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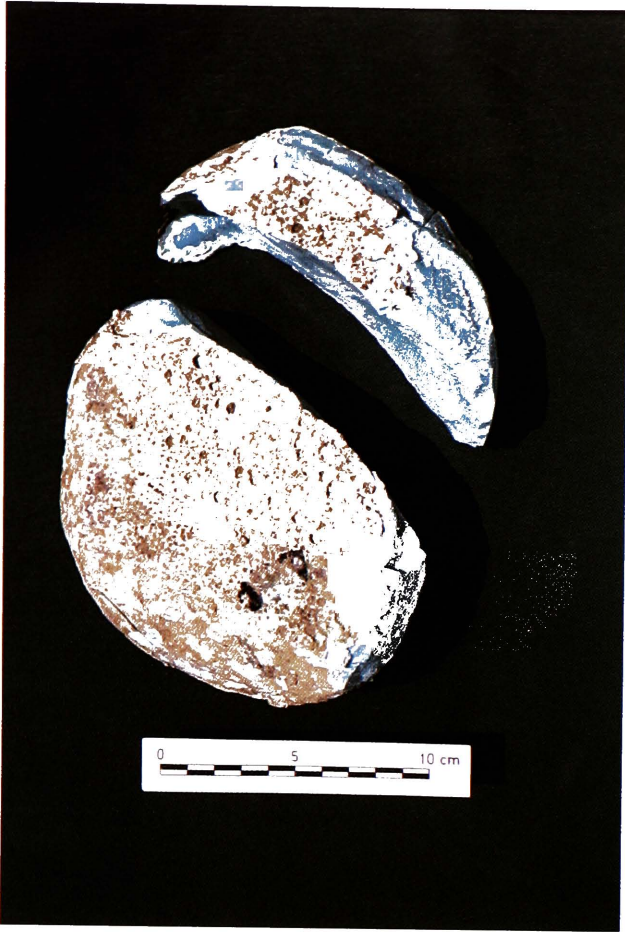
Excavations at Tell Brak

Vol. 1: The Mitanni and Old Babylonian periods

By David Oates, Joan Oates and Helen McDonald



BRITISH SCHOOL OF ARCHAEOLOGY IN IRAQ



Glass ingot, copper colourant (see p.85).



Core-moulded glass bottle (see p. 82).



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By David Oates, Joan Oates and Helen McDonald

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Introduction

Tell Brak lies in northeastern Syria, close to the modern borders of Iraq and Turkey and astride two of the ancient roads that ran from southern Mesopotamia and Assyria westwards to the Mediterranean and the mineral resources of Anatolia (Fig. 1). In particular it controls the pass to the south between Jebel Sinjar and Jebel Jeribe, which provides access to the northern Jazirah and one of the major routes to the east and the Tigris Valley. The geographical and environmental situation of Brak will be discussed in greater detail in Volume 2 of the final reports dealing with the third millennium, when the site's position as a gateway city and a point of contact between Mesopotamia and the North and West were of greater significance. In Mitanni times, the primary subject of this volume, Brak lay within the heartland

of this Late Bronze Age kingdom and its 'frontier' position was of less immediate consequence. The Mitanni kingdom was populated by a largely Hurrian-speaking population and was one of the major powers in the Late Bronze Age world (the best general reference is Wilhelm 1989).

The main tell covers an area of over 40 ha and is one of the largest mounds in northern Mesopotamia and Syria, approximately the same area as Quyunjik, the main mound of ancient Nineveh, and half again as high (Fig. 2). The mound of Brak consists of a southern area, rising to a height of over 20 m in Area DH (tell plan, Fig. 3), and a much higher northern ridge. It lacks the outer city wall which characterizes most third- and second-millennium cities in the Khabur area, for example, Tell Leilan and Tell Beidar.

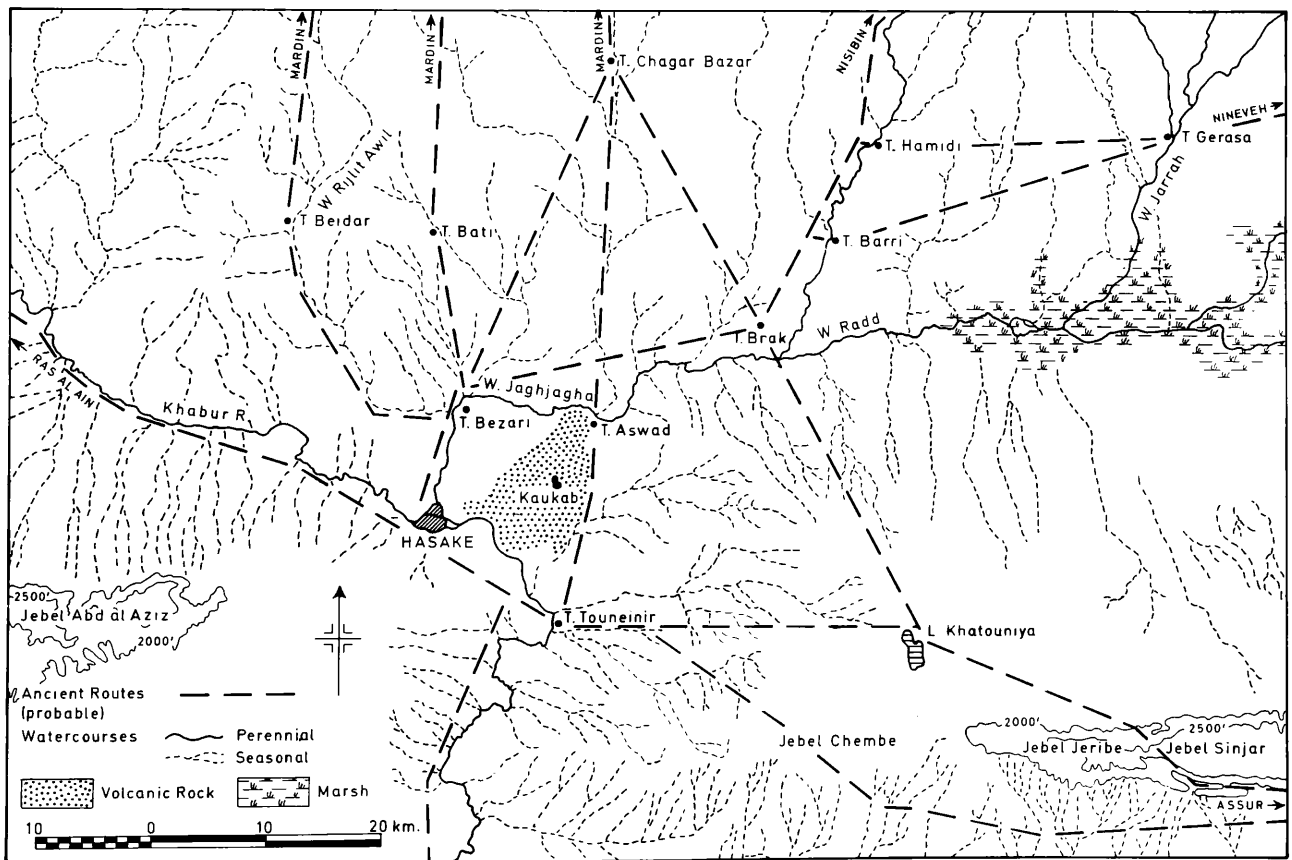


Figure 1. Map of southern Khabur basin.

Introduction



Figure 2. View of Tell Brak from the northwest.

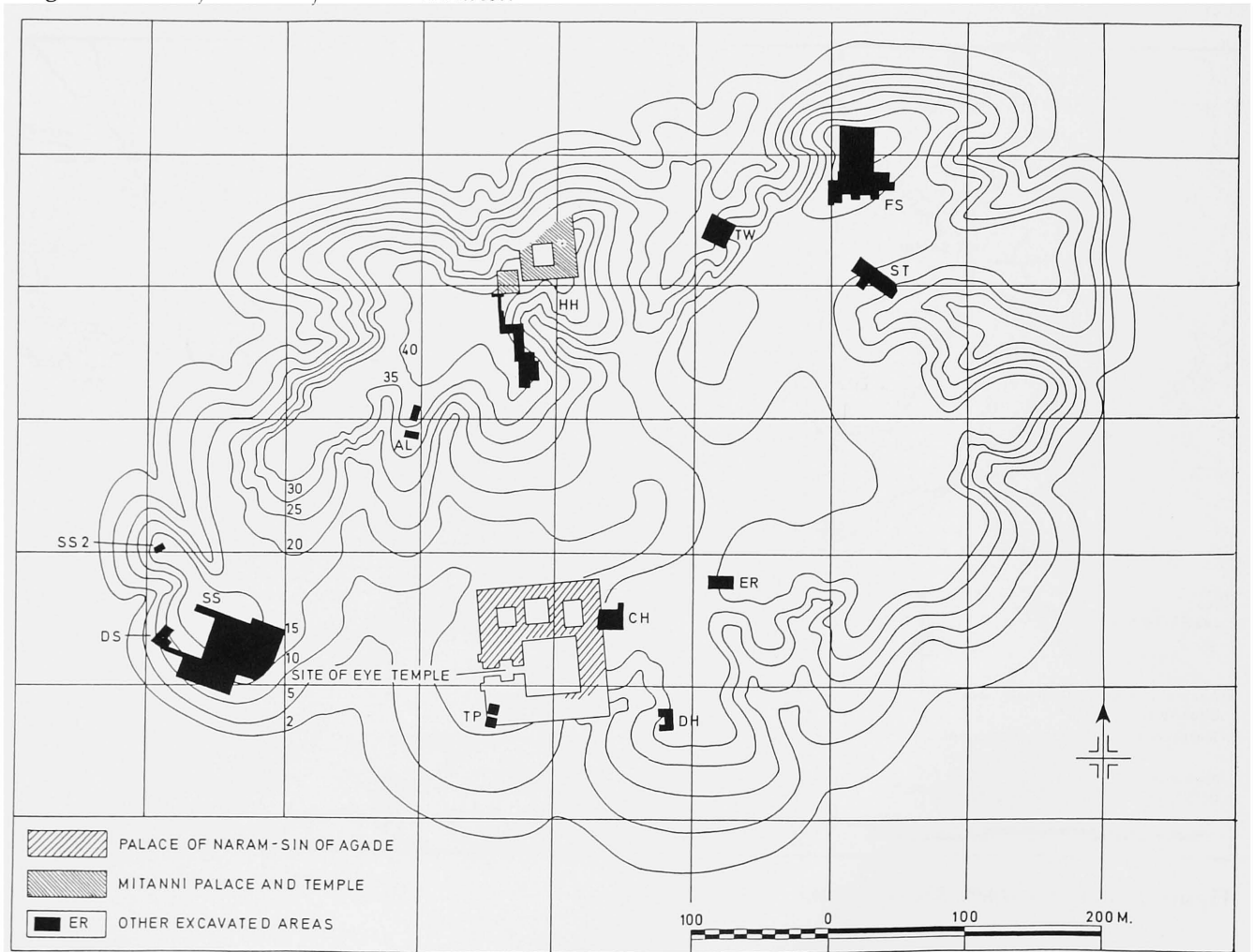


Figure 3. Plan of Tell Brak showing excavated areas.

During the third and fourth millennia Brak had been one of the largest cities in northern Mesopotamia, but its southern half was effectively abandoned sometime early in the second millennium BC. A major reason for our selection of the site for excavation was the fact that this enabled immediate access to the Early Bronze Age city. This third millennium city and the earlier Uruk and 'Ubaid settlements are the subjects of Volumes 2 and 3 in the series of final reports.

The high north ridge stands some 43 m above the modern plain, dominating the lower areas of the site. Seen from a distance, the most prominent feature of its upper slopes is a very substantial platform of grey mud-brick, at least twenty-four courses thick, topped by a similar mass of red brick, both heavily eroded. The first soundings here were made by Father Poidebard in 1930. Unfortunately no records survive apart from tantalizingly brief notes (Poidebard 1930; 1934), but a large basalt statue found by him can now be seen in the Louvre. The north slope of the tell is today extremely steep, and its erosion must have been accelerated by the removal at that time of 'basalt paving stones' by Poidebard's host, a military engineer who reused the stones in the piers of a new bridge across the Wadi Jaghjagh. Unfortunately we have no information as to the date of the original but now lost stone structure(s). In 1937–38 Brak was excavated by M.E.L. Mallowan (published in *Iraq* 9, 1947; a more entertaining account of life on the site can be found in *Come Tell Me How You Live*, written by his wife, Agatha Christie, 1975).

The recent series of campaigns at Tell Brak began in 1976, with the specific purpose of investigating the third-millennium city during which time we knew, from the evidence of Mallowan's 1930s excavations, that Brak had been an administrative outpost of the archaeologically little-known Akkadian Empire. The fact that the southern part of the tell seemed to have been abandoned early in the second millennium focused our excavations on the lower city, where we hoped to recover a reliable sequence of third-millennium archaeological materials, a period for which our knowledge of north Mesopotamia was markedly deficient. While working on the lower areas of the tell, however, we continued to be intrigued by the mass of red mud-brick which covered the high north ridge beneath the modern survey point, the slopes of which were littered with second-millennium Khabur ware sherds (Fig. 4). In 1984 curiosity overcame us, and it was decided to try to establish the nature of this massive red-brick

structure by the simple expedient of tracing its eastern edge across the tell. Much to our surprise this small exercise produced the exterior wall of an obviously monumental building, ornamented with a series of niches, in which were set groups of engaged half-columns (Fig. 5). Over the next two seasons part of our work force was diverted in order to establish the nature of this unexpected monumental building, which we knew from Mallowan's 1930s excavations, and our own discovery there in 1984 of a fourteenth-century BC legal document, must date to the little-known Late Bronze Age Mitanni kingdom. During 1987–88 we extended this excavation to the south in order to establish a sequence of material from private houses of this time.

In 1937–38 Mallowan had excavated an area on the middle of the north ridge which he named HH, a designation we have retained for our recent excavations which adjoin his on the east. The eastern limit



Figure 4. Gully south of Mitanni Palace Room 1, showing basalt seat (p. 6) and the very distinct mass of red brick at the top of the north ridge of the tell.



Figure 5. View from Area FS of Mitanni Palace columned east façade. The third-millennium tell surface is visible in the foreground as a distinct line above the lower (Akkadian) building.



Figure 6. Air photograph taken on 28.3.39, showing the steep slope of the high north ridge and the extent of Mallowan's 1930s excavations on Area HH. An area of Mitanni houses is visible in the plain between the main tell and a low Roman site, upper left. Beyond the Roman site is one occupied in Akkadian and Middle Uruk times.

of his trench, some 70 m southwest of the survey point, was determined by a 'heavy terrace' beyond which he did not investigate (Fig. 6). This has now proved to be the foundations of a Mitanni Temple. The 1930s excavations revealed private houses, of which the plans are incoherent but the stratigraphic sequence is of interest (Mallowan 1947, 77–8). Mallowan reports three major levels containing Late Bronze Age Nuzi ware. Level 3, the earliest in this sequence, combined Nuzi ware — in smaller quantity than in the succeeding Level 2 — with Khabur ware, an association which at Tell al Rimah we have dated approximately to the late sixteenth century BC (*Rimah*, 37). Both Levels 2 and 3 had been destroyed by fire. Mallowan made a small sounding below Level 3, and states that Khabur ware was found without Nuzi ware to a depth of a further 4.5 m, and was then preceded by incised pottery and earlier still by black-burnished 'Sargonid' pottery. Clearly the earliest, ill-defined levels in the sounding take us back to the second half of the third millennium, while the Old Babylonian period, to which the unadulterated Khabur ware levels can be assigned, is represented by a minimum of 4.5 m of deposit; the earlier incised pottery to which Mallowan refers covers a period which we now know to range from

early Akkadian to early Mitanni. The relationship of this sequence to the evidence from our own excavations is discussed below, and illustrated in Table 2 (p. 35). Our excavations have established, in addition, that in this area of the mound the Old Babylonian ground surface of c. 1800 BC lies still some 35 m above the level of the modern plain, striking evidence of the size and extent of the underlying cities.

Our objective in this volume is to present the second-millennium evidence in a readable yet at the same time detailed form. The latter is, we hope, at least partially accomplished by the extensive use of photographs, plans and sections, together with the detailed charts that accompany Figures 179–239. A word of explanation is needed, however, about the organization and conventions of the text. References to specific objects designate either a figure reference within the text (for example, Fig. 11) or a specific object designation within the figures of drawings that accompany the text at the end of the volume, usually given as ‘glass 1’, with the actual object number in bold when the figure reference is not given. On these plates of drawings all objects of the same material are numbered sequentially, e.g. pottery nos. 1–699. The catalogue information which appears on the charts that accompany each end figure includes for each object the locus number, which precisely identifies its findspot, the archaeological level to which we attribute that locus, the object or pottery register number recorded on the excavation (these run sequentially for the objects and are qualified by the year in the case of the pottery), and the museum catalogue number, prefixed by TB, which refers solely to those objects now housed in the new Deir ez-Zor Museum. A full list of locus numbers referred to in the text and charts can be found on pp. 284–90. Spot heights are calculated from an elevation of 376 m, the base height of the survey point on the summit of the mound (Fig. 6) as recorded on the quarter inch maps (GSGS).

It should be emphasized that the level numbers refer specifically to Area HH and apply only to Area HH in the second millennium BC (see list of level designations, Table 1, p. 35, and the overall stratigraphic summary for the site, *Iraq* 56, 1994, 173). It is perhaps necessary also to note that all the object photographs were taken at the time of excavation. Thus, for example, there are two photographs of projectile points, since the majority of these were found in two different seasons. Moreover, in some instances, in particular with respect to the metal

objects which were often not sufficiently clean to be photographed until the very end of the season, the individual photograph incorporates objects of varying date, that is, includes objects not published in this volume (Fig. 144, for example). Such objects will, of course, appear again in Volume 2 or 3. Some objects have been restored in Deir ez-Zor. Compare, for example, our photograph of alabaster jar 96 (Fig. 138) with its restored condition in the Rimini Exhibition catalogue (Rouault & Masetti-Rouault 1993, 294; but note that our restoration differs owing to the presence of a second handle, almost certainly belonging to this jar, among the fragments recovered). One of the most spectacular restorations in the Deir ez-Zor Museum is the Egyptian Blue bowl (frit 79).

There are over 800 excavation register entries for objects found in Area HH, excluding pottery, and often an individual entry includes a group of similar objects found together. Owing to this large quantity of material we have not published details of all the objects found except in the case of the glass and metal, where such information is perhaps of most interest. All types within each material group are illustrated, however. The pottery represents an even greater problem. Here we have produced drawings of all complete sections, together with some sherds where they are of particular interest. The information in the accompanying charts and the bar graphs (Chapter 4) incorporates data from the sherd notebooks, in which all sherds were recorded on site at the time of excavation. References in the text to the journal *Iraq* without specification of author refer to preliminary reports on the excavations, written by either D. or J. Oates, or both.

The first chapter in the volume describes the excavations themselves. A section at the end of the chapter provides detailed information about the objects found in the more important rooms in the Palace and Temple, and in Trench D. Information provided in the charts accompanying the plates, together with the locus list, enables the reader to reconstruct such specific assemblages of published material for all contexts on the site. The individual categories of object are discussed separately in Chapters 2–10. Detailed information on unpublished material is available on the dig computer and also in the site registers and excavation notebooks at present housed in the McDonald Institute for Archaeological Research, University of Cambridge.

A brief historical commentary concludes the volume.

Chapter 1

The Excavations

A. Introduction: the Mitanni Palace

Our investigations in Area HH began late in the 1984 season. In the northeast corner of the HH ridge was revealed a substantial layer of mud-brick, too eroded to yield even the outline of a plan, but which proved to be a capping with a surviving thickness of only two or three courses, the foundations of a building which has otherwise disappeared. This building is referred to again below (p. 153). Beneath it we were able to trace a wall face which runs for some 46 m from north to south across the eastern end of the ridge. It was ornamented at irregular intervals with a series of recesses, in each of which was a set of three engaged half-columns (Figs. 7 & 8). The differences in intervals would seem to reflect varying elevations within the building, and they rise towards the north, presumably reflecting the existence of two storeys for which there is other evidence, discussed below. At some later time this façade had been masked by a revetment of mud-brick, used as the foundation for a wall now 4.1 m thick. We know little of the earlier building except that it had a paved courtyard (Fig. 9) and external walls coinciding with the later structure. On the north, south and east sides of Courtyard 8, beneath the wall plaster of the later building, we again found panels of three columns, which at some earlier time had been cut back and incorporated in the later walls (Figs. 10 & 173). The original courtyard pavement (brick size $31\text{--}32^2 \times 9$) continued in use, with some patching, throughout the life of the building, since it can in places be seen to underlie the original columned façade. Thus there was little or no change of floor level, but parts of the walls of the original building had either been severely damaged or deliberately levelled, very probably both, and the original columned façade suppressed.

The later building, though heavily eroded on north and south, can quite firmly be identified as a fortress-palace. Some indication of the earliest possible date for its reconstruction was given by the discovery, embedded in the mortar between the first façade and the later revetment, of a small fragment

of a core-moulded glass vessel (glass 37), which is very unlikely to be earlier than the sixteenth century BC. We now know, from subsequent discoveries, that this building was erected by some unknown Mitanni ruler. This may have taken place by the middle of the sixteenth century, since at that time, or not long after, Parattarna, king of Mitanni, controlled the whole northern plain from Nuzi in the east to the Mediterranean in the west, and it is inconceivable that Brak, which lay within the homeland of this Late Bronze Age kingdom, was not a Mitanni city in his reign. At the very latest the Palace was in existence by the early fifteenth century. (A table of historical 'approximations' can be found in Chapter 12, p. 149.)

Finds in the Mitanni Palace, though in most cases badly broken and scattered — pieces of the same glass, alabaster or pottery vessel were often found in different rooms — were of outstanding interest. The glass included fragments of vessels decorated not only with multi-coloured festoon and chevron inlay (Fig. 11), a technique already known in this period from sites like Nuzi and Tell al Rimah, but also an unusual vessel with tiny inlaid flowers and bands with pendant triangles composed of minute globules of yellow and white glass (glass 2 and Fig. 122). This latter type of decoration in glass is unique and represents one of the highest achievements of Mitanni craftsmen. We believe that these and other vessels were actually being manufactured at Brak, for there is extensive evidence for craft activity and we found pieces of cullet and a number of ingots of raw glass in the Palace. The evidence for glass and other glazed materials is discussed in Chapter 5. Other objects reflect the international relations attested in the well-known Amarna Letters, correspondence among the rulers of the then-known ancient world recovered in Egypt, in which the kings of Babylon, the Hittites and the Mitanni, along with the Egyptian pharaoh, figured prominently as the leading rulers of the age. This internationalism can be seen, *inter alia*, in objects of 'Egyptian alabaster' found at Brak (see discussion in Chapter 7 of this stone type which is technically travertine), in the



Figure 7. *Columned east façade of Mitanni Palace.*

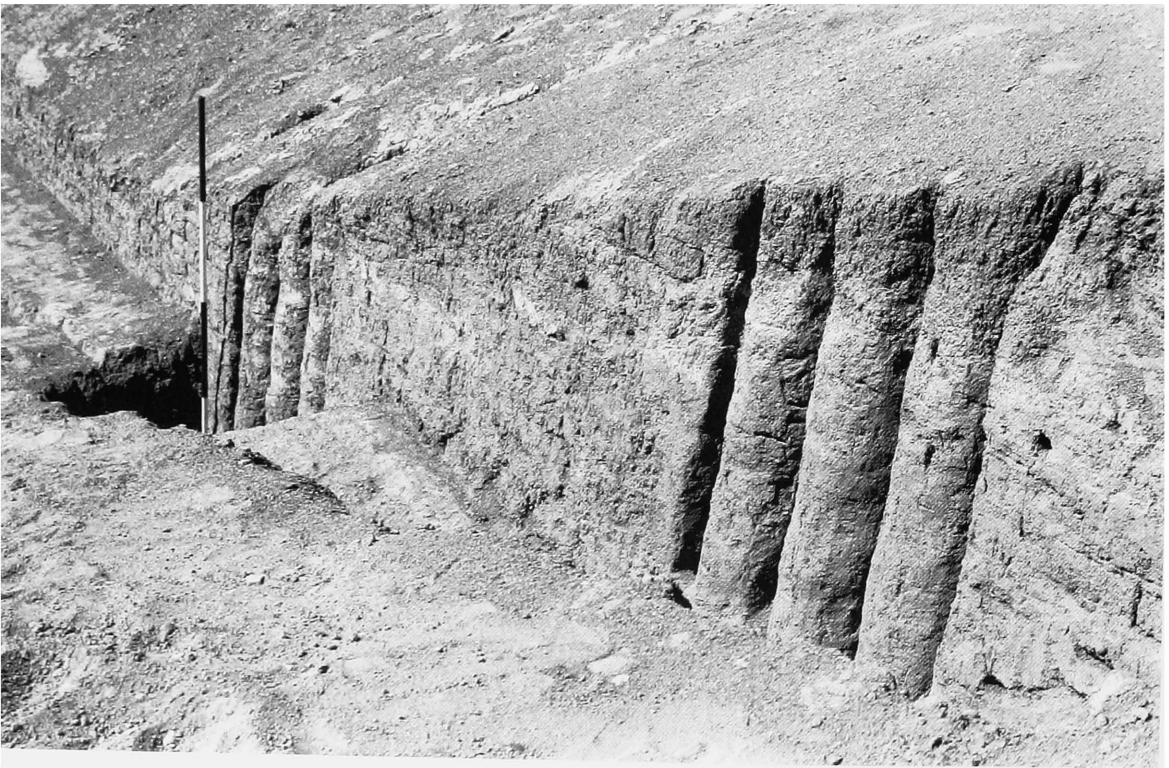


Figure 8. *Detail of panels of engaged semi-columns, original external east wall of Mitanni Palace.*



Figure 9. Original courtyard floor, Mitanni Palace, showing pavement repairs. In the background a Middle Assyrian level can be seen cut into the east wall of the courtyard.

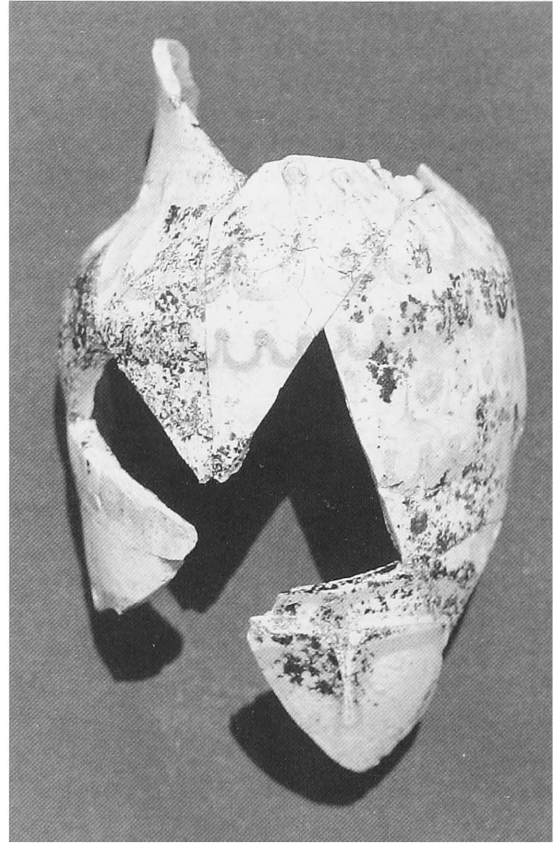


Figure 11. Core-moulded blue glass bottle, decorated with coloured festoons, Mitanni Palace Room 7, cf. p. 82.



Figure 10. Engaged semi-columns, south courtyard wall, cut back and plastered over and the upper wall rebuilt in the fifteenth-century repairs to the Palace.

Mycenaean stirrup jar (p. 79), the 'Egyptianizing' scarabs (Fig. 221:69 & 70) and in highly burnished plum red vessels which closely resemble fine Hittite pottery in both ware and shape (Chapter 4). A detailed commentary on the finds from the more important Palace rooms and the adjacent Temple is provided at the end of this chapter. The remainder of the volume contains more detailed comment on the various categories of material recovered.

B. Architecture of the Palace (Fig. 12)

Although the external doorway has been lost owing to the heavy erosion of Area HH (cf. Fig. 6), it must have been situated in the south wall close to the southwest corner, and led through two rooms (10 & 9) into the central courtyard which, as we have observed, also formed part of the original plan. In Room 9 was found a very distinctive, square, brick-built hearth (Fig. 13) of a type found also in Room 11 and

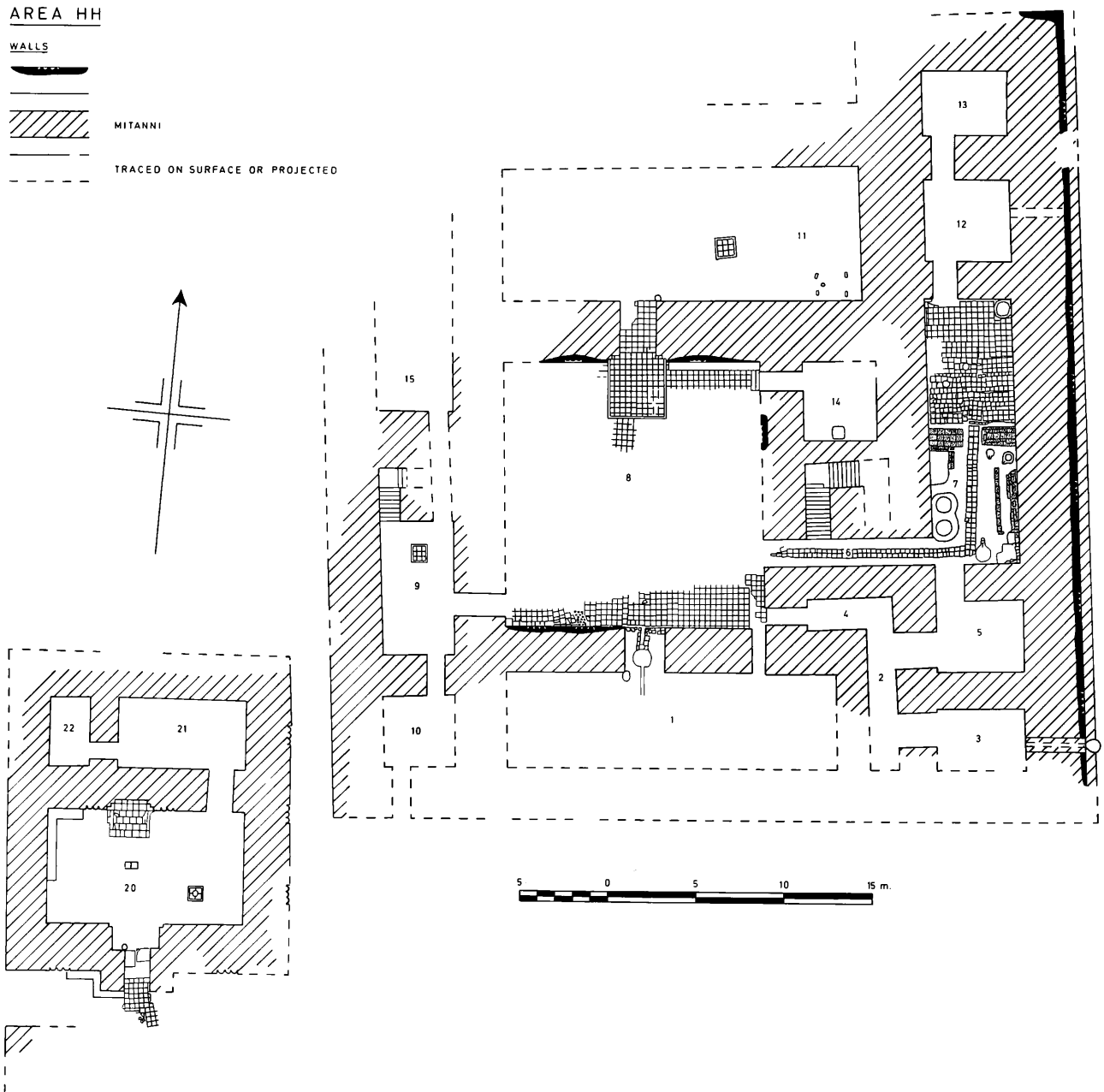


Figure 12. Plan of Mitanni Palace and Temple.

the Temple, and in a Mitanni context at Tell al Rimah. Two ash-covered floors were identified in Room 9 from which a 6 m long vaulted passage led to a now eroded room (15) to the north; a staircase of three flights rose over the passage (below, p. 11; mud-bricks 37² plus a large joint).

On the south side of the courtyard was a large chamber (1), now largely lost through erosion but originally some 15 by 5 m. It was entered from the court by a doorway 2.3 m wide, beneath which was a well-built drain (Fig. 14). The single door had apparently been burnt *in situ*, for the doorpost socket was filled with ash and charcoal. It contained not only the usual pivot-block with a circular depression in its upper surface, but a cylindrical pivot stone with one end rounded to fit the depression and flattened on one side to lock it into the butt of the wooden post on which the door swung (Fig. 15). A charcoal sample from the wooden post provides a dendrochronological date, for which we are indebted to Dr Kuniholm (relative year 1228, Gordion Midas Mound Relative Dating System; radiocarbon 1293–37 BC; see p. 127). A second narrower doorway near the northeast corner of Room 1 gave easy access to a range of rooms on the east side of the building, including an ablu-tion room (3) and a large workshop (7, mistakenly identified as a ‘kitchen’ in the preliminary reports owing to its large number of ovens). The ablu-tion room was floored with fine grit and had a shallow, paved depression

with an opening to a well-built drain through the east wall (Fig. 16). The room contained the remains of a large ‘bathtub’ (Fig. 212:617) and, together with the adjacent corridor (Fig. 174), a number of large and elaborately decorated potstands designed, presumably, to carry water jars.

By comparison with Mesopotamian palaces



Figure 13. Palace Room 9 from the south, showing the western stair with the vaulted passage beneath, and the brick-built hearth in the centre of the room (see also Fig. 24).



Figure 14. Room 1 doorway, Mitanni Palace, showing the brick-built drain running from the courtyard (foreground).

Room 1, with its north-facing aspect and close association with an ablution room, should be a major reception or even throne room. Indeed the large basalt pedestal or seat found in the wadi below (Fig. 4) almost certainly fell from this room. But here the Mesopotamian analogy ends. The whole of the north side of the courtyard was occupied by an even larger chamber (11), *c.* 7.5 m wide. The west and much of the north sides have been lost by erosion, but it was at least 16 and probably 20 m long, and was entered from the court by a doorway 2.0 m wide (Fig. 19). In the surviving area the only permanent installations were a square baked-brick hearth set in the plastered floor, and a set of four small rectangular blocks of

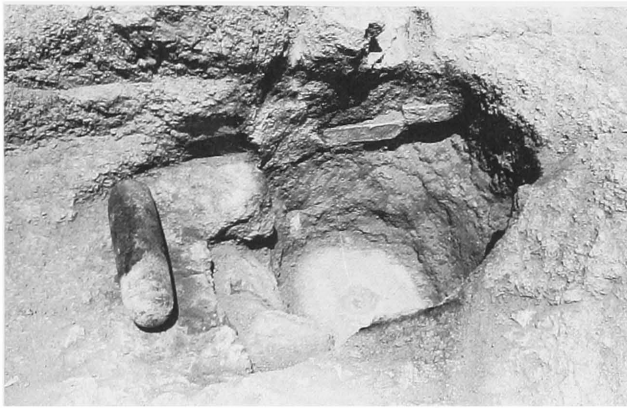


Figure 15. Room 1 doorsocket and pivot stone (Fig. 230:123).



Figure 16. Ablution Room 3, with *in situ* potstands and well-built drain in the east wall.

stone (28 × 13 × 11 cm deep), flush with the floor and close to the southeast corner (Figs. 17 & 18 and plan, Fig. 40). These appear to have been footings for the corners of a wooden structure or piece of furniture, some 1.5 m long and 1.0 m wide. This had clearly been moved before the fierce fire that consumed the contents of the room, since a massive juniper or cedar post had been set in the floor within the area it spanned, possibly to support a sagging roof beam; the post itself had been burnt in the fire (dendrochronological sample BRA- 2, p. 128). We infer that the palace was damaged and that later, after a short interval in which local repairs were carried out, large parts of it were burnt and it ceased to exist as an official building. The dating of these events is discussed below and in Chapter 12. In the courtyard, to the south of the Room 11 door, we found a kerb of bricks on edge, possibly enclosing a raised floor of some other material (Fig. 19). Its position in front of an important south-facing doorway suggests that it may have been the floor of a covered porch, but no evidence of roof supports was found. Its presence undoubtedly further emphasized the public importance of Room 11, while the silver nail and fragments of silver sheet recovered here (reg. nos. 3013 & 2792) suggest that the portico itself may have been lavishly decorated.

Returning to the east side of the building, both the workshop (7) and its anteroom or, more probably, storeroom (5) contained a number of large storage jars. The workshop was elaborately equipped with a variety of ovens while its northern half, where liquids were evidently used, had a baked-brick pavement drained by a brick-lined trough which ran down the middle of the workshop area and then turned west to pass through a second doorway and through Corridor 6 into the courtyard (Figs. 20 & 21; a section of Corridor 6 is illustrated in Fig. 31). In the north wall of the workshop an intact arched doorway (ht 3.5 m) led into two small rooms (11 & 12) with an interconnecting doorway, also

The Excavations



Figure 17. Room 11 from the west, showing heavily burnt floor, brick-built hearth and stone paving slabs fallen from above.

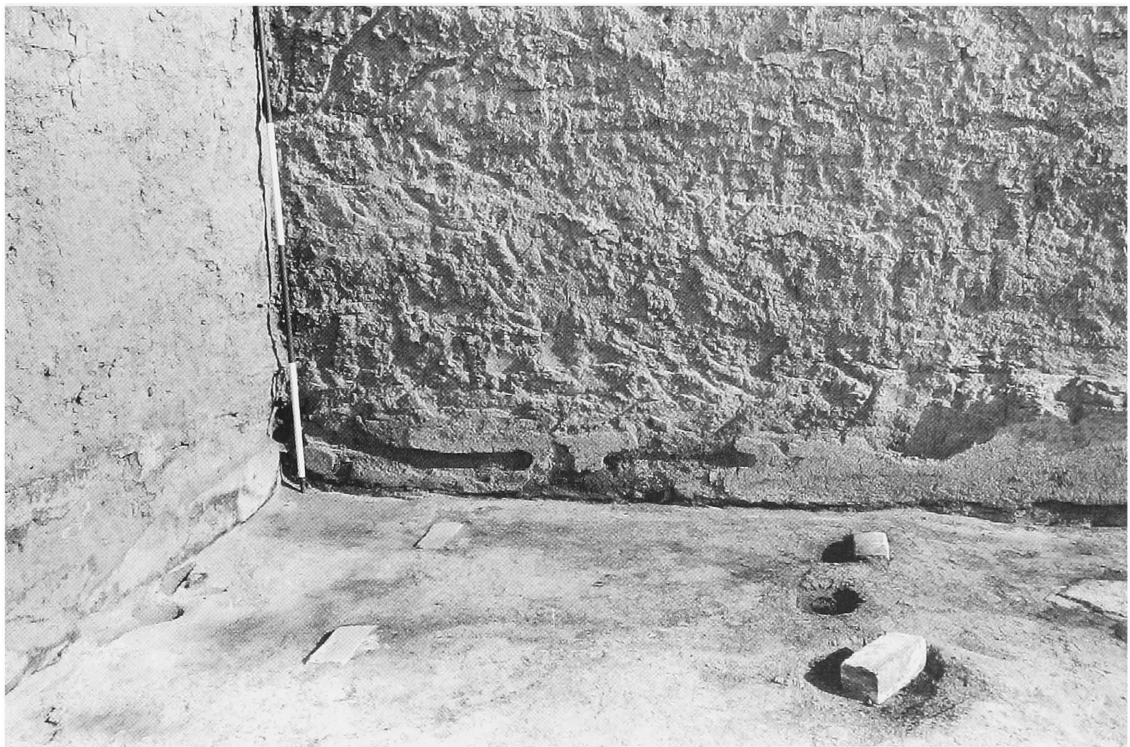


Figure 18. Detail of southeast corner of Palace Room 11 showing stone supports and posthole.



Figure 19. View from Courtyard 8 through the south door of Room 11, showing the kerbed portico on the north side of the courtyard, leading into the large reception room.

arched. These showed signs of intense conflagration. They seem also to have been workshops, for we found hearths and some fragments of what appeared to have been a small, roughly made crucible with an inner deposit that looked like silver. There were also many sherds of large storage jars together with the unusual rectangular tub (Fig. 22). From the intensity of the blaze, which had almost vitrified the wall plaster, we suspect that some of the jars contained a flammable substance such as oil, for example the heavily burnt bottle 508, found in the doorway between the two rooms. Room 12, moreover, had a very narrow ventilation slit in the east wall, some 2 m above the floor. Here the surviving spring of a vault enables us to calculate approximately the minimum height of the roof, which appears here and in Room 11 to have been at least partly paved with baked bricks of which many examples were found in the mud-brick debris which filled the rooms. The function of Room 14 remains an enigma. A large basin was let into the floor near the south wall and an ash-filled pit near the door suggests the possible

presence of a hearth. Its 'secure' position in the centre of the Palace suggests the possibility of a strong-room, but this receives little support from either the fittings of the room or its contents — the usual range of glass (7, 19) and metal objects, including a plaster button covered with gold leaf (metal 75), and the glazed talc scarab (Fig. 218:69).

Another very un-Mesopotamian feature of the Palace was the presence of two stairways, one on the east side between the workshop and the courtyard (Corridor 6, Fig. 23), the other on the west, opening off the second entrance chamber. Both were approximately the same width as ordinary doorways, unlike the wide single stairs of Mesopotamian palaces and temples, and seem to have been designed for purely practical use. Their gradient can be accurately reconstructed and provides independent evidence of roof height, on the east side *c.* 7.0 m, on the west *c.* 5.4 m above floor level. The Corridor 6 stair was preserved over two flights, the lower flight consisting of 12 risers of which the uppermost appears to have been reduced in both height and width. In

The Excavations



Figure 20. North and south ends of Room 7, showing northern paved floor and arched doorway, and southern drain and ovens; Room 5 in background.

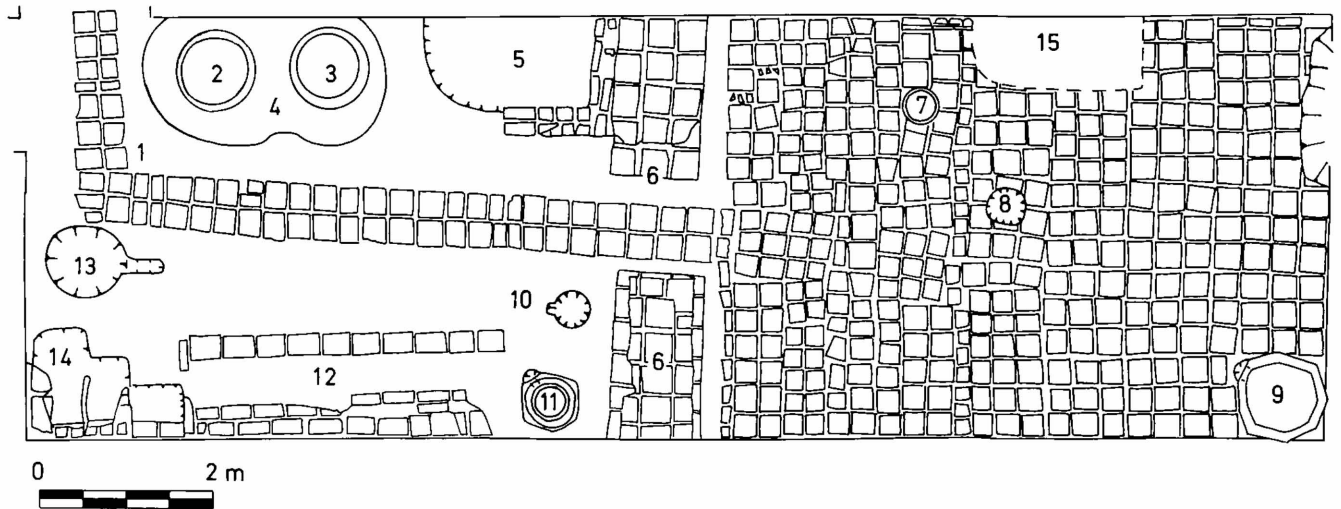


Figure 21. Plan of Room 7.

- 1 Baked-brick-lined drain, runs into courtyard through Corridor 6, bricks $25 \times 25 \times 5$; filled with grey ash and charcoal (locus 72, see also Figs. 20 & 31);
- 2,3 clay-lined ovens (loci 67 & 68), white plaster surface, lining 5 cm thick, filled with ash and charcoal flecks, set into
- 4 construction pit for ovens 2 & 3 (locus 73);
- 5 oven, walls of burnt orange clay, contained pot 572 and 2 blue frit melon beads (not primary contents) (locus 80);
- 6 libn platforms across middle of room (?room dividers) (loci 95 & 96);
- 7 pot set into pavement (secondary deposit of whetstone) (locus 103);
- 8 hole in pavement, possibly a 'potstand', filled with ash and stone cobbles (locus 104);
- 9 oven (locus 101);
- 10 small oven (locus 94);
- 11 small clay-lined oven, sides consist of circular rings of fired clay, plaster on the outside (locus 74);
- 12 large rectangular oven, lined with brick and filled with grey ash (locus 71);
- 13 clay-lined oven, cut into libn floor (see Fig. 44) (locus 93);
- 14 rectangular oven/kiln, heavily burnt, remains of a possible clay floor 5 cm thick, 25 cm above the bottom of the oven; vertical central wall may have supported this floor; cut into libn floor (locus 84) (see Fig. 44).



Figure 22. Large pottery tub, Palace Room 12 (cf. Fig. 212:619).



Figure 23. Mitanni Palace east stair, width 1.35 m, 12 risers 2 mud-bricks in height (red libn, $36^2 \times 10-11$). A Middle Assyrian floor can be seen in section above the first landing. The second flight is illustrated in Figure 32.

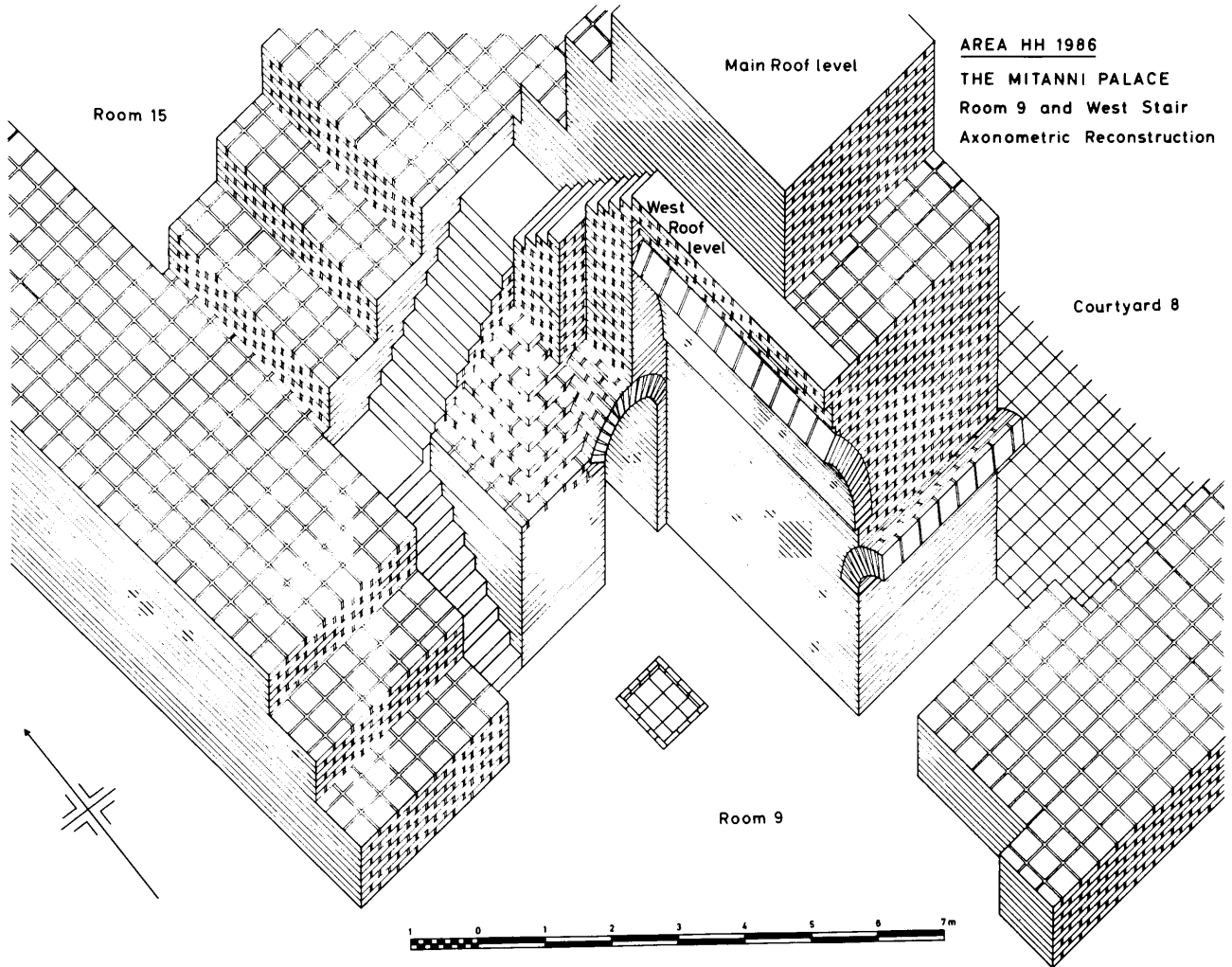


Figure 24. Axonometric reconstruction of the western stair, Room 9.

Room 9 the stair rose over a vaulted passage some 6 m in length, which led to a room (15) now totally eroded away (Fig. 24). Three considerations lead us to believe there was a second storey above at least the northern and eastern parts of the Palace: the great thickness of the walls, 3.5 as compared with 2.5 m elsewhere, the presence of two internal stairways, and the absence of any purely residential quarters on the ground floor. It seems likely that the apartments which constituted the *bitānu* or residential area of a single-storey Mesopotamian palace were, in this building, on an upper floor over the great north chamber and possibly also the workshop, with a paved terrace at the northeast corner (Fig. 171). The east staircase must have given access to these private apartments. There is an obvious parallel in the Level VII palace at Alalakh (Woolley 1955, fig.

35), and it may be that limitations of space dictated two-storey construction on both sites.

The courtyard itself was not fully excavated, owing to its size and depth. After the final destruction of Mitanni Brak, it had obviously lain open for an undetermined time, since about a metre of erosion silt and ash had accumulated within, the levels sloping down from the surviving walls (Fig. 25, and see also Chapter 11). Four glass ingots, perhaps originating from the workshop or its adjoining store, were found in the courtyard (reg. nos. 1697, 1702, 2674 & 2762), together with a variety of other objects including a large number of wall cones (Fig. 238), suggesting their presence as decoration on the upper walls surrounding the court. In general the Mitanni wall cones were hollow, with a hole in both the head and the tip; only one glazed example survived (11).

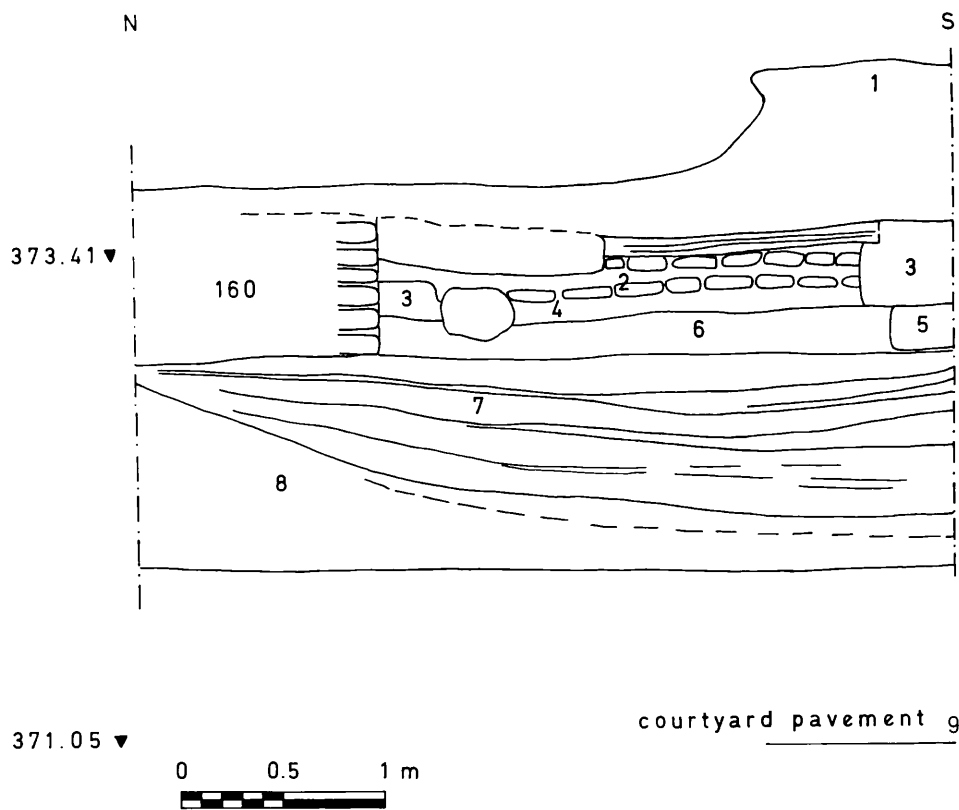


Figure 25. North-south section in Courtyard 8 showing the thick erosion deposit below the Middle Assyrian walls.

- 1 Red libn platform, over decayed libn and ash (cf. Fig. 159:6;
- 2 sequence of plastered floors and libn;
- 3 Middle Assyrian walls, second phase of occupation;
- 4 Middle Assyrian phase 2 floors (Level 1a);
- 5 Middle Assyrian phase 1 walls (including wall 160);
- 6 Middle Assyrian Level 1b;
- 7 thick bands of ashy erosion deposits;
- 8 collapsed mud-brick and water-laid silts, representing decay of Mitanni Palace walls;
- 9 the lowest line represents the courtyard pavement.

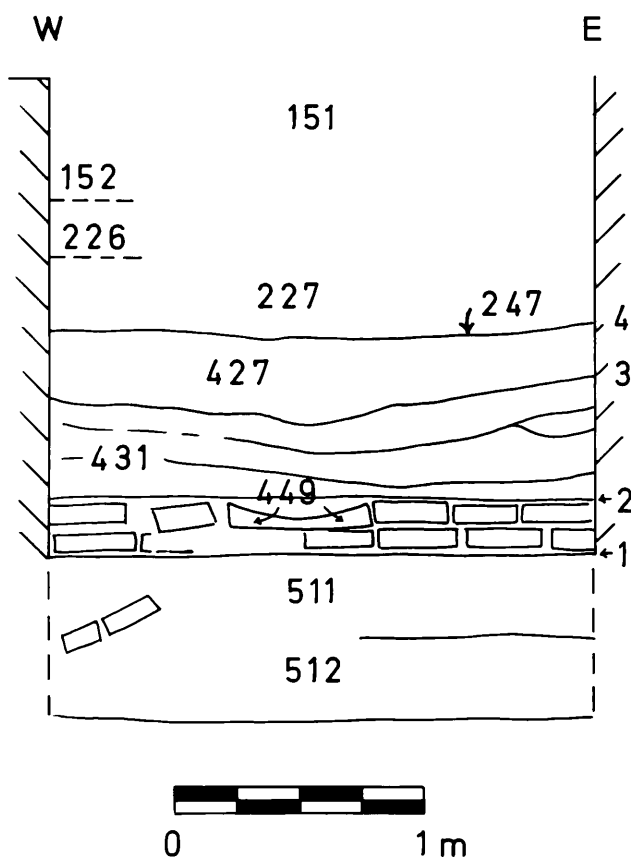


Figure 26. Section through deposits in the street between the Mitanni Palace and Temple. Note that the overlying strata (loci 151-247) were excavated in 1986, and that no section was drawn at that time. The following levels were recorded:

- locus 151 surface clearance;
- locus 152 Middle Assyrian occupation, built against east wall of Temple (plastered surface);
- locus 225 red sandy earth, overlying
- locus 226 uppermost Mitanni road surface;
- locus 227 earth foundation for surface 226;
- locus 247 road surface beneath 227, lower limit of 1986 excavation;
- locus 427 mud deposit, decayed red mud-brick, few sherds;
- locus 431 layered occupation debris, charcoal in lowest layer;
- locus 449 juss (gypsum) drain set into Palace/Temple foundation level, filled with ashy material;
- locus 511 hard-packed grey ashy fill; grey libn beneath Palace, brick collapse beneath Temple wall (left);
- locus 512 loose, light-brown loamy earth.

1 = bottom of red mud-brick Palace/Temple foundations;
 2 = original floor level;
 3, 4 = distinct road surfaces pre-dating the latest surface 226.

C. The Mitanni Temple

This small building measured some 16 m wide from east to west and 18 m long, separated from the Palace only by a passage 2.3 m wide. A sounding excavated in this passage demonstrated that the two buildings were constructed at the same time (Fig. 26). However, the Temple appears not to have been damaged at the time the Palace semi-columns were suppressed, perhaps owing to its smaller size if, as we suspect, the damage to the Palace resulted from some natural disaster (p. 148, below). On the south and east façades inset panels of three engaged half-columns survived in reasonable condition (Fig. 27); we did not excavate the west side, which had been disturbed by Mallowan's trench, or that to the north which lay at the edge of the heavily eroded tell, but we assume the pattern was repeated around all sides of the building (Fig. 28). The temple entrance, 1.5 m wide, was flanked by small projecting towers which lay approximately in the middle of the south side. It led into a *breitraum* cella (20), 11.2 m wide and 6.5 m deep, with a shallow rebated niche in the north wall almost opposite the door (Fig. 29). The niche was flanked by two pairs of engaged half-columns, and from it a stepped dais of mud-brick projected into the room (Fig. 30). The only other permanent installations were a low mud-brick bench along part of the north and west walls in the northwest corner, a pair of baked bricks flush with the floor on the axis of the dais, presumably to support an altar or offering table, and in the south-east quadrant of the room a square baked-brick hearth of the type also found in the Palace. The *breitraum* plan is in marked contrast with the Temple plan at Nuzi which conforms to the standard north Mesopotamian bent-axis temple (Starr 1937, plans 12 & 13).

A door in the north-east corner of the cella led into two further rooms (21 and 22), connected by an arched doorway, which seem to have served as stores or vestries. The presence of a number of heavy basalt grinders and other workshop equipment in the middle of

Room 21 (see Fig. 49) suggests the possibility that this was some form of workroom, though here as in other workrooms of the Palace, we have no evidence for any source of light, even when walls are preserved to roof height as in Room 12. The Temple, like the nearby rooms in the southwest quarter of the Palace, was not heavily burnt, but the contrast in this respect with the northern and eastern rooms of the Palace may reflect only the lack of flammable materials. There were signs of burning around the dais, however, and there seems little doubt from the pottery and other objects, and the condition in which they were found, that the Temple was destroyed or at least looted and abandoned at the same time as the Palace.

D. The destruction of the Palace; Middle Assyrian Brak

In the account of the architecture of the Palace, we have noted the evidence of structural damage at two points in the building's history, once at some time in the fifteenth century when the engaged semi-column ornament was suppressed, and again towards the end of the life of the palace, when the roof of Room 11 apparently needed further support and the doorpost of Room 1 was replaced. Historical evidence in the form of cuneiform annals provides the information that two Middle Assyrian kings, Adad-nerari I (1305–1274 BC) and Shalmaneser I (1273–1244), claim to have destroyed the cities of Mitanni,



Figure 27. Engaged semi-columns on the east outer wall of the Temple.

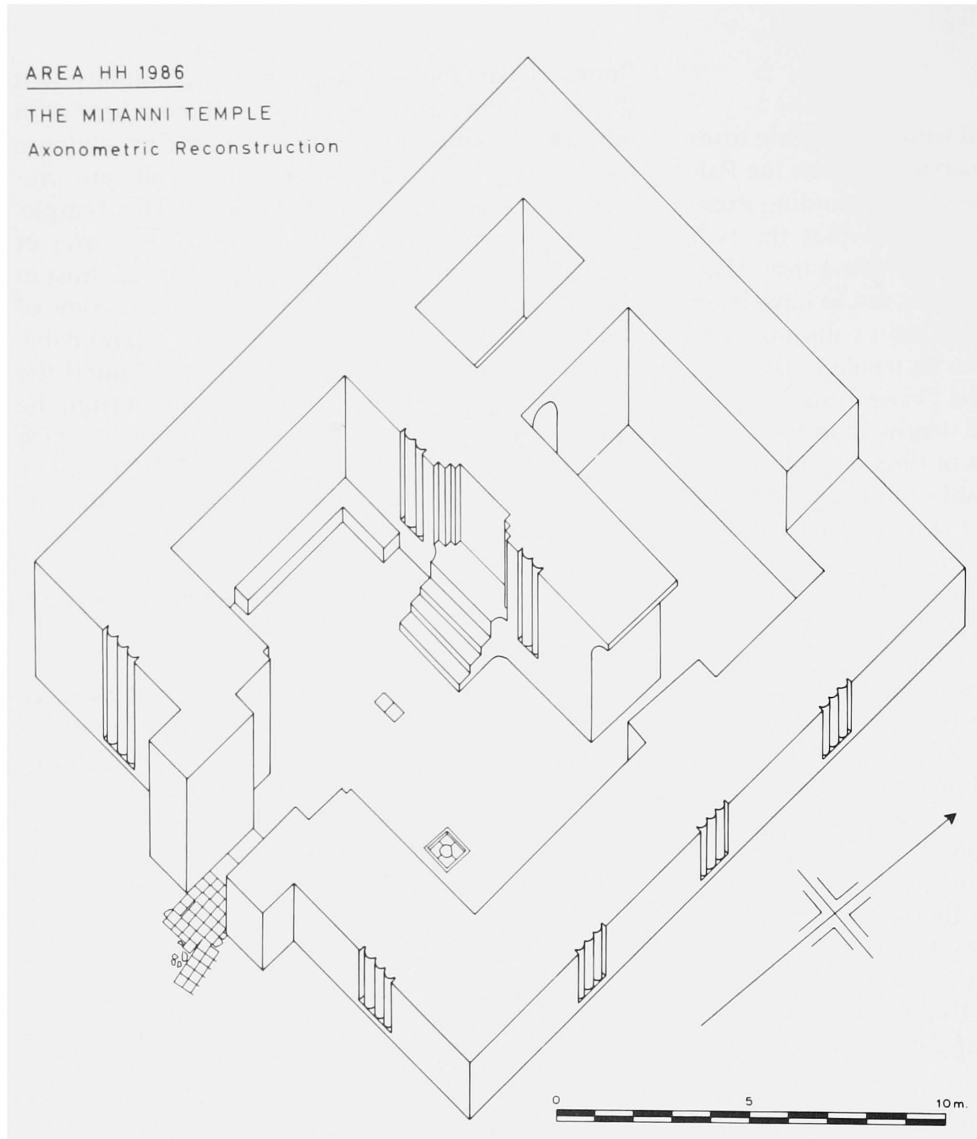


Figure 28. Axonometric reconstruction of the Mitanni Temple (for plan see Fig. 12).

including Ta'idu which if it is not Tell Brak is certainly in the immediate vicinity (perhaps Tell Hamidi/Ahmedi, a large and clearly important site some 20 km to the north). Both kings claim to have captured the Mitanni cities 'from Taidu to Irridu . . . the fortress of Harran to Carchemish which is on the bank of the Euphrates', and Shalmaneser concludes, 'I ruled over their lands but I set fire to the remainder of their cities' (Grayson 1972, 58 & 83). Superficially, Adad-nerari's campaign in c. 1280 fits very conveniently with our dendrochronological (radiocarbon) date, but the latter reflects the erection of the door post, and not its destruction. It is possible that Adad-nerari's scribes may by their use of standard phraseology overstate the extent of the destruction at that time, since the Mitanni king Wasasatta was

permitted to remain in control of his own territory, albeit as an Assyrian vassal. We suggest that the damage observed in the great north chamber is the work of Adad-nerari I, while the second holocaust represents the final destruction of the Mitanni city by Shalmaneser I, sometime in the second quarter of the thirteenth century. That there were two chronologically close destructions finds support also in the two separate ash levels in Room 9 and in Corridor 6 (cf. Fig. 31).

After its destruction, the Palace lay apparently abandoned for some years, during which time the upper storey collapsed and further extensive erosion deposits up to a metre in depth accumulated in the Palace courtyard (section, Fig. 25). At some time after the abandonment of the Palace a new settlement was founded, of which the apparently residential buildings often reused the walls of the partly collapsed Palace. On the evidence of the

pottery found within them, these new buildings can be dated unequivocally to the Middle Assyrian period. Unfortunately, beyond a few wall stubs, floors and hearths, we have found relatively little evidence of the Middle Assyrian structures themselves. A few more substantial walls did survive, however, in particular over the northeastern part of the Palace and above the Courtyard and the Temple vestries, where it is clear that there were two closely related phases of Middle Assyrian occupation. Newly constructed Middle Assyrian walls were built of red and grey bricks, whereas the Mitanni walls consisted of red bricks with grey mortar.

A small amount of Middle Assyrian pottery was recovered from topsoil in the trenches south of the Temple (discussed below), but the bulk of the

Brak material of Middle Assyrian date derives from the occupation overlying the Palace. The excavations in Palace Corridor 6 (Fig. 31) illustrate well the Middle Assyrian deposits. Here part of the Mitanni south wall had been cut out to enlarge the available space, or perhaps because the wall had become unsafe, and two distinct floors associated with the Middle Assyrian occupation were clearly defined (Level 1a, locus 220, and 1b, locus 539). It was evident too that the staircase itself had been filled in and served as an entrance to a Middle Assyrian house, and that the upper flight of the east stair was still in use at that time (see Figs. 23 & 32). Similar evidence above Room 9 also shows the continued use of the upper flight of the west stair. This evidence for extensive Middle Assyrian re-use of the Mitanni building suggests that there was not a long period of time before its reoccupation.

Undoubtedly the most interesting object which appears at least superficially to derive from a Middle Assyrian context is the Mycenaean stirrup jar 603, about which Dr French writes below. This object lay at the junction of eroded mud-brick debris and an upper Middle Assyrian floor (locus 220; cf. Fig. 31:9). It is a small fragment and is in places heavily worn, features which suggest that the sherd may have been re-used as a lid and that the stirrup jar itself possibly originated in the upper storey of the Mitanni Palace, where it would have arrived as a prestigious gift from the west. No other sherds of the vessel were found. We believe it to be the easternmost example of this Mediterranean type.

A further small group of finds should be mentioned in Middle Assyrian context, though it must be admitted that, since all came from the surface of the mound, we have for them no dating evidence whatsoever. These are four large but very worn and fragmentary pieces of basalt sculpture, including a

Figure 30. Interior of the cella of the Mitanni Temple, showing the stepped dais and niche with reveals and engaged semi-columns; two baked bricks are inset in the floor in front of the dais.



Figure 29. Temple cella and dais, viewed through the southern outer door and showing the two large limestone slabs and the baked-brick pavement in the doorway.



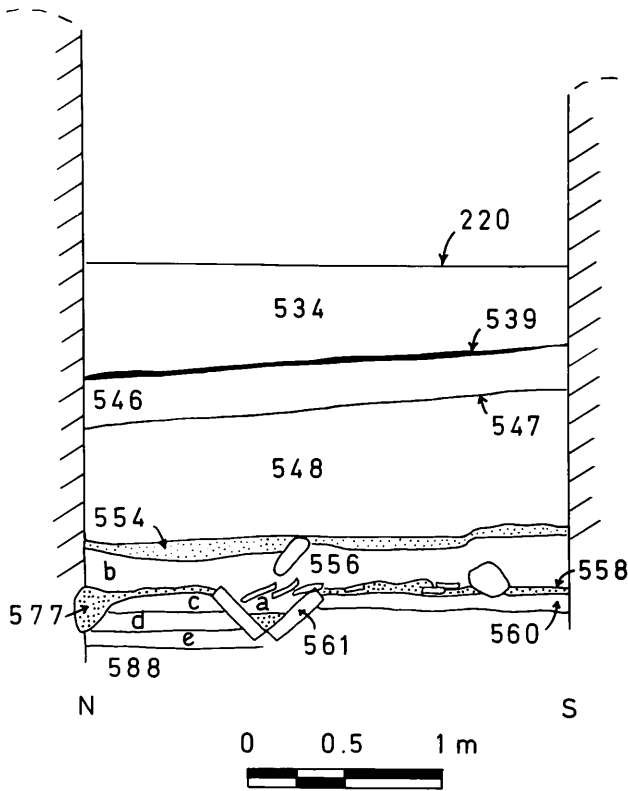


Figure 31. Section and Middle Assyrian plan above Corridor 6.

- locus 220 beaten earth floor, MA Level 1a;
- locus 534 fill between MA floors (objects sparse);
- locus 539 very hard floor surface, lower MA house (Level 1b);
- locus 546 earth layer (= 545, second stage of wall collapse, contains baked brick fragments presumably fallen from Mitanni upper storey);
- locus 547 weathered surface, top of original building collapse;
- locus 548 broken libn and earth fill, contained large stones, charcoal, bones, glass, alabaster, bronze, pottery, much charcoal; debris of final destruction of Mitanni building;
- locus 554 layer of pure ash, represents destruction by Shalmaneser I;
- locus 556 layer above sherd pavement [= b/574]; floor of corridor, post-Adad-nerari I destruction;
- locus 558 pavement of potsherds, two layers thick and set in a clay and straw mixture on a thin layer of sand; footing for floor 556, overruns drain;
- locus 559 lower ash layer, contains only a few bones; probably Adad-nerari I destruction (c. 1280 BC); also ash in bottom of drain (locus 576, 2–3 cm thick, pure ash); = 573 and 577, an area where the surface of the north wall of the corridor had eroded; 577 contained the Hurrian tablet and a decayed piece of iron;
- locus 560 [= c/575] floor paving of red libn, bricks $(32-35)^2 \times (9-10)$; fifteenth-/fourteenth-century floor of Palace;
- locus 561 drain, baked bricks $25 \times 25 \times 5$ cm; upper fill of drain is locus a/572, above ash 576, contained pottery, glass, bones, charcoal;
- locus d/582 thick layer of mortar, associated with laying of floor 560/575;
- locus e/583 red libn floor; original floor of Mitanni Palace;
- locus 588 prepared level for construction of Palace; orange burnt earth.

The dotted levels are the two ash levels almost certainly representing, respectively, the destruction of the Mitanni Palace first by Adad-nerari I (c. 1280 BC) and a decade or so later by Shalmaneser I. A large red wall or platform (locus 115), lay above the Middle Assyrian house levels illustrated here, beneath which was a layer of ashy soil (locus 116).

Figure 31. (cont.)

(associated Middle Assyrian house plan)

- 1 Libn doorstep and stone doorsocket (10 × 3), on floor 220, MA Level 1a (see section);
- 2 floor 220, MA Level 1a (see section);
- 3 oven locus 221, on floor 220;
- 4 upper flight of stairs, locus 231, treads covered by grey, ashy sand (cf. Fig. 32);
- 5 roughly laid libn blockage of lower stairwell, 4 courses;
- 6 N-S wall, locus 222, associated with floor 220;
- 7 Palace Corridor 6, west of doorway to Room 7;
- 8 area above Mitanni Palace Corridor 4;
- 9 edge of tell erosion, Level 1a;
- 10 Mitanni Palace south wall of Corridor 6, cut back and reused by the MA inhabitants.



Figure 32. Second (upper) flight of eastern stair; Areas FS and ST in the distance.



Figure 33. Front and side views of head from basalt statue, ht 22.5 cm.

large human head (Fig. 33) which was recovered from among the stones and sherds overlying a relatively recent grave. The other pieces seem to be a massive headdress, part of a shoulder and torso, and part of a bull's leg (Fig. 135), all carved on a monumental scale and all in rather coarse basalt (unlike the much finer stone of the large seat or pedestal which lies in the gully below Room 1, see Fig. 4). Their closest general parallel is with nearby Tell Halaf, but the Brak pieces are too few in number and far too fragmentary to allow of their more precise dating. It is also possible that they are contemporary with the Mitanni occupation of the site, but we found no traces of basalt sculpture within the surviving rooms of the Palace, from which the one statue recovered was of limestone (Fig. 41). It is of course even conceivable, though in our view far less likely, that the unstratified pieces of basalt sculpture predate the Mitanni Palace. In this respect it is particularly regrettable that we know neither the precise location of the source of the basalt 'paving stones' removed by French engineers in 1930 nor the original position of the very large and schematic basalt statue now in the Louvre (Poidebard 1930). Certainly the latter came from some upper level in Area HH (it was found face down where it had washed down the slope of the tell), but in style it bears no resemblance to our more realistic fragments. Poidebard's attempt to identify the original position of the statue by *sondage*, as illustrated in *Trace de Rome* plate 129-2, lies at the base of the Mitanni red brickwork, on the steep north slope of the tell just to the west and at the level of the Mitanni Palace. Not surprisingly, he reports only mud-brick in this trench.

Among the most interesting Middle Assyrian finds were various pieces of rusted iron and other metal, including a fragment of a corroded iron arrowhead (HH 149). The Middle Assyrian smelting/casting debris may of course have originated from the final occupation of the Palace. This includes a droplet of tin bronze (10 per cent tin), presumably spillage from casting, and pieces of rusted iron containing dissolved copper, the latter suggesting that the iron may have been a by-product, as a small bloom, recovered from the same furnace(s) that smelted the iron-rich coppers (see pp. 120–23).

E. Area HH, Trenches A–D (Figs. 34–5)

In excavating the Mitanni Temple we had discovered a massive wall some 6 m to the south, separated from the Temple by an east–west roadway. We had assumed, initially, that this wall marked yet another

monumental building, and with the hope of further cuneiform tablets of the historical importance of those found in the Palace, we decided in 1987 to open two trenches in the surviving flat area south of the wall (Trenches A & B), to which a further trench (C) was soon added (Fig. 34). This revealed not a public building but an area of heavily eroded private houses. Excavation was continued here for the next two seasons with four objectives: 1) to recover ordinary household material, as a contrast with that from the monumental buildings, 2) to provide an archaeological sequence spanning the period during which the Palace and Temple were in use, and for which, in the monumental buildings, no material evidence survived, 3) to determine if possible the date of construction of the Palace and Temple, and 4) to establish if possible a stratigraphic connection with Mallowan's 1930s excavations, which lay directly to the west of the Temple but with which the immediate stratigraphic link had been destroyed. With respect to these objectives we had some success, but the central area of these new trenches produced no coherent plans and little *in situ* material. Only in the southernmost Trench C4, excavated at the end of the 1987 season, and in the adjacent Trench D, dug in 1988, did we find remnants of the well-stratified, *in situ* sequence we had hoped for.

Useful information did emerge, nonetheless, from Trenches A–C. Here a small quantity of Middle Assyrian pottery was found within the uppermost deposits, although no floor level of this date had survived. In some places, moreover, the surface material was clearly contaminated by Mallowan's dumps. A poorly preserved level in Trenches B and C was probably contemporary with the final occupation of the monumental buildings, to be dated sometime in the first half of the thirteenth century (Level 2, of which the very fragmentary Trench C walls survived to a height of only 2 cm!). Below was a further and rather undifferentiated occupation fill, overlying a very distinctive level (3) composed largely of hardened surfaces, often consisting of crushed red *libn* debris (e.g. locus 264, Fig. 35). These marked a point at which the site had suffered some form of destruction, perhaps contemporary with the destruction of Mallowan's uppermost level of houses (Table 2, p. 35). Level 3 was stratigraphically useful in sealing the underlying strata. Below the red *libn* deposits was a building phase designated Level 4; a wall of this date (locus 470) connects the Trench C walls with the latest surviving structure in Trench D.

In the central area south of the Temple massive deposits of rubbish were discovered below Level 4, to a thickness of up to 75 cm. These Level 5 deposits

The Excavations

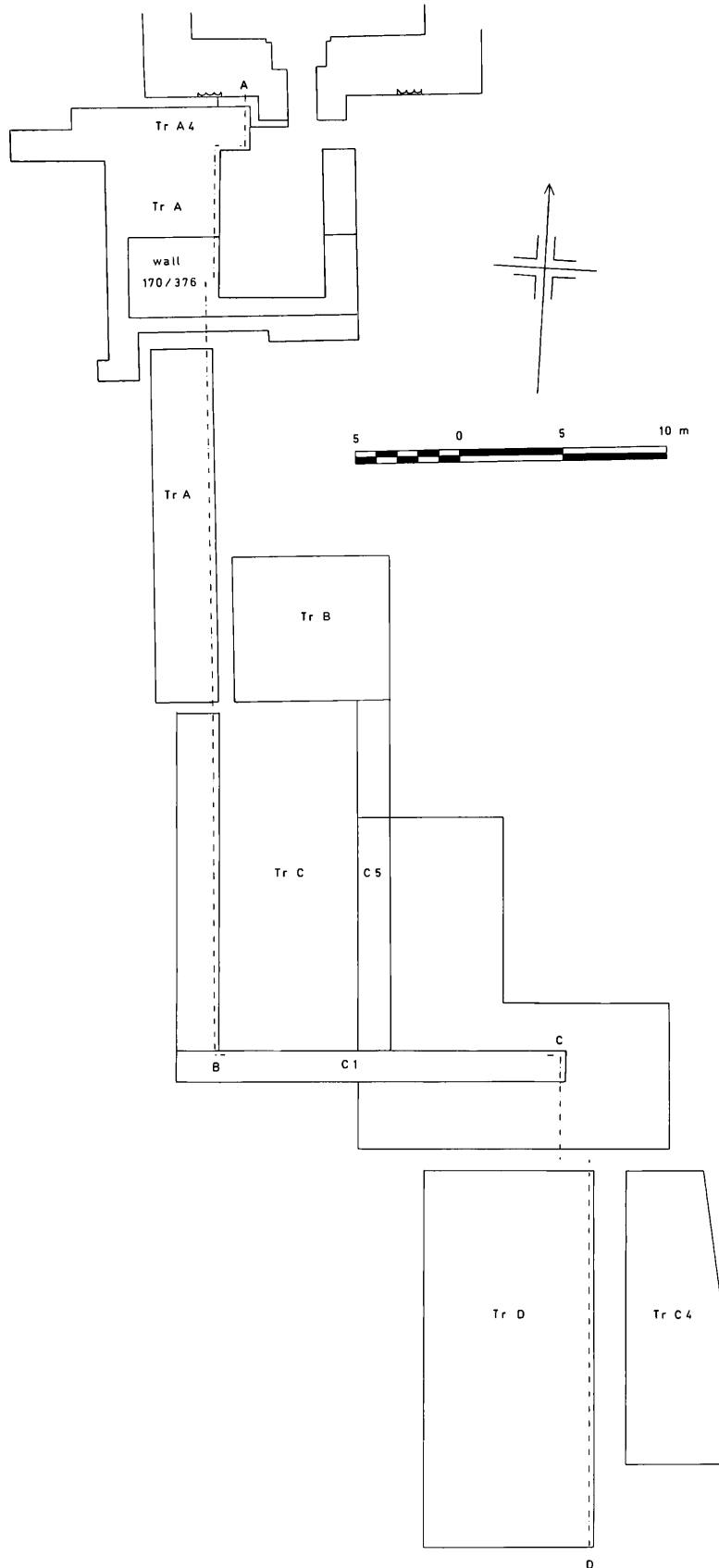


Figure 34. Plan of Area HH trenches.

Chapter 1

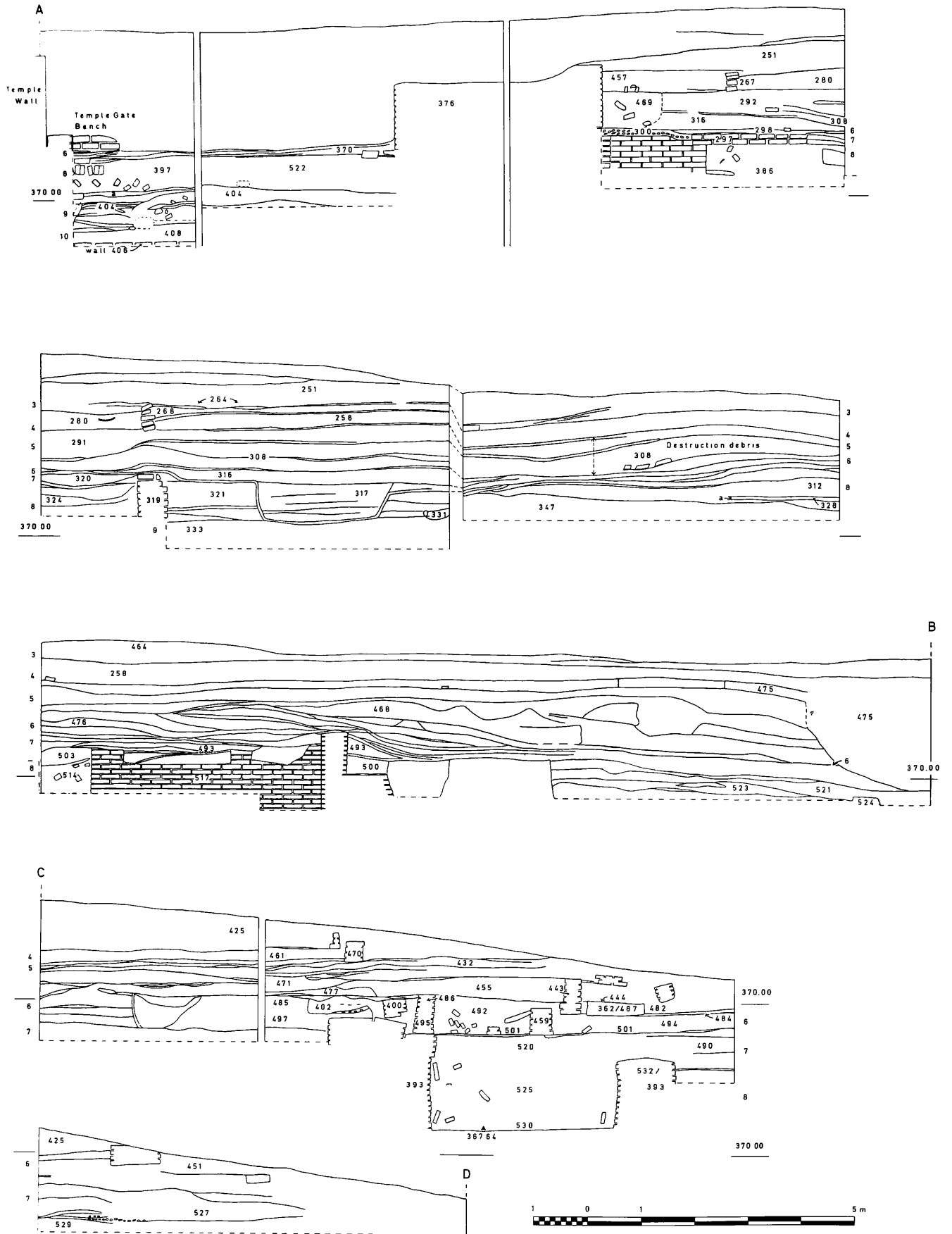


Figure 35. Section through Area HH trenches.

(*inter alia* loci 291, 292, 308, 466 & 468; see Fig. 36) contained unusually large quantities of pottery, including some of our finest quality Mitanni examples (e.g. burnished beaker 553 and Fig. 198). One of the most interesting discoveries in locus 468 was the recovery of roasted matte from preparation for the smelting of chalcopyrite. We believe that this layer of fill is likely to have originated in debris cleared after the destruction or collapse of some important building. A prime candidate is of course the Mitanni Palace itself, which we know to have been severely damaged at some time early in its history, possibly through natural causes (p. 148). Deposition of the Level 5 destruction debris seems to have occurred in two discrete phases. In Trench D, further to the south, where a contemporary sequence of residential buildings is preserved, there is evidence for three distinct Level 5 building phases. We believe that Level 5, and the Palace collapse, date from sometime in the fifteenth century. Unfortunately no material of this date survives in the Palace itself, owing to its careful maintenance and perpetually clean floors. If we are right in thinking that the fill of Level 5 came from the damaged Palace, we have here evidence for the smelting of copper in the Palace workroom(s) early in the fifteenth century, perhaps even earlier.

Building Level 6 represents the construction of the Palace and the Temple. This must be dated sometime in the second half of the sixteenth century, or certainly no later than 1500 BC. Our efforts to connect Trench A to the public buildings was of course impeded by the presence of the massive boundary wall, which seems to have been designed to separate the Palace and its adjoining Temple from any nearby *hoi polloi*. In order to extend the stratigraphic connection to the north, a further Trench (A4) was opened to the southwest of the Temple, at right angles to Trench A (Fig. 34).

In Trench D Level 7 can be attributed to a period bridging the end of what is historically identified as Old Babylonian and the beginning of Mitanni domination. Level 8 is unequivocally Late Old Babylonian, approximately contemporary with the so-called 'kitchen' at Tell al Rimah, a particularly important context for pottery of this date (*Rimah*, 36). This marks the lowest level of excavation in Trenches A–C. In Trench D at this level an interesting vaulted room was identified, which we have described as a 'shrine' owing to the niche in the west wall and the stone figurine found on the floor (Figs. 56 & 136; other objects from the shrine are enumerated on p. 35). Two distinct levels of occupation were identified within this building.

In Area HH, Level 10 is represented only in the deep sounding adjacent to the Temple (Trench A4), which revealed a large kiln and a number of walls



Figure 36. Sherds from Level 5 locus 468.



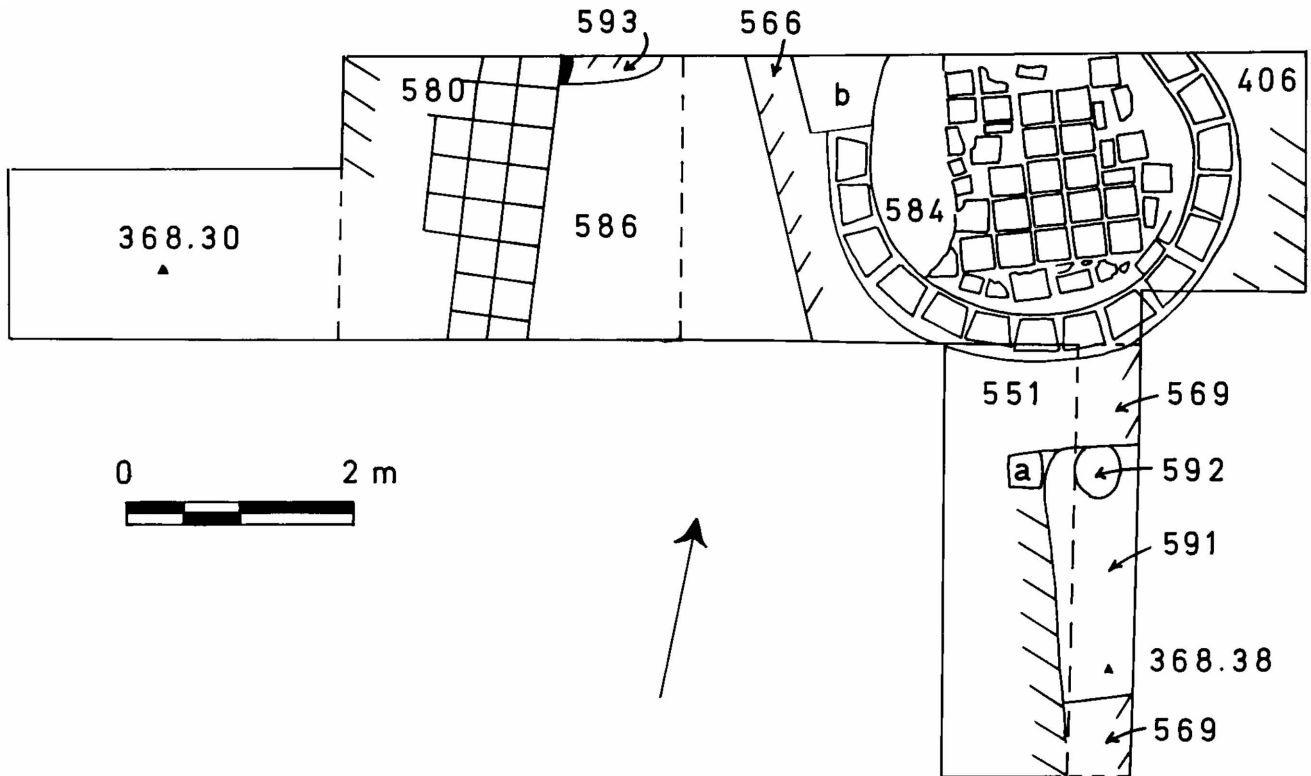
Figure 37. East end of trench A4 showing the section beneath the Temple and the upper part of the Level 10 kiln (1987 photograph).



Figure 38. Extension of Trench A4, excavated in 1990, showing the depth of the lower kiln chamber; the edge of wall 580 lies at the lower edge of the photograph. The upper section, excavated in 1987, has extensively eroded, leaving a very visible Level 6 ground surface beneath the boundary wall (upper right) and the southwest corner of the Temple (upper left).

Figure 39. (below) Plan of Level 9 and 10 walls in Trench A4 (cf. Fig. 37).

- locus 406 libn platform, Level 10;
 - locus 551 libn platform, Level 9b;
 - locus 566 Level 10 wall;
 - locus 569 Level 10 wall, cut by platform 551;
 - locus 580 Level 9b wall;
 - locus 584 ash in kiln, covers kiln floor 587;
 - locus 586 Level 10 floor, assoc. walls 566, 593;
 - locus 591 Level 10 floor, assoc. wall 569;
 - locus 592 tannur, assoc. floor 591;
 - locus 593 remnant of Level 10 wall, cut by 580.
- a = plaster basin, set into wall 569;
 b = packing between wall 566 and kiln;
 spot hts relate to the survey point, +376 m.



for which, again, we have no coherent plans, in this case owing to the small size of the sounding (Figs. 37–9). Pottery from this level and from a large Old Babylonian pit excavated in Area AL in 1984 can be closely dated on evidence from Tell al Rimah to the time of Shamshi-Adad. The sequence revealed in these trenches is summarized at the end of this chapter, while the pottery is discussed in Chapter 4. The approximate relationship of our levels with those excavated by Mallowan is shown in Table 2. Old Babylonian pottery was also found on the construction level of the second-millennium city gate in Area TW (further discussed in Chapter 12; see Fig. 166).

Thus we have a sequence of five major building levels associated with the use of the Palace and Temple, and we have established stratigraphically that the Palace, the Temple and the boundary wall were constructed at the same time (Level 6).

F. Finds from the Palace and Temple

In this section we examine more closely the range of finds from the major rooms in the Palace and Temple, with diagrammatic representation of their find-spots. For consistency and completeness this requires some repetition of general comments made in the context of the architectural descriptions above. The purpose of this section is to illustrate both the remarkable range of material recovered in individual rooms, to illustrate the extreme level of destruction and looting, and where possible to speculate on the possible function of the room itself. Information is provided in the charts accompanying the object drawings at the end of the volume to enable the reconstruction of such find repertoires for all rooms in the two buildings, and indeed for any other locus on the site.

1. Room 11 (*locus* 224)

The most important objects found in the Palace came from the floor of the great north room (11) and the doorway leading from the courtyard. Their distribution suggested that they had either been burnt *in situ*, in the case for example of the wood, ivory and bronze furniture components, or in other instances had been abandoned by the Middle Assyrian looters rushing through the room and out into the courtyard. A number of objects illustrate the fact that they had been broken and their pieces scattered before they had been burnt (*inter alia*, frit bowl 79 and the unique incised bottle 602). Figure 40 illustrates the distribution of material on the Room 11 floor and, in the section, of collapsed roofing and other materials. Some objects in the upper fill, including the baked

bricks, must have fallen from the private apartments on the upper floor.

Perhaps our most interesting find here was a small statue of fine-grained white or grey limestone, just under 42 cm high and representing a seated male figure, which was found face down in the doorway of the north chamber, where it had fallen or been thrown (Fig. 41). It was badly calcined and split, and only preliminary cleaning and repair were possible on the site since it was found on virtually the last day of the 1986 excavations. It is almost complete apart from the face which was destroyed in antiquity, probably as a deliberate and symbolic act. The figure wears a toga-like garment with a large asymmetric counter-weight at the back, apparently attached to his belt. He holds some object, possibly a vase, in front of his body. Although mediocre in both design and execution, this figure is of extreme interest as the only known example of human sculpture from a site within the Mitanni homeland. Comparison with the statue of Idrimi from Alalakh only serves to emphasize the provincial nature of the Brak piece. A colour illustration can be found in the Rimini exhibition catalogue (Rouault & Masetti-Rouault 1993, 295), where our figure has lost his feet, now happily restored to him in the Deir ez-Zor Museum.

The north chamber also yielded two complete cuneiform tablets, discussed in Chapter 2 by Dr Eidem. The first (text 5) is the record of a legal case concerning the distribution of property heard ‘in the presence of Tušratta the king’, who succeeded his older brother Artasšumara as king of Mitanni about 1380 BC, and who is well-known as the author of some of the Amarna letters. Although different individuals are involved, the text is closely parallel in form and content to another tablet found in the ablution room 3 (text 4), which recorded a disposition of property in the presence of Artasšumara, the only surviving document from this king’s reign. Indeed we know from the Amarna letters that the young Tušratta succeeded to the throne on the occasion of the murder of his elder brother. Both tablets were sealed with a Mitanni dynastic seal which had been cut for their forebear Saustatar (Fig. 66; impression 1, Chapter 3). We have very little evidence for the ancient context in which the tablets recording such decisions were subsequently stored, but it would be reasonable to assume that copies were kept by the individuals or families affected by the decision and secondly, that copies might be retained in central or provincial chanceries.

The second document from Room 11 (text 7) is more difficult to understand completely, since it is

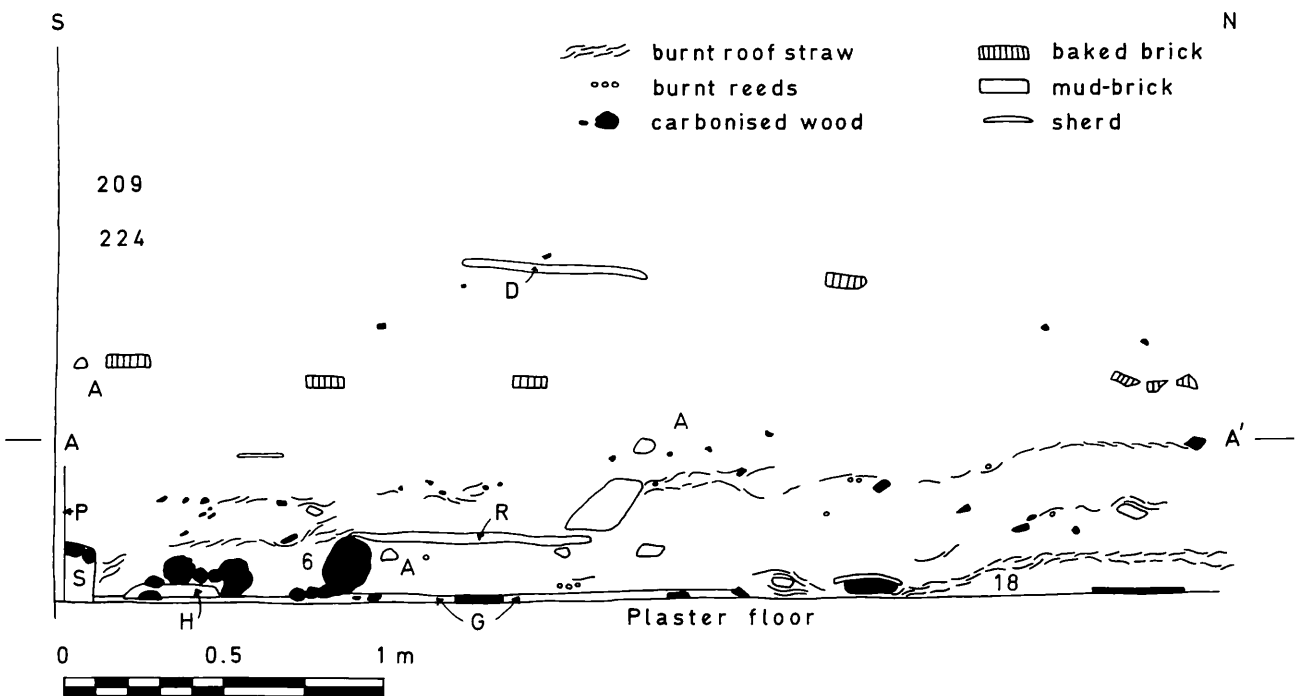
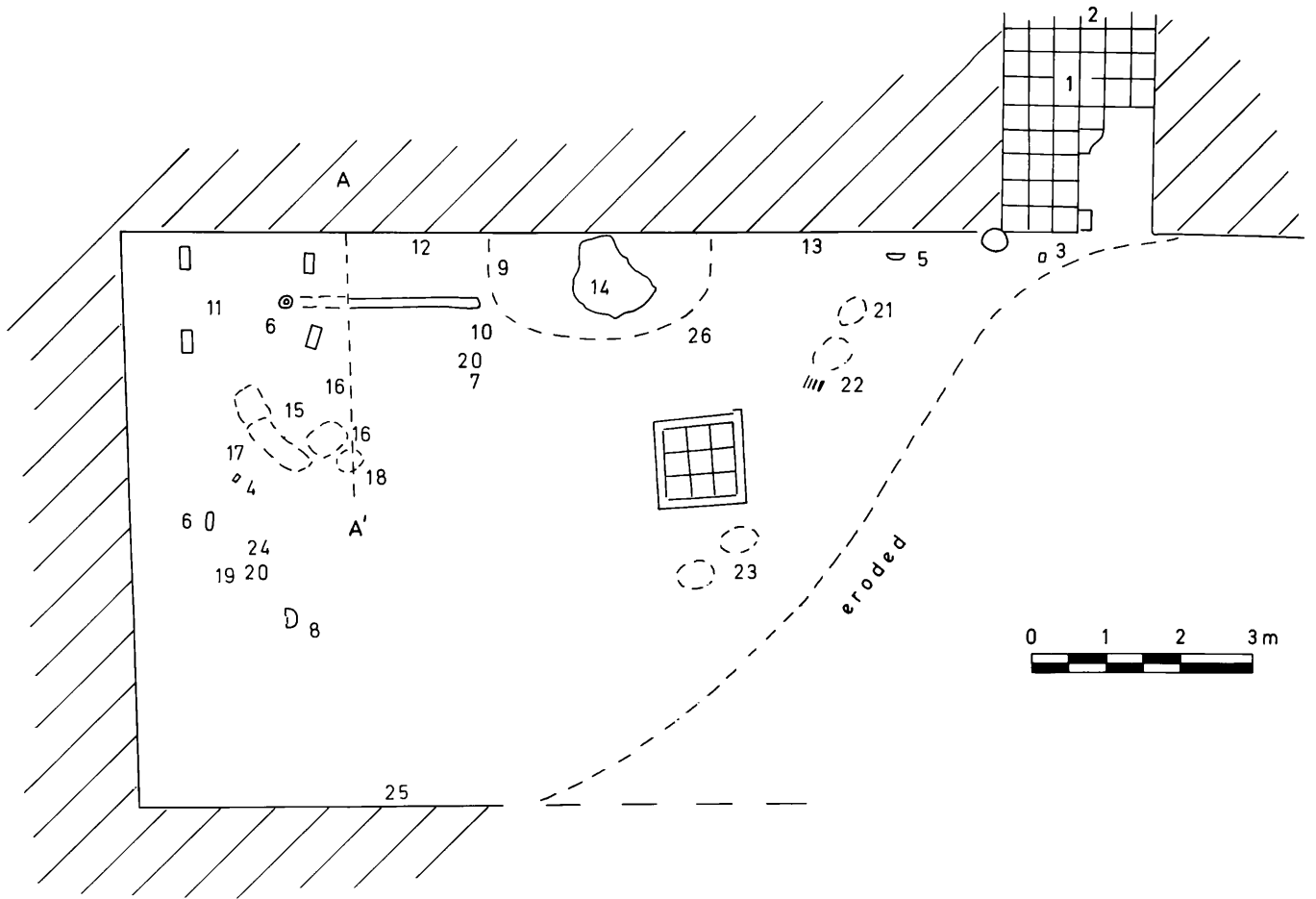


Figure 40. Room 11 plan and section showing distribution of objects found on the floor.

Figure 40. (cont.)

Key to plan (locus 224):

- 1 Limestone statue (Fig. 41);
- 2 gold leaf/gypsum plaster cup (Fig. 146);
- 3 Tušratta tablet, cuneiform text 5;
- 4 cuneiform text 7;
- 5 ivory cosmetics container (Fig. 43);
- 6 post-hole and large carbonized tree trunk (juniper or cedar);
- 7 copper/bronze furniture fittings (Fig. 145); lead strips;
- 8 blue frit bowl 79, together with gold stud (Fig. 47), a frit bead necklace, burnt fabric and a gilded nail;
- 9 small fragment of gold leaf on plaster;
- 10 small gold object;
- 11 deposit of wood and plaster (p. 26);
- 12 potstand 678;
- 13 large ring-based plate (reg. no. 86.61);
- 14 largest stone fragment in a deposit of many large pieces of limestone, 8–20 cm thick; all overlie burnt wood;
- 15 glazed sherds;
- 16 macehead 76 and a white paste finial together with a

- deposit of wood;
- 17 ivory and bone, including a large quantity of guilloche decoration;
 - 18 glass beads;
 - 19 frit bead necklace;
 - 20 glass bottle 6;
 - 21 beads, gold fragment, and small red-edged pottery dish (identical with but smaller than 129);
 - 22 panels of ivory guilloche decoration (Fig. 151);
 - 23 pierced glass cylinders (?uncut seals);
 - 24 40 fragments of blue glass bottle (glass 14);
 - 25 yellow-glazed sherds (pottery 504);
 - 26 blue faience bead 39;
- A–A' section line.

Key to section:

- A ashy soil;
 D dark ashy soil;
 G grey ash;
 H hard white ash;
 P thick wall plaster;
 R red ashy soil;
 S very soft fine grey ash.



Figure 41. Limestone statue of seated male figure, ht 41.7 cm. The face was deliberately destroyed in antiquity.

in very summary form. It concerns 'reeds', possibly bundles of arrows, 'of the town of Nawar in the district of Ta'idu'. The transaction was effected in the presence of an official named Malizzi, presumably the owner of the seal impressed on the tablet (Fig. 67 and seal impression 2). Again we may consider where such a document might be stored and conclude that it would be of importance either as a receipt to the person involved in the transaction, or as a matter of record to the local administration, or both. In either case it seems virtually certain that Tell Brak was not only a local administrative centre but was either Nawar or Ta'idu; indeed a growing body of third-millennium evidence increasingly supports the identification of Tell Brak with ancient Nagar, of which Nawar must represent the Late Bronze Age pronunciation. This question is further explored in Chapter 12.

Large quantities of burnt wood were found in Room 11, in particular in the southeast corner of the room where the fire had raged with particular intensity (cf. the section, Fig. 40). These include a lengthy cedar or juniper post, presumably a roof support, which overlay a quantity of crushed copper/bronze, and furniture components consisting of rectangular copper sheathing and very heavily burnt structural elements of wood (Fig. 145; Fig. 236:94). The latter include a large claw foot and a bulbous moulding,

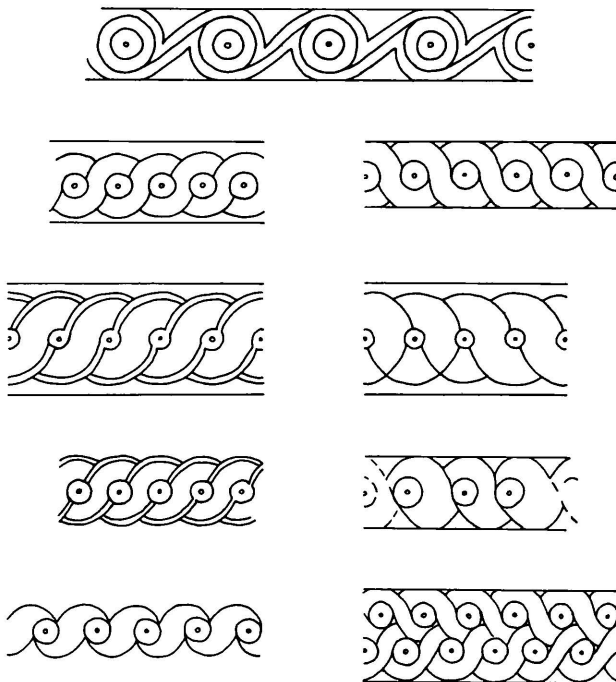


Figure 42. Guilloche decoration found on ivory and bone panels in Room 11 (see also Figs. 151 & 237).

parts of chair or table legs, perhaps deriving from the large object which had originally stood on the stone supports in the southeast corner of the room. There were also numerous pieces of ivory inlay, and ivory or bone bearing guilloche patterns, possibly the decoration of furniture and in one instance certainly a small box (Fig. 42). The most interesting and attractive ivory object was the base of an elongated oval container in the form of a duck's body which, to judge from very similar examples at Alalakh, would have had a swivelling lid carved to represent the bird's back, with head and neck turned to form the handle (Figs. 43 & 149). Our piece was made of hippopotamus ivory, and the interior was unfinished, suggesting that it was being made in the Palace at the time of its destruction. Nineteen unpierced sheep/goat astragali recall the deposits found in Rooms 21 and 22, discussed below.

Small items of gold jewellery were also found (gold stud, Fig. 47), as well as very thin sherds of a gypsum plaster hemispherical cup which had been incised with panels of vertical guilloche, diamonds and zigzags and then covered with gold leaf pressed into the design (metal 69), items which, like the gold



Figure 43. Unfinished cosmetics box made of hippopotamus ivory (see p. 125).

and plaster button from Room 14 and indeed the gold stud which was also made using gold sheet overlay, suggest that the supply of gold to the Mitanni lands was not as reliable at the time of Mitanni collapse as it had been in the heady days of the Amarna letters a century before. Another unusual use of gold was the glass 'lollipop' (glass 39) 'supported' on a gold wire. A great variety of objects in glass, frit and faience was recovered, including a small fragment of mosaic glass (30), a large and almost complete blue frit bowl, of which some but not all fragments had been badly cracked and warped by the fire (frit 79), complete and broken finials and 'doorknobs' of white frit, a faience macehead (76), many beads of frit and glass, fragmentary glass vessels including 40 sherds of a blue glass bottle (14), and a number of small glass cylinders which look like blank cylinder seals awaiting the hand of the engraver. An unusual copper/bronze nail with a frit head (Fig. 220:41) adds to the impression of an important room with elaborately ornamented fittings. Copper/bronze hook 64 lay on the floor. Also worthy of mention are a large, virtually complete, and very heavy plate of fine basalt, 42 cm in diameter (stone 122), and a number of fragments of alabaster vases, of types which are widely distributed throughout the building. On testing with hydrochloric acid many of these can be identified as calcium carbonate, that is, their chemical composition resembles travertine or calcite, rather than true alabaster which is a sulphate. Such an identification indicates that these pieces have been imported from the west or directly from Egypt; at Brak the local stone is true alabaster (see discussion in Chapter 7). Pottery included a variety of small jars and bowls, as well as larger items (*inter alia*, 131, 138, 510, 543-5, 570 & 678); like the blue frit bowl, broken vessels inevitably demonstrated that they had been smashed before being burnt in the fierce fire that consumed the room. Whether all the enumerated items were originally stored here is impossible to determine, but they are certainly a testament both to the wealth of the inhabitants

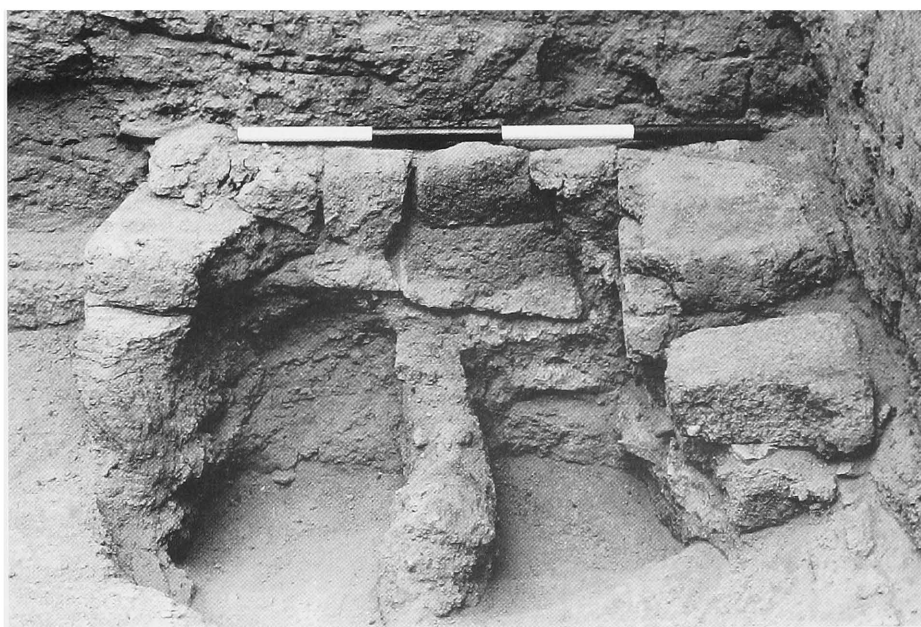


Figure 44. Fire installations 14 and 13, Mitanni Palace Room 7 (see Fig. 21).

and to the patronage of various specialized crafts within the building. The more substantial fittings are undoubtedly in their original contexts and lend support to the identification of Room 11, as its plan suggests, as the building's major reception area.

2. Room 7 (*locus 66*)

The workshop (Figs. 20 & 44) is of most interest for its array of hearths and ovens. Unfortunately their contents were visually not revealing and we have no direct evidence for the kinds of objects or materials that were manufactured here, although analyses of metal fragments recovered from the southeast corner of the Palace clearly attest smelting and almost certainly casting procedures nearby (pp. 120–23). Room 7 was excavated in 1985 and, regrettably, by the time the techniques of soil micromorphology had reached us, we had had to fill in the room owing to the dangerous state of its very high-standing walls. The adjacent Corridor 2, Corridor 6 and Storeroom 5 contained a number of glass ingots, a corroded ingot

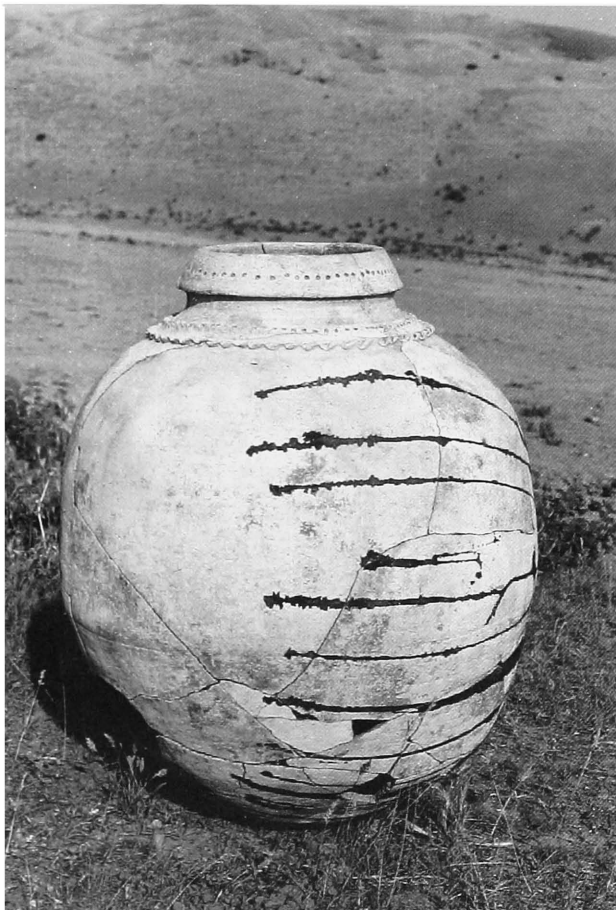


Figure 45. Large jar from Room 7 (see Fig. 213:625).

of iron-rich copper and, in the case of Room 5, other kinds of raw material including a large jasper boulder. Iron-rich slag, possibly a by-product of copper smelting, has been identified in corridor 6, presumably thrown out from Room 7 at the time of the sack, and a corroded ingot of iron-rich copper was found in the adjacent storeroom (Room 5). Slab fragments of iron-rich copper as cast from the smelting furnace were also recovered. Room 7 itself yielded a variety of objects in glass, frit, ivory and copper/bronze. These include 8 stone polishers, 1 bone and 6 copper needles, 4 copper pins, 2 projectile points and a piece of sheet copper, a lead pin, a glass ingot, a number of glass and frit beads, 3 broken glass vessels including Figure 11 and fragments of an inlaid bottle (glass 10), 3 glass and faience gaming-pieces (50, 62 & 64) and glass pendant 87. Frit and faience objects include a frit finial (75), the base of a yellow faience bowl (81), an unillustrated flat-topped frit bottle stopper (reg. no. 1704) and fragmentary blue frit object 48. Several broken 'alabaster' vessels (including potstands 107 and reg. no. 2026) and some 10 pieces of bone inlay were also recovered. Among the pottery were a strainer (57), 2 potstands (688 & 690), the large two-handled urn 620, 2 Nuzi ware vessels including the unusually large beaker 392, 2 tripod bowls with 'loop feet' (535 & 536), bottle 547, a type often burnished, 2 small jars (566 & 573), the large open vessel 584, red-edged bowls 142, 154, and 2 large jars (629 and Fig. 45). Unfortunately this wide-ranging inventory leaves us none the wiser as to the manufacturing processes carried out in Room 7. The presence of glass ingots here and in the adjacent rooms does, however, suggest the strong possibility that glass objects may have been made here, while the range of other materials recovered argues for a diversified workshop. The function of Late Bronze Age palaces as centres of specialized craft activities with full-time specialists maintained by the administration, widely attested in written sources, seems well-supported by the archaeological evidence from Brak.

Room 12, to the north, which had been the scene of a fierce fire, also contained an unusually large quantity of pottery, including the large decorated jar 621, tub 619 (Fig. 22) which had been repaired in antiquity with red-painted gypsum plaster, water jar 622, the fenestrated stand 689, and the unusual incised bottle 602. As in Room 11, a number of objects had been broken before the fire. Also from Room 12 were Nuzi ware beaker 399, small bottle 569, beaker 324, a colander, potstand 679, bowl 69, and two red-edged plates (132 & 137).

3. Room 5 (*locus 44*)

Room 5 was choc-a-block with storage jars, which seem to have been densely stacked in the room. In one of these was found a complete and very beautiful jar covered with a glaze of turquoise blue (497). As elsewhere in the building, the pottery here appears to have been deliberately smashed in the Middle Assyrian sack. The fragments of corroded copper ingot, the glass ingot (Fig. 124), glass cullet including dark amber and white opaque glass (Table 3, Corning samples 1233 & 1234) and a number of large pieces of stone, including a massive piece of bright red jasper weighing several kilos and an unusual number of grinding slabs add to the impression that Room 5 had served as a storeroom for the adjacent workroom; this interpretation is further supported by the presence of a door sealing (impression 7). Three sealings of impression 3 were also found, together with a sealed cuneiform document (letter 3, Fig. 60), a sealed docket (seal impression 4, Fig. 70) and a faience cylinder seal (seal 13, Fig. 76). A worn tablet edge was also recovered, from a large document approximately the same size as the administrative list found nearby in Corridor 2 (text 6). The latter document, a list of workmen, and further cylinder seals (nos. 8, Fig. 72, and 14 = glass 38), also found in the corridor, may well have originated in the storeroom. Tiny fragments of a unique glass vessel came from this room (Fig. 122), ornamented with minute glass globules inlaid in a manner resembling the technique of granulation used on contemporary gold jewellery (Fig. 47). Other objects in the room included a fragment of a very beautiful 'Egyptian alabaster' bottle (reg. no. 1801) together with part of another calcium carbonate vessel (reg. no. 1603), the usual glass, frit and stone beads, copper/bronze pins, needles, projectile points and a chisel (metal 48), stone polishers, ivory inlay (reg. no. 1614) and a lead disc (59). Pottery included storage jars 623, 624, 628, 630 and 631. A painted footed beaker (330), a variety of Nuzi ware (394, 396, 397, 398 & 401), a single-handled water jar (509) and a spindle bottle (511), part of red-slipped bottle 512, most of which was recovered from the adjoining corridor and ablution room, the large open vessels 611, 616, the compartmented vessel 539, the large potstand 684 and the third-millennium-inspired stand 691 (see p. 76), a red-edged bowl (143) and a number of the carinated bowl types which come in small, medium and large sizes and form the basis of the Palace 'dinner service' (55, 62, 70, 75, 76 & 95) were all found in Room 5.

4. Room 20, the Temple cella (*locus 204*)

A wealth of valuable objects was recovered also from the Temple, those in the cella itself including a number of gold, ivory and glass fragments, smashed and scattered like the material from the Palace (Fig. 46). In the cella we identified two areas of charcoal and burnt earth and a further area of small animal bones, some of which were also burnt (15 & 16 on plan 46). A basalt basin and large slabs of basalt lay to the west of the dais, together with one of the finest objects from the cella, the large but fragmentary Nuzi ware jar 402 (Fig. 48). A few sherds from this vessel (palmette design) were found some distance away, to the east of the dais (13 on plan), suggesting the possibility that the jar had been installed on or above the dais itself. Also notable were heavily burnt and broken pieces of large conch shells (11 on plan), the only examples of this type of shell found at Brak at this period. Of the glass objects the small pieces of mosaic bowl 3 are of greatest interest: the unusual geometric design can be paralleled only in a Neo-Assyrian example from Assur (Haller 1954, pl. 12:d,e). Fragments of two bottles of creamy white glass were also found here, and the largest single concentration of so-called alabaster vessels, including nos. 99, 100, 110 and 111, of which numbers 110 and 99 would appear to be made of true alabaster, i.e. the local stone. Decorative wall cones were also recovered from the cella. The concentration of objects around the dais may possibly reflect their deliberate deposition there. In the doorway lay an arrowhead and an unusual piece of obsidian inlay (stone 87). A nail with a fragment of sheet copper attached to it suggests the possibility of appliqué copper/bronze ornament on the Temple door, a feature attested elsewhere in Late Bronze Age public buildings (see, for example, the texts from Aqar Quf: Gurney 1953).

5. Rooms 21, 22 (*loci 243 & 241*)

The two Temple 'vestries' also yielded objects of quality and value. Of particular interest in the smaller, western chamber, Room 22, are the concentrations of material suggesting the presence of some form of cupboard or storage container at either end of the room (Fig. 49). The northern 'cupboard' contained a number of glass eyes, a white paste/frit 'doorknob' or finial (reg. no. 2565), and 'alabaster' vessel fragments, including 97 (imported carbonate); pieces of ivory and a number of glass beads were found nearby. The south cupboard contained another frit finial (73), frit beads, beaker 328, and more 'alabaster' jar sherds. Immediately adjacent was a large concentration of sheep/goat astragali, many of which

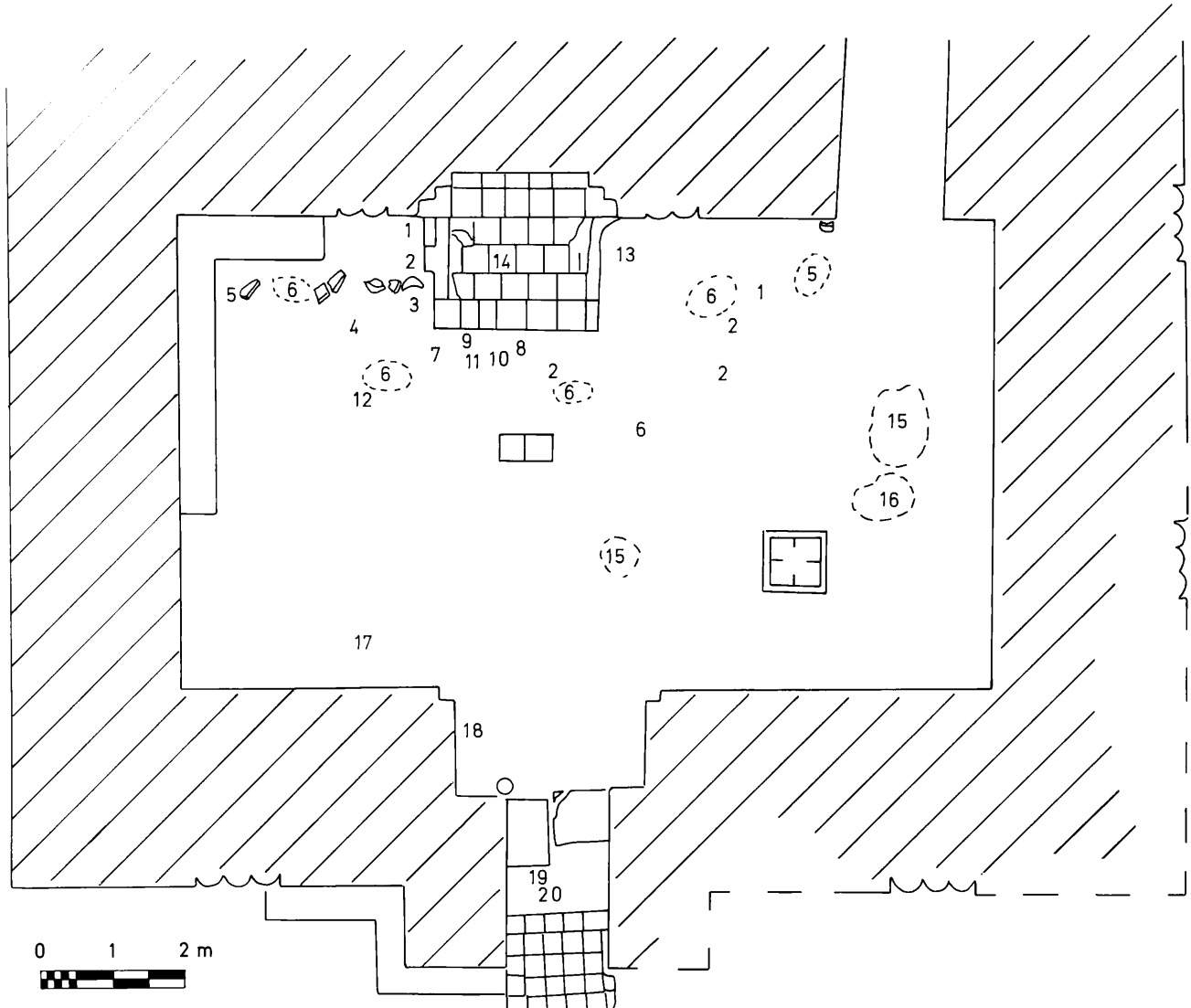


Figure 46. Plan of the Temple cella, Room 20.

Key to plan:

- | | |
|--|--|
| 1 large Nuzi ware jar fragments (402); | 10 copper/bronze fragments; |
| 2 'alabaster' jar fragments; | 11 large pieces of heavily burnt conch shells; |
| 3 basalt basin and large fragments of basalt slabs; | 12 10 fragments of glass bowl with geometric mosaic pattern (glass 3); |
| 4 alabaster 99; | 13 sherds of Nuzi ware with floral design; |
| 5 glass fragments; | 14 copper/bronze fitting, reg. no. 2495; |
| 6 ivory fragments; | 15 charcoal and burnt earth; |
| 7 gold incl. jewellery fragment (Fig. 47) and gold leaf 71, 72 & 73; | 16 many small animal bones, some burnt; |
| 8 rim sherd with incised bird decoration (632); | 17 blue- and green-glazed sherds (506 & 507); |
| 9 oval marble stamp seal with design of a cross, hemispherical section (?prehistoric; ??re-used); reg. no. 2269; | 18 pierced bone; |
| | 19 copper/bronze arrowhead (4); |
| | 20 obsidian inlay (stone 87); shell. |

Figure 49. (below) Plan of Mitanni Temple, Rooms 22 and 21 (loci 243 & 241).

Key to plan, Room 22:

- 1 white paste finials (TB 8090 identical with 72, found at north end of room, 73 at south);
- 2 glass and composition eyes;
- 3 'alabaster' jar fragments;
- 4 glass beads and ivory;
- 5 frit beads;
- 6 beaker;
- 7 red-edged bowl sherds;
- 8 maximum density sheep/goat astragali;
- 9 scattered sheep/goat astragali;
- 11 glass beads.

Room 21:

- 2 glass eye 67, to south; glass eye in copper surround 68, to north;
- 10 terracotta stamp 24;
- 12 ivory fragments (bulls' hooves Fig. 237:26; reg. no. 2615);
- 13 intact basalt mortar, stone 117;
- 14 stone celt (reg. no. 2427);
- 15 stone pestle (reg. no. 2428);
- 16 basalt ring;
- 17 small rubbing stone (reg. no. 2424);
- 18 caprid horn;
- 19 arrow and spearheads (2, 8, 11, 16 & 17);
- 20 ivory and bitumen object of indeterminate nature;
- 21 pierced bone plaques (Fig. 236:87; reg. no. 2614);
- 22 gold sheet;
- 23 frit gaming piece 51;
- 24 terracotta figurine (sheep);
- 25 large jar sherds;
- 26 pottery palette (reg. no. 2437).

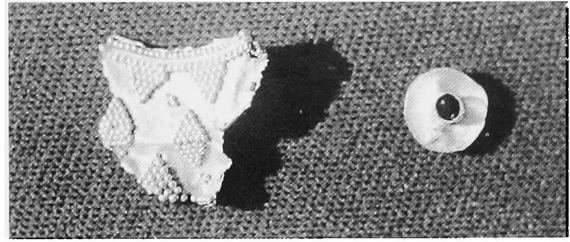


Figure 47. Fragment of gold jewellery with granulation (Temple cella, Fig. 46:7) and a gold stud from Room 11 (Fig. 40:8); see pp. 119–20. Scale 2:1.



Figure 48. Fragments of a large Nuzi ware jar, found on either side of the Temple dais (Fig. 46:1; Fig. 196:402).

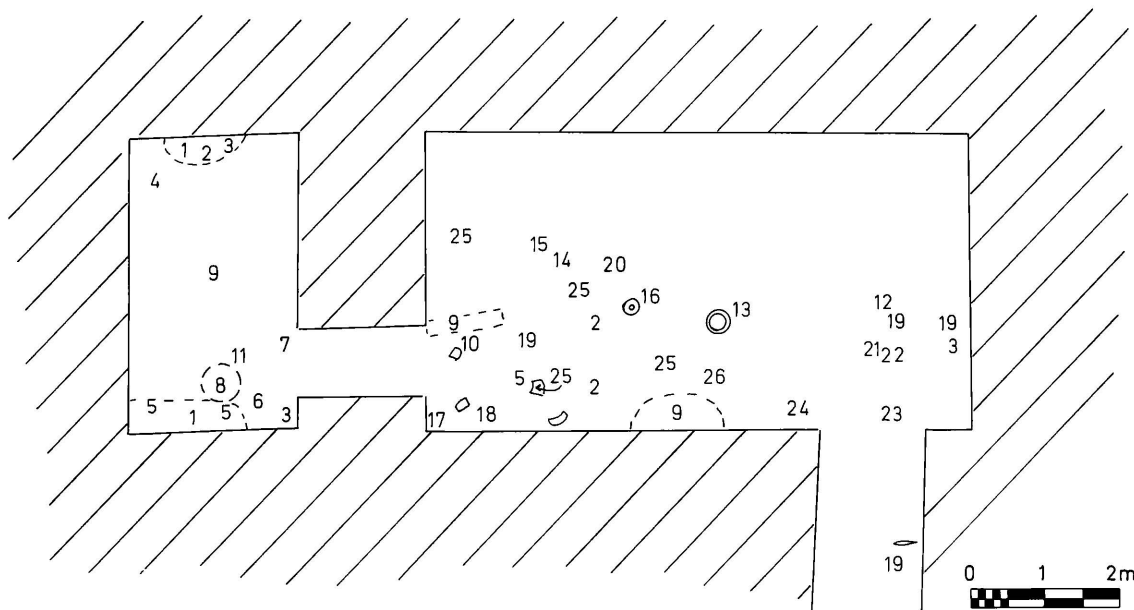




Figure 50. *Compartmented dish with impression of a cylinder seal rolled around the sides, from levelling fill beneath the Trench D, Level 4 house, cf. seal impression 10.*



Figure 51. *Level 5 house in process of excavation, showing beaker 332, flask 563, potstand 692, plate 151 and basalt tripod mortar reg. no. 3139, in situ.*

had been horizontally pierced and covered with a blue-green substance resembling coloured gypsum plaster. In total, 93 astragali were recovered, with the greatest concentrations on either side of the doorway between the two rooms. We suggest that they had been strung together and may perhaps have

served some purpose in Temple ritual. The surviving evidence would seem to indicate the manufacture of these strings of astragali in Room 21. A caprid horn was also found nearby. Sherds of a red-edged bowl had fallen near the doorway.

In Room 21 there were an unusual number of arrowheads, which lay both on the floor and in fill some 40–70 cm above the floor (metal 2, 8, 11, 16 & 17). The equipment of the room, a basalt mortar (stone 117), a stone pestle (reg. no. 2428), a stone celt (reg. no. 2427) and a large stone ring, all concentrated in the centre of the room, suggest the function of a workshop; a further small rubbing stone lay in the southwest corner of the room. An unusual terracotta stamp (Fig. 180:24) was also found here. It is not clear how such a workshop would have been lit, even in the Palace where the windowless Rooms 12 and 13 are preserved to roof height. (The narrow slit in the upper outer wall of Room 12 could have been for ventilation only.)

Objects of value were concentrated along the south and east walls and included two very unusual glass eyes, one with eyelashes (glass 67) and one with a copper surround

(68). Yellow-glazed bottle 501 was found here; scattered sherds of a large storage jar lay in the southwest corner of the room. Among the most unusual objects in the room were several ivory bulls' hooves (reg. nos. 2615 & 2616, cf. Fig. 237), an ivory eye (Fig. 237:9) and an ivory comb (Fig. 152). An ivory and

bitumen object of uncertain nature was also recovered. A white frit finial (Fig. 128) and fragments of bone inlay, a bone blade and two bone points were found (reg. nos. 2614, 2617 & 2526)

G. House contexts in Trench D

Although we were unlucky that so little had survived of actual Mitanni structures in the area covered by Trenches A, B and C, the houses of Trench D were better preserved; even here, however, we failed to recover complete house plans, again largely owing to the heavy erosion of the site but also to the relatively small size of the soundings. Five building phases were identified, the latest stratigraphically associated with Trench C Level 4. At this point the

tell slopes down to the south, and in Trench D this level lay close to the surface; further to the south, it had totally disappeared. A corner and parts of two rooms of a mud-brick house had survived, in which were found a painted shoulder beaker (382), 3 copper or copper alloy pins (TB 3191, 3846 & 3855), a copper alloy projectile point (Fig. 232:12), a nail, a fragment of a glass vessel (33), sealing 11, a fragment of a faience plate with turquoise glaze (71), and a basalt quern and rubbing stone. Both the tiny fragments of faience and glass, like an Uruk eye idol also recovered here, may derive from decayed mud-brick and therefore pre-date Level 4. From the underlying construction level were recovered two seated stone statuettes (stone 93, 94 and Fig. 136), a large frag-

ment of a fluted blue and white glass bottle (34) and the very unusual compartmented dish with a seal impression rolled around its sides (Figs. 50 & 74).

The best preserved Level 5 structure contained several rooms; a curved wall had been built against

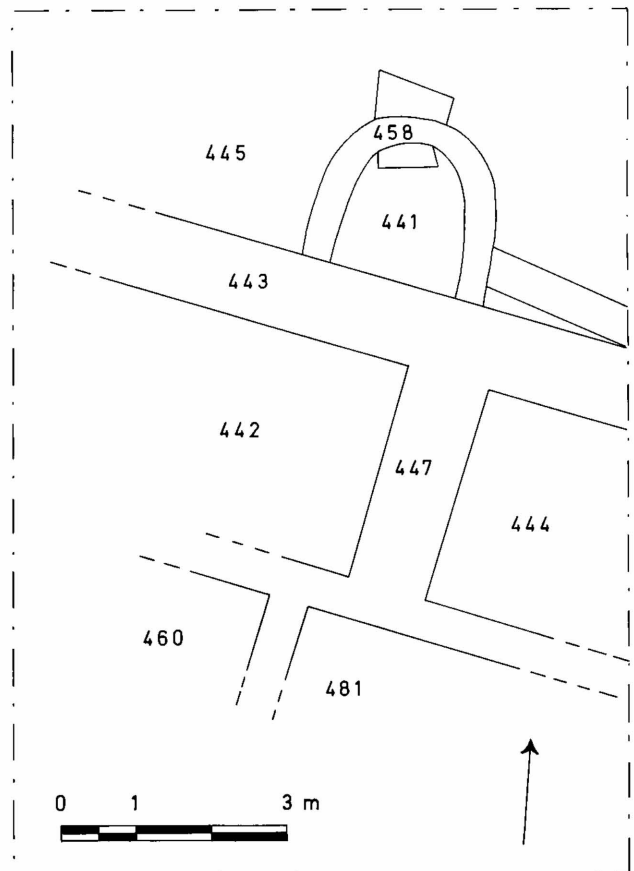


Figure 52. Plan of surviving rooms of Trench D Level 5b house and photograph of its northern rooms (see also Fig. 51).

- locus 441 storage area with steps in and out;
- locus 442 & 444 floors of house;
- locus 443 & 447 walls of house (libn);
- locus 445 outdoor surface associated with Level 5 house;
- locus 458 wall of storage area 441;
- locus 460 & 481 floors of Level 5b house, cut by modern tell surface.

the northern external wall, perhaps part of some storage feature (Fig. 52); a single step led in and out of this feature. One of our most interesting pieces of glass came from this storage area (35), the tiny fragments again perhaps deriving from mud plaster or brick. Perhaps the most unusual find was a large piece (1230 g) of a corroded ingot of iron-rich copper (HH 442), while another of the house rooms produced the ubiquitous basalt rubbers and a copper/bronze pin. The painted Mitanni footed beaker (332), the unusual pilgrim flask (563) and a large potstand (692) came from Room 444 (Figs. 51 & 53), together with a red-edged plate (151), a small bowl similar to



Figure 53. Beaker 332 and flask 563, from floor of Level 5b house, Trench D (photographed in situ, Fig. 51).

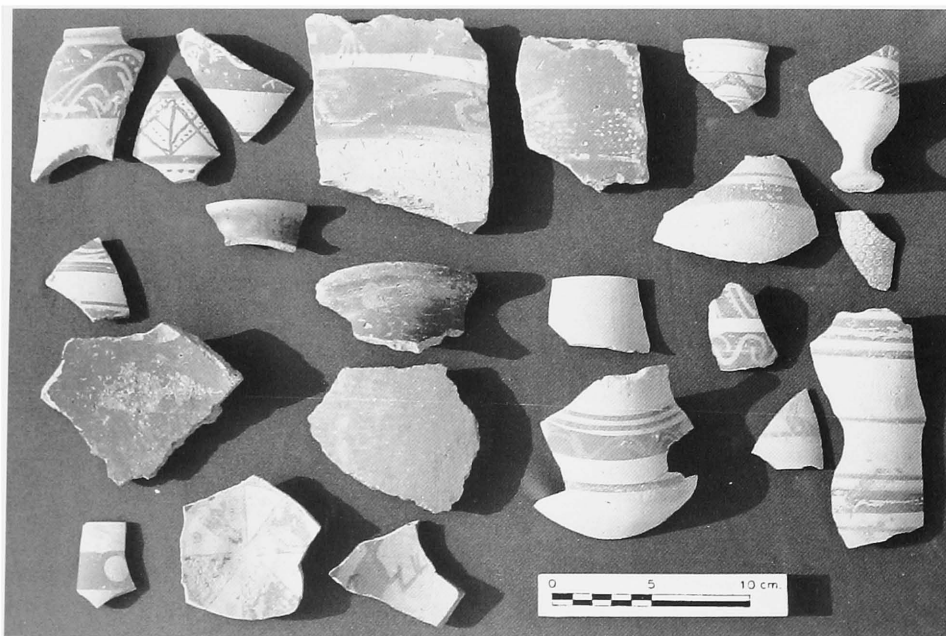


Figure 54. Level 5 sherds, including early Nuzi ware (see p. 282).

55, and footed beakers 338–40. Two beer or wine strainers were recovered from the house, one in Room 444 and one in the storage area (metal 61 and TB 3193). Shouldered beaker 424 and the small painted jar 381 were also found in the storage area. One of the most interesting early Nuzi ware pieces came from a surface associated with this house: the shouldered beaker (Fig. 197:432) on which the white paint was very faint, but the design, painted onto the conventional shouldered beaker stripes, was very clear (see also Fig. 54, just above the left hand side of the scale). A further Nuzi ware shouldered beaker and a burnished vessel (167) were also associated with this structure.

A Level 6 room (locus 485) produced several glass beads, a blank glass cylinder and a frit spacer bead. The 'white plaster floor' (locus 448, Fig. 55) has been attributed to Level 7, though the possibility remains that this surface was in fact an upper terrace of Level 8. Certainly it lies at the chronological boundary of Late Old Babylonian and Early Mitanni, and produced two of our most attractive pottery vessels, the dark grey-burnished bowl 184 and the beautifully burnished, white beaker 556. Vessels 108, 114, 210, 358 and 521 come from the same context.

From the Level 8 'shrine' came the largest number of finds of any context in the trenches excavated in 1987–88 (Fig. 56). Of particular note are the very pitted, white limestone, male figurine (Figs. 136 & 228:95), the base of a beautifully made bowl of igneous breccia, cut down and re-used (TB 4119); a

steatite (?) spacer bead (82), a copper/bronze needle (46) and pin; the 'house model' (Fig. 155), two zebu figurines (clay 22 & 23); a number of bowls, 'grain measures' and jars with groups of painted stripes on the rim (241, 265 & 481); and a collection of more or less complete storage jars with combed ornament (639–41 & 644). The vessel with wavy incised decoration (652) comes from late fill in this room, perhaps to be dated to Level 7, but other examples of this type derive from Level 8 elsewhere on the site (*inter alia*, loci 435, 437 & 500). A number of basalt rubbers

were also found in the shrine. The photograph (Fig. 56) shows traces of a heavy replastering at the level of the bottom of the shrine niche, perhaps suggesting a secondary phase of occupation. The eastern part of the shrine lay in Trench C4, excavated in 1987. A photograph of part of the east-facing section of Trench C4 (Fig. 57) shows the low doorway in wall 409, which connected the two rooms of the shrine.

H. Stratigraphic summary

Mallowan's 1930s excavations

Mallowan's Level 1 lay between 0.8 and 1.2 m below the surface, here reckoned as the 40 m contour. There were at least two sub-periods of construction. The Level 2 floors lay between 1.5 and 1.8 m below the surface. Here there were three subperiods of construction, and black ash is said to have been found over the latest occupation level. Level 2 produced a seal (impression 20) in style very like our seal 9 which was found in Level 4 of the recent excavations. According to Mallowan, 'at the beginning of this period there had been a radical reconstruction of the houses, and a heavy mud-brick packing had been stamped down over the top of the ruins of Level 3' (1947, 77); this is possibly contemporary with the evidence of substantial damage to the fabric of the Palace. Mallowan's Level 3 floors lay between 2.2 and 2.8 m below surface. Red-edged plates, Nuzi ware, but in lesser quantity than in Levels 2 and 1, and beakers with bird designs were found in this level. The mud-bricks measured 39 × 39 × 10, in size close to those used in the construction of the Palace. This settlement too was covered in ash, also conceivably an event contemporary with the fifteenth-century collapse of the Palace. Below Level 3 was 'heavy mud packing which had been stamped down', perhaps the equivalent of

Figure 55. View looking north in Trench D. The 'white plaster floor' (locus 448) lies on the left of the photograph, with a three-sided bench-like fitting at its eastern limit. Level 6 walls and floors lie further to the east.



Table 1. Area HH stratigraphic summary.

Level 1	Middle Assyrian
Level 2	Latest occupation in Mitanni Palace and Temple, finally destroyed by Shalmaneser I sometime early in the thirteenth century; very latest, ephemeral house level in Trench C.
Level 3	Very distinctive occupation across Trenches A-C (surface of crushed red <i>libin</i>).
Level 4	Intermediate level above destruction debris of Level 5; latest preserved level in Trench D.
Level 5	Three building phases in Trench D; elsewhere contains thick layer of destruction debris, apparently moved from elsewhere and deposited in 2 distinct phases; overlies level of early Palace occupation.
Level 6	Palace/Temple construction level and earliest occupation.
Level 7	Building level just preceding construction of Palace and Temple; represented in Trenches A and D.
Level 8	Late Old Babylonian. Vaulted building in Trenches C4 and D; associated with 'lower ash level', Trench C.
Level 9	Fill in Trench A, below Level 8; best represented in Trench A4.
Level 10	Old Babylonian, around or not long after 1800 bc; kiln structure in Trench A4.

Table 2. Absolute level equivalences 1938/1990.

1938 level	Depth below surface (40 m contour)	1938 Absolute height	Equivalent absolute level 1990	Probable equivalent 1990 stratigraphic level
1	0.80-1.20 m	372.20 m	Level 3, bottom	Level 2
		371.80 m	Level 4, bottom	Level 3
2	1.50-1.80 m	371.50 m	Level 5, middle	Level 4
		371.20 m	Level 6	Level 5
3	2.20-2.80 m	370.80 m	Level 7	Level 6
		370.20 m		Level 7
4	7.30 m (lowest) (Old Babylonian)	365.70 m	Level 8 floor = 367.60 m Tr. A4 Level 10 = 368.30 m	Levels 8-10

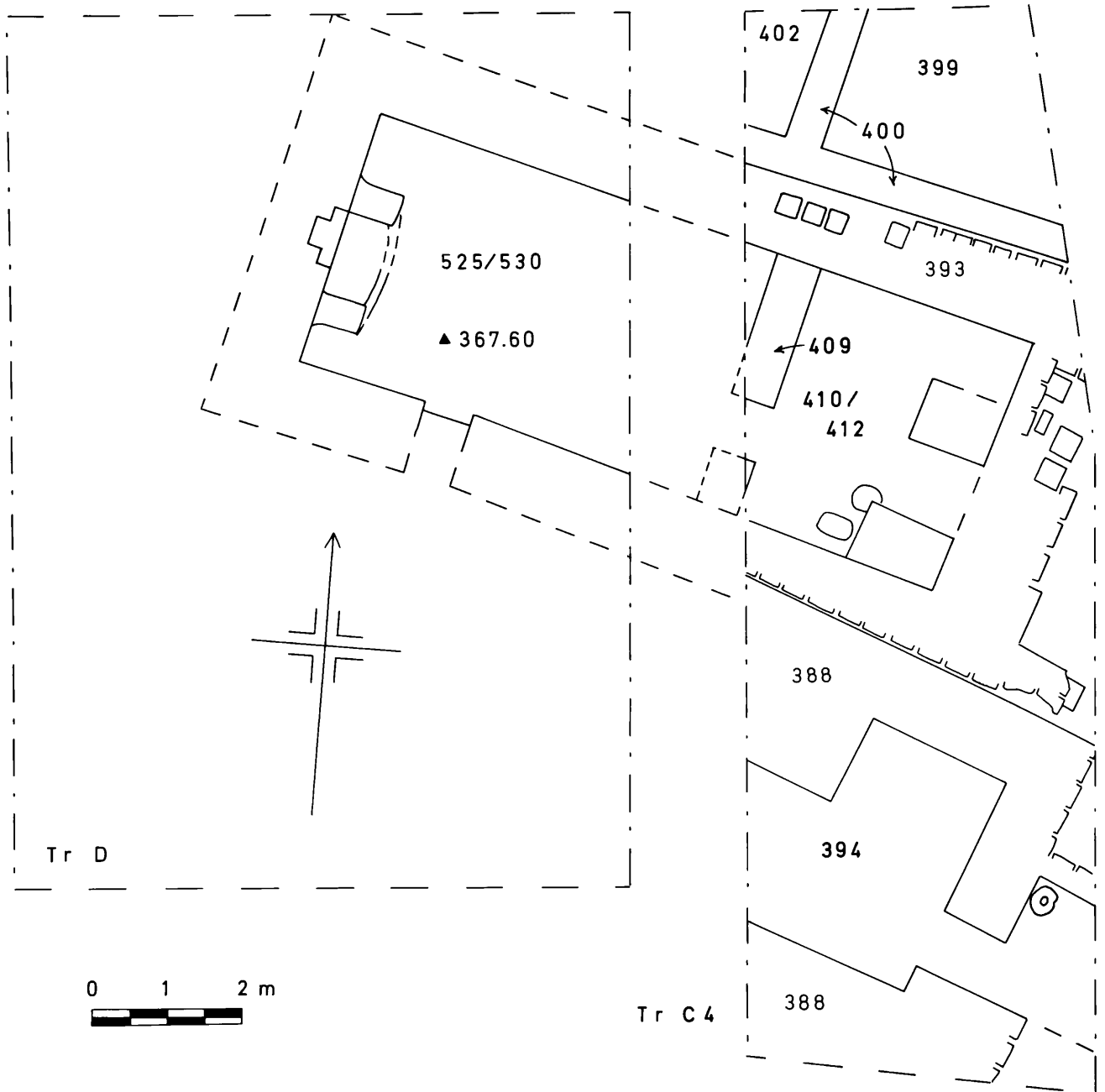


Figure 56. Level 8, plan and photograph of Late Old Babylonian vaulted shrine. Jars 640 and 641 are visible in the northwest corner of the shrine. The eastern end of the room contains a mass of fallen brickwork, perhaps from the vault. Both adjacent buildings in Tr C4 are trenched into the Level 8 walls (see also Fig. 83).

Key to plan of Level 8 vaulted shrine, Trench D and Trench C4:

- locus 388 Walls of late Level 8 building (Level 8a), trenched into shrine wall;
- locus 393 Level 8 shrine walls;
- locus 394 Level 8a floor, building south of shrine;
- locus 399 Level 6 floor;
- locus 400 Level 6 walls; these lie two structural levels above the adjacent Level 8 walls 393, into which the south Level 6 wall is trenched.



Figure 56. (cont.)
 locus 402 Level 6 floor;
 locus 410 lower fill in eastern part of shrine;
 locus 412 floor in eastern part of shrine;
 locus 525 lower fill in western part of shrine;
 locus 530 floor in western part of shrine.

the extensive grey *libn* packing that was found beneath both the Palace and the Temple but seems not to be represented in the trenches south of the Temple.

It has proved difficult precisely to relate the recent excavations in Area HH with those of Mallowan in the 1930s. Table 2 provides a comparison based in the first instance solely on spot heights from the recent excavations and estimates of the absolute levels of Mallowan's house strata. In absolute figures, this would equate his Level 2 with the construction of the Mitanni Palace. We believe this to be unlikely, since both Nuzi ware and Late Khabur ware are found in his Level 3, an association which is particularly characteristic of our Levels 6–5 and even as late as Level 4. Our Level 6 is therefore more logically equated with Mallowan Level 3, and we must assume either that the absolute levels lie at a higher elevation just to the north and west of our trenches, or that we have underestimated, by perhaps 2 m, the absolute height of the original surface of the tell in



Figure 57. East-facing section of Trench C4 showing wall 409 and low doorway into the western room of the Level 8 shrine (see plan, Fig. 56, and Fig. 83).

the area of Mallowan's excavations. We know from excavation further to the west that the HH levels appear to slope down from west to east; there is also a north–south slope illustrated in the spot heights in Trench A4 Level 10 and Trench D Level 8. These reflect no more than the contemporary configuration of the tell but may explain the apparent discrepancies in our calculations. Table 2 illustrates the possibilities.

Chapter 2

The Inscriptions

edited by Jesper Eidem

While the excavations conducted in Area HH by Mallowan did not produce any written evidence, the more recent work has retrieved six inscribed tablets and a fragmentary dedicatory(?) inscription of second-millennium date. The inscriptions have been fully published (Finkel 1985; 1988; Illingworth 1988; Wilhelm 1991), but it will be convenient to present the evidence here in summary form. Below are reproduced the copies, photographs, transliterations and translations of the texts as established by the original editors. For notes on philological and other details we refer to the original editions, with the exception of those cases where some updating or additional comment has seemed useful.

The material principally comprises six Mitanni period tablets, all found in rooms of the Mitanni Palace. These include a letter written in Akkadian and addressed to a certain Pattip-šarri, and a fragmentary, acephalous letter written in Hurrian. They further include two legal documents related to, respectively, the reigns of Mitanni kings Artaššumara (text 4) and Tušratta (text 5), and two administrative documents. The tablets were found scattered in different rooms and corridors of the building, with a concentration in the southeast corner and in Room 11. As observed by the excavators, they must be regarded as bits and pieces from several now lost tablet groups or 'archives' once kept in the Palace. Apart from a few fragments retrieved at Tell Hamidi, and Middle Assyrian texts found at Tell Fakhariya, Tell Shermola and Tell Barri, no texts of mid- to late second-millennium date have so far been found in the region; this at the moment adds to the inherent interest of the Brak finds. The HH texts are at present the only documents we have from the Mitanni heartland and as such offer the first important historical keyhole to this ancient centre of power (see the remarks by Wilhelm 1996, 179f.). Of particular interest

is the firm evidence for the reign of Artaššumara, hitherto uncertain (text 4) and new evidence for the use of a Mitanni 'dynastic' — or 'state'-seal. Of more general interest is the fact that the texts, as regards format and language, adhere more to the eastern tradition of the Mitanni realm as exemplified at Nuzi than the western tradition as known from Alalakh and Emar. Otherwise the texts do not themselves impart much historical information, but mainly serve to support interpretation of the archaeological and other evidence as discussed in Chapter 12 of this volume.

Based on cumulative — and mostly third-millennium — evidence it has in recent years become increasingly likely that Tell Brak should be identified with the ancient town of Nagar/Nawar (see Eidem in press for references and further literature). The second-millennium material from HH may be said to support the assumption since text 5 concerns land near Nawar, and text 7 may well have been written and kept at Nawar. Text 7, however, also shows that Nawar was close to the then clearly more important town of Ta'idu. At the moment the best candidate for the latter site is Tell Hamidi some 20 km north of Brak. The relative proximity of Nawar and Ta'idu, however, would make it likely that their fortunes ran closely parallel during the Mitanni period, and hence also that Nawar was conquered by Adad-nerari I and subsequently Shalmaneser I in the same campaigns which in the thirteenth century BC brought Ta'idu and numerous other places in Hanigalbat under their control. It is most likely that second-millennium Nawar/Brak was, prior to the final Assyrian conquest, an important stronghold in the 'district' of Ta'idu. The addressee of text 3, Pattip-šarri, was possibly one of the important figures once in residence, but beyond that the present documentary evidence supports little profitable speculation.

1. Dedicatory inscription TB 7036, Figures 58 & 164.

Publ. Finkel 1988, 86, no. 11.

Isolated body sherd from a whitish alabaster vessel. D. c. 21 cm; size 4.7 × 5.6 × 0.7 cm. Found on surface of east slope of HH, below the Mitanni Palace façade.

The fragment has part of three lines of an inscription in archaic script. The original editor prudently refrained from any firm theories as to language, reading, and interpretation. A subsequent, tentative suggestion is that the text is an Old Babylonian dedicatory inscription authored by the Šehna (Tell Leilan) king Yakūn-Ašar who reigned c. 1750–1728 BC. A possible transliteration is as follows:

- | | |
|----|---|
| 1' | [(...) <i>ia-k</i>] <i>u-un-a-šar</i>] |
| 2' | [(...) <i>iš-t</i>] <i>u pu-ut m[a²-at²</i>] |
| 3' | [.....] <i>a¹-l[i</i>] |

The fact that Tell Brak can now with some confidence be identified with ancient Nagar adds further credibility to the suggestion. In the Old Babylonian period Nagar is known as a famous cult centre in the Khabur and the seat of the goddess Bēlet-Nagar. More specifically, texts document how this goddess claimed responsibility for the royal succession at Leilan. Viewed in this light the present inscription could well be thought to stem from a vessel dedicated to Bēlet-Nagar by the Leilan king, deposited in the goddess' temple now buried deep in the HH mound, and brought to the surface by erosion or other disturbance (cf. pp. 141–2).

2. Letter TB 11021, Figure 59. Publ. Wilhelm 1991.

Fragmentary: 9.5 × 6.5 × 3.5 max.

Found in Adadnerari I destruction debris in Corridor 6, locus HH 577, Fig. 31.

This large fragment is the lower part of a letter written in Hurrian. As in the famous 'Mitanni letter' of Tušratta (from Tell el-Amarna), the text is divided into sections by double rulings. Unfortunately little of the surviv-

ing text can be properly understood. Possibly the letter was sent to a figure addressed as 'lord', and mention is made of a person named Šenui and of otherwise unknown localities (?) Kusam and Satyam.

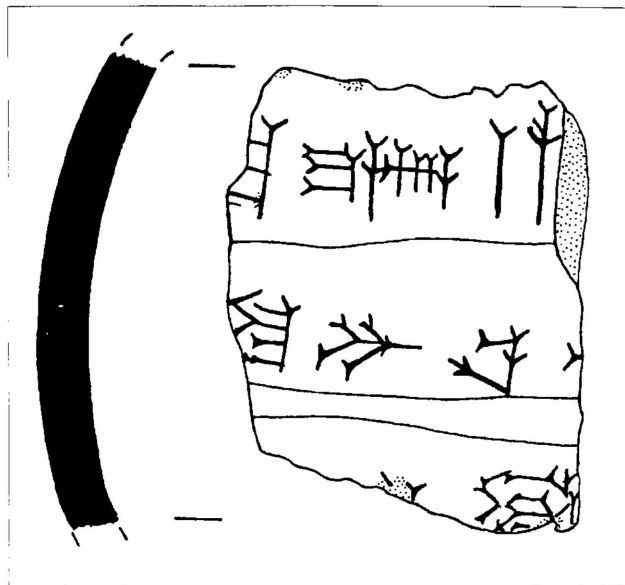


Figure 58. Sherd from alabaster vessel with dedicatory inscription (text 1); see also Figure 164, and pp. 141–2.



Figure 59. Lower part of a cuneiform letter written in the Hurrian language (text 2).

3. Letter TB 7035, Figure 60. Publ. Finkel 1988, 83–6, no. 10; seal impression 6. Complete: 4.5 × 3.3 × 1.8 cm. Found in Room 5 face down in loose ashy fill at floor level.

obv. *a-na 'pa-ti-ib-[luga]l-ri*
um-ma 'na-ad-na-ma
'ú-aš-šu
ša mi-^rta-ni¹
 5 *ša ^kli-li-ip¹-pa-ap-ni*
ku-us-sí-šu
ma-am-ma
 l.e. *šu-bar+meš(?)*
lu la i-pu-ag

To Pattip-šarri, thus (says) Nadna: (With regard to) Uaššu of Mitanni, of Kilip-papni, tie him up! Nobody may release his handcuffs!

4. Legal document TB 6002, Figure 61. Publ. Finkel 1985, 191–4, no. 6; seal impression 1. Complete: 5.2 × 4.2 × 1.8 cm. Found on floor of Room 3. The tablet is sealed on the reverse with the seal of Saustatar, son of Parsatatar.

obv. *a-na pa-ni 'ar-ta-aš-šu-ma-ra lugal*
dumu 'šu-ut-tar-na lugal
'in-tar-ú-ut-ti ri-ik-sa ir-kus
mi-nu-um-me-e é-sú
 5 *ù mar-ši-is-sú re-hat*
a-na 'zu-un-zu-li
ù a-na dumu-meš
 l.e. *'zu-un-zu-li*
 rev. *'it-ta¹-dīn*
 10 *'[i]n-^rtar-ú¹-ut-ti*
a-di ti.la 'ú¹-ma-'a-ar

In the presence of Artasšumara the king, son of Šuttarna the king, Intarutti made an agreement. He has made over all of his estate and (whatever of) his property (that) remains to (the woman) Zunzuli and to the sons of Zunzuli. Intarutti shall (however) have use of it (?) for as long as he lives.

Seal inscription: Saustatar, son of Parsatatar, king of Mitanni (*maitani*).

5. Legal document TB 8001, Figure 62. Publ. Illingworth 1988, 99–105, no. 23. Complete: 7.2 × 5.8 × 2.5 cm. Found in Room 11 at bottom of charred debris overlying floor. Like text 4 the tablet is sealed on the reverse with the seal of Saustatar, son of Parsatatar; seal impression 1.

obv. *a-na pa-ni 'tu-^riš¹-e-rat-ta lugal*
'ia-ab-bi ri-ik-sa ir-ku-su
'pu-ra-me dumu 'e-se-er-ti-šu
a-na ha-ni-gal-bat-ú-ut-ti um-te-eš-šir-šu
 5 *ù ama-šu 'a¹-na ša-šu-ma sum-nu*
a-na é-šu ús-ta-am-me-eh-šu
é¹-meš-tu₄ ri-hé<-tu₄>-ma iš-tu uru na-war
an-nu-ti sa₅-ma 'a¹-na 'ti-lu-na-i-e
ù a-na dumu-meš 'ti-lu-na-i-e
 10 *it-ta-dīn é-meš ša diš ú-ti-^ul-li*
ki-meš ša diš ma-ri-an-ni
iš-tu uru na-war an-nu-ti
sa₅-ma a-na 'pu-ra-me it-ta-dīn
mi-nu-um-me-e é-sú
 15 *ù mar-ši-is-sú gāb-bá*
 l.e. *a-na 'ti-lu-na-i-e*
ù a-na dumu-meš 'ti-lu-na-i-e
 rev. *ù a-na 'pu-ra-me it-ta-dīn*
šum-ma i-na egir u₄-mi
 20 *'ti-lu-na-i-e a-na dam-ut-ti*
ú-šab qa-du dumu-meš-ša šu-uz-zù-rat
'ia¹-ab-bi a-di ti.la
ú-ma-'a-ar

In the presence of Tušratta, the king, Yabbi made an agreement. He has freed Purame, the son of his concubine, making him a citizen of Hanigalbat, and has given his mother to that person. He has made him an heir to his estate. The remaining properties near the town of Nawar — these he has given to (the woman) Tilunaie and to the sons of Tilunaie. The properties of a chief herdsman (and) the parcels of land of a *mariannu*-warrior (which are) near the town Nawar — these he has given in their entirety to Purame. He has given all of his estate and the totality of his property to Tilunaie, and to the sons of Tilunaie, and to Purame. If, hereafter, Tilunaie decides to (re)marry, she shall be accursed with her sons. Yabbi shall (continue to) be in control as long as he lives.

Note: The emendation in l. 7 follows the suggestion of the original editor. The translation of ll. 10f. assumes that Purame, as chief heir, is specifically allotted the means necessary to uphold the social position of his father.

6. Administrative document TB 6001, Figure 63. Publ. Finkel 1985, 195–8, no. 7. Fragmentary: 12 × 7.2 × 3.2 max. Joined from 14 fragments found under potstand on floor of Corridor 2, adjacent to Room 3 (see Fig. 174).

For a full treatment of this text see Finkel 1985. The

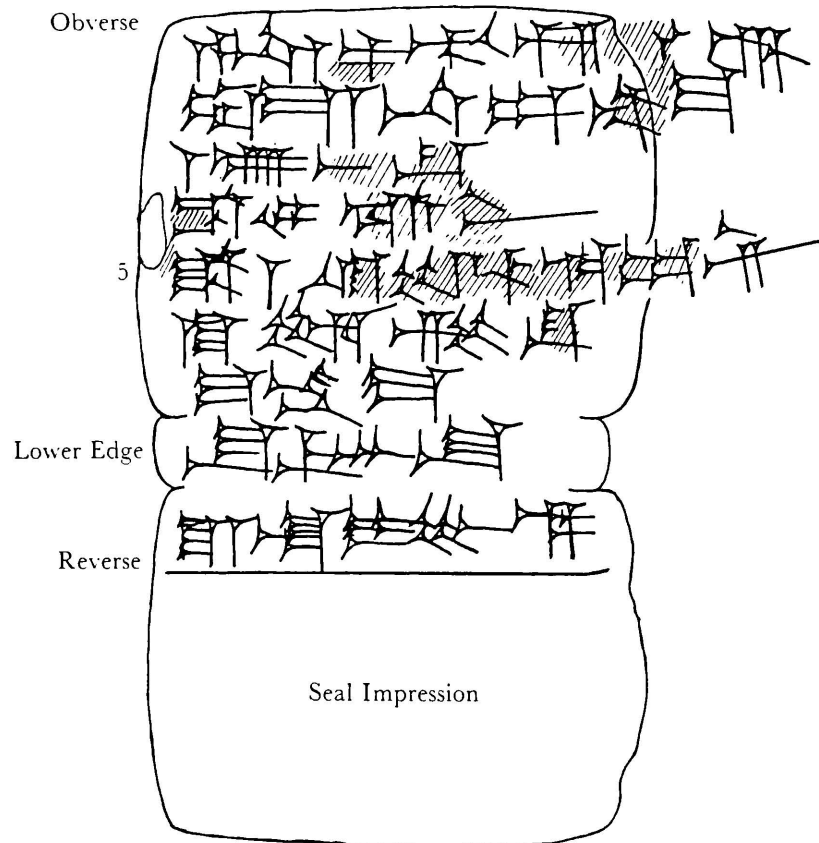


Figure 60. Letter written in Akkadian, text 3, sealed by the sender (cf. sealing 6).

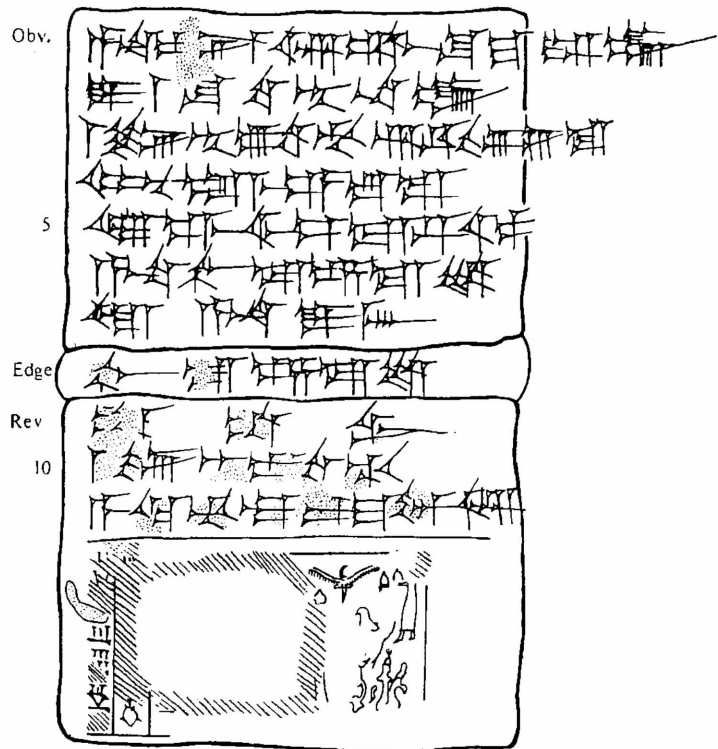


Figure 61. Legal document recording an agreement made in the presence of the Mitanni king Artasšumara (text 4), sealed with the dynastic seal of Saustatar (pp. 48–9).

tablet is a list of originally perhaps *c.* 100 named workmen grouped in 6 sections under supervision of foremen (*ugula*). Only *c.* 24 names are more or less completely preserved, and these all seem Hurrian (no Akkadian name is preserved). For some important observations on the onomastic material in this tablet see Deller 1987.

7. Administrative document TB 8002, Figure 64. Publ. Illingworth 1988, 105–8, no. 24; seal impression 2. Complete: 2.4 × 3.6 × 2.1 cm. Found on floor of Room 11 at bottom of charred debris overlying floor. Sealed on reverse (Fig. 67).

obv. gi-meš 10 hé-eš-ti-ra-a-še
 'ša¹ uru na-wa-ar
 hal-ší uru ta-i-de,
 a-na pa-ni 'ma-li-iz-zi
 l.e. 5 pu-u-ha
 il-te-qú-ú

Arrows of 10 bundles from the town of Nawar (in the district of the town Ta'ide in the presence of Malizzi have been taken as replacement.

Note: The difficult l. 1 was discussed in detail by Illingworth and Wilhelm in the original edition, and various tentative solutions presented. The sign GI can be read either 'reed' or 'arrow (reed shafted)', and the key to our context is the Hurrian word *heštiraše*. Wilhelm referred to the word *heštiri* which can be used as the equivalent of an Akkadian word 'dam, weir' and is almost certainly the same root. The form here is different, and Wilhelm therefore suggested a different meaning based on the assumption that the root for a word meaning 'dam, weir' should be something like 'close off'. Thus according to the grammatical analysis of our form (active participle genitive plural), he arrived at 'of/for the (men) who close off = 'the garrison troops (?)'. While Hurrian lexicography cannot yet provide any secure solution, it seems reasonably certain that Hurrian words with the root *hešt* share a semantic range which includes 'dam'. From this departure one may speculate on the correct contextual solution: 'arrows/reeds of/for 10 "closures"' indicates the available range. Arrows were sometimes measured in baskets or quivers of presumably standard size and content (see CAD, 89a). A possible solution could be translated

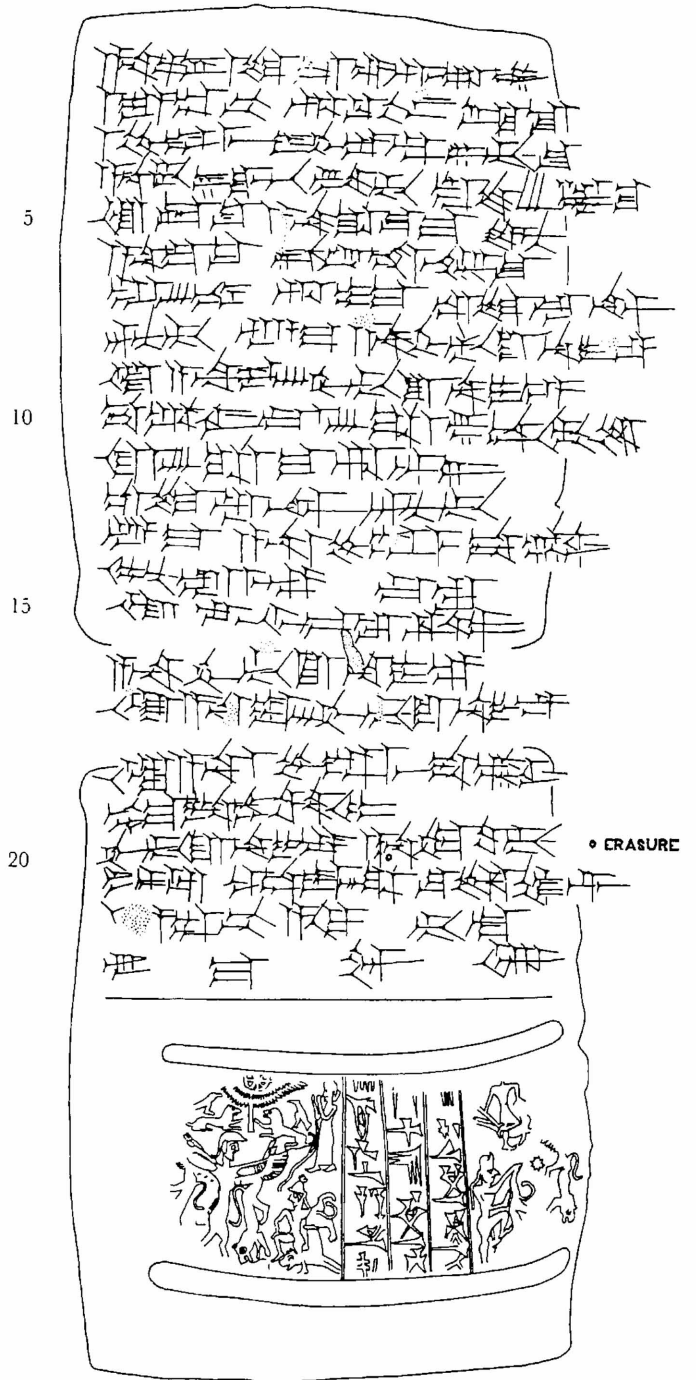
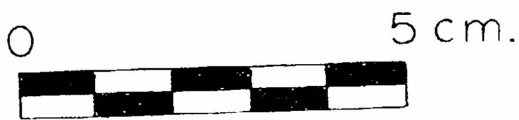
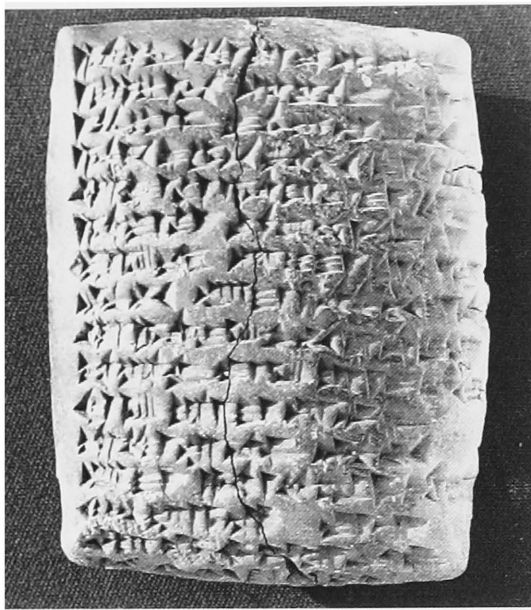


Figure 62. Legal document recording an agreement made in the presence of the Mitanni king Tušratta (text 5), sealed with the dynastic seal of Saustatar, as on Figure 61.

'arrows of 10 bundles', but the tentative nature of this suggestion hardly needs stressing.

8. Uninscribed docket sealed with Mitanni period seal TB 7038, Figure 70, seal impression 4. Publ. Finkel 1986, 84–5 (sub no. 10). From the doorway to

Room 5 from Corridor 2.

9. Tablet fragment (reg. no. 1781). A worn tablet edge from Room 5, probably from a tablet similar in size, and perhaps category, to the list of workmen, text 6, above (see Finkel 1986, 85).

The Inscriptions

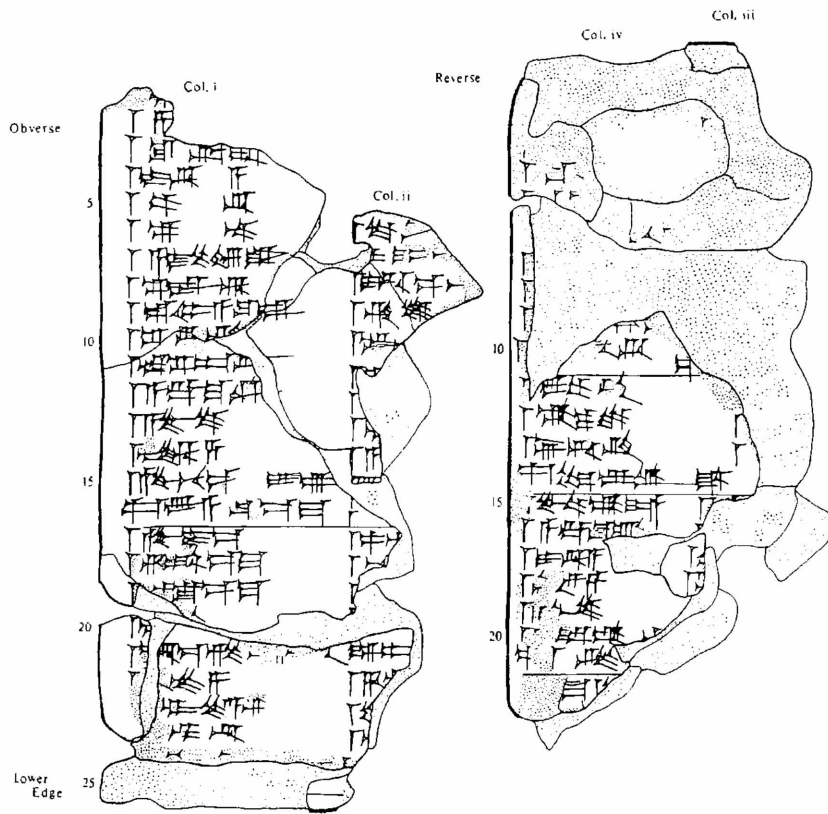
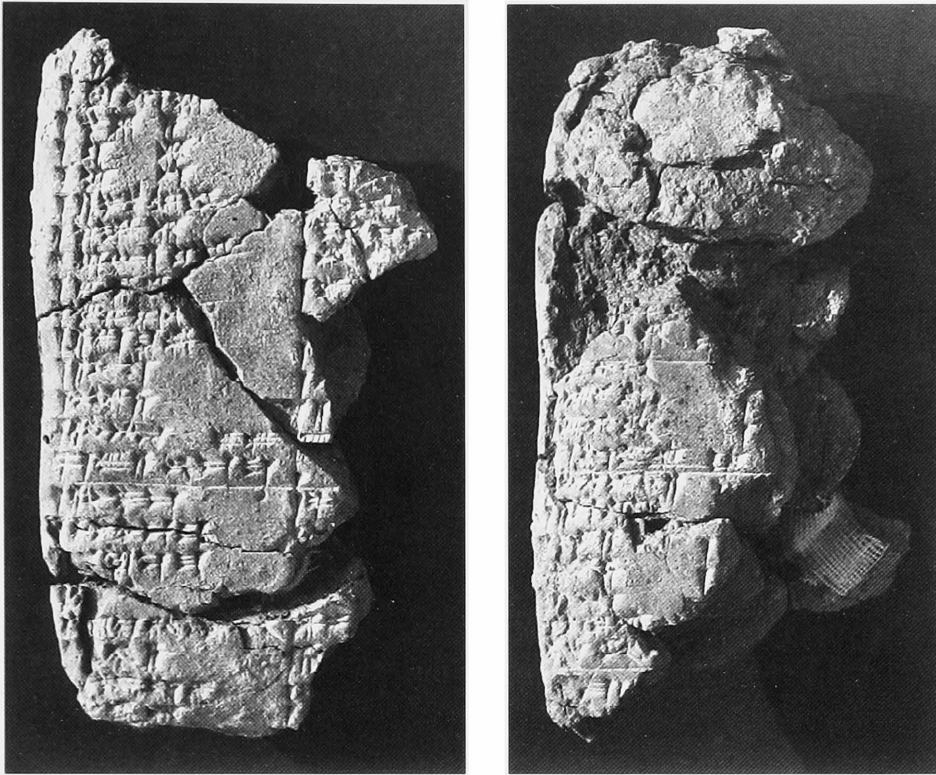


Figure 63. Administrative text listing Hurrian workmen employed at Brak, perhaps in or for the Mitanni Palace (text 6).



0 2 cm

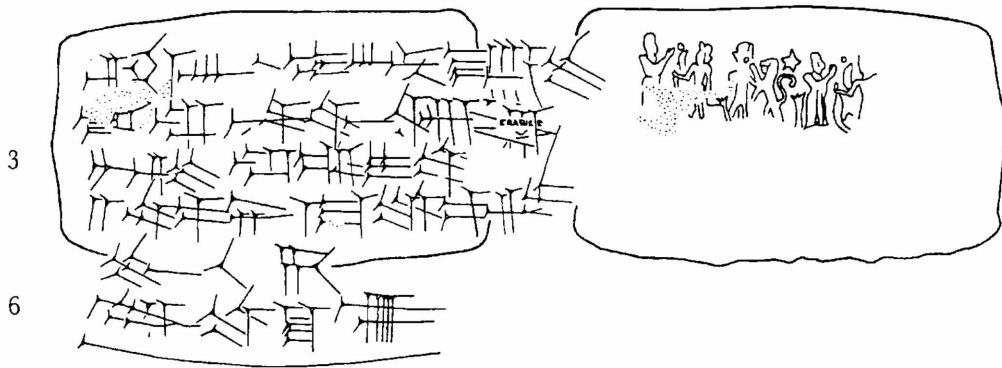


Figure 64. Administrative document concerning 'reeds from the town of Nawar in the district of Ta'idu', text 7, seal impression 2 (see Fig. 67).

Chapter 3

Seals and Sealings

(Figs. 179–80)

All the Mitanni glyptic comes from Area HH and, with the exception of 9–11, those examples from the recent excavations derive from the Palace destruction level. It is perhaps no coincidence that a number of seals and sealings were found in Room 5, the workshop storeroom, and its adjacent corridor, where they had presumably been discarded by the Middle Assyrian plunderers (3, 4, 6, 7, together with seals 8, 13, 14), while seal 12 came from the nearby courtyard. Two further unsealed bulla fragments came from Room 3 and the corridor. Also from the Palace are four sealed tablets and an unscribed docket, providing impressions 1, 2, 4 and 6. One seal (9), one impression (11) and the unusual compartmented dish with a seal impression rolled around its sides (10 and Figs. 50 & 74) come from earlier strata (Levels 4 & 5). Mallowan's seals are not so well-dated, but they are in general earlier than the early thirteenth-century destruction. The clay bulla bearing impression 15 and the faience seal 20 were found in his Level 2, approximately contemporary with our HH Levels 5 and 4 and the compartmented dish (cf. Table 2). We remain uncertain of the specific contexts of the other examples from the 1930s excavations.

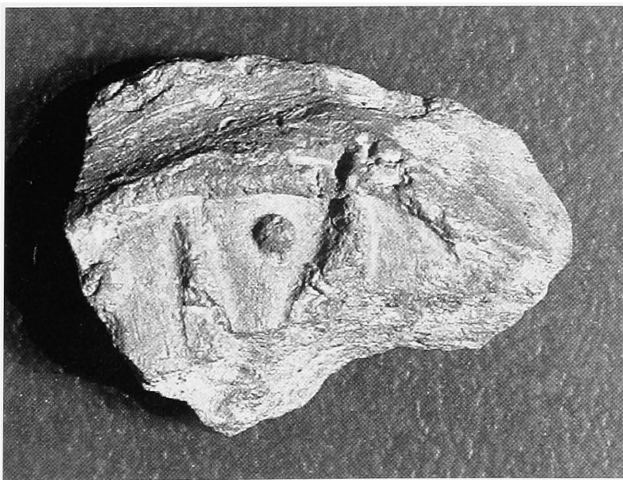


Figure 65. Terracotta fragment impressed with a Cappadocian-type stamp (25), found on the surface of Area HH.

A small number of additional seals and sealings have been found in the recent excavation of second-millennium levels, including an oval white marble stamp seal, possibly prehistoric, with the design of a cross and pierced laterally (reg. no. 2269, 1.5 × 1.2 cm). It was found next to the dais in the Mitanni Temple (Fig. 46:9). A clay stamp (24) came from one of the two small rooms behind the cella (Fig. 49:10), the simple geometric design perhaps a debased version of the better known Cappadocian stamp type, of which a small fragment was also found at Brak (25 and Fig. 65). Surface find 23 is a more contentious piece and may possibly be prehistoric. However, it is very well made and, although it superficially resembles the PPN-B examples known from sites like Al Kowm (von Wickede 1990, no. 14) and Halula, a site south of Carchemish excavated by a Spanish expedition, the first is made of stone and the clay of the second contrasts strongly with our highly fired terracotta piece. The Brak example is included here both because it is the only other stamp of this general type from Brak, and because it is conceivably to be dated to the third or even the second millennium. Generally similar types are certainly found in Bronze Age Anatolia (cf. *inter alia*, Alishar Hüyük, von der Osten 1937, II, fig. 258; see also von Wickede 1990, 52 ff.).

The Mitanni Seals from Tell Brak

by Donald Matthews

There are three main sources of information on the Mitanni seals — the evidence of the impressions, of the actual seals from excavations, and of the actual seals in collections. The general picture obtained from each of these sources is quite different. The actual seals from excavations, with surprisingly few exceptions, belong to the Common Mitanni style which was engraved in faience. Most come from Syria and Palestine, but they are the most common type among the few excavated seals from northern Mesopotamia and are present wherever seals of this period are found. Faience seals, after a few thousand years, are

usually neither robust nor attractive, and they are therefore under-represented in collections, which concentrate on Mitanni seals in hard stone, which are mostly of medium or low quality. There are only two substantial published collections of Mitanni seal impressions, from Alalakh and from Nuzi, and they both show strong local characteristics, Syrianizing at Alalakh and the 'Kirkuk style' at Nuzi (Collon 1988a; Porada 1947). Seal impressions consistently attest a much better class of seal than actual seals from the same site and are almost the sole source of information on the very best Mitanni glyptic. There is still no thorough classification of the hard stone seals, but the groups in Porada 1947 are a useful, if not comprehensive, starting point. The Mitanni style may be assigned in broad terms to the period 1600–1200 BC, but further refinement within this era is very difficult to achieve. For dating purposes most of the Area HH contexts, on floors in well-defined architecture, are as good as could be desired, but as usual with monumental buildings, this means that the seals and tablets could have been stored for many years prior to abandonment, which occurred not long after 1300 BC. The Level 4/5 examples are almost certainly to be dated to the fifteenth century. As seals are well known for their propensity to survive for centuries as heirlooms and even to slip down in the soil to earlier levels, stratigraphy in general is only liable to be of use where large numbers of seals were excavated, and such collections are likely to derive from old excavations on the grand scale where stratigraphic control was normally deficient. In practice there is almost no useful information of this kind available. For this reason the material from Tell Brak is particularly valuable as we have here a combination of clear stratigraphic and historical evidence which allows some assurance to be given to the chronology. We can only regret that so much of the Mitanni levels have been eroded away.

Our glyptic may be divided into four groups, Common Mitanni on the one hand, and good, intermediate and poor quality designs in hard stone on the other. In such a small corpus we cannot expect to have a balanced reflection of the local styles, and in fact our material is characterized more by its diversity than by its consistency. For this reason a short introduction to each section sketches the general environment in which the designs should be placed.

A. Syrianizing designs

Our two most important impressions, **1** and **2**, which are rolled on the most interesting texts, are both in

the Syrianizing tradition which is much more typical of the impressions of Alalakh than of those from Nuzi. In the present state of our knowledge it is impossible to determine how much of this difference is due to their geographical separation and how much to chronological factors. However, the Syrian emphasis at Alalakh and the strong influence of Babylon at Nuzi make the geographical hypothesis very likely. It used to be thought that the two archives are approximately contemporary, and that the Nuzi archive could be dated from the Saustatar seal impression. But we now know from our impressions of this seal at Brak (**1**) that it was in fact a dynastic seal and could have been used at Nuzi, as at Brak, by one of his successors. The problem has been fully discussed by Stein (1989a), in which she argues, on Wilhelm's low chronology (1976), that Nuzi was probably destroyed between 1350 and 1330 BC. As argued later in this volume, however, the ceramic evidence from Brak suggests an earlier rather than a later date for the destruction of Nuzi (p. 66). The Alalakh IV archive ends one to four generations earlier, depending on the initial assumptions. All this is quite independent of stylistic questions, but here too a chronological distinction would make good sense. The Syrianizing glyptic of Alalakh has an uncanonical, transitional feel as though the Old Syrian conventions were half-remembered, while the Mitanni conventions were as yet unfixed. 'Old Syrian' is used here in the broad sense to cover the whole Syrian development of the Old Babylonian period, following Özgüç (1968, 53). This is contrary to Porada's usage (1980, 17). Much of the Babylonianizing glyptic of Nuzi, on the other hand, is fully assimilated into a vigorous and mature local style with its own canons. Since the Brak tablets are later than those from both Alalakh and Nuzi, it would be very useful to know what the local good-quality style was; but as **1** was certainly made long before it was used here, which may be true of **2** also, we have no evidence to bear on the question. One could argue, however, that the impression of the seal of a king of Hanigalbat (Frankfort 1939, fig. 88), which has nothing in common with our seals, represents the glyptic of the Khabur area at the beginning of the thirteenth century.

Impression 1 (Fig. 66)

Winged human-headed demon with tail and lion's legs holds up two lions by the hindlegs. On either side a hero holds an inverted lion. Above, a winged disk on a short stand, faced on either side by a lion with a bird on its back. Upper left, a hero masters a

horned animal. Upper right, interceding female. Fillers, from top left: animal head, monstrous disembodied human head, wavy line (snake?), star, animal (hare?), bird, scorpion(?). Inscription, in three ruled vertical columns, Saustatar, son of Parsatatar, king of Maitani. Impression of plain caps. The design of the seal used at Brak is identical with that used at Nuzi, even to the misshapen cutting of the star, a fact that indicates that the Brak impressions are rollings of the same seal.



Figure 66. Seal of Saustatar (Fig. 179:1), text 5, reverse.

Since its discovery in an impression at Nuzi, the seal of Saustatar has played a central role in discussions of Mitanni glyptic. Frankfort (1939, 262–6) recognized correctly that it includes both Syrian and Mitanni elements but interpreted this as a geographical rather than a chronological distinction. This transitional nature means that it is most unsuitable as a type for either style, and attempts to use it as such have not been helpful. On the other hand, as a royal seal it should be typical of the best craftsmanship of its age. Yet it lacks the assurance and character of other royal seals such as those from Arrapkha or Assur, which indicates that at the time it was made, early in the fifteenth century, the best Mitanni glyptic had not yet acquired some of its more characteristic features, at least at the Mitanni court (cf. the rather clumsy recut seal also used by Saustatar as a dynastic seal: Collon 1975, 230). Frankfort drew attention especially to the free composition which is quite unlike the very careful arrangements typical of most Old Syrian seals and early Middle Assyrian designs (1939, 263, 273). Porada (1979) compared it to the seal of Itkhi-teššup, King of Arrapkha, which represents the best glyptic of the local style of Kirkuk. This style is not known elsewhere, and I do not believe that Saustatar's seal belongs to it, though it is of course related. The Kirkuk designs show a consistency of detail which does not occur in the Saustatar seal, such as the demon bent over at right angles, small decorative curls and a frequent appearance of the weather god on his attributive

dragon. The winged disc, which dominates our design, does occur in the Kirkuk series but is less common than the weather god. The composition, also, is not the same: in Saustatar's seal the main scene is placed in the centre and five minor scenes are arranged around it, while in the Kirkuk series, where there are subsidiary scenes (as opposed to isolated filling elements), they are beside rather than around the main scene. This central composition is unusual, but it does occur executed in a much more orderly manner in the other seal that may have been used by Tušratta (Porada 1974/77, fig. 1). The strongest argument for a close link with the seal of Itkhi-teššup is the little curled beard of the central demon; however, details of this kind can be misleading as in the case of the triple-crested headgear of the heroes on each side, which recurs in Old Syrian seals of earlier date (Porada 1948, 955). In the later second millennium it occurs in a transitional Kirkuk/earliest Middle Assyrian impression (Beran 1957, 1) and, as Dr Stein kindly informs me, in some unpublished Nuzi impressions. The Saustatar seal has a number of points in common with the Alalakh designs, e.g. the wavy line (Collon 1975, 221), the upper left animal with trailing hindlegs (Collon 1975, 218) and the irregular central composition, and shares their clear descent from Old Syrian glyptic. But the specific details do not give a clear stylistic context for it, probably because so little of the glyptic of the early and mid-fifteenth century, or of the sixteenth

century, has survived.

On the Saustatar seal the *central demon* is a winged man with the hindlegs of a lion and a tail. Unlike monsters in the Mesopotamian tradition the wings and tail look detached rather than an organic part of the creature. The only parallel I know for the combination of parts is the upper demon in the Perati seal (Collon 1987, no. 274) where the feet appear to be clawed like a lion, although the lower torso is phallic as in a bullman. This seal has several elements in common with that of Saustatar (the winged disc, star, lion, antithetic birds, monstrous human head, demon) but is quite different in style, probably late fourteenth-century Mitanni under Assyrian influence (cf. Beran 1957, 83, 88, 94). The demon holds two lions upside down by their hindlegs. This is a much less common composition than that in which a demon dominates two herbivores (Porada 1974/77, fig. 2). Above the demon the central scene shows a *winged disk* on a short standard flanked by two lions. Once again the presence of lions rather than herbivores is unusual. Mitanni winged disks rest only on standards in this period, following an Old Syrian tradition (e.g. Porada 1948, no. 955; Frankfort 1939, pl. 42k), though it is unusual for them to have a short standard. The form of the winged disk, a circular disk with a fringe running under it to link the two wings, is unusual in Mitanni where the wings are usually separate, and is an early forerunner of the Assyrian type. Our seal also has a human in the Babylonian tradition, the *interceding figure* in the upper right corner. It is unclear whether she is wearing a flounced or a plain dress. Both are possible in Old Babylonian iconography (Collon 1986, 25 A.5, 39 B.9), but in Old Syrian the plain robed figure only occurs in Syrianized or Egyptianized forms (Porada 1948, nos. 953 & 956). Both occur in Mitanni glyptic (e.g. Nuzi 545: Porada 1947), but the flounced type is more favoured in the finer seals and the plain in simpler designs. The three other scenes in the design consist of *heroes mastering animals*, lions in the two lower scenes and perhaps an ibex upper left. The postures of the heroes on the left are not of the normal form. The upper one rather resembles the 'dancing men' of Old Babylonian glyptic (Collon 1986, 33 B.2f). The high knee of the lower hero recurs in a few good-quality Mitanni seals (Porada 1947, no. 728; Matthews 1990, no. 601). A man fighting a lion occurs occasionally (see our impression 2) and is presumably a clumsy adaptation of Old Syrian scenes. The *disembodied head* is yet another unusual feature. Mayer-Opificius gives a summary of the problem (1984, 195–6), which is confused by at least

two other types of full-face, disembodied head in the Old Babylonian period, those of the *nude hero* and the *bullman* (Porada 1948, no. 402; Collon 1986, no. 451). These both have a wide beard between the locks of hair at the side, and the bullman has bull's ears. In the Old Babylonian period the style is sufficiently regular to distinguish the Humbaba head by its ghastly contorted snarl, as opposed to the placid, noble features of the other three types; such a distinction is not clear in the later second millennium where there is a shortage of evidence with only some twenty cases preserved (*inter alia* Collon 1987, 267; Porada 1974/77, fig. 5; Porada 1947, nos. 665, 774 & 775). There is no doubt that these group most conveniently on the lines suggested by Mayer-Opificius, round topped with curls at ear level and a wide chin on the one hand, and with parted hair, bull's ears and a narrow chin on the other. But as she points out, the latter cannot always be described as 'Hathor' because parted hair and bull's ears can be combined with a beard. Indeed none of the cases with parted hair in this period occurs certainly without a beard. The Saustatar head belongs to the group with parted hair and a narrow chin; contrast the Itkhi-teššup head which cannot be ascribed to either group with its round top, narrow bearded chin and curls at ear level. The Brak example does not have bull's ears, and, though lacking a beard between the chin curls, has long drooping whiskers which I have never seen elsewhere. The Saustatar head thus does not belong to an interpretable type and shows features for which there are no parallels.

As a general rule Late Bronze Age Syrian and Mitanni seals do not have *inscriptions*, unlike those of Babylonia. Where there is an inscription, it is nearly always in vertical columns with fewer than five lines. The seal of Itkhi-teššup, with eight lines, is wholly exceptional (see Wilhelm 1981). Alalakh, both in the Middle and the Late Bronze Age, shows a very high proportion of impressions with inscriptions, which are certainly associated with better quality seals and are, therefore, more prevalent in impressions than as actual seals. The proportion among the Nuzi impressions (not counting earlier and Kassite designs) is only about five per cent, compared with about a third at Alalakh, and perhaps one in two hundred actual seals. Royal seals are particularly likely to be inscribed, which may account for the high percentage in the Alalakh archive. Dr Stein tells me that at Nuzi inscriptions are more common on palace and office seals than on private examples, and are thus underrepresented in the Tehiptilla archive that is the basis for the figures just given.

Impression 2 (Fig. 67)

A man dressed in a robe open in front raises one hand in front of his face. A nude female(?), conceivably winged, holds an inverted animal before him. She probably holds a weapon, perhaps a curved sword, in the other hand. There is a star above a three-pointed object behind him, perhaps another such object behind her. This latter may alternatively be an object held by a much damaged hero, who is in combat with a rampant lion.

Most of the design on this impression is preserved, though much of it is quite faint. There are two scenes. In one, a man faces a figure holding an inverted animal; in the other, a man fights a lion. The figure with inverted animal should probably be restored after the Mitanni impressions from Assur (Beran 1957, 59, 60). The most distinctive figure in our design is the onlooker, a man in a long robe drawn back to show one leg and his tunic. His forward arm is held in at the waist and his rear hand is raised before his face. This figure originated as a rare variant in the Old Babylonian period (e.g. Collon 1986, 99). It did not survive in Kassite seals, but has a distribution in Mitanni glyptic among the best quality seals. In most cases it faces a figure who is clearly designated as a god; in Contenau (1926, 128), it faces a double lion-headed, winged demon (see also the royal seals of Itkhia/Itkhi-teššup: Stein 1989b, figs. 20 & 23). The most plausible identification of the figure is that it represents the king, owing both to its context and to the arm position (see for example the stele of Hammurapi, an identification perhaps less relevant in Mitanni seals than in Babylonian). The figure fighting the lion may therefore be a god with domination over animals, although the combination of figures does not recur elsewhere.

This figure appears only once on the rolling and that faintly. The scene can be restored from Delaporte (1923, A951), another good quality seal; the man's arms may have been more like Collon (1975, no. 228). In fact the seal may be a re-used seal

of Old Syrian style, though Dr Collon informs me such a small size is unlikely among Old Syrian seals. A possible trait favouring the former view is the very prominent hand of the man raised in front of his face. In Mitanni representations the hand is usually close in front of the mouth. The composition, in one register with no horizontal subdivision of secondary scenes, is unusual in both Old Syrian and good-quality Mitanni seals. The rampant lion, with both forepaws in the air, is however more typical of Mitanni than of Old Syrian style (e.g. Porada 1947, nos. 642, 651, 655, 660 & 792). The extremely small size of this impression (ht 6 mm) recalls a probably Cypriote seal from the Uluburun shipwreck (KW 1463). This seal has as a prominent non-Cypriote feature a man comparable with our main figure. I am indebted to Dr Collon for showing me this seal. The only seals known to me of the later second millennium with heights of less than 9 mm are Teissier (1984, no. 638) and, more significantly, an Alalakh impression (Collon 1975, no. 210).

B. Intermediate styles in hard stone

While both the good and the poor quality Mitanni styles are fairly recognizable, not just in terms of quality but also by the dependence of the one and the freedom of the other with respect to Old Babylonian and Old Syrian traditions, the intermediate seals are ill-defined and lack original characteristics (Porada 1947, 40–42, Group XV). Impressions

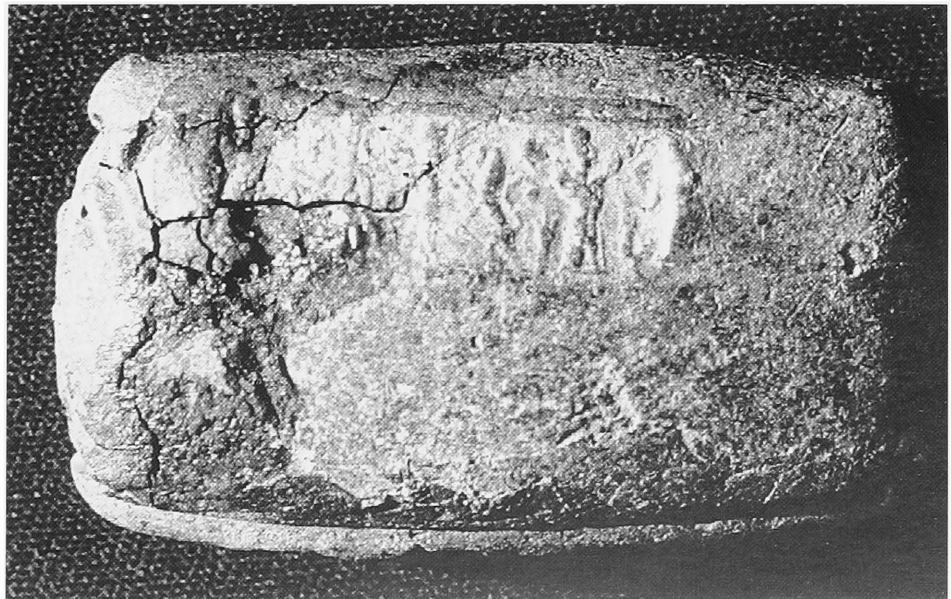


Figure 67. *Tablet 7, reverse. Seal 2, belonging to an official named Malizzi.*

3 and 4 are placed here for convenience; neither has clear parallels.

Impression 3 (Figs. 68 & 69)

Two bullmen, identifiable as such by their tails, clasp hands and raise their other arms behind them. Two animals and a stag above two winged griffins menacing an animal between them, fish, vase and ballstaff on right. The impression on reg. no. 2030 shows that there is a small fish to the right of the bullmen (see Fig. 179). Unclear line above the right bullman. Line borders. Part of the upper field is damaged in three different rollings and is therefore probably a chip on the original seal.

Some six impressions of this seal were found including 3 fragments from Room 5. The seal belongs to the Mitanni hard stone style of Porada (1948, nos. 1040 & 1041), but has some unusual features. The pair of bullmen, clasping hands and raising their other hands behind them, has no good parallels. The composition is irregular, but the engraving is quite detailed. In Mitanni seals bullmen are nearly always found in the better quality of design (e.g. Porada 1947, nos. 661 & 777), especially those closest to incipient Assyrian (e.g. Beran 1957, nos. 76 & 83). The posture of the bullmen seems to demand a tree or standard between them, but it seems clear from the photographs that no such object is present. Pairs of persons holding hands occur infrequently and the only case known to me which is remotely comparable is an impression from Kish (Buchanan 1966, 1000). The two griffins molesting a herbivore is a standard

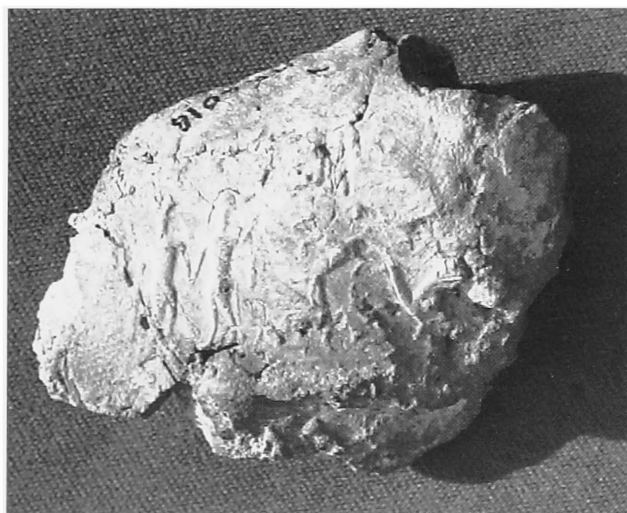


Figure 68. *Impression 3, from fill outside Room 3 (TB 6016). Door sealing.*

motif in this type of seal (Teissier 1984, no. 591; Porada 1947, no. 580), but also in the better quality series where the bullman is more at home (Parker 1975, no. 43).

Impression 4 (Fig. 70)

A nude(?) man in ascending posture holds a curved sword (?) in one hand and another weapon, or the tail of the rampant lion before him, in the other. The centre of the scene is missing. On the other side there is a nude man, possibly also in ascending posture, and a figure in 'interceding' attitude in a plain robe. Fillers: two animals, an animal head and a dot.

Unfortunately the rolling here reveals the ends of the design rather than the centre, making it difficult to understand. The most distinctive figure is the man on the right, with weapons in both hands, or perhaps the end of the lion's tail, and one leg in ascending posture, probably attacking a lion. In Mitanni seals of a better quality the lion is usually an attributive beast when combined with this figure, but this does not seem to be the case here. If we assume that we have most of the design, then we might have two men subduing a lion between them, but the parallels for such a scene are not convincing. The interceding figure in a plain robe who looks on the scene from the side is common in all types of Mitanni seal, except the simpler styles in hard stone of which Porada (1948, 1032) is a rare example. However, the well-preserved filling animal has a distinctive posture. Impressions from Rimah (Parker 1975, 32) and Nuzi (Porada 1947, 455) have a similar lion and animal, with the interceding figure, but the style is not the same. The drill is used less blatantly suggesting that the latter seals were probably engraved in faience.

C. Coarse Mitanni seals in hard stone

There are two major groups of Mitanni seals cut schematically in hard stone. Both are common in collections and are thus probably not restricted local styles, but their distribution remains uncertain. *Nuzi Group XXV* (Porada 1947, 80) has simple well-constructed compositions usually with two animals or monsters facing a tree or standard between them. It was very common at Nuzi towards the end of the archive, which on the ceramic evidence from Brak could lie as early as the late fifteenth century. The *Demon series* is even more common in collections (e.g. Porada 1948, 1050–62; Teissier 1984, 600–629), but does not occur at Nuzi. There is less feeling for composition but usually a schematic winged demon as a vertical element with various animals, monsters

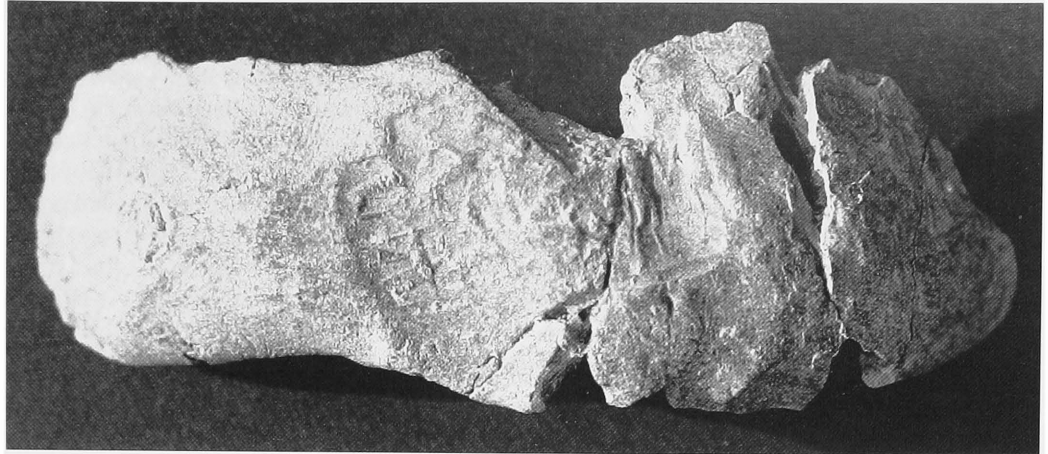


Figure 69.
Impression 3, and reverse, found in Room 3 (TB 6017). Strip of clay over large cloth-covered container, tied with string.

and symbols round about. As with the fine seals we may choose between geographical and chronological divisions: Group XXV could be early, or eastern, while the Demon series could be late (thirteenth century), or western. Tell Brak lies in the centre for both of these oppositions and does indeed appear to be transitional. I do not know of any actual provenanced seals belonging to Group XXV. The Marcopoli and Aleppo catalogues (Teissier 1984; Hammade 1987) illustrate in general terms the glyptic of north Syria. In both, the Demon series is well represented and Group XXV is rare or absent. Sealing 17, found by Mallowan at Tell Brak, is in the tradition of Group XXV, while seal 18, another of his finds, is closer to the Demon series. Collon has provided evidence to place the Demon series in North Syria in the fourteenth century (1982, nos. 108–9), but there is no reason to doubt that it continued thereafter. Two impressions from Assur (Beran 1957, 68 & 102, reign of Assur-uballit) and a seal found by Layard in



Figure 70. *Uninscribed docket bearing seal impression 4, Room 5.*

'Assyria' (Collon 1987, no. 273) attest to the group in the east. Since seals in hard stone are so rarely found in excavations, nothing can confidently be asserted from this distribution.

Impression 5 (Fig. 71)

This seal was originally roughly engraved and the impression is poorly preserved. One possible reconstruction is a winged demon, holding an animal by its hindlegs, and a man with raised arms (or an animal at right angles) facing the centre of the scene now lost. On the other side a man sits on a stool.

This impression provides only a part of the design, unfortunately (like 4) showing the two ends but not the centre; it is in a very poor state of preservation. The main scene seems to have consisted of an interceding person facing a seated figure, with unknown figures or objects in between. The possibility that this 'interceding person' is really an animal with its legs folded under its body, placed at right angles to the field, cannot be excluded. Both drawings that I have been given see it as a human. As may be expected, this combination of two human figures occurs in other Mitanni seals (though not very often,



Figure 71. Bulla fragment impressed with sealing 5, Room 11; ht of seal c. 1.8 cm.

see e.g. Porada 1947, 96; Parker 1975, 33; Collon 1988a, 47), but none of these is very similar in style. The seated man often occurs in low-quality hard stone seals (see discussion of seal 8) and, though at first sight our seal is not as coarse as most of these, it should be noted that the making of a bad impression will often soften the sharp edges of a harsh style of engraving. In most cases the seated man's stool does not have diagonal crossbars as in our impression, but there are cases where, as in 8, the man is drinking from a pot through a tube (BM 89402 and BM 103237). In BM 103237 and Marcopoli 600 (Teissier 1984) he occurs in the Demon series, and it may be suggested that the figure in the centre of our impression is a demon of this kind. The diagonal lines below the wings, certainly present on the right and possibly also on the left, would then be its arms. In BM 89402 the seated man is accompanied by a man mastering animals, which is another standard motif in this class of seal. Sometimes the winged demon masters animals, as in Porada (1948, 1036 & 1051), and in Marcopoli 590 we have such a demon in combination with a seated man. Although the demon's legs are normally rendered using straight lines, a row of drillings as in our impression is not impossible. The Brak impression, if I have understood it correctly, is then an early example of this type. Dr Collon has pointed out to me that the 'interceding person' does not show the coarse heavy drilling of the rest of the design. So we may have two overlapping impressions or, more likely, a re-cut seal.

Impression 6 (Fig. 60)

A tall winged figure, probably a demon, stands between a winged and a wingless griffin. A zig-zag band above the griffins, and a bucranium above the wingless one. A dot behind the griffins. Line borders.

The style here is simple but effective, with prominent use of a large drill. The seal has something in common with the Demon series, and indeed Collon (1987, no. 273), has all these elements. However, as with sealing 5, there is some doubt over this attribution, since our seal seems to be more regular and of a better quality than most seals of this kind. The angled bodies of the monsters are particularly out of place and draw us more towards the style of Nuzi Group XXV. Most of the monsters in this group have wings formed from a kind of rhombus-shaped grill, unlike our examples which have wings more comparable with those of the Demon series. Thus it may very tentatively be suggested that we have here evidence

for a transition between the earlier, better quality, Nuzi type, and the later, coarser, thirteenth-century Demon group. The pattern above the monsters' backs follows a convention of the Nuzi group (e.g. Porada 1947, 856 & 863) but is simplified in our seal. In almost every case the monsters in the Nuzi group flank a tree or standard, often topped with a winged disk, and it is possible that this, rather than a demon, is the correct interpretation of the faint traces at the edges of our impression which once again centres on the edges of the design. An impression from Alalakh (Collon 1988a, no. 135) shows much the same mixture of Demon series and Nuzi Group XXV features.

Impression 7

Three animals in a frieze with the head of one overlapping the hindquarters of the next. Rhomb and star.

This impression is from a door sealing from the store-room (5) adjacent to the Palace workshop. The animals resemble those commonly found in the simplest kind of Mitanni seal in hard stone, such as Porada (1948, nos. 1053, 1056, 1057 & 1062), but such animals almost invariably have their heads turned back. The latter all belong to the Demon series, and although simple rows of animals are not impossible, they do not have the head of one animal overlapping the hindquarters of the next as in our impression. This device is more typical of pseudo-Kassite and Elamite glyptic (e.g. Amiet 1972, 2054), but there, even where the animal has the same basic shape, it is drawn quite differently. Another possibility is that we have a re-used Jamdat Nasr seal (cf. Buchanan 1966, 40, and for the rhomb, 59). As Porada observed, such re-use normally takes place where the ancient seal is similar to those of the contemporary style (1947, 97). Dr Collon has suggested that the Brak seal could have been subjected to some re-cutting, e.g. in the star.

Seal 8 (Fig. 72)

Three nude men. One sits on a stool with a pot and a drinking tube. Another holds a large mace(?). The third kneels in the upper

field above a lion; he holds a short spear or a bow. There is an animal in front of him and an animal head (?) underneath.

This is a good example of the coarsest kind of seal in hard stone which still retains a Mitanni character. The seated figure, often as here drinking from a pot through a tube, is a common element in these seals (Teissier 1984, 594 & 599; BM 89402, 103237). Porada (1948, 1037) provides a particularly good parallel with all of our main elements except the kneeling man. The kneeling man brandishing a weapon is also a standard element in these seals (cf. especially Buchanan 1966, 911, from the Carchemish region).

D. Common Mitanni seals

The Common Mitanni style is the one found most often in excavations, and it is well represented at Brak. Although the type is very widely distributed, it has proved difficult to isolate regional styles. It originated at the beginning of the Mitanni period (Collon 1988a, 8–9), but in view of the high proportion of stratified examples which come from late contexts one cannot easily endorse Porada's view (1947, 80) that it was replaced in the fourteenth century by low-quality engraving in hard stone. Five groups of Common Mitanni seals, constituting about two-thirds of the whole genre, have a general distribution over the whole Mitanni world. These may be called the 'Humans and Trees' series, the 'Stag Group', the series in horizontal bands, Nuzi Group II and the 'Marching Men' group. The Brak glyptic is



Figure 72. *Haematite seal from the floor of Corridor 4; impression 8.*

related to the first three of these, although seal 14 may conceivably belong to Nuzi Group II. In addition, 12 belongs among the seals with rows of animals which are mainly, though not exclusively, of Palestinian origin. The 'Humans and Trees' group is the most common (30 per cent) and is the most important group at Brak. It includes 20 & 21, found by Mallowan, and now 9 and 10. Here the main scene consists of one or two humans with a tree or standard, with the rest of the surface usually occupied by animals and a guilloche. The 'Stag Group' comprises about ten per cent of the whole style, with an emphasis on Palestine. It is defined by a consistent structure with four vertical elements placed side by side. Each element rises the full height of the seal, and there is no horizontal division of the field. The repertoire of elements is restricted and consistent, with an emphasis on stags and sphinxes, and there are some recurrent stylistic peculiarities (Matthews 1990, 119–25). None of the Brak seals belongs to this group, but several are related to it. Designs with horizontal bands of repeating elements, of which seal 13 (Fig. 76) is a very typical example, have much the same distribution as the 'Stag Group'.

Seal 9 (Fig. 73)

Two men in long dresses raise one hand in front of them; between them a standard with crossbars but no head. Two animals look back at each other beneath a three-pointed object. Line borders. Found on a Level 4 floor.

In seals of the 'Humans and Trees' group the tree is normally of the 'bouquet' type. It is unusual for the top of the standard to be completely undecorated, but there are other cases which are as simple as this Brak example (e.g. Parker 1949, 102 & 113 (Lachish); Porada 1947, 333, 334 & 933). The humans, on the other hand, with their striated garments and one hand raised, are of an unusual type more at home at Ugarit than at Nuzi (Schaeffer-Forrer 1983, 9.266 & 24.522). In Common Mitanni seals it is more usual for both arms to be shown. The animals on the Brak seal have one of the standard horn types and follow the usual convention associated with this kind of horn in having some additional motif above the animal's tail (though not, in our case, actually attached; see also the Mallowan sealing 21). This motif is usually from the repertoire of elements which can be placed on top of a staff, such as the bouquet-tree or the winged disk and, although our example is not of the usual form, it should probably be interpreted as such.

Impression 10 (Figs. 50 & 74)

A man in a short dress faces a 'bouquet-tree', with his hands at his waist. Two stags are crossed at the shoulder, with a short line running up from the crossing. Line borders. Level 5 (fifteenth century).

This design, which also belongs to the 'Humans and Trees' group, is far more remarkable for its situation than for its glyptic qualities. It seems that it was



Figure 73. Faience seal, Common Mitanni style, Humans and Trees group (seal 9); from Level 4; ht of seal 2.0 cm.

rolled onto the compartmented dish for decoration, rather than as a label as in the case of the impressions sometimes found on storage jars. A seal from Palestine shows the same scene, but the antlers and the man's feet are stylized in a distinctive way typical of the 'Stag Group' (Parker 1949, no. 114), a feature which does not occur on the Brak seal. A pair of animals crossed at the shoulder is a standard motive in Common Mitanni seals, but in most cases the bodies are horizontal or nearly so. An impression from Nuzi shows a similar upright body, a similar stylisation in the animal's forelegs and the line above the joint of the shoulder, and a similar coarse delineation of nose and hair (Porada 1947, nos. 164 & 212; Parker 1949, no. 80). These examples are related to the 'Stag Group'.

Impression 11

Trace of an animal, probably either winged or crossed with another animal. From Level 4.

This design is so poorly preserved that little can be said about it, but the animal seems to be of a standard Common Mitanni type, perhaps crossed as in impression 10. Or we may have a Common Mitanni sphinx like Parker (1975, 21) or Porada (1947, 241).

Seal 12 (Fig. 75)

Three winged sphinxes face a 'bouquet-tree'. Above, a guilloche, with two lines beneath it. Line borders.

Compositions with a repeating band above a figurative scene are especially typical of Palestine (Parker 1949, 71, 76, 98 & 111). The rarity of such seals at Ugarit and Alalakh is noteworthy. The sphinx is one of the less frequent of the standard Common Mitanni motifs; there are some in the 'Stag Group' and others occur in the more complicated Common Mitanni seals that are most often found at Nuzi (Porada 1947, 417, 459, 487, 488, 497, 498 & 502). For the most part the former have horizontal bodies, like our seal, while the latter usually sit up with their bodies at an angle. The tall turbanned heads of our sphinxes are similar



Figure 74. *Compartmented dish with seal impression 10 rolled around the edge (see also Fig. 50); from Level 5.*



Figure 75. *Faience seal 12 with row of sphinxes and 'bouquet tree'; ht of seal 2.2 cm.*

to the detached human heads of a Rimah seal (Parker 1975, 24), but most of the heads in both groups of sphinxes are round-topped. A scene with a row of animals, often with a tree, is a Palestinian speciality. It is rare, however, to find a row of sphinxes in this scene (cf. Parker 1949, no. 77).

Seal 13 (Fig. 76)

Frieze of three fish, with a lattice below. Line borders.

In this horizontal bands design, the particular combination of elements, fish and a lattice, is one of the most common (Porada 1947, no. 83; Schaeffer-Forrer 1983, 23.11 & 24.227), but there is no reason to suppose that this association has any special significance.

Seal 14 (see Fig. 220:38)

Traces of a man beside a zig-zag panel.

This is our only glass seal, unfortunately too fragmentary for adequate description. Neither of the preserved elements is complete, nor is the zig-zag pattern of a standard Mitanni form. In the 'Stag Group' such zig-zag hatching is always duplicated (Porada 1948, 1008, see also 6). Alternatively, it could be half of a grill-pattern and thus a design like Porada (1948, 1007), belonging either to the 'Stag Group' or to Nuzi Group II. However, it is unusual for this pattern not to have horizontal strokes (Parker 1949, 182). The human figure has no recognizable features.

E. Conclusion

It is important to recognize that a collection of about twenty designs (including those found by Mallowan)

cannot be expected to represent either the range of styles in use at the site or their relative importance. Nor can it be assumed that we have a contemporary assemblage. Indeed one design, that of Saustatar, must be as much as a century and a half older than the date of the destruction of the Brak Palace. This must serve as a warning that other impressions may also be earlier than their date of deposition, though the door sealings 3 and 7, both of which derive from what seems to have been a storage area, are unlikely much to predate the destruction of the Palace. This may also be true of the other impressions on clay lumps (5 & 11). The Brak designs are almost evenly divided between those engraved in hard stone and those of Common Mitanni style in faience. The latter are very much what we might expect. The former almost certainly give us no indication of what was the best local style at the end of the fourteenth century; this remains a major lacuna in our understanding of Mitanni glyptic. 5 and 6, however, may give us a useful pointer to the relationships between the coarser groups in hard stone, while 9, 10 and 20 provide fifteenth-/early fourteenth-century examples of the Common Style.

We may conclude by noticing a few more objects. Most interesting are nine blank cylinders in glass of which three were found in Room 22 in the Mitanni Temple, five came from Room 11 and one from Room 1 (Fig. 223:1). While it is possible that they were made for some other purpose (e.g. beads), they can readily join the existing, though limited, evidence for the use of glass in glyptic already in the fourteenth century (Brak 14; Collon 1988b, 5, from Mohammed Arab; Parker 1975, 39 & 40, from Tell al-Rimah). The influence of Egypt is visible in Figure 221:70, and although this object is probably a bead, its linear engraving is similar to that of some of the

cruder Egyptianizing cylinder seals (e.g. Buchanan 1966, 1010). Finally we may observe the guilloche on the magnificent Nuzi ware sherds (Fig. 48). Guilloches are of course commonplace in Mitanni glyptic, but this one, probably because of the larger field available in pottery, is of an elaboration not generally found in seals. It has three interwoven strands, each strand being triple. Such multiple



Figure 76. *Faience seal 13 with fish frieze, Room 5.*

strands are common in seals, but there are rarely more than two of them (see Beran 1957, 73, 4 triple strands in a context comparable with the Brak vessel; Porada 1981/82, 24, 3 triple strands as here; these designs date to the fourteenth century).

F. Supplement: Mitanni glyptic from the Mallowan excavations

Impression 15 (Fig. 77)

Three rollings on a clay bulla fragment, possibly originally attached to a basket with a handle.

Seated man probably holding several objects faces a figure standing on a lion whose dress is drawn up at the knee. Between them, a nude figure with a long lock of hair, perhaps holding a cup; a hatched box-like structure; lines radiating from the hand of the right figure; and perhaps other objects. On right, unclear object, possibly large frontal head or volute tree. On left, probably four animals or monkeys, with possible winged demon beyond them; disk(?) above. A guilloche and a base line lie below the whole scene. All the details near the edges of the preserved area are unclear and the microscopic detail makes the entire description uncertain.

Seal 16 (Fig. 79)

Mottled grey stone, not very hard, surface poor, cracked.

A figure in a short kilt and a headdress with possible horn at the front has one hand raised in the smiting posture, holding a weapon(?), and the other grasping an inverted horned animal. On left, flying bird above lion attacking horned animal. In field, bucranium, animal head, stroke, ballstaff, vase and fly.

Impression 17

Three rollings on fragment of peg sealing from 'HH B, B floor'.

Volute-tree flanked by two animals, small animal on left. Behind, winged disk above animal or kneeling figure. Baseline. The details are so small, and so inconsistent on the three rollings, that they are hard to understand: contrast Buchanan's 1966 description (no. 920).



Figure 79. *Impression 16 of grey stone seal from Mallowan excavations.*

Seal 18

Winged disk above horned animal and scorpion, dot and saltire in field; top and bottom lines. Cut style.

Seal 19 (Fig. 78)

Seal, medium hard orange-brown opaque stone. Aleppo Museum, label says 'Tell Brak' in Arabic but this provenance is not certain. Hammade 1994, no. 404.

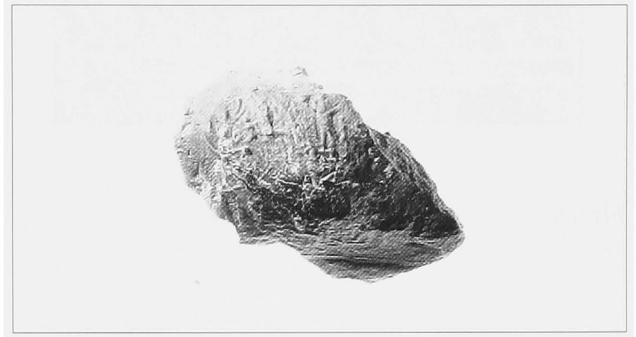


Figure 77. *Clay bulla fragment from Mallowan excavations, impression 15.*



Figure 78. *Impression 19 of stone seal in Aleppo Museum, possibly from Mallowan excavations at Brak.*



Figure 80. *Impression 20 of faience seal from Mallowan Level 2.*

Two horned animals face a rhomb between them, two concentric circles above. Behind them a 'winged disk': it is not clear whether this is a bird, a demon or winged disk. Dots in field, top and bottom lines. Cut style.

Seal 20 (Fig. 80)

Seal, faience, now white. BM 125795.

Mallowan 1947, pl. XXII: 1–2, p. 136–41, B. 803, site HH, 1.5 m below surface, contemporary with Nuzi ware and the 'face vase' (Mallowan 1947, pl. XL). Matthews 1990, no. 609.

A human in a long robe raises both hands to a 'bouquet-tree' with strokes across the trunk. Two horned animals at right angles above a line, guilloche below. Top and bottom lines. Common Mitanni style.

Impression 21 (Fig. 81)

Two rollings on fragment of clay jar sealing with impression of jar rim and neck on back.

Two humans in long robes with their hands at their waists face a 'bouquet-tree' between them. Behind them, two(?) horned animals look back at a 'bouquet-sprig' between them. Bottom line; unclear if the edge visible at the top is a top line or the edge of the seal. Common Mitanni style.

Impression 22

At least two rollings on bulla fragment, reverse



Figure 81. *Fragment of jar sealing 21 from Mallowan excavations.*

broken.

A human is back to back with an animal(?) above a horizontal line, perhaps foot of second human on left; animal(?) below. The upper rolling shows part of a human. Common Mitanni style.

Acknowledgements

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Chapter 4

The Pottery

(Figs. 181–217)

Six hundred and ninety-nine complete or near-complete pottery vessels and decorated sherds are illustrated in Figures 181–217 at the end of the volume (note that numbers in bold in this, as in other chapters, refer to specific objects illustrated on these figures, and that further information about the sherds illustrated within the text can be found on pp. 282–3). Although this represents the total number of reconstructable vessel shapes from the Area HH excavations, these are but a small proportion of the total number of vessels recovered and an even smaller proportion of the total quantity of pottery once used by the inhabitants of second-millennium Brak. A high proportion of the material recovered comes from the destruction of the Mitanni monumental buildings. This reflects a universal fact of archaeological life, that tidy peoples, who sweep clean their floors, leave little artefactual material for the archaeologist, and that we must hope for catastrophe if we are to recover meaningful ranges of artefacts. Thus in peaceful times, and indeed in the context of important buildings like the Mitanni Palace in which the same paved floors continued in use for over 200 years, little survives of earlier furnishings. Such material may be recovered from rubbish tips or from levelling fills or even mud-bricks (the red bricks of the Mitanni buildings, however, were made of clean, off-site soil), but in such instances all evidence of original date and context is lost beyond a simple *terminus ante quem*. In addition, the sequence at any tell site is compromised, often severely, by this secondary or even tertiary deposition of rubbish as levelling fill or raw material for mud plaster or brick. In the Hamrin we once found a large 'Ubaid sherd in the plaster of a modern mud roof, while the immediate surroundings of the dig house at Brak are now contaminated with Roman sherds which derive from the mud-bricks used to build the house. These had been made locally, using the closest available water, an artesian well northwest of the tell which had long ago attracted a Roman settlement (*Iraq* 55, 1993, fig. 39). Thus there is no such thing as a 'complete sequence' on any Mesopotamian site, and it is also the

case that all too often the most interesting objects are found in secondary deposits of rubbish (for example, two of the three stone figurines from the HH trenches). In this respect we must be grateful for the seriously destructive character of the final Middle Assyrian campaign against the Mitanni cities of the Khabur region. One can be certain that the Middle Assyrian army removed far more than it left behind, but they were at least also responsible for the survival of a quantity of valuable material, overlooked or discarded more or less *in situ* in the Temple and Palace.

On any archaeological site there are of course other factors that affect the types of objects that survive. Context itself has a restricting effect and on tell sites buildings can rarely be excavated *in toto*. We have in fact excavated all surviving rooms in the Mitanni monumental buildings but, regrettably, much of the Palace had already been lost through the erosion of the tell. The private houses south of the Temple were disappointingly fragmentary in plan, as, it would seem, were Mallowan's, to judge from his surviving plans (1947, pl. 63). Although it has been possible to establish here a generalized sequence of material culture over some 500 years, the gaps remain far greater than the sum total of our evidence. Moreover, the evidence for burning and apparent destruction within the sequences of houses suggests repeated disruptions which seem at odds with the visible continuity of the Mitanni monumental buildings. There are, nonetheless, good contexts within the HH trenches (*inter alia*, the Level 8 small shrine and the Level 5b house floor) but the bulk of the pottery recovered elsewhere in these trenches was not as securely stratified as we would have liked. We have already referred to the imbalance between the pottery from the monumental buildings and that from Trenches A–D, in terms both of quality of context and quantity of sherds. Coincidentally, almost precisely the same total volume of soil was excavated in the two operations, a fact relevant to the interpretation of the bar charts. All sherds were processed in the field, and the accumulation of

information in the sherd notebooks is reflected in the 'range' column of the charts accompanying the drawings at the end of the volume.

The Mitanni and Old Babylonian settlements at Brak occupied the higher northern areas of the modern tell; Mitanni houses were also found in the ploughed land north of the tell (*Iraq* 55, fig. 39), and there would appear to have been at least one late Old Babylonian/early Mitanni house on the south-western area of the mound (referred to as Area SS), of which no floors or walls survive. The latter occupation is identified by a concentration of well-made painted vessels found in surface pits or simply in the sub-surface soil (*inter alia* vessels 294, 698 and an unusually well-made, burnished, red-edged plate, locus SS 18). A large clay-lined pit of Old Babylonian date, found during the excavation of Area AL (site plan, Fig. 3; see also Fig. 167), provided our largest single collection of early eighteenth-century pottery, while a few Old Babylonian vessels were found in Area TW, on the construction level of an Old Babylonian city gate (Fig. 166). In the following sections this pottery is considered together with that from the stratified excavations in Area HH.

A. Early second-millennium pottery (Isin-Larsa)

Little material of this date has been recovered, since it would seem to mark the latest extensive occupation of the lower, southern portions of the tell, now heavily eroded. In Area HH occupation of this date lies below the level to which our excavations descended. Pottery of southern Mesopotamian Isin-Larsa types has been found at the western and northeastern limits of the lower southern mound (Areas SS and FS), suggesting that the large urban settlement which we know to have characterized Brak in the fourth and third millennia was still in existence early in the twentieth century BC. The latest surviving pottery in these areas includes such Isin-Larsa types as *UVB* 18, pl. 21:e and pl. 23:f, and will be treated in more detail in the second final report, devoted to the third-millennium city (we are indebted to Professor McGuire Gibson for confirmation of the date and attribution of this material). The unusual Anatolian vessel 604 comes from the same SS context (Fig. 82). Its closest parallels lie with the 'grape-cluster pitchers' of Alishar Höyük, though the technique of manufacture is not comparable (von der Osten 1937, fig. 192; see also the bell-shaped cups, fig. 174). The Brak piece is wheelmade and the individual 'grapes' have been pushed out from the vessel wall. Other items of possibly 'Cappadocian'

origin have been found on the surface of the site (*inter alia* the lead figurine Fig. 163 and the stamped fragment Fig. 65). Other 'miscellaneous' pottery, illustrated on Figure 216, includes two examples of type 697, which are almost certainly of third-millennium date and presumably derive from second-millennium mud-bricks or levelling fill.

B. Old Babylonian pottery

The extent and importance of the Mitanni buildings have served to restrict access to the Old Babylonian town, severely limiting the areas in which we have been able to excavate it. Kilns of second-millennium date were found at the bottom of the small trench adjacent to the Mitanni shrine (HH Level 10, Figs. 37-9) and near the surface of the mound, dug into the Old Babylonian gate foundations in Area TW (visible in the foreground of the photograph, Fig. 166). Some pottery from the Trench A4 kiln and neighbouring structures, together with that from the Area AL rubbish pit, closely parallels Old Babylonian material from Tell al Rimah which can be dated on epigraphic evidence to the time of Shamshi-Adad. This constitutes the only material of this date (c. 1800

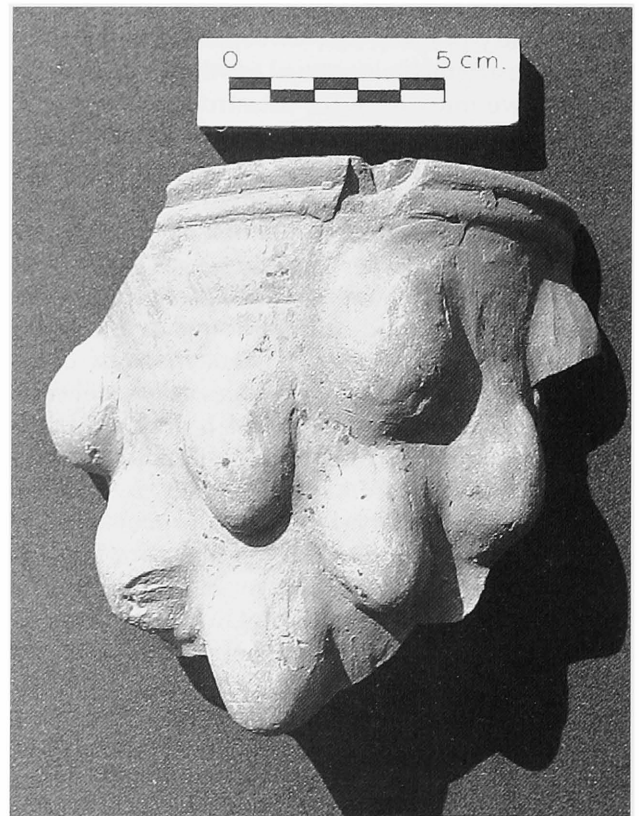


Figure 82. Rim sherd of 'grape cluster' vessel 604, c. 1950 BC.

BC) recovered during recent excavations at Brak.

The other HH trenches were excavated down to Level 8, almost certainly Late Old Babylonian, to be dated sometime towards the end of the seventeenth century or the very beginning of the sixteenth century BC. Potential information from the most productive trenches, C4 and D, at the southern limits of what survives of Area HH, was unfortunately much reduced by the fact that the southern extensions of otherwise well-preserved houses had completely disappeared through erosion (Fig. 83). The most interesting structure excavated here was a well-built vaulted room, referred to as the 'small shrine' owing to the presence of a niche in the west wall and a stone figure resting in the doorway (95, see Figs. 56 & 136). Other Late Old Babylonian pottery was recovered from the lowest level reached in the long north-south section (e.g. 635, Fig. 214); vessels 207, 208, 255, 268, 482 came from the construction level of the Old Babylonian foundations in Area TW. With such limited exposure our range of Old Babylonian pottery is inevitably restricted. By contrast, the evidence for this period from the much more extensive excavations of this date at Tell al Rimah, some 140 km to the southeast, across Jebel Sinjar, is not only greater but more reliably dated by its association with a large number of cuneiform texts. Thus we have relied heavily on Rimah for the comparative dating of Old Babylonian pottery at Brak. One of the interesting facts that has emerged from the excavations at Brak, however, is that there are both very strong parallels with and very considerable differences from the pottery of Tell al Rimah. This is especially true of the Mitanni pottery, discussed below, but two of the most distinctive, and common, Old Babylonian types at Rimah, the banded beaker (banded in the sense of a raised, collar-like band on the shoulder) and the shallow, rough-based bowl (*Rimah* pls. 46-51 & 74:797-801) would appear to be virtually absent at Brak. The banded beaker dates

primarily from the period that bridges the essentially 'political' labels 'Late Old Babylonian' and 'Early Mitanni', that is approximately contemporary with Brak Levels 8-6, yet at Brak only two or three possible examples have been found. Equally, a single, burnished, rough-based, shallow bowl (653) comes from Brak Level 6, whereas at Rimah this was the most common Late Old Babylonian vessel type. Of course no site ever produces a 'complete' sequence, as we have already noted, and 'sequences' differ even within the same site, but at Brak one would have expected sherds of these very distinctive types to have occurred in levelling fills, or bricks, or among the eroded sherds on the tell surface, had they been common at the site.

1. *Khabur ware*

Undoubtedly the most easily recognized Old Babylonian pottery is Khabur ware. Our use of this term is explained in detail in the Rimah pottery volume; for the Old Babylonian period it includes, basically, those painted, Middle Bronze Age vessel types illustrated by Mallowan from nearby Chagar Bazar (1937, 1947). We retain, moreover, Hrouda's (1957) concept of an 'older' and 'younger' Khabur ware, despite the recent expression of views to the contrary (Stein 1984; Hrouda 1989). Our reasons lie in two simple facts: 1) that it is impossible to distinguish between the



Figure 83. Trench C4 looking north, showing the southward slope of the tell and the heavily eroded occupation levels. In the foreground, walls of Level 8 (see plan Fig. 56).

painted wares of 'Late Old Babylonian' and 'Early Mitanni' levels, a statement for which there is uncontrovertible evidence at both Rimah and Brak, and 2) the differentiation usually made between

'older' chaff- and 'younger' grit-tempered fabrics does not hold universally true among the large quantities of pottery excavated at these two sites where both types of temper are employed in both periods, and the use of chaff is as much a measure of the size and purpose of the vessel as of its date (see, for example, the discussion of the Rimah 'wine jars', a classic early Khabur type, *Rimah*, 53).

Among the most distinctive early Khabur ware at Brak is the jar or bowl with a sharply ribbed band which protrudes slightly from the shoulder of the vessel, found in Level 10 contexts in both the Trench A4 kiln area and the large pit in Area AL (247, 291–302). The small bowls are often unpainted (291 & 192); on the larger vessels painted decoration usually consists of simple parallel bands, while some examples from the AL pit bear the cross-hatched triangles which adorn many Khabur ware jars (299, 301 and Fig. 84). Examples of this ribbed type from

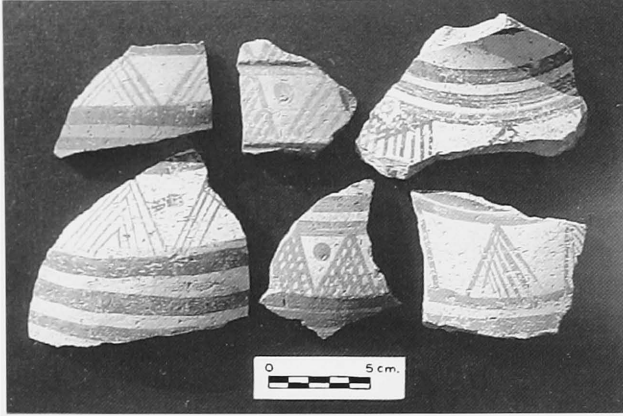


Figure 84. Sherds of Old Babylonian Khabur ware jars (see p. 282).



Figure 85. Late Old Babylonian Khabur ware sherds.

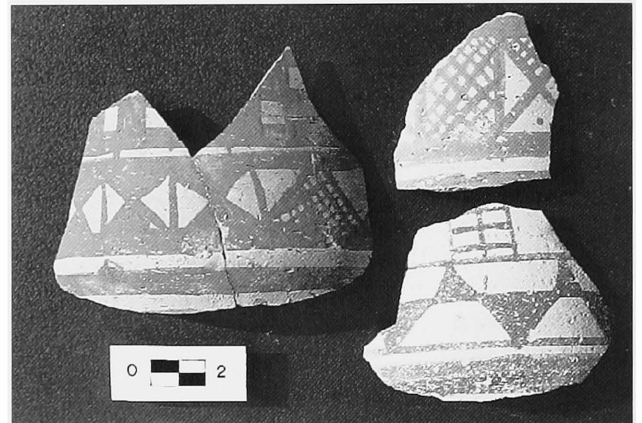


Figure 87. 'Grain measure' sherds, Levels 8 and 3 (lower right).

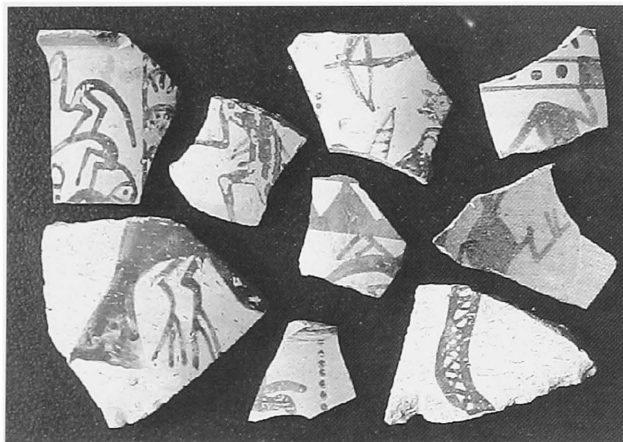


Figure 86. Old Babylonian sherds with anthropo- and zoo-morphic decoration (largely surface finds cf. p. 282).



Figure 88. Old Babylonian and Mitanni Khabur ware (see p. 282).

closely dated contexts at Rimah can be attributed to the time of Shamshi-Adad (*Rimah* 879, 880, pl. 19d). Bowls 298 and 302 display another very characteristic feature of Khabur ware open vessels, and that is the deliberate application of dribbles of paint to the vessel interior. Superficially, this may look careless, but it occurs on elaborate vessels, otherwise carefully painted, and one can only suppose that it is the hallmark of special workshops or even particular craftsmen. It is also one of a number of Old Babylonian stylistic traditions which continue well into Mitanni times (see, for example, Fig. 190).

A related group of bowls or jars is illustrated on Figure 191. These are distinguished by a markedly concave curve to a sharp carination on the shoulder (243, 244, 248 & 249); with the exception of vessel 247 these lack the protruding ribbed band of the previous type. All the stratified examples come from Level 10. At Rimah the combination of simple grooved and painted ornament also identifies Khabur ware of the time of Shamshi-Adad (236, 245, 246, 290 & 637). Another very distinctive early Khabur ware type is the shallow bowl with very marked ribbing (237-8 & 241-2), a shape manufactured also in dark grey-burnished fabrics (170-72). Three of the illustrated painted examples display on their rims another very characteristic Khabur ware feature: groups of parallel stripes painted across the rim, found commonly on bowls but also occasionally on jar rims (*inter alia* 219 & 236). Such decoration occurs also in Late Old Babylonian contexts (212, 214, 265, 310 & 481, Level 8) and in Level 7 (210 & 213). Variations of this type persist in early Mitanni levels (215, 216, 220, 226 & 287) though at Brak we have no complete examples of Mitanni date.

A variety of Khabur ware jars occur throughout the Old Babylonian levels, including the well-known 'wine jar' (312, cf. *Rimah* pl. 90), a similar large squat jar with a drain hole at the base (313), and a number of smaller tall- and short-necked vessels. The most common form of ornament is of course the simple painted stripe but in Level 8 in particular there occur more unusual variations of the characteristic cross-hatched triangle with interspersed painted dots (253 & 306; see also Fig. 85). Also from Level 8 was a range of smaller jars and cups (251, 253, 255 & 256), types which again continue into the earliest Mitanni phase (252 & 254). In Area TW a variety of small carinated bowls was found (207 & 208), again closely paralleled at Rimah; further examples come from Level 8 (205 & 206).

Another very recognizable Old Babylonian (and Early Mitanni) type is the so-called grain measure, a

term first used by Mallowan (*Iraq* 8, 1946, 148; for the distribution at Rimah, see *Rimah* fig. 38). A large number derive from Brak Level 8 (*inter alia* 259, 265, 275 & 277; Fig. 87). The figure with bow and arrow (276 and Fig. 86) is a surface find, but almost certainly belongs with this Late Old Babylonian group (as do 281 & 282). 'Grain measure' 263 was found in Level 5 but its busy ornament suggests the possibility of an original context of slightly earlier date (cf. *Iraq* 9, 1947, pl. 67, 19, from Mallowan's level 3, and the Alalakh Level V example, Woolley 1955, pl. 95). In addition to the 'grain measures' a number of other characteristic Mitanni types are found already in the Late Old Babylonian period. These include deep open bowls or urns (284 & 285, Level 8) which are clear precursors of one of the most distinctive Mitanni pottery types and one on which the Old Babylonian workshop tradition of 'paint splash' persists (Fig. 200), proof if needed that our historically-based terminology reflects changes in political hegemony but not of local populations or their potters.

The second-millennium beaker tradition is well-illustrated at Brak, but again we defer to Rimah for the Old Babylonian period where the epigraphic evidence provides a more precise chronological framework. Interestingly, at Rimah the shouldered beakers of the time of Shamshi-Adad and Hammurapi are for the most part undecorated (*Rimah* pl. 73), and it is only in Late Old Babylonian times that the well-known striped beakers appear in quantity (*Rimah* pls. 74-5). The latter are accompanied by a number of more elaborately decorated examples (*inter alia*, *Rimah* 824, 832 & 840). At Brak only one beaker fragment has so far been recovered from Level 10, presumably a factor both of the contexts excavated and of the very limited area of excavation; painted beaker 350 comes from Level 9. Level 8 produced similar short-necked striped beakers (355) together with examples with a sharper angle at the junction of the neck and shoulder (356 & 380). A variety of similar beakers with button bases continue throughout the pre-Level 2 Mitanni levels. Bowl types 367 and 368 are also characteristic of Level 8.

2. *Grey-burnished ware* (see distribution graph Fig. 112) Grey-burnished vessels, largely bowls, are a feature of both Old Babylonian and Mitanni pottery, though in general the shapes and the colour differ. The shades of grey run from pale, almost white to greyish brown to almost black (see Munsell colours, chart Fig. 189). As a generalization the darker greys are especially diagnostic of Old Babylonian date, but they also occur in early Mitanni contexts (165, 179-84 & 197).



Figure 89. Mitanni sherds from locus 476, Level 6.

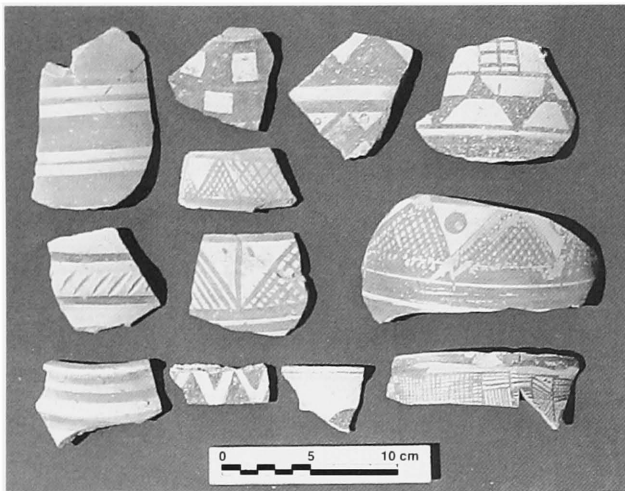
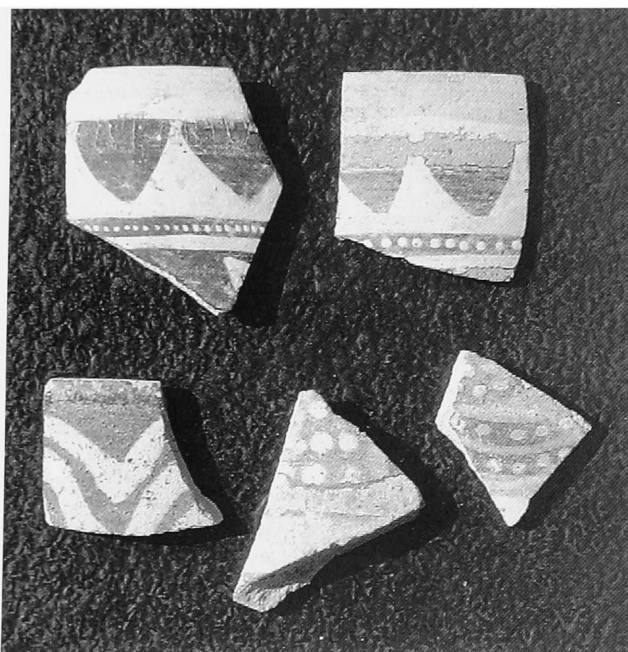


Figure 90. Mitanni Khabur ware sherds, Levels 5 & 6.



Hammer-headed rims are particularly characteristic of Old Babylonian grey ware, the beautifully burnished bowl 184 lying at the chronological boundary of Late Old Babylonian and Mitanni.

3. Other pottery types

A well-stratified collection of jars was recovered from the Level 8 shrine in Trench D. These include distinctive combed, incised and cable decoration (639–41, 644 and type 652) and the deep urn 644. Incised wavy line ornament is also found on large urns in Levels 7 and 6 (645 & 652), and in comparable Early Mitanni contexts at Rimah (*Rimah* pl. 65), yet another example of the continuity of ceramic style within the Old Babylonian to Mitanni time frame.

All the complete vessels and profiles of Old Babylonian date from the 1980s excavations, together with a number of sherds, are published here. We have deliberately not provided type and ware percentages, which would have been seriously misleading owing both to the small quantity of complete, *in situ* pottery and the very limited extent of the exposures of this date.

C. Mitanni pottery

Although our exposure of Old Babylonian occupation has of necessity been minimal, the Mitanni levels provide for the first time a reliable sequence of Late Bronze Age pottery and other materials from a major city within the Mitanni heartland. Although there is comparable material from Rimah, the latter lacks the vertical definition of that from Brak. Moreover, Rimah came under Assyrian control sometime in the fourteenth century, at which time Brak and its neighbouring sites remained flourishing Mitanni centres. Both Alalakh and Nuzi have produced Mitanni pottery and other objects, but both are peripheral sites with their own cultural traditions. The date of the destruction of Nuzi remains a matter of debate, but the closest parallels with Brak lie in the grey wares of Level 5. On the ceramic evidence from Brak this destruction is likely to be earlier than the late fourteenth-century dates recently proposed (*inter alia*, Stein 1989). Indeed there is relatively little relationship between the Mitanni Palace pottery and that from the destruction level at Nuzi. At Brak the absence of the Nuzi grey ware types, common in Levels 5–4, is particularly striking.

Figure 91. Nuzi ware, including Level 8 fragment 453, lower left; ht of upper lefthand sherd 2.4 cm (see p. 282).

1. *Khabur ware*

The evidence from both Brak and Rimah demonstrates unequivocally that in the absence of epigraphic documentation a separation of Late Old Babylonian from Mitanni Khabur ware is difficult, if not impossible. Only the presence of either Nuzi ware or core-moulded glass vessels, which appear at Rimah in an early Mitanni context and at Brak in Level 6, provide a clear signal of Mitanni date. (At Brak four examples of Nuzi ware have been attributed to Level 8 (see Fig. 92). Of these 452, 453 and another tiny fragment from locus 437 must remain suspect owing to their very small size. A larger Nuzi ware sherd comes from locus 410, also 'Level 8', but the proximity of this deposit to the tell surface can be seen in Figure 83.) Red-edged plates and pie-crust potstands are also typically Mitanni; indeed the single 'Level 8' red-edged bowl sherd comes also from locus 410. Pie-crust potstands occur in quantity from Level 5 onwards; a single example was found in both Levels 7 and 6.

The painted Khabur ware of early Mitanni date remains indistinguishable from its Old Babylonian predecessor, even to the survival of Old Babylonian 'paint splash' (222, 223, 228, 239 & 240) and the use of groups of paint strokes across bowl rims (215, 216, 220 & 287). In Level 6, contemporary with the construction of the Mitanni Palace, a variety of more imaginatively decorated bowls is found (*inter alia* 228 & 233). See also the Level 6 sherds in Figures 89 and 90. Small bowls with painted bands begin in Level 8 and continue in early Mitanni contexts (230–33). Old Babylonian Khabur ware patterns now appear in more inventive designs, for example the painted triangle and interspersed dot on the base of bowl 224. Shouldered beakers and 'grain measures' continue, the latter often decorated with elaborate patterns of birds (Fig. 201).

A new technique of painted rim decoration appears, both on grain measures and one of the most striking Mitanni types, the large open urn-like vessels of Figures 191 and 200. This Mitanni rim ornament consists of a variety

of geometric patterns, including running zigzags (270, 271 & 455–7). The latter design is attested on a single probably Late Old Babylonian specimen (479), of which the stratification is insecure. As we have already noted, the workshops which produced these large and very characteristically Mitanni urns retained the Old Babylonian paint splash tradition. The addition of cable ornament on painted vessel 480 is unusual.

To what extent painted Mitanni types should be classed as Khabur ware remains as much a matter of definition and usage as inherent logic. The fact that there is no clear demarcation between Old Babylonian and Mitanni painted pottery, in particular among the unquestionably Khabur ware categories of shouldered beakers, jars, carinated bowls and grain measures, all of which are found in good Mitanni contexts, leads us to prefer Hrouda's original concept of 'older' and 'younger' Khabur ware, and to retain the general term 'Khabur ware' for both.

2. *Nuzi ware*

The case for retaining the conventional use of the term Nuzi ware (*pace* Stein 1984) is argued in *Rimah*, pp. 54–5, and is followed here. That is, 'Nuzi ware' should designate solely those vessels on which a pattern in white or, occasionally, cream has been overpainted on an underlying monochrome design. One of the most distinctive ceramic types ever manufactured in ancient Mesopotamia and North Syria, its origins coincide with the period of Mitanni hegemony. As noted above, four sherds (including 452

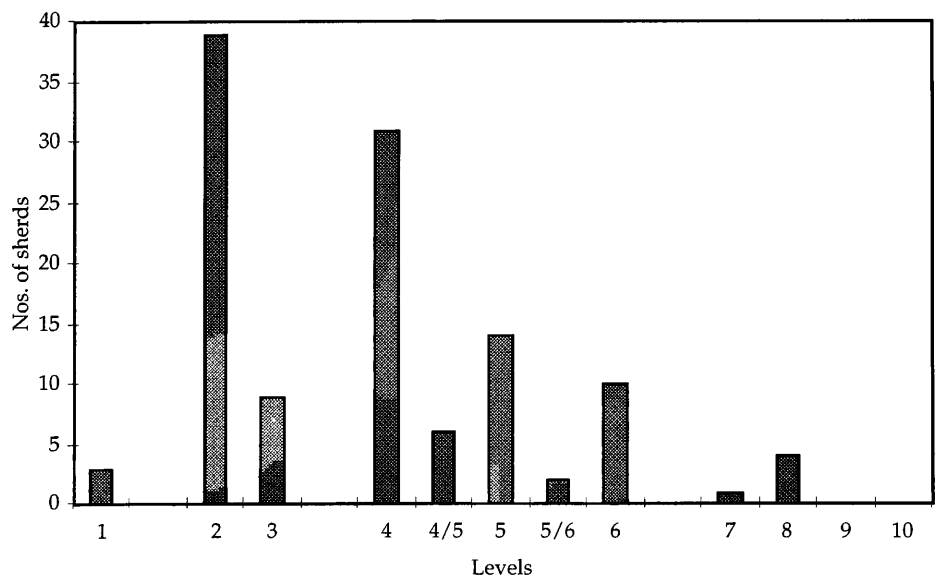


Figure 92. Distribution of Nuzi ware.

& 453) allegedly recovered from Level 8, must remain suspect owing to their small size, to the highly active jerboas and other burrowing animals at the site, and, in the case of the single locus 410 example, to its proximity to the surface of the tell. Moreover, only one Nuzi ware sherd was recovered from Level 7 (Fig. 98:9), which possibly marks the earliest Mitanni occupation of the site. The unstratified Nuzi ware sherd 454, however, is decorated with the 'low crouch' running bird style characteristic of Late Old Babylonian vessels (see below), additional but equally inconclusive evidence for either the slightly earlier appearance of Nuzi ware or the persistence of what has been identified as Old Babylonian in style. The distribution of Nuzi ware at Brak is illustrated in Figure 92. Single sherds and whole vessels are given equal weight in these graphs.

The earliest unequivocally stratified Nuzi ware occurs in Level 6 and, interestingly, with a repertoire of vessel shapes closely associated with the Khabur ware tradition. See, for example, the shouldered beakers (Figs. 93, upper right & 94, lower right), which retain the Khabur ware practice of parallel painted bands but are here overpainted in the Nuzi style (see also Fig. 96:5). Especially characteristic of early Nuzi ware at Brak is the broad sweep overpainting illustrated on Figure 93. On the lower righthand fragment this even includes bands across the rim in Old Babylonian Khabur ware style (420, see also Fig. 96:5). Other early types are illustrated in Figures 95 and 97 and include ring-based bowls (443) and a jar with filter pouring lip (437). These early Nuzi ware types are easily missed in excavation since, at least at Brak, the surviving white paint can be very faint. It is often better bonded, however, than the paint on later Nuzi ware, for example the very splendid beaker 392 on which little of the original pattern had survived (see also jars 400 & 401, on which no pattern whatsoever was reconstructable). On some of the earliest examples (e.g. 453 and a Level 6 sherd from HH 494, Fig. 96, sherd 7) the colour of the overpaint appears more cream than white. Early Nuzi ware comparable with that from Tell Brak is found also at Tell Hamida, southwest of Tell al Hawa (Zimansky 1995).

Both straight-sided and shouldered beakers occur among the Level 6 Nuzi ware (408, 409, 422 & 451, the latter decorated with running birds). Unfortunately no complete profiles have survived, but this group undoubtedly includes the straight-sided, footed type (e.g. 415). Both large 'grain measures' and smaller beakers of similar shape are found early in the Nuzi ware repertoire (410 & 431 and Fig. 97).

Note also the range of bird-decorated 'grain measures', stylistically indistinguishable from their Khabur ware cognates (compare, for example, 471 & 445). A number of the earlier Nuzi ware sherds come from very thick-walled, large vessels, of which no complete examples survived (492–6); these must have come from vessels on the scale of the very beautiful, large jar found in the Mitanni temple (402).

Floral decoration is not uncommon (Figs. 99, 172 and 421 & 433), and at both Brak and Rimah there have survived tiny sherds of a very delicate, thin-walled beaker type once thought characteristic only of sites in the west (Alalakh, Woolley 1955, pl. 102:a; *Rimah* 718–20; Brak Fig. 91, upper row). Small jars are common in the later Nuzi ware repertoire (398, 399, 400, 425 & 430). Among the more unusual Nuzi ware pottery are a single tripod vessel (444) and a pig pot (601).

3. Drinking vessels

The large and very distinctive collections of drinking vessels found at Mitanni sites have led to an association expressed in published works which calls to mind the later Celtic thirst for Roman wine. But such dissipation was not a peculiarly Mitanni trait. The extensive variety of Old Babylonian shouldered beakers found at Rimah and elsewhere, the clear association of drinking tubes with Old Babylonian Khabur ware jars in graves at Chagar Bazar and Baghouz (Mallowan 1937; du Mesnil du Buisson 1948, Tomb Z 47), together with the cuneiform records of issues of both beer and wine at Old Babylonian sites like Tell al Rimah attest an equally healthy thirst in the Middle Bronze Age for which equally elegant drinking cups were *de rigueur*. Higher status merited larger rations, and we know from an Old Babylonian letter from Tell al Rimah that the ruler's wife and her sister drank 'regularly' with the goddess Ishtar of Qatara, and with the unusual privilege of iced drinks (OBTR letter 79).

Among the innovations of Mitanni workshops was the elegant, straight-sided, footed beaker. The earliest example at Brak is a beautifully burnished, undecorated specimen from Level 7 (555). Whether or not the inspiration came from Larsa period goblets (Stein 1984, 12) is in a sense immaterial. The Mitanni straight-sided beaker constitutes a very distinctive and specific pottery type, apparently far more common than the southern goblets, very clearly associated with Mitanni hegemony, and to which the painting techniques of both Khabur and Nuzi styles were applied. At the same time, as we have seen, the striped shouldered beakers of Late Old Babylonian

The Pottery

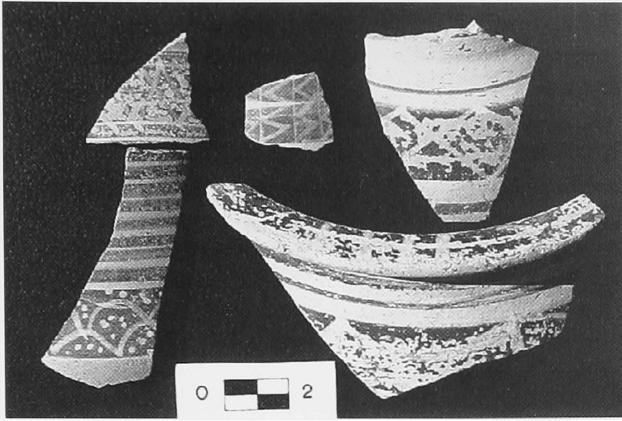


Figure 93. Early Nuzi ware (see p. 282).

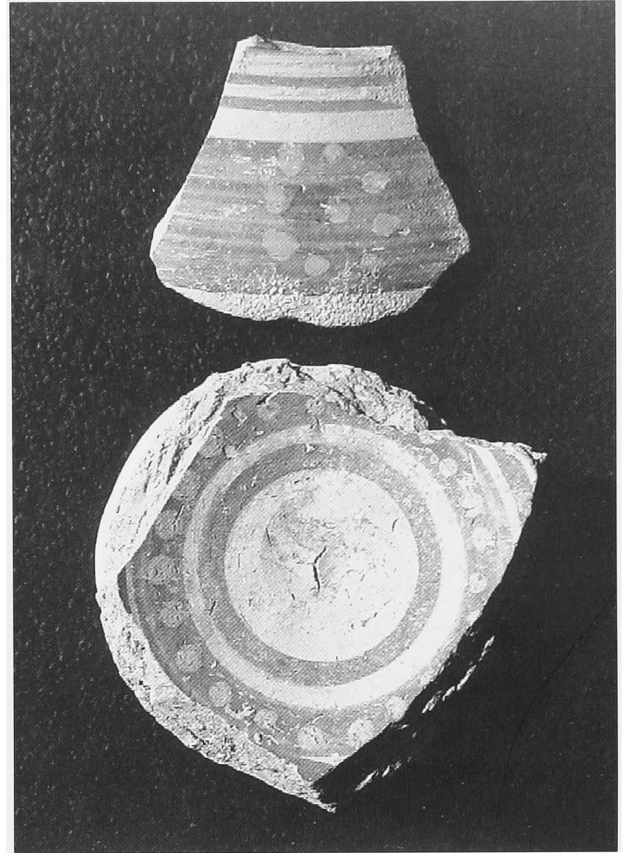


Figure 95. Nuzi ware sherds; width of lower sherd 5.7 cm.



Figure 94. Level 5 Nuzi ware (except upper left, Level 2).

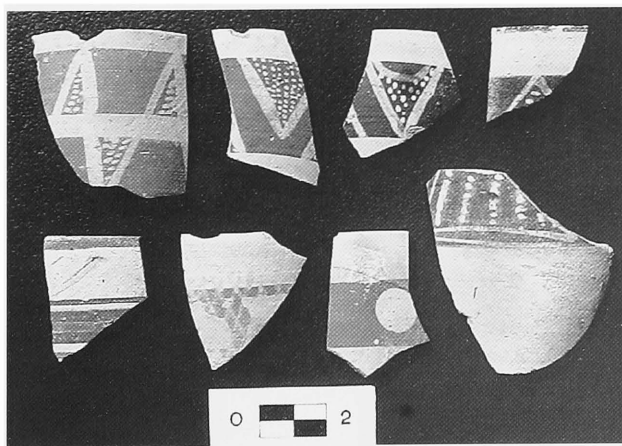


Figure 96. Nuzi ware sherds, Levels 5 & 6.

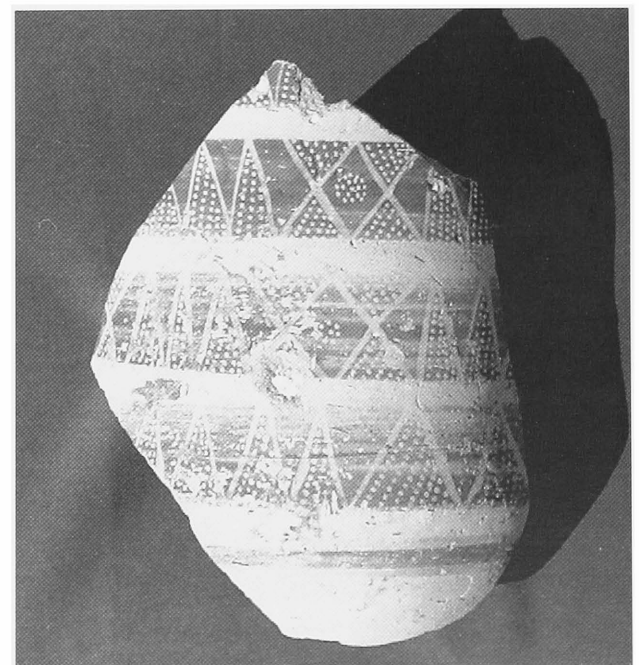


Figure 97. (right) Nuzi ware 'grain measure' 431, Level 5.

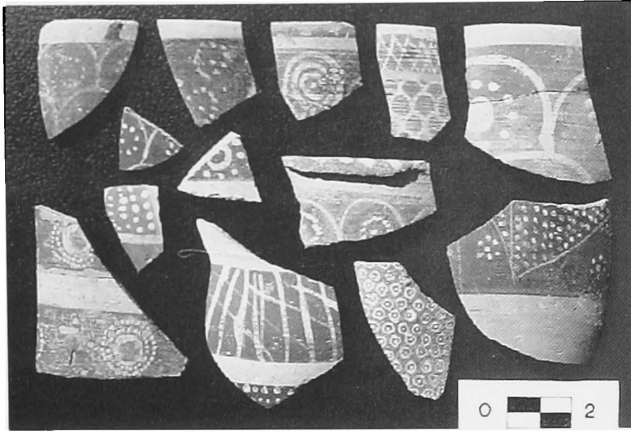


Figure 98. Nuzi ware sherds, Levels 7-2 (see p. 283).

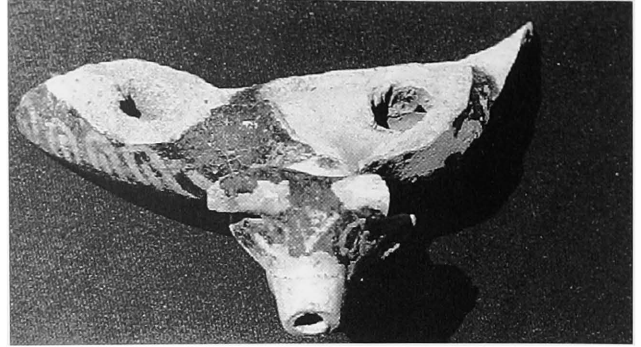


Figure 101. Spout of kernos ring, Nuzi ware 598, Level 2; width of surviving sherd 9.6 cm.



Figure 99. Nuzi ware, Levels 4 & 5.

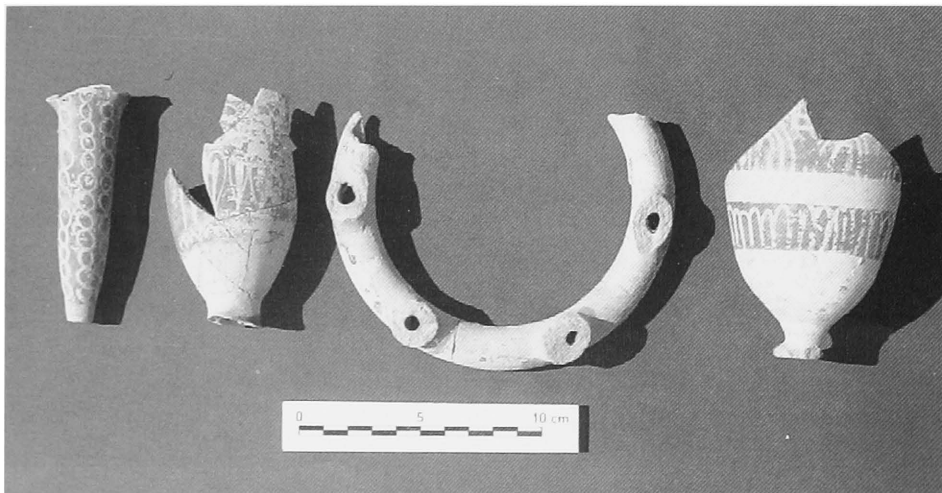


Figure 100. Nuzi ware spout; kernos ring 600 with cup, left; beaker 389, Level 2.

times continue well into the period of Mitanni control. At Brak they are absent only from Level 2, as are all other forms of 'younger' Khabur ware; in earlier Mitanni levels both types of beaker are manufactured in both Nuzi and Khabur ware style. We interpret this as evidence of continuation of workshop tradition, and local populations, in combination with Mitanni innovations. Moreover, since at Rimah, Nuzi and Brak the tall footed and shouldered beakers are of identical ware and workmanship, there seems no logical reason to exclude the straight-sided variety from the 'younger' Khabur ware category. Missing at both Brak and Rimah are the dimpled beakers found at Nuzi in Mitanni times (and apparently elsewhere only in the Late Assyrian period), perhaps suggesting, despite the many similarities in Late Bronze Age pottery from east and west, a fundamentally different manufacturing tradition east of the Tigris, of which grey ware with white inlay, rare at Brak and Rimah, provides a further example (discussed below).

At Brak footed beaker bases vary from simple button-shaped (324 & 340) to more elaborate taller examples (325, 328 & 331). Among these variations there seems to be little difference in date, although the disk-based 344 would seem to be an early type. The Nuzi ware champagne goblet (403) is, so far as we know, unique. Nipple bases are in general Middle Assyrian, though earlier examples do occur, especially at Rimah. Also Middle Assyrian at Brak are undecorated shouldered beakers (314 & 315). In Level 2 only the straight-sided beaker is found, at least in the context of the Palace and Temple, decorated exclusively in Nuzi ware style, and it is possible that many of the 'undecorated' Level 2 beakers once bore Nuzi ornament which, as we have already noted, is notoriously poorly bonded with the pot, especially at this date. Among the more unusual Nuzi ware objects from the Palace destruction level are parts of several kernos rings (Figs. 100 & 101).

4. Bird and animal ornament

Within the Khabur ware tradition anthropomorphic and zoomorphic motifs are rare. The earliest appearance of a common Mitanni design, the use of running birds to decorate jars and beakers, is however clearly established in a small number of examples from Late Old Babylonian contexts at Rimah. Two Old Babylonian-inspired fragments are known from Brak (452 & 454), both Nuzi ware examples, both from uncertain contexts. The low crouched style of the birds on sherd 454 dates it at the latest to early Mitanni. Later Mitanni birds are drawn in a more

upright stance (455 & 471).

At Brak both shouldered and straight-sided beakers, open cups and 'grain measures' are decorated with running birds, similar examples being found in both Khabur and Nuzi ware (445 & 471). Such motifs are less common on open bowls (475 and Fig. 102) but are a particular feature of an easily recognized Mitanni type, the large open urn (Fig. 200). Vessel 455 from Level 5 (Fig. 103) and sherd 477 well illustrate the contrast in style between the 'crouching' bird and painted 'stroke' rim ornament characteristic of Late Old Babylonian style and the earliest well-stratified Mitanni ornament at Rimah, and the upright bird and geometric rim of later Mitanni examples. The 'hen party' of sherd 478 is unique.

Zoomorphic ornament is less common, but does occur, for example on 'grain measure' 488 and the large urn 456. The 'wrestlers' on the latter vessel are, so far as we know, unique (Fig. 104). Other human ornament appears, rarely, on 'grain measures' of mid-second-millennium date, of which unstratified sherd 276 is an example (see also Mallowan 1947, pl. 78:12, which must be either Late Old Babylonian or very early Mitanni, and Alalakh Level V, Woolley 1955, pl. 95). Several unusual beetle and frog-like creatures have also been found (487, 490 & 491). The

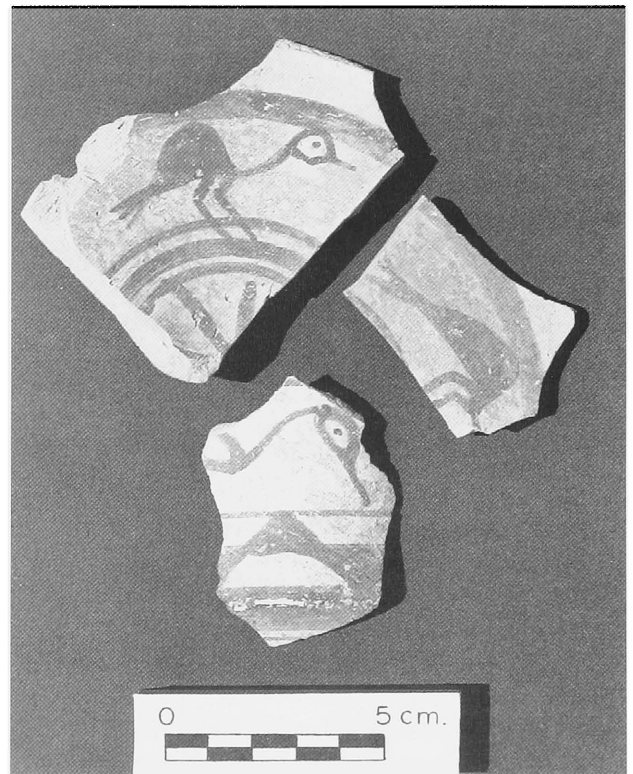


Figure 102. Two sherds of open bowl 475 and sherd 461.

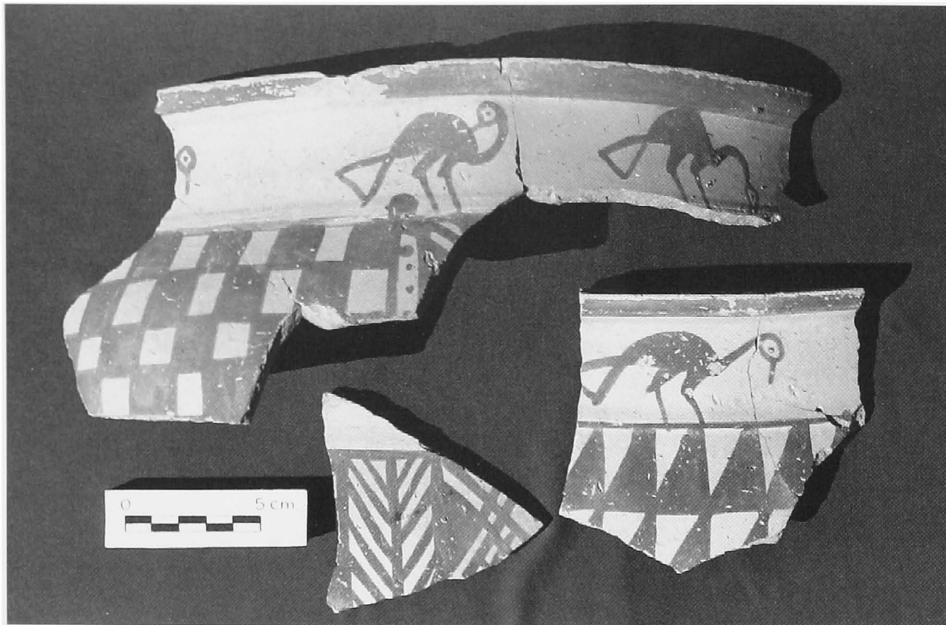


Figure 103. Sherds of large urn 455, Level 5.

strange creature on sherd 487 is perhaps a whip scorpion; a frog-like Nuzi ware creature appears on 448.

5. Glazed pottery (Fig. 203)
Present evidence suggests that the invention of the technique of core-moulding glass bottles and beakers lies in northern Syria, conceivably in Mitanni or West Syrian workshops. The earliest example known at present comes from Tell al Rimah (Site A Level 2c, early Mitanni, i.e. late sixteenth century BC).



Figure 104. Detail of wrestlers, urn 456, Level 4/5.

Single sherds have been found in Brak Level 6 and Alalakh VI from which level the earliest glazed sherds are also reported (Woolley 1955, 299). The latter are described as 'a few miscellaneous fragments of green- or blue-glazed pottery'. No complete glazed vessels were found before Alalakh V (a single example in a grave). The glazing of earthenware is technically more difficult than the moulding of glass owing to the differences in their coefficients of expansion, and among the relatively well-stratified materials at both Brak and Rimah core-moulded glass bottles appear at an earlier date than glazed pottery which is first found in Brak HH Level 4 (8 sherds) and Rimah 'Late Mitanni' (Site A Level 2a,b, and Site C Level 5a, fifteenth century). At Rimah far more glass than glazed vessels has survived. The same is true at Brak where, with its relatively smaller area of excavation, virtually all the glazed vessels come from Level 2, an 'elite' context (Fig. 105). A glazed terracotta wallcone comes from corridor 4 (Fig. 238:11). Of the Brak vessels jar 497 from Room 5 and the 'watermelon' jar 499 are perhaps the most interesting. The earliest glazed vessel so far discovered at Brak is bowl 498, which can be dated at the latest to Level 4 and may be earlier. Its original colour seems to have been cobalt blue; it held some form of inlay on the rim. Glazed jar 503 well illustrates the legacy of preservation and reconstruction problems left for us by the looting Middle Assyrians: its fragmentary sherds had been scattered throughout the Palace ablution room and both parts of the adjacent corridor.

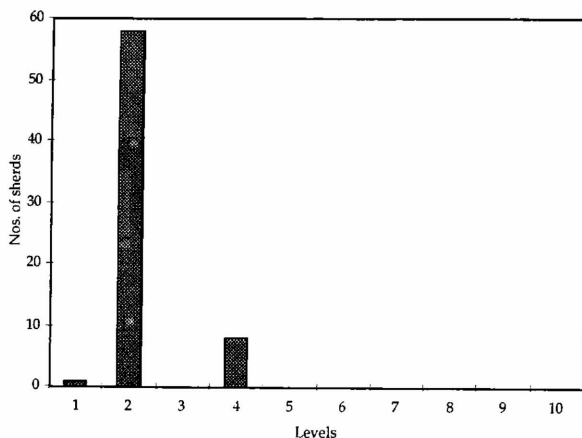


Figure 105. Distribution of glazed pottery.

Mitanni vessels, as were those of Middle and

Late Assyrian date, were glazed by dipping the whole vessel into the liquid glaze. This often left a thick layer of glaze in the bottom of the jar or bottle (as on 502). Copper was the main colouring agent and the basic colour a turquoise blue. Some vessels may originally have been yellow (504). 58 glazed sherds and a minimum number of 15 glazed vessels were found in the Palace and Temple. An unusual single-handled jug is illustrated in Figure 106.

6. Red-edged bowls and plates (Figs. 187 & 188)

The red-edged shallow bowl or plate is one of the most distinctive Mitanni innovations. The earliest securely stratified Brak example is very highly burnished and comes from Level 7 (160). The type remains common throughout the fifteenth and fourteenth centuries (Fig. 107). Thus at sites like Rimah, Shaikh Hamad and Mohammed Arab it appears in fourteenth-century 'Middle Assyrian' contexts. Brak bowl 154 represents a deeper and probably thirteenth-century Middle Assyrian example. The single example ascribed to Level 8 comes from locus 410, close to the tell surface (see discussion above, under Nuzi ware).

On some bowls the paint appears brown rather than red (155, 156 & 159); this is possibly deliberate but more likely to have been the result of firing conditions. Some but not all examples are highly burnished, higher percentages of burnishing tending to be earlier in date. The vessel shapes include a very distinctive range of small bowls (129-32) which were found in large quantities in the Palace destruction level and were obviously part of the Palace 'dinner service', which also includes a range of similar medium-sized bowls (133, 134 & 137-9) and much larger flat plates (140-43). Early shapes appear to mimic the grey wares (135-7 & 150), including one plum-red example (Fig. 108) with the deeply cut notches found also on 541.

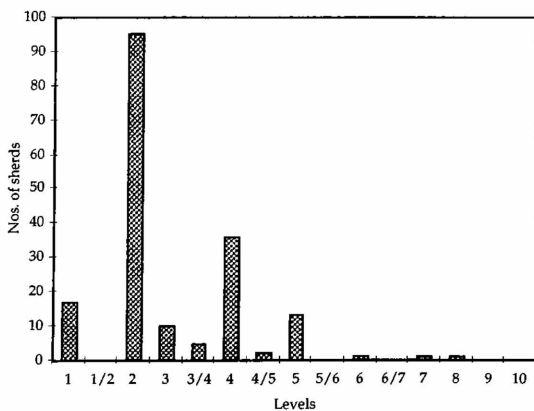


Figure 107. Distribution of red-edged bowls.

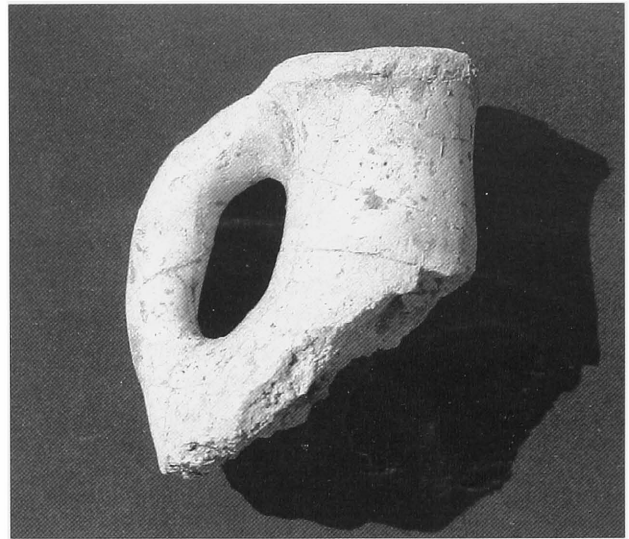


Figure 106. Fragment of glazed single-handled jug, Palace Room 3; ht 9.5 cm.

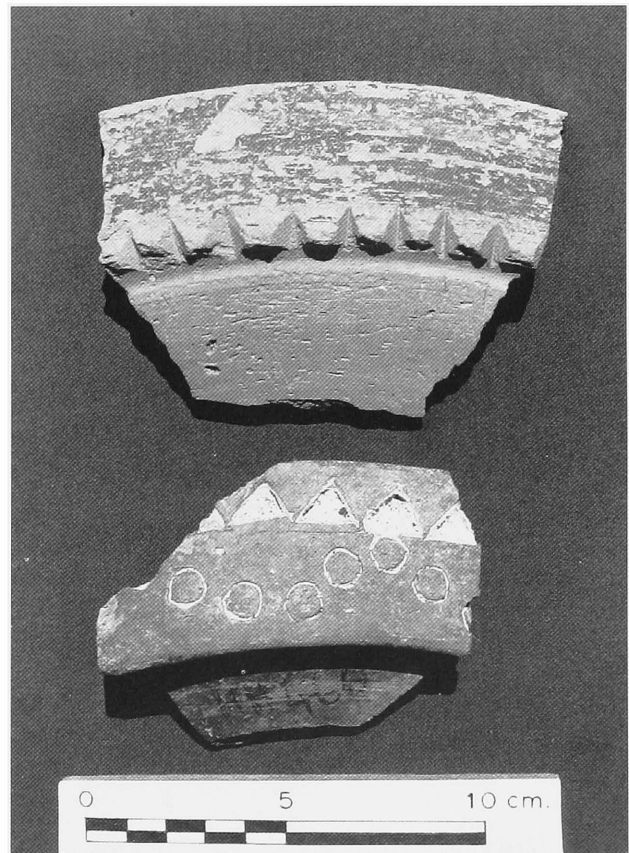


Figure 108. Bowl 540, notched rim, plum red paint, and grey-burnished sherd 589, with white paste inlay.

7. Red-slipped bottles and jars (Fig. 204)

This would appear to be a specifically Anatolian-related type (at least the fabric which is tempered largely with chaff does not match the descriptions of 'Syrian red ware'). No vessels of this type were found at Rimah and, outside the Khabur area, we personally have never found a sherd of this type in Northern Mesopotamia. The red slip is often but not always vertically burnished. The Level 2 bottles and jars are heavily chaff-tempered, with a dark grey core and rather perfunctory burnishing. Jar 516 illustrates well the havoc caused by the marauding Middle Assyrians — it was pieced together from fragments found in Rooms 2 and 3 and Courtyard 8, while bottle 512 (Fig. 109) came from Rooms 2, 3 and 5. The distribution of red-slipped jars and bottles is shown in Figure 110.

Also found was one red-slipped beaker with a brilliant lustrous burnish (520). It cannot be dated directly but its context suggests that it may be

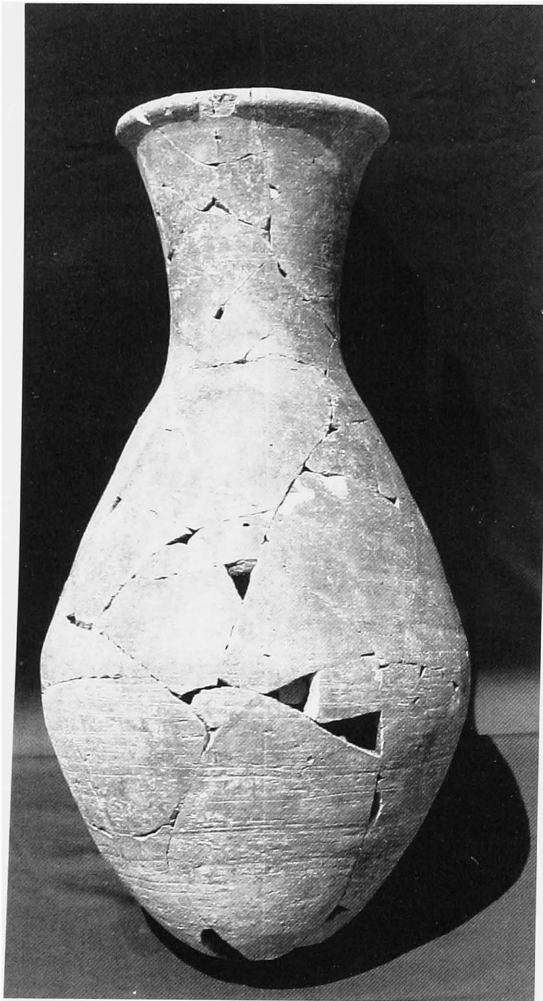


Figure 109. Red-slipped bottle 512, ht 50 cm, Mitanni Palace.

contemporary with the highly burnished beakers illustrated on Figure 206. Perhaps the most unusual red-slipped sherd is the fragment with appliqué fingers (594, Fig. 111). Like the lustrous red beaker this would seem to be of Hittite or related derivation (cf. Fischer 1963, pl. 124:1125).

8. Grey-burnished ware

The most common Mitanni grey ware bowl is a carinated vessel with more or less upright sides (173, 187, 188, 191 & 199–202). These begin in Level 6 and occur in abundance in Level 5. Some are found with tripod legs (529, 531, 533 & 534). In form this type would seem to be related to, and perhaps derive from, the upright 'folded' and 'hammerhead' rims of Level 6 and earlier (179, 180, 189, 190 & 195–7). Ring bases are common; some have slightly concave disc bases (184 & 191). Many of the Brak grey ware vessels are precisely paralleled at Rimah and Nuzi, perhaps indicating a closely connected network of production centres (cf., for example, *Rimah* 215 and the very elegant and beautifully burnished Brak bowl 198). Comparable grey-burnished ware was not found at Alalakh. At Brak a few grey-burnished jars were found, *inter alia* 549 and 550 from Level 5; bottle base 551 comes from Level 4. One grey ware bowl was found with deep notches cut into the lower edge of the upright rim (541), as on the red example, Figure 108.

Bowl type 201 is also found with white inlay. By comparison with the site of Nuzi, the use of white inlay on burnished grey vessels is relatively uncommon at both Rimah (*Rimah* pl. 100) and Brak, where up to now only three examples have been found

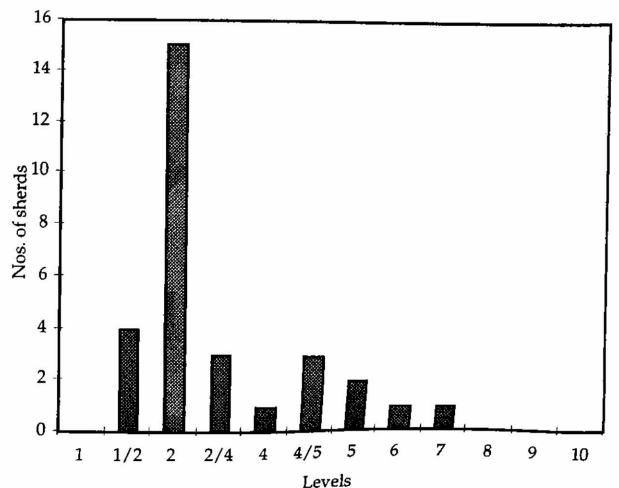


Figure 110. Distribution of Mitanni red-slipped jars and bottles.

(588–90 and Fig. 108). The distribution of burnished grey wares at Brak is illustrated in Figure 112. It should be noted that only one grey ware sherd from Level 2 came from an actual floor, and that the upright 'folded' rim type, especially characteristic of Levels 5–6, does not occur *in situ* in this level. The relationship between the approximately contemporary impressed grey wares of Nuzi, Rimah and Brak and the 'black impressed ware' of Alalakh V remains to be established.

9. *Brown- and cream-burnished types*

A small group of brown- to tan-burnished vessels occur in shapes comparable with the red- and grey-burnished groups (167–9 & 558–60). Small burnished jars, generally of brown fabric, were found in the Palace destruction level (543–5). A number of small bowls were also burnished (557).

Among the most beautiful vertically burnished early Mitanni vessels were a group of beakers with a pale cream, almost white surface, including 555 and 556 (Fig. 113), both from Level 7; 'grain measure' 552 is of a similar fabric. The orange cup-shaped beaker 553 is also vertically burnished. Burnished tripod vessels are discussed below.

10. *Mitanni potstands* (Figs. 175 & 215–17)

The usual Mitanni potstand was of the 'piecrust' type; occasional painted versions were found (690). A number of large and often ornate fenestrated potstands came from the Mitanni Palace, four from Corridor 2 (680–83 and Figs. 174–5), three from the ablution room (685–7) and other examples from the courtyard (684). The large plain stand 688 came from the workshop and 689 from the adjacent room 12.

The lack of appropriate contexts in the smaller

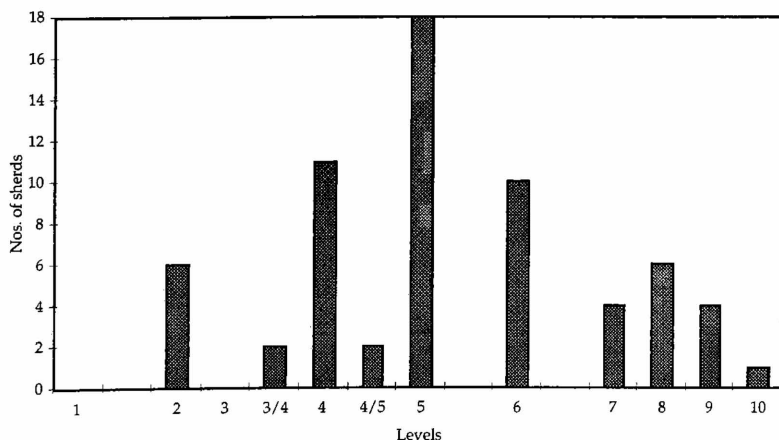


Figure 112. Distribution of grey-burnished ware (see comment on Level 2, above).



Figure 111. Red-slipped sherd 594, with fingers perhaps holding a cup.

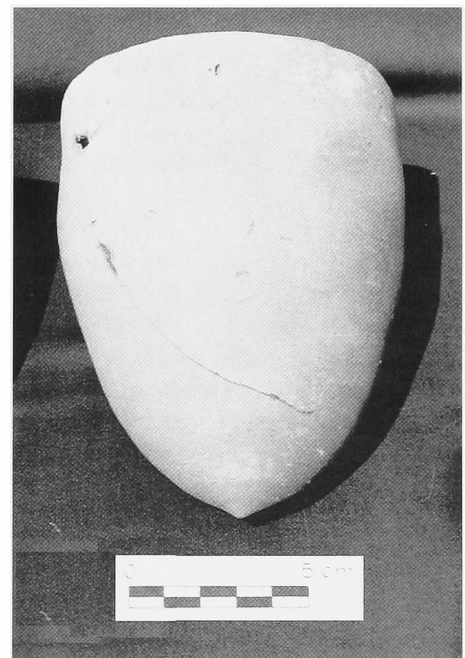


Figure 113. Burnished 'white' beaker 556.

area of early Mitanni excavation is almost certainly responsible for the relatively small number of pre-Level 2 potstands. Certainly at Rimah they were very common, as were the stands with perforated base (cf. 618); the Rimah potstands were often concentrated in courtyards. Nor did we recover any examples of the decorated tall stands known at Rimah (*Rimah* pl. 98) and Billah (Speiser 1935, pl. 63). Potstand 691, with Maltese cross fenestrations, is unusual, such design being typical of the larger third-millennium stands (*Iraq* 44, 1982, vessel 45). More than one example was found in Mitanni contexts, however, and we have wondered whether a Mitanni potter at Brak found and copied a third-millennium piece. Comparable though larger third-millennium stands are common at the site as are both Uruk and Akkadian jars with cross-hatched triangles ornamenting their shoulders, possible inspirations for the very distinctive early Khabur ware design.

11. Undecorated vessels

A wide range of Mitanni undecorated bowls is found in the same shapes as the red-edged and grey ware varieties (Figs. 184–6). A number of plain jars were also found (Fig. 207). Hole mouth bowls are less common (77–80). In Level 2 a large number of storage jars were found in Room 5 (611, 616, 623, 624, 628, 630 & 631), which seems to have served as a store for the manufacturing materials used in the adjacent workshop (Room 7). Other jars came from the workshop itself (620, 625 & 629, see Fig. 45).

12. Unusual Mitanni types

It hardly needs emphasizing that pot shape varies according to function, and that such function is also related to context. Thus for the Old Babylonian period we have a limited range of pottery types, but for the Mitanni Palace, of which the surviving ground floor rooms were excavated, we have an unusual range of material both fallen from the residence above and from the workshops and reception rooms below. Among the uncommon vessels recovered from the Palace were a variety of large tubs and bowls, types that at least in some instances seem not to be found in ordinary households. Cable-decorated urns like 611, 613 and 614, and jars like 267 are not uncommon elsewhere, but the more elaborate versions 615 and 621 would appear to be a more 'expensive' product, at least in terms of manufacturing time, as is the unusual square 'garden tub' from Room 12 (619 & Fig. 22). 617 is a metre-long bathtub from the Palace ablution room (Room 3), which also contained several elaborately decorated, fenestrated stands

(685–7 & Fig. 16), presumably for the water jars, and another type of stand with solid, perforated base (618). Elsewhere, several large jars had been decorated with incised duck-like birds (632–4).

One of the most attractive and undoubtedly most unusual Mitanni vessels is the unique incised jar from Room 12 of the Palace (602, Fig. 114). It almost certainly came originally from the upper storey residential apartments; its (probable) handle was found in the upper fill of Room 14. The decoration was incised before firing (unlike a superficially similar sherd from Mohammed Arab on which the design was scratched after firing). The Mycenaean stirrup jar (603), discussed by Dr French, below, is almost certainly another elite, late fourteenth-century possession, even if of inferior quality by Mycenaean standards, which must once have enhanced the residential quarters of the Palace. It was found associated with a beaten earth surface which marks the upper level of Middle Assyrian occupation (locus 220, Fig. 31), but only one worn and possibly re-used fragment survived. According to Dr French the Brak piece is of Levantine manufacture and is likely to date to the early thirteenth century, or perhaps slightly earlier.

Other uncommon vessels include a pilgrim flask (563), found with footed beaker 332 on a Level 5b floor in Trench D (Figs. 51 & 53), and three compartmented bowls, two from the Palace (537 & 539) and an unusual Level 5 example with a seal impression (10) rolled around the edge (Figs. 50 & 74). Also unusual is the 'Hittite' red-slipped hand (Fig. 111) and the beaker with lustrous red burnish (520), of which a number of sherds were found (some in the plaster of the original columned façade). No other examples were found of the tray-like vessel or lid (654, Fig. 115). Vessel 653 is the only Brak example of a Late Old Babylonian/Early Mitanni type very common at Rimah, the so-called rough-based bowl. Such very shallow examples are of early Mitanni provenience at Rimah. Figure 116 illustrates the impressed decoration on the base of another unusual vessel, jar 621.

Tripod vessels are widely known in Mitanni contexts, and were found from Level 5 to Level 2 (Fig. 205) (one Rimah example (1203) came from an Old Babylonian context). At Brak a number were grey and often burnished; some bore a red or brown burnished slip (528). Several examples were supported by pierced, triangular, handle-like feet (531, 535 & 536). One Nuzi ware tripod vessel was found (444). Pot marks are rare in Mitanni contexts, and it is uncertain whether Figure 117 represents a crude animal sketch or some more abstract symbol.

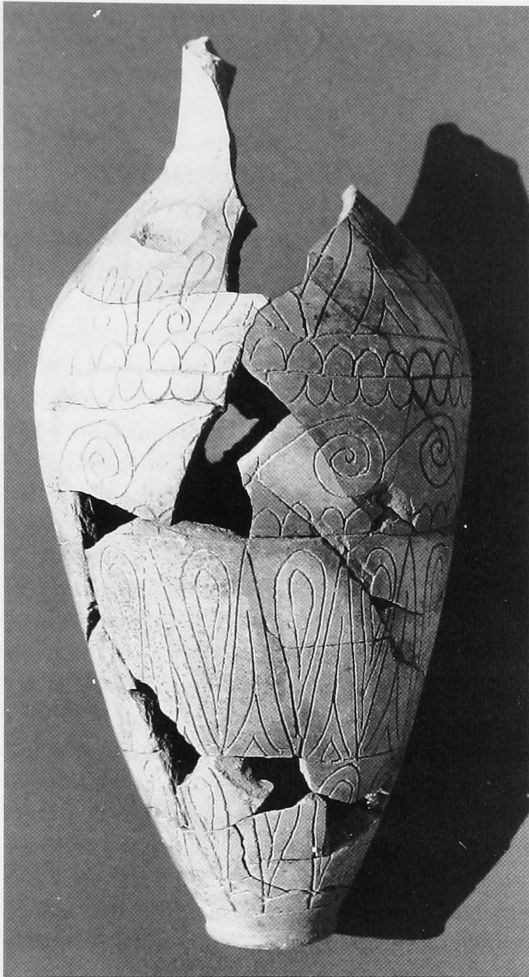


Figure 114. *Incised jar 602 from Room 12, probably fallen from upper, residential floor; ht 24.5 cm.*



Figure 116. *Base of large jar 621 from Room 12, showing detail of decoration.*

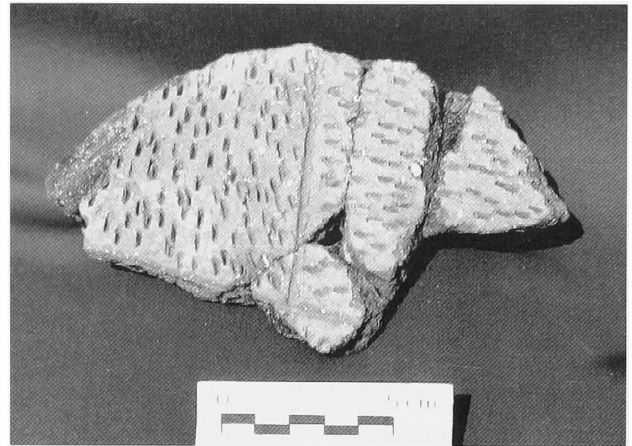


Figure 115. *Jab decoration on base of tray (?lid) 654, Level 5.*

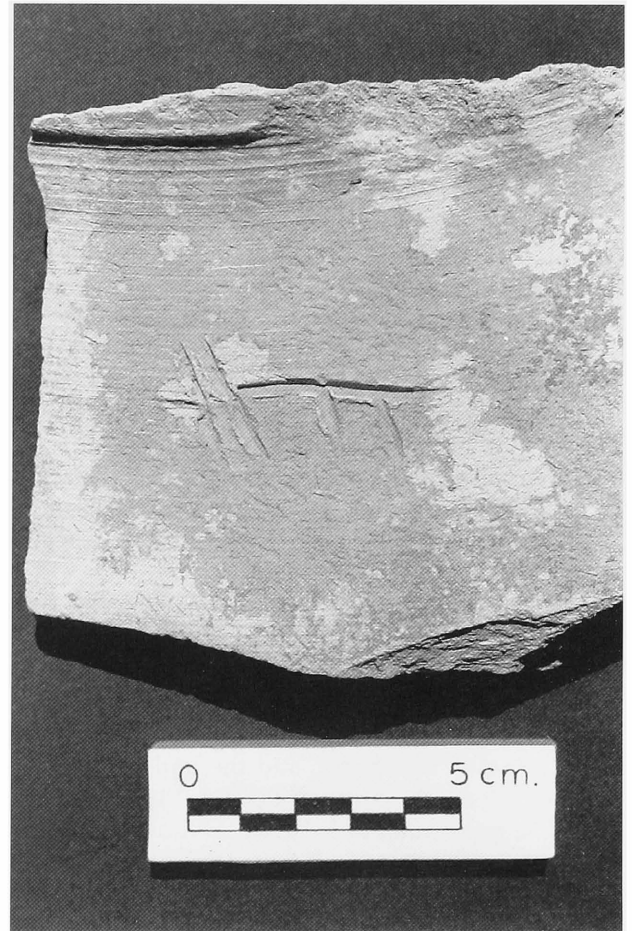


Figure 117. *Pot mark on Level 4 jar (locus 432).*

D. Middle Assyrian pottery

Small quantities of Middle Assyrian pottery were found in the surface deposits of all the HH trenches excavated in 1987–90, with the exception of the southernmost trenches, C4 and D, where even the late Mitanni levels had completely disappeared. Most of the pottery published here comes from Middle Assyrian occupation overlying the Mitanni Palace and often literally re-using the walls of the earlier building, for example Palace Corridor 6 where part of the standing south wall had been cut out to enlarge the Middle Assyrian room (Fig. 31). For this reason it was sometimes difficult to distinguish between a surface that represented no more than trampled Palace collapse and one that was a genuine Middle Assyrian floor. A number of Middle Assyrian wall stubs and hearths were found. But only in the northeast corner of the Palace courtyard, above the east stairs and above the street between the Palace and the Temple (Fig. 26) were there identifiable Middle Assyrian house structures (*inter alia* floor loci 220, 318 & 539). House floor 318 and its associated walls lay 1.94 m above the courtyard pavement (Fig. 25).

The Middle Assyrian pottery is illustrated on Figures 181–3, Figure 194: beakers 314–21 and Figure 215: potstands 659–65. Other vessels such as painted bowl 154, the large cable-ornamented bowl 609, jar 572 and possibly the decorated jar 592 are also Middle Assyrian. The pottery is for the most part chaff-tempered; even the beakers are largely, though not exclusively, of chaff fabric. The most distinctive vessel types are the ubiquitous, ‘type fossil’, carinated bowls and cups, the nipple-based and shoulder beakers, and jars of the type illustrated on Figure 183.

Unfortunately we have no internal dating evidence for the Middle Assyrian occupation beyond the obvious fact that it must post-date the destruction of the Mitanni Palace by sufficient years to allow the collapse of the building, which had been heavily sacked and burnt, and the build-up of erosion deposits in the courtyard (see p. 14 and Fig. 25). This time gap cannot be long, since Middle Assyrian structures were literally inserted into the fabric of the Mitanni building and the Mitanni walls re-used. We believe that the Palace was finally destroyed not long after 1275 BC by Shalmaneser I. This almost certainly places the earliest Middle Assyrian re-settlement sometime later in the thirteenth century. In his extensive study of Middle Assyrian pottery Peter Pfälzner (1995) has suggested a date later in the

twelfth century on the basis of parallels with the pottery from Tell Bderi, dated by Middle Assyrian inscriptions to the time of Tiglath-Pileser I (1114–1076 BC). Such pottery constitutes his Middle Assyrian III, with phases I and II attested at Tell Shaikh Hamad and dated there to the fourteenth and thirteenth centuries, respectively. Certainly there are many close parallels between the Middle Assyrian pottery of Brak and Bderi, but the Brak stratigraphy makes such a late date difficult to sustain, and one must suspect that many Middle Assyrian types have a long duration. There are, moreover, sufficient parallels with thirteenth-century pottery from Tell al Rimah and Shaikh Hamad to support an approximately similar date at Brak. Many of the closest parallels in fact lie in the fourteenth-century Shaikh Hamad materials, *inter alia* the tall jar type 45 (Pfälzner 1995, pl. 86, MA I) and jar bases 48–51 (Pfälzner 1995, pl. 97j, MA I). No comparable jars or bases are published from Tell Bderi, though Pfälzner plate 157c provides the closest parallel for the Brak conical base jar 46. Other parallels with Shaikh Hamad include the round bowl rim (pl. 73b; cf. Brak 38–41), plain open bowls (pl. 98) and other bowl types (pls. 70b and 99a; cf. Brak 18, 12). This is not to suggest that the Brak Middle Assyrian pottery is of fourteenth-century date. We know that it is not. Only to make the point that no site has produced the full repertoire of Middle Assyrian pottery at any given moment and that common types like the carinated bowls and cups, and the nipple-based beakers, have a long currency. Pfälzner has suggested that such common types represent a mass-produced ‘official’ ceramic which occurs alongside a ‘household’ pottery with its origins in Mitanni workshops. It is possible that Brak, with its long tradition as an important Mitanni town, maintained a higher proportion of the local ceramic repertoire than did sites like Bderi and Shaikh Hamad.

E. First-millennium pottery

The ‘miscellaneous’ pottery published on Figure 216 comes largely from the surface of the tell. We remain uncertain of the precise date of lamp 696. Pipe lamps occur in Middle and Late Assyrian contexts (e.g. *Rimah* 1228, Middle Assyrian) but the shape of this lugged example, from the uppermost deposits in Area CH, suggests that it may be Achaemenid, Parthian or possibly even later in date. Bowl 699, from what we believe is a Late Iron Age, possibly even Hellenistic, cobbled floor on the mound surface between Areas FS and CH, is also difficult to

date (from Area JJ, a surface scraping exercise on the high ridge between Areas FS and ER).

Late Assyrian pottery is found in the ploughed fields north and northeast of the tell. Of considerable significance is a 'hand of Ishtar' from the plough just below the western slopes of Area FS (Fig. 178), an object which indicates the presence at Brak of a monumental building of this date. Unfortunately any structural evidence for possible Iron Age settlement here has been destroyed by ploughing, but the discovery of a number of large pieces of possibly Aramaean basalt sculpture on the tell and the Late Assyrian hand of Ishtar at the foot of the tell, together with the existence of a massive mud-brick platform above the surviving Middle Assyrian levels, all point to the existence of a now-lost monumental building, perhaps of tenth- or ninth-century date, at the summit of the tell. A Roman/Byzantine castellum and church, excavated by Father Poidebard in 1930, lie just to the northeast. These ruins correspond with the Peutinger map location of Roman Thebeta (see Oates & Oates 1990, and discussion in Chapter 12).

The Mycenaean Stirrup Jar

by E.B. French

Shoulder of Mycenaean stirrup jar; Furumark shape 182, conical jar; linear decoration only (Furumark 1941). For illustration and ware description, see Figure 210:603.

Indentation on top of false spout from ?secondary usage (perhaps as lid), handle possibly deliberately removed; false spout worn but body in good condition. Base of neck and false spout encircled with single band; line group of outer bands with 6/7 fine lines between, on shoulder just above greatest diameter; thick band on greatest diameter.

The assignment to Furumark Shape 182 (by Dr Mountjoy who has handled the sherd) is based on the angle of the upper body and the narrow false neck with small top. From the fabric and the lack of patterned decoration it may be considered a good but 'local' production of some outlying centre. It did not originate in the Mycenaean mainland. The stylistic date is LH IIIB and more likely LH IIIB1. A date in the first quarter of the thirteenth century is thus

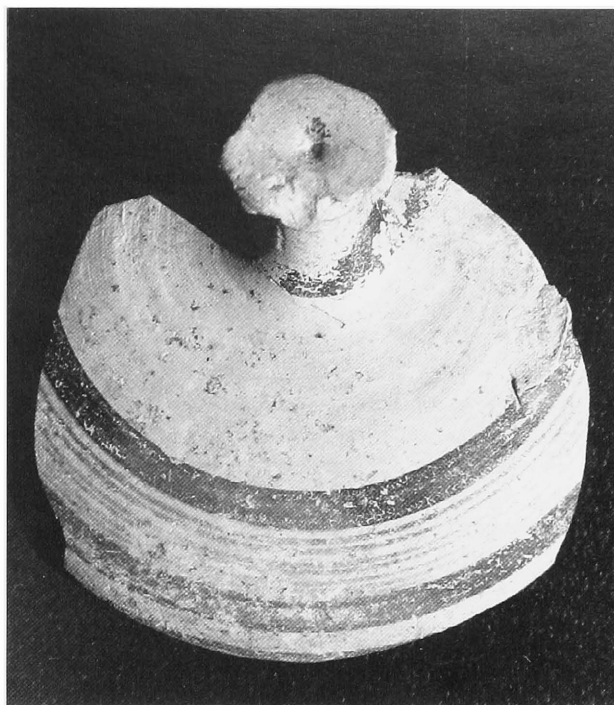


Figure 118. Re-used fragment of Mycenaean stirrup jar 603; width of sherd 7.7 cm.

perfectly suitable. (For a recent assessment of the chronological evidence concerned see Wiener forthcoming.)

This is not a high quality piece but rather a good example of the Mycenaean type pottery produced somewhere in the Levant so that merchants could satisfy local demand. The small stirrup jar, which is thought (at least in Greece itself) to have been a container for perfumed oil, is widely known in the Levant and was, on occasion, copied in faience, particularly in Egypt. Among the most far-flung finds known at present are those from Tille Höyük (Summers 1993, 14) and Maşat Hüyük (Özgüç 1978, 66 and pl. 84), though both of these belong to a phase (LH IIIA/B) slightly earlier than that from Tell Brak. This version of the shape is frequent (Leonard 1994, 65 & map 16) and has probably been found also at Meskene, on the west bank of the Euphrates. Unpatterned examples are known from Beth Shan (good parallels for the Tell Brak piece) and Tell Abu Hawam (though some of these identifications of the shape are not certain).

Chapter 5

Glass, Frit and Faience

(Figs. 218–25)

In this chapter we have followed customary if erroneous archaeological terminology for a group of man-made substances closely related in chemical composition. The term frit in particular is potentially misleading, owing to its more correct application to a specific stage in the manufacture of glass. Glass differs from frit and faience by virtue of its homogeneous vitreous composition. In conventional archaeological usage, frit and faience consist of a sintered quartz body, distinguished from glass by virtue of its crystalline nature. The difference between frit and faience lies in the fact that the surface of a faience object has been 'glazed', producing a discrete surface layer of glass. The body of a faience object is often white; frit objects are often coloured and can be distinguished from faience by the fact that the colour is consistent throughout the object. The colour of faience comes from its surface glaze, though if this is heavily worn, faience can easily be mistaken for frit from which it differs only in the presence of the glaze. Careful examination can often reveal minute traces of surviving glaze, for example in the grooves of melon beads and rosettes. Glass is particularly prone to decay in Mesopotamian soils, and the resultant surface can be extremely weathered and soft, while the colour may change from blue to green to yellow and white; decayed glass, however, is normally easily distinguished from crystalline frit/faience. Detailed discussion of the technology of these materials can be found in Goldstein 1979 and Oppenheim *et al.* 1970.

A. Glass (Figs. 218–21)

Over 160 individual glass objects were found in Area HH, from Level 6 onwards, including the glass beads published in Chapter 6. A single spacer bead fragment recorded from Level 8 (reg. no. 2891) comes from an area where the stratigraphy is unclear and, as in the case of the small Nuzi sherds also recorded from Level 8, we cannot prove that it does not owe

its apparent stratigraphic position to the activity of burrowing animals. Evidence from other sites, however, could support the possibility of the manufacture of moulded glass in Late Middle Bronze Age contexts (deliberately manufactured glass is found as early as the late third millennium, while moulded glass objects are reported from Alalakh Level VI and Megiddo IX (early MBA); for a recent summary of the evidence for early glass, cf. Moorey 1994, 190 ff.).

By far the majority of the glass objects from Brak came from Level 2, which produced over 73 registered items excluding the beads. Of the former, by far the largest number were core-moulded glass vessels. Many repeat types known from elsewhere, for example at Nuzi and Tell al Rimah; some are unique to Brak. Regrettably, most of the Brak material was severely damaged in the Middle Assyrian sack, and all too often only small sherds have survived. Glass gaming pieces, eyes and of course the great variety of polychrome beads constitute other common types. Among the most interesting objects are a number of glass ingots and many miscellaneous pieces of cullet, strongly suggesting that glass objects were being manufactured at Brak. The earliest securely stratified second-millennium glass found at Brak comes from Level 6, contemporary with the construction of the Mitanni Palace, and includes polychrome beads. Also possibly from Level 6 are two small fragments of core-moulded bottles (22 & 36, discussed below). Core-moulded glass bottles are unequivocally attested in Level 5, which can be dated to the fifteenth century. A core-moulded glass bottle was recovered from an early Mitanni context at Rimah (TR 2619), but at present the single sherd from Alalakh Level VI, with blue and white festoons presumably in the manner of Brak 34, remains the earliest known bottle fragment. Like the Brak fragment from Level 6, however, which may be of similar date, its context is not secure. The presence of cullet in Brak Level 5 suggests the manufacture of glass objects at the site already in the fifteenth century.

1. Glass bottles

Piriform bottles constitute the most common vessel type, of which Figure 11 (vessel 1) illustrates the most complete example recovered. Here the blue base colour (colourant copper) was unusually well-preserved, the decoration consisting of a two-thread hanging festoon on the shoulder, simple festoons or 'meanders' on the body and an inverted three-thread festoon on the lower body, the most common pattern sequence on such vessels. Core-moulded vessels were made by coiling viscous glass around a clay and dung core. The coloured threads were trailed onto the vessel, a technically complex procedure, and marvered into the surface. The uppermost point of the hanging festoon which appears on the shoulder of the most common decorative scheme was often left in raised relief (Fig. 119). The base glass is normally a copper coloured opaque blue; thread occurs in white, yellow, orange, red, amber, brown, black and pale blue. Red is rare but is clearly preserved on vessel 19 (for analyses of a variety of glasses, see below p. 89 ff.).

A variation of the Figure 11 type has a rib at the base of the neck, consisting of a bi-coloured rope-like twist of glass (4 and Fig. 120, right), a feature common on bottle and beaker rims. Here the four-thread festoon and the single meander have much squarer profiles than those of vessel 1. A further type of glass bottle ornament consists of rows of horizontal chevrons, the combination of several rows



Figure 119. Sherds from core-moulded glass bottle 1, illustrated on Figure 11. White and yellow festoons on blue body. Palace Room 7.

creating a zig-zag effect (10 & 11). It would appear that, like the decoration on the beaker from Marlik (von Saldern 1970, fig. 4), these are composed of contiguous, twisted, spiralling strands of dark blue and yellow or white glass. That is, the vessel has been built up of contiguous twisted strands.

Another common type is the piriform bottle with fluted body, well represented at Brak as at other contemporary sites, and usually decorated with a running pattern of 'feathered' chevrons. One Brak example, from Room 11, has a body of dark blue, opaque, cobalt-coloured glass (6, Corning 1235, p. 90). Fifteen fragments of a second vessel of this type were also found in Room 11 (TB 8182). Similar feathered-chevron patterns occur also on vessels that are not fluted (7, 19 & 22). In the 1990 season a fluted bottle neck was found (5), also with a dark blue base glass; the light blue decoration consists of single threads, drawn in scallop fashion around the neck. This piece was found in Corridor 6 together with vessel 4, but the two pieces do not belong to the same bottle (Fig. 120).

Another category of glass bottle is decorated with individual embossed roundels, sometimes multi-coloured (9). Similar glass is found also at Rimah, though less frequently (TR 4608, TR 5405). Embossed roundel decoration is sometimes combined with festoon patterns, rope-like twists and other types of inlaid design (27 and Fig. 121). The nipple-based bottle 14 is unusual; a total of some 40 fragments of this vessel were recovered from Room 11.

2. Footed beakers

A less common vessel shape is the footed beaker, of which the finest example comes from Tell al Rimah (TR 4601, *Iraq* 30, 1968, pl. 35c, reproduced in colour in Curtis 1982, pl. 6b). The Rimah beaker comes from a well-stratified context, to be dated sometime in the second half of the fifteenth century. Only fragments of glass beakers have been recovered at Brak. These include a beaker 'foot' of dark blue opaque glass from Room 10 (17) and another from destruction

debris on the lower flight of stairs in corridor 6 (18). The latter has a rope-like twist around the base of the beaker body. A further small fragment of a beaker base comes from Room 9 (reg. no. 2338).

Room 20 in the Temple and Room 5 in the Palace yielded fifteen fragments of what now appears as a creamy white opaque glass, apparently without ornament. These fragments include a number of rim sherds (15 & 16). Where the body shape can be determined, these appear to have come from beaker-like vessels. Whether any of these fragments were originally decorated is difficult to determine. Both surface and body of some are a clear creamy white, almost certainly originally without ornament; others have a very mottled surface, which could possibly represent the decay of some form of surface decoration, though this seems far less likely. These fragments have not as yet been analyzed.

3. Mosaic glass

Mosaic glass is rare at Brak; indeed only one small fragment of the conventional glass cane type was found (30). Such vessels are made from sections of monochrome cane held together with an adhesive and fused in a mould. Like the trailing of coloured threads into the core-moulded vessels, this is a technically difficult process since the different coloured glasses have different degrees of hardness. At Rimah cane mosaic glass occurs for the most part in Middle

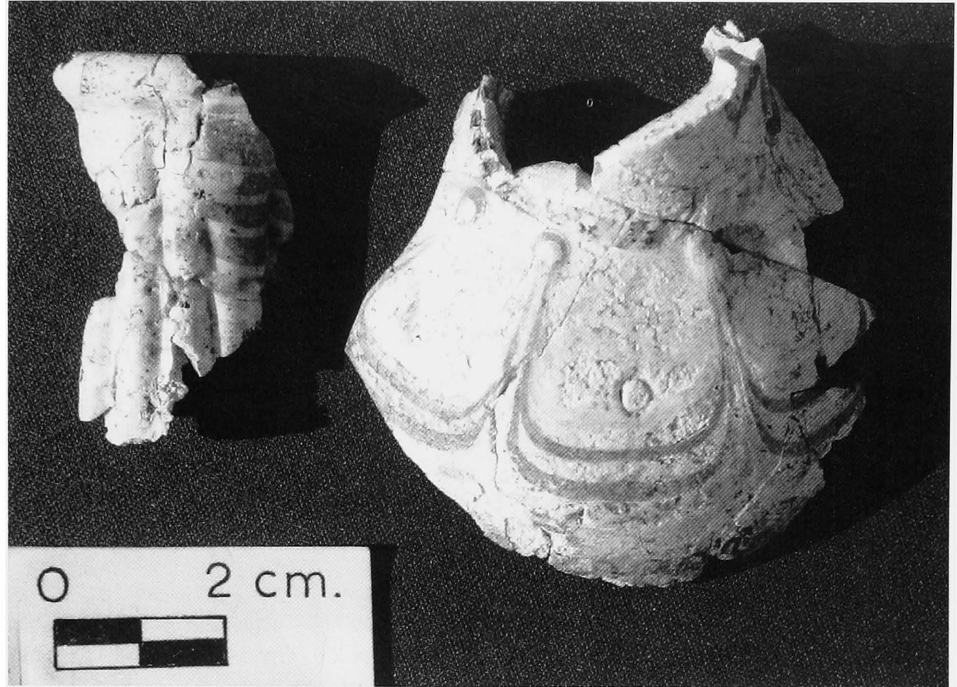


Figure 120. Glass bottle fragments 4 and 5, from the upper fill of the Corridor 6 drain (see section, Fig. 31, locus 572).



Figure 121. Glass vessel fragments with embossed roundels and bi-coloured twists. Palace courtyard (25, 27); lower right fragment 31 from Level 3, or earlier.

Assyrian levels, for example the large beaker fragment published in *Iraq* 28, 1966, found in a deposit which also yielded tablets dated by *līmū* of Tukulti-

Ninurta I; two substantial pieces were found in Mitanni contexts, however (TR 2605, TR 3618). The Brak fragment would appear to be an early example of this general type, and the glass canes, of which the vessel is constructed, are smaller, with diameters of only 2 mm, than those in the comparable Rimah vessels (cane d. 3 mm). Microscopic examination of this small piece at the Corning glass laboratory has suggested that shapes other than the canes may also have been present.

Undoubtedly the most attractive mosaic glass fragments recovered at Brak were from a bowl or beaker decorated with a pattern of overlapping circles, the individual inlays consisting of the overlapping segments, producing a six-petalled effect (3). Ten fragments of this vessel were found in the Temple cella. The surviving colours are blue and white. Within the second millennium the Brak vessel is unique, although a beaker from the palace courtyard at Nuzi produces a similar effect (Barag 1970, fig. 3). The only bowl directly comparable with the Brak example comes from a Late Assyrian grave at Assur (tomb 311) (von Saldern 1970, figs. 42–3).

4. 'Granulation' in glass

The most remarkable glass vessel found at Brak is certainly unique: a small bowl or cup found smashed into such tiny pieces that the shape was not reconstructable (2 and Fig. 122). Many of the over 100 fragments were only a few mm across; the largest

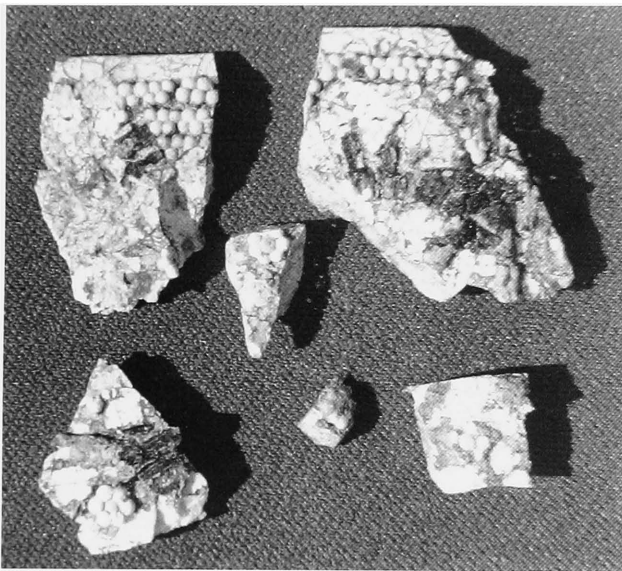


Figure 122. Unique blue glass vessel 2, decorated with rosettes and hanging triangles composed of minute globules of yellow and white glass. Palace Room 5. The largest fragment measures 3.0×1.5 cm.

measured 3.0×1.5 cm, a powerful example of the wanton destruction wreaked at the site. The vessel was decorated with a pattern of rosettes and triangles, each consisting of groups of tiny yellow and white glass globules less than 1 mm in diameter. These tiny balls of glass were set into the surface of the vessel, and probably protruded very slightly. The end product closely resembles contemporary granulated patterns on gold jewellery, an example of which was also found at Brak in the Mitanni shrine (Fig. 47).

5. Pre-Level 2 glass (Fig. 123)

Six fragments of glass vessels were recovered from levels pre-dating the final Mitanni occupation. It must be emphasized, of course, that the total amount of material from these levels is relatively small, and no statistical comparison can be made with Level 2. Of these earlier pieces undoubtedly the most interesting comprises four fragments of another unusual mosaic vessel, recovered from a Trench D Level 5 house, perhaps the earliest mosaic glass yet found. The body is composed of alternating rhomboids of dark blue and white opaque glass (35), apparently set at an angle on the vessel surface, that is, as represented in the drawing and not on the photograph Figure 123. So far as we know this piece is also unique in the history of Mesopotamian glass.

Two further sherds of glass vessels were recovered from contexts which cannot be dated later than Level 5. The slightly flared rim of a blue glass beaker (36) was found in a drain which had been constructed at the time the Palace and Temple were built and which was soon overlaid by occupation debris (section, Fig. 26), that is, it may conceivably be contemporary with the earliest phase of Level 6 and is certainly no later than Level 5, but the nature of the context does not allow certainty of dating. 22 comes from the early Palace pavement, but again cannot be precisely dated. A single small fragment of glass (37) was recovered from the actual plaster used to fill in the external columned façade when the damaged Palace was rebuilt, probably early in the fifteenth century. Also from Level 5 were a fragment of a fluted vessel with feathered chevron pattern (34), glass beads including large spacer beads, and small fragments of cullet. The cullet fragments come from the HH 468 fill, suggesting that they originated in whichever public building was the source of the fill, perhaps even the Palace itself (see p. 21). The fluted vessel came from the levelling fill for a Trench D, Level 4 house, in association with the stone statuettes 93 and 94. Levels 3/4 yielded fragments of

three vessels. The bodies of both 32 and 33 were green (almost certainly originally blue); one was decorated with yellow and white 'swag' inlay, of which the overall pattern could not be determined. The technique resembles that of the Level 5 fragments. The other bore single festoons or meanders, that is single wavy threads of yellow and white glass (33). Fragment 31 was from a vessel of white opaque glass with raised roundels, also white (Fig. 120).

It is perhaps relevant that none of the early glass vessels from Brak is ornamented with the specific combination of festoons found in the Palace (e.g. 1 and Fig. 11) and so common at other sites like Assur and Rimah. The small size of the Brak sample may explain this apparent discrepancy, but it is equally possible that these sherds represent an earlier and less standardized style. The feathered chevrons from Level 5, however, are indistinguishable from those of Level 2 (cf. 6 & 34). No examples of the early beaker type known from Nuzi, made of 'marbleized glass' (Starr 1937, pl. 119) was found at either Brak or Rimah. Interestingly, at Brak the earliest glass vessels, in particular the fluted, feathered type, appear to have been made of dark blue, cobalt-coloured glass, perhaps a reflection of the early role of glass as a substitute for precious stones, and in particular lapis lazuli.

6. Ingots/cullet

Glass ingots are rare on terrestrial archaeological sites; the three fragments of a single ingot from Nuzi (Barag 1970, p. 40 & fig. 16) are among a very small number so far reported. A total of 13 ingots and fragments was recovered from the Mitanni palace at Brak. The best-preserved ingot (Fig. 124) came from the doorway between Room 5 and Room 7, the former apparently a store for the adjacent workshop (7) where another similar ingot was found. The Brak ingots were cast in slightly concave crucibles, the relatively complete fragments measuring 15 cm in

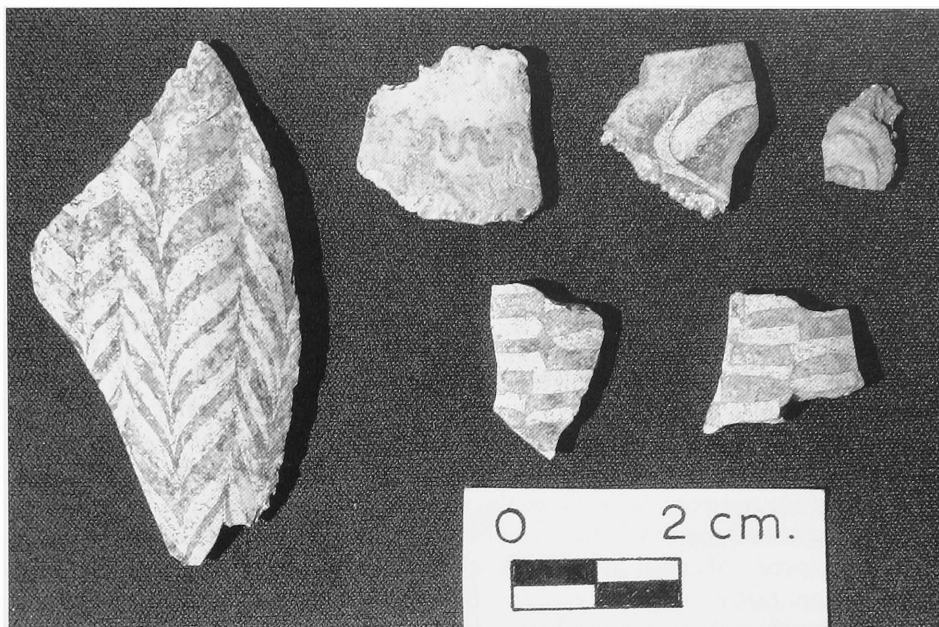


Figure 123. Pre-Level 2 glass: 1) fluted feathered pattern 34, Level 5; 2) meander pattern 33, Level 4; 3,4) yellow and white pattern on blue body 32; 5,6) unique dark blue/grey and white mosaic glass 35, Level 5b.

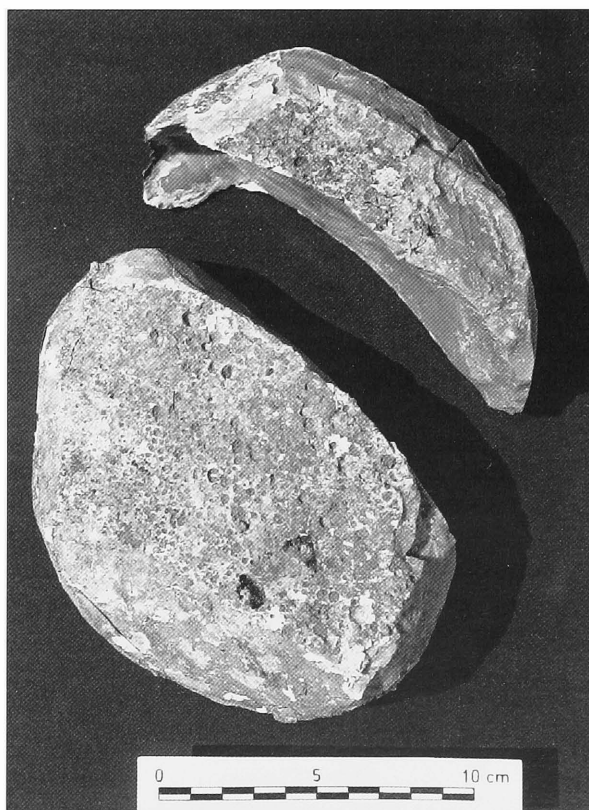


Figure 124. Blue glass ingot, copper colourant, d. 15 cm, depth 6.6 cm, Palace Room 5, TB 7022.

diameter. Most of the ingots and cullet were of light blue opaque glass (copper colourant, see Corning analysis 1230), though some dark blue opaque examples were also recovered, presumably coloured with cobalt. Further ingot-like pieces, also from Room 5, have been identified by Dr Brill as possible glass 'waste', the crucible-shaped lumps consisting of layers of two colours, a 'dark amber glass coating a flat piece of white opaque glass' (reg. no. 1664; Corning samples 1233 & 1234, see p. 90 below). Fragments found in Corridor 6 in 1990 seem also to have been waste glass, again consisting of layers of dark amber and white opaque colours.

Of especial interest is the small ingot from HH 427, analyzed by Dr Henderson as sample Br9. Its stratification is not precise, but it is almost certainly of early fourteenth-century date, if not earlier. This, and the evidence of cullet in HH 468, strongly suggest the manufacture of glass objects at Brak as early as the fifteenth century. Certainly there seems little doubt that by the fourteenth century there was an active glass industry at Brak; whether the raw glass was made there is a question we cannot answer on existing evidence (see lead-isotope analyses and discussion by Dr Henderson, below).

B. Glass objects

At Brak we found no examples of the moulded glass figures known from sites like Rimah and Nuzi, though this again may represent little more than chance discovery. A variety of apparently plain glass moulded plaques and/or pendants were, however, recovered (83 & 84).

Gaming pieces constitute one of our major categories of glass object (Fig. 125), and were also found at Rimah and Nuzi. Twelve examples were recovered from various rooms in the Mitanni Palace, with

several fragments in an overlying Middle Assyrian context (61). Some of the gaming pieces, notably the undecorated ones, are made of frit and it was not always clear, especially in the case of the unbroken examples, whether those with a glazed surface were of glass or faience composition. Certainly the multi-coloured, decorated pieces would appear to be glass, as are the multi-coloured beads, as one would expect from a technological point of view. We have identified these small objects as 'gaming pieces' both because of their flat bases and the fact that the different numbers of coloured blobs could have served to distinguish different pieces in the 'set'. Such an assumption is, of course, entirely hypothetical, but it seems a reasonable explanation for such clearly differentiated yet related objects.

Also found were glass eyes, one with eyelashes (67) and one in a copper surround (68), and a number of circular 'bullseyes' (65 & 66); there were large numbers of bullseyes at Rimah, but for the most part in Middle Assyrian levels. At Brak there is no evidence comparable with that from Nuzi for the use of such glass eyes for architectural decoration (Starr 1939, 92); however, such a purpose could explain their presence in the Mitanni Temple and Room 11 at Brak. A fragmentary glass cylinder seal was recovered (glass 38), as were some 15 blank glass cylinders. Among the other glass objects were an unusual glass 'lollipop' on a gold wire (39) from Room 11 and a glass-headed nail (40 and Fig. 126) from Trench B, Level 5.

C. Comment on glass analyses (see pp. 89ff.)

A number of samples of Brak glass have been analyzed by Dr Robert H. Brill of the Corning Museum of Glass Research Laboratory, Dr Bruce Velde of the Laboratoire de Géologie, École normale

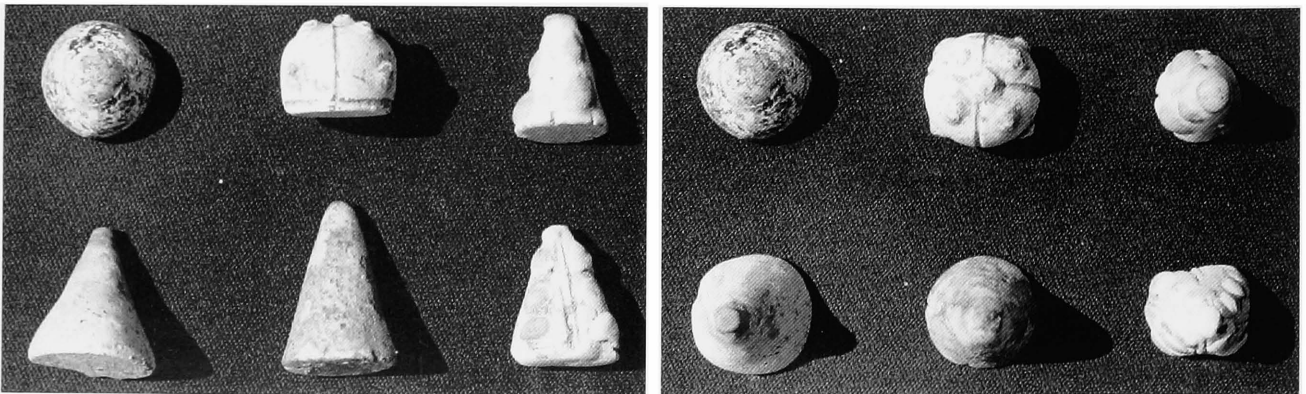


Figure 125. Side and top views of glass and faience gaming pieces 56, 59, 63, 62, 50 and 64, Palace Level 2.

supérieure, Paris and Dr H. Shirahata of the Muroran Institute of Technology, Japan. Further analyses have been carried out by Dr Julian Henderson, whose general comments can be found below. The results reveal the usual highly alkaline Mesopotamian glasses with relatively high potassium and magnesium content. As at Rimah, the calcium content is relatively high (6–11 per cent compared with Brill 1970, 122, 4–8 per cent; see also Pollard & Moorey 1982, 47). The primary colourant is copper, which produces a range of colours from red to green and blue, depending on kiln conditions, with antimony used as a white opacifying agent. Cobalt, for which two sources are attested at Brak (p. 99), and manganese also appear as colourants, and the high percentage of lead in sample 1237 (yellow opaque glass) is likely to reflect its deliberate use also as a colourant. Cobalt produces the rich deep blue which associates this glass with imitation lapis lazuli, the shortage of which in the mid-second millennium was undoubtedly an encouragement to the glass industry as we see it. Our earliest well-stratified, substantial fragment of a glass vessel is of this dark blue glass (34, Fig. 123), as are several vessels from Room 11 (see analysis of vessel 6, Corning 1235, on the inner surface of which the blackened core residue still adhered). Surviving glass colours include a range from black and brown to green, blue, amber, orange, yellow and red (the latter is rare, but see 19). The Nuzi red and orange glasses are coloured by cuprite inclusions (and iron oxide, Vandiver 1983, 245). Both red and black glasses require melting under strongly reducing conditions. Analyses of beads from Room 11 reveal the expected copper and cobalt blues, green (copper), an opaque purple (copper, manganese and antimony) and black and brown glasses of which the colouring agent remains uncertain, but one notes the presence of iron and the lack of manganese in the black sample (as at Nuzi, Vandiver 1983, table 1). Of particular interest at Brak are the remains of 'waste' glass, which have clearly been poured into crucibles in layers of different colours (e.g. samples 1233 & 1234, from Room 5, where a dark, transparent amber glass has been 'floated' onto a white opaque glass). Blue, black and brown transparent glasses are found among the beads of Room 11.

D. Frit

Some 26 frit objects were found in the Palace (Level 2), in addition to the large number of frit beads discussed in the following chapter. It was not always possible to determine whether an object consisted

solely of frit or whether it had once been glazed (= faience). However, in many cases tiny traces of glaze survived, as on rosette 43, the frit body of which as well as the glaze was yellow. Objects of Egyptian blue are obviously easier to identify, *inter alia*, the small rosette 44 and the fragmentary object 48. The most splendid blue frit object from Brak was a bowl with a diameter of some 20 cm, interesting both for its beautiful colour and its size (79). It is clear that the vessel had been broken before the fire in which some, but not all, of its fragments were so severely damaged that the frit itself was rendered 'bubbly'. The bowl has now been restored and can be seen in the new Deir ez-Zor Museum. An 'Egyptianizing' blue frit bead (70 and Fig. 127) was also found, with an incised Eye of Horus (or perhaps, if turned 90°, a crown of Lower Egypt on a basket; we are indebted to John Ray for these interpretations). Two other frit bowls were found, including the yellow frit example 78.



Figure 126. Glass-headed copper/copper alloy nail 40, Level 5; d. of glass head 2.7 cm.



Figure 127. 'Egyptianizing' blue frit bead 70, with incised Eye of Horus, Room 11; 1.2 × 0.9 × 0.7 cm.

A number of frit finials were recovered (Fig. 128), some composed of a very soft white material that may have been talc rather than frit (as in the large scarab 34). These objects may have served as furniture or even chariot pommels, or perhaps, in the case of the type represented by 72, a knob for locking a door (Huot 1996). The depressions on disc 47 must have been inlaid with another coloured material; traces of adhesive survive in the neatly drilled out cylindrical spaces (see also stone object 135). Another type of finial (77), a surface find from Area HH, must have been the head or handle of some kind of tool or pin. A copper/bronze nail from Room 11 with a frit head resembling a melon bead (41), now yellow in colour, calls to mind the better-preserved glass-headed nail, Figure 126. Several tiny rosettes (?inlays) were found, composed either of frit or of faience; a small rosette-like button came from room 11 (Fig. 133 and 59). Several pieces of raw yellow frit were found in Level 2.

Relatively few frit objects were recovered from the earlier levels in HH: beads included a cogwheel type from Level 3/4 and various examples from Levels 5 to 7, including two of Egyptian blue from Level 5 and a pale-coloured spacer bead from Level 6. However, the use of frit has a long history at Brak and the material is not uncommon in third-millennium levels at the site. Perhaps the most interesting object of this date is the multi-coloured Akkadian bowl published in *Iraq* 47, 1985, pl. 29:c. An unusual white frit rosette of Uruk attribution was found in Area CH (TB 2802).

E. Faience

Three faience cylinder seals cut in the 'common Mitanni style' are discussed in Chapter 3. Two came



Figure 128. White frit or possibly talc finials: 1) TB 8098, Room 22; 2) 72, Room 15; 3) 73, Room 22.

from the Palace and the third from Trench B, Level 4. Fragments of several faience vessels were also found. The most interesting of these (82) is the upper part of the head of a horned animal (?gazelle) which must have formed part of a faience rhyton (cf. Bass 1987, 708). Two ring-based sherds of yellow faience bowls came from Room 7 and Corridor 6 (80 & 81), and a faience macehead (76 and Fig. 129) from Room 11. Some of the conical gaming pieces were made of faience rather than frit or glass (e.g. 50) as was a small 'counter' or 'token' of tetrahedral shape, recovered from Room 5 (53).

No faience rosettes, one of the most common objects in Middle Assyrian levels at sites such as Tell al Rimah, Mohammed Arab and Assur were found in the Mitanni levels at Brak, confirming their Middle Assyrian attribution (see Tucker 1992). At Brak a single fragmentary rosette was recovered from Level 1 (42), which lacked, at least in its very worn state, the conventional scalloped edges of the Middle Assyrian form. In Level 2 there were a number of small faience rosettes which differ from the Middle Assyrian variety in both size and purpose. The Middle Assyrian examples have a button-like perforation for attachment at the back, whereas the smaller Mitanni pieces apparently served as inlay (43–5).

Perhaps the most unusual glazed piece from Level 2 is a large scarab (69), of which the original surface was, unfortunately, very worn. It measured some 6.6 cm in length and was made not of sintered quartz but, unusually, of a very soft, talc-like stone. Although we found relatively little faience in the earlier Mitanni levels, two pieces from Level 4 are of particular interest, one the cylinder seal (9) and the other, a very small fragment of a flat-rimmed faience bowl or plate, with a white body and a well-preserved, turquoise blue glaze which looks

to us much more Egyptian than Mesopotamian (71). Our Egyptological colleagues refuse to own it, however, which suggests, as is often the case, that the piece came originally from the Levant. One final piece of faience must be mentioned, although we cannot date it. It is a fragment of a light blue faience tile, measuring 5.6 cm in width and 1.1 in depth; a broken length of 7.7 cm survives. The white body is slightly pink in the middle. The tile comes from a hard, white, ancient ground surface adjacent to the late third-millennium 'red libn building' in Area FS. We have no other piece like it from Brak. It is



Figure 129. Green-/?blue-glazed faience macehead 76, Room 11; 4.2 × 4.4 cm.

unquestionably faience and the blue glaze survives in an unusually hard state (for a Kassite parallel, see Baqir 1945, 14). Small, thickly glazed, green faience objects, for example beads and pendants, are found in Akkadian contexts.

Glazed pottery is discussed on pp. 72–3; a glazed wall cone came from Corridor 4 in the Palace (Fig. 238:11).

The following is a summary of unillustrated, registered items of glass, frit and faience:

Unillustrated glass includes 12 ingots or their fragments, 4 from the courtyard and 4 from Corridor 6, one each from Room 7 and Room 10. Seven fragments of ingot-like glass came from the street south of the Temple, in a pre-Level 2 context (reg. no. 3067). The large ingots measure 15 cm in diameter; 4 fragments of a much smaller, copper blue ingot from Corridor 6 (reg. no. 4360), measured *c.* 5 or 6 cm in diameter; thickness 1.7. Raw cullet was found in a further 13 contexts, including Room 11, Room 5, and corridor 6. The Room 11 pieces include cobalt blue and amber; amber and white waste glass was found in both Room 5 and Corridor 6.

Among the unpublished objects are a further bullseye(s) (amber, blue and white fragments, reg. no. 4439), 4 further pendants (Room 11, Corridor 6 and Level 1, Middle Assyrian) and a number of gaming pieces. Fragments of 11 further core-moulded glass vessels were recovered (Room 1 door socket, Room 5, Room 2, Room 7). From Room 11 came 15 pieces of a fluted, feathered dark blue and white bottle (TB 8182).

F. Laboratory Analyses of Some Glasses and Metals from Tell Brak

by Robert H. Brill & Hiroshi Shirahata

Several samples of heavily weathered glass were submitted to the Corning Museum of Glass for chemical analysis. Some samples were so weathered that no glass remained. In such cases, the samples were used for lead-isotope analysis, along with samples of metallic lead, also from Brak. The glass fragments included two remarkable pieces uncovered in undoubted Akkadian contexts. These have also been examined and analyzed, and the results will be reported in Volume 2.

The eight fragments analyzed came from three different locations within the Mitanni Palace. According to the excavators, the monumental buildings underwent two destructions: one in 1283 BC, the other in *c.* 1275 BC. The glasses were broken in one of those destructions, but might well have been made some years earlier. Hence the excavators feel that *c.* 1300 BC is a good estimate of a general date for the glass, although some pieces could be earlier than that. A few fragments were found in what is believed to have been a workshop (Room 7) while others came from an adjacent storeroom (Room 5). The latter also contained raw materials and glass ingots.

Descriptions of the samples are given below. By extensive cleaning, it was possible to obtain interior samples of unweathered glass from six of the fragments submitted. For two other fragments, even the interior glass appeared to have been partially altered by weathering, but they were analyzed anyway.

Chemical analyses

The six unweathered glasses proved to be soda-lime glasses with K_2O and high MgO . They are typical Mesopotamian soda glasses, almost certainly made from pebbles and plant ashes. This is a formulation anchored firmly at the beginning of glassmaking in this part of the world and persisting (in the authors' view) for some 3500 years into modern times. The plant ash and pebbles described in the cuneiform glassmaking tablets (Brill 1970a) were the staple ingredients for glassmaking at inland locations where natron appears rarely, if ever, to have penetrated from littoral regions along the Mediterranean. Thus, it is not surprising that the Tell Brak glass compositions resemble those of roughly contemporaneous glasses from Nuzi and similar sites.

Table 3a. Chemical analyses of some glasses from Tell Brak.

	1230	1231	1232	1233	1234	1235	1236	1237
SiO ₂ d	67.50	64.18	70.99	67.13	68.76	70.12	64.20	73.12
Na ₂ O	16.3	15.3	14.4	16.3	13.6	9.73	16.1	7.52
CaO	8.37	10.9	6.68	7.33	8.56	6.44	7.49	5.93
K ₂ O	1.67	2.01	1.64	3.09	2.3	2.59	3.84	1.42
MgO	3.01	4.23	2.6	5.54	5.31	6.51	5.31	4.9
Al ₂ O ₃	0.24	0.86	0.39	0.39	0.3	2.01	0.99	1.18
Fe ₂ O ₃	0.1	0.37	0.11	0.08	0.08	1.42	0.53	0.82
TiO ₂	0.005	0.02	0.005	0.005	0.005	0.05	0.03	0.03
Sb ₂ O ₃	1.25	0.79	1.43	-	0.95	0.1	1.11	0.35
MnO	0.017	0.024	0.014	0.017	0.018	0.041	0.048	0.038
CuO	1.15	0.69	1.63	0.005	0.005	0.75	0.04	0.01
CoO	-	-	-	-	-	0.05	-	-
SnO ₂	0.003	-	-	-	-	-	-	-
Ag ₂ O	0.001	0.001	0.002	0.0005	0.0005	0.002	0.0005	0.001
PbO	0.005	0.5	0.005	0.01	0.005	0.05	0.13	4.59
BaO	0.005	0.01	0.005	0.005	0.005	0.005	0.01	0.005
SiO ₂	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.03
Li ₂ O	0.001	0.001	0.002	0.002	0.001	0.001	0.001	-
B ₂ O ₃	0.01	0.01	0.01	0.01	0.01	0.03	0.03	-
V ₂ O ₅	0.001	0.001	-	-	-	-	-	-
Cr ₂ O ₃	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
NiO	0.005	0.001	0.001	-	-	0.01	0.001	0.001
ZnO	0.3	0.042	0.026	0.029	0.032	0.032	0.035	0.048
ZrO ₂	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P ₂ O ₅	-	-	-	-	-	-	-	-
<i>Reduced compositions</i>								
SiO ₂ *d	69.45	65.59	73.33	67.22	69.52	70.96	65.20	77.06
Na ₂ O*	16.77	15.64	14.87	16.32	13.75	9.85	16.35	7.92
CaO*	8.61	11.14	6.90	7.34	8.65	6.52	7.61	6.25
K ₂ O*	1.72	2.05	1.69	3.09	2.33	2.62	3.90	1.50
MgO*	3.10	4.32	2.69	5.55	5.37	6.59	5.39	5.16
Al ₂ O ₃ *	0.25	0.88	0.40	0.39	0.30	2.03	1.01	1.24
Fe ₂ O ₃ *	0.10	0.38	0.11	0.08	0.08	1.44	0.54	0.86
T*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(Na+K)*	18.49	17.69	16.57	19.42	16.07	12.47	20.25	9.42
(Ca+Mg)*	11.71	15.46	9.59	12.89	14.02	13.10	13.00	11.41
(Si+Al+Fe)*	69.80	66.85	73.85	67.69	69.90	74.43	66.75	79.17
(Na/K)	9.76	7.61	8.78	5.28	5.91	3.76	4.19	5.30
(Ca/Mg)	2.78	2.58	2.57	1.32	1.61	0.99	1.41	1.21

All analyses are a combination of quantitative ICP values and semiquantitative emission spectrographic values. SiO₂d was estimated by difference from 100 per cent; P₂O₅ was not sought. The analyses were conducted by Dr Brandt Rising and his co-workers at Empire and Control Services, Inc., West Babylon, NY. Reduced compositions are calculated by normalizing the oxides shown to 100.00 per cent.

Table 3b. Details of glass samples analyzed by Robert Brill.

Sample no.	reg. no.	HH Locus	Room	Level	Description
1230	1698	42	5	2	Nugget of cullet (Fig. 124). Light blue opaque, heavily worn.
1231					Pendant or plaque fragment. Light blue opaque, heavily worn.
1232	1554	21		1	Pendant top with bore. Light blue opaque, heavily worn.
1233	1664	41	5	2	Glass artefact (or waste?). Dark amber glass coating flat piece of white devitrified, opaque glass, both heavily worn. Sample is of amber glass.
1234	1664	41	5	2	As above. Sample is of the white devitrified, opaque glass. X-ray diffraction shows Na ₂ O.2CaO.3SiO ₂ phase.
1235	2524	224	11	2	Cored vessel. Dark blue opaque, heavily worn, blackened core residue adhering. Original colours of threading indeterminate (6).
1236			7	2	Large spherical bead. Whitish opaque glass, heavily worn.
1237	1987	91	7	2	Large spherical bead. Yellowish opaque glass, heavily worn.
<i>Glass samples too weathered for chemical analysis, used for lead-isotope analysis</i>					
Pb-2141	1878	58	8	2	Miniature glass plaque containing yellow opaque beaded decoration. Completely worn (glass 2).
Pb-2142	1983	91	7	2	Fragment of cored vessel with combed decoration. Completely worn, original colours indeterminate except for yellow opaque.
Pb-2143	1980	63	1	2	Fragment of cored vessel with circular, fused-in decoration. Completely worn, original colours indeterminate except for yellow opaque.
Pb-2144	2593	224	11	2	Fragments of fused mosaic glass consisting of yellow and light green opaque rods and (possibly) other shapes (30). Heavily worn. Sample consists of yellow opaque glass.
Pb-2145	1947	80		1	Medium-sized glass bead. Light blue opaque glass with yellow opaque surface decoration. Heavily worn.
Pb-2146		85	1	2	Medium-sized glass bead. Yellow opaque glass throughout, heavily worn.
Pb-2151	2114	CH 691			Flattened lead wire, oval shape, heavily corroded. From mixed Uruk and Early Dynastic fill; no later than ED III, and probably earlier. Late 4th/early 3rd millennium bc.
Pb-2152	1701	TP 9			Lump of grey metal, uncorroded. From Eye Temple platform robber trenches; late 4th/early 3rd millennium bc.
Pb-2153	897	ST 85			Thin metal 'plating', corroded with brownish corrosion products. Late ED III; 2500-2400 bc.
Pb-2154	1616	FS 1171			Lead wire, heavily corroded. Akkadian or just post-Akkadian; c. 2200 bc.
Pb-2155	1615	HH46	7	2	Lead wire, heavily corroded; same context as glass from Mitanni Palace.

The data are reported in Table 3a. Here it can be seen that the two glass samples that appeared altered by weathering, nos. 1235 and 1237, both have lower sodium values than the other glasses — a consequence of sodium having been partially leached out. The three light blue opaque glasses, nos. 1230–32, are coloured only with copper and opacified with calcium antimonate, $\text{Ca}_2\text{Sb}_2\text{O}_7$. The only dark blue glass analyzed, no. 1235, is coloured with both cobalt and copper. The copper appears to have been accompanied by some nickel (NiO). The dark blue glass also has a considerably higher alumina content than the other glasses. This is probably due to the cobalt colourant as well, an effect noticed in Egyptian cobalt-coloured glasses of Dynasty 18.

Samples 1233 and 1234 are from a single fragment consisting now of four, thick, alternating layers of amber and white opaque glasses. No. 1233 is an orangy amber transparent glass, and no. 1234 is from one of the thick white opaque layers. The white colouring is so dense and the material so hard that the white layer closely resembles marble or porcelain, but it is indeed a glass. The hardness and colour result from the fact that the glass is heavily devitrified by having been heated at some intermediate temperature for several hours or days — perhaps accidentally. X-ray diffraction analysis by Philip Fenn and John Geiger (both of Corning, Inc.) established that the devitrification phase is $\text{Na}_2\text{O} \cdot 2\text{CaO} \cdot 3\text{SiO}_2$, a commonly found devitrification product of soda-lime glasses.

The amber glass is the only one of the six glasses that does not contain antimony, a feature that is responsible, indirectly, for the amber colour. Because antimony — an oxidizing agent — is absent, the internal redox state of the glass when melted was more reducing than in the other glasses, thus allowing the ferri-sulphide chromophore responsible for amber colours to form in that glass but not in the others.

Table 4 shows a mean composition for six of the Tell Brak glasses. (The two weathered glasses with lower soda were excluded.) The mean is expressed in terms of the reduced composition values, as indicated by the asterisks. The reduced composition consists only of the seven major and minor oxides listed, after normalizing them to 100.00 per cent. This allows for a more valid compositional comparison between glasses because it mathematically removes the compositional effects of additives such as colourants and opacifiers. Table 4 also

shows mean values for a group of ten somewhat earlier glasses from Nuzi. The compositions are strikingly similar.

Lead-isotope analyses

Lead-isotope analysis has been proved to be a valuable tool for classifying ancient lead-containing artefacts, including glasses, according to their origins. The analyses give information useful for learning where particular artefacts might have been made — or where they are unlikely to have been made. One particularly successful application has been in distinguishing between yellow opaque glasses made in Mesopotamia and those made in Egypt (cf. Brill 1970b; 1978; Brill *et al.* 1993). (Such glasses contain lead antimonate, $\text{Pb}_2\text{Sb}_2\text{O}_7$.) This can be seen in Figure 130, which summarizes data for about 900 artefacts of widely varying dates, provenances, and materials.

In particular, Figure 130 shows a group of 39 leads from Mesopotamia and Iranian artefacts that have similar lead-isotope ratios. They are indicated in the graph by the ellipse marked 'M', where they can be seen to be distinctly different from the lead in Egyptian artefacts. The group includes mostly glasses, but also some glazes and metallic leads. Until now we have not located any galena ores matching these leads, but somewhere in the Near East there were mines that supplied leads of this isotope type to glassmakers and glazemakers for over a thousand years — and possibly as long as 2500 years. (We say 'mines' because the ellipse 'M' actually contains either two or three subgroups of leads that are isotopically similar but nevertheless distinguishable from one another.) The earliest glass examples are from Tell al Rimah (c. 1500 BC) and the latest is a single high-lead, emerald-green Islamic cameo glass of the eleventh century AD.

It was expected that the Tell Brak glasses and metals, coming from where they did and being of Mitanni date, would fall among these Type M leads.

Table 4. Mean composition of glasses from Brak and Nuzi.

	Mean composition of some Tell Brak glasses (n = 6)					Mean composition of some Nuzi glasses (n = 10)				
	\bar{x}	\bar{x}	\bar{x}	s	r.d.	\bar{x}	\bar{x}	\bar{x}	s	r.d.
SiO_2^*	63.81	68.39	72.96	2.77	4.1	63.4	68.4	73.4	3.03	4.4
Na_2O^*	13.91	15.62	17.32	1.03	6.6	12.3	15.5	18.8	1.96	12.6
CaO^*	6.08	8.38	10.67	1.39	16.6	5.24	7.66	10.1	1.47	19.2
K_2O^*	1.15	2.46	3.78	0.80	32.3	1.85	2.76	3.68	0.55	20.1
MgO^*	2.51	4.40	6.29	1.15	26.0	3.33	4.46	5.59	0.68	15.3
Al_2O_3^*	0.05	0.54	1.02	0.29	54.4	0.18	0.72	1.25	0.32	45.1
Fe_2O_3^*	-0.08	0.22	0.51	0.18	82.6	-0.02	0.48	0.98	0.30	62.7

Means with 90 per cent confidence limits.

r.d. = relative deviation (Std dev. as a percentage of mean.)

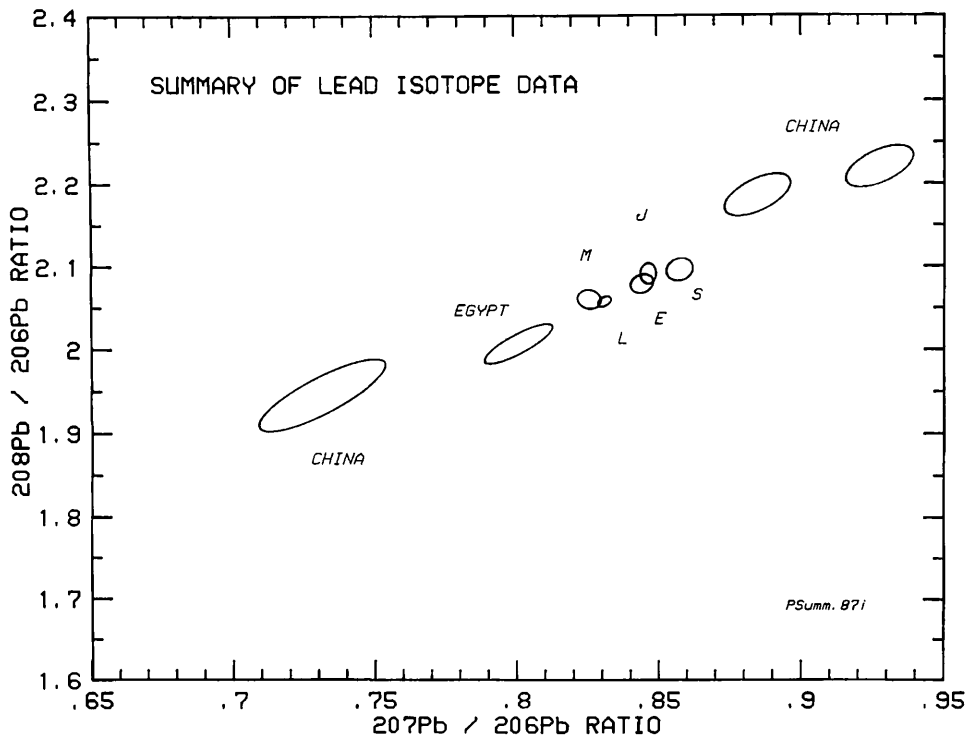


Figure 130. Summary of lead-isotope data for about 900 ancient artefacts including a wide variety of materials, periods and provenances. Some ores are also included. The ellipse marked 'Egypt' contains 50 Egyptian samples dating from Dynasty 18 or earlier. 'M' contains about 40 artefacts, most of Mesopotamian and Iranian origins. L, E and S are groups established previously but now used mainly as reference markers. 'L' denotes Laurion (or Laurion-like) leads, 'E' English and some European leads, 'S' Spanish and certain other leads. Many late Egyptian

glasses and most Hellenistic and Roman glasses fall between L and E. 'J' denotes some Japanese glasses while most Chinese glasses fall towards the higher and lower isotope ranges. All data for composing this graph are from the National Institute of Science and Technology (formerly the National Bureau of Standards) or the Muroran Institute. Nine of the eleven samples reported in this study lie within the M group ellipse; the other two lie just outside it.

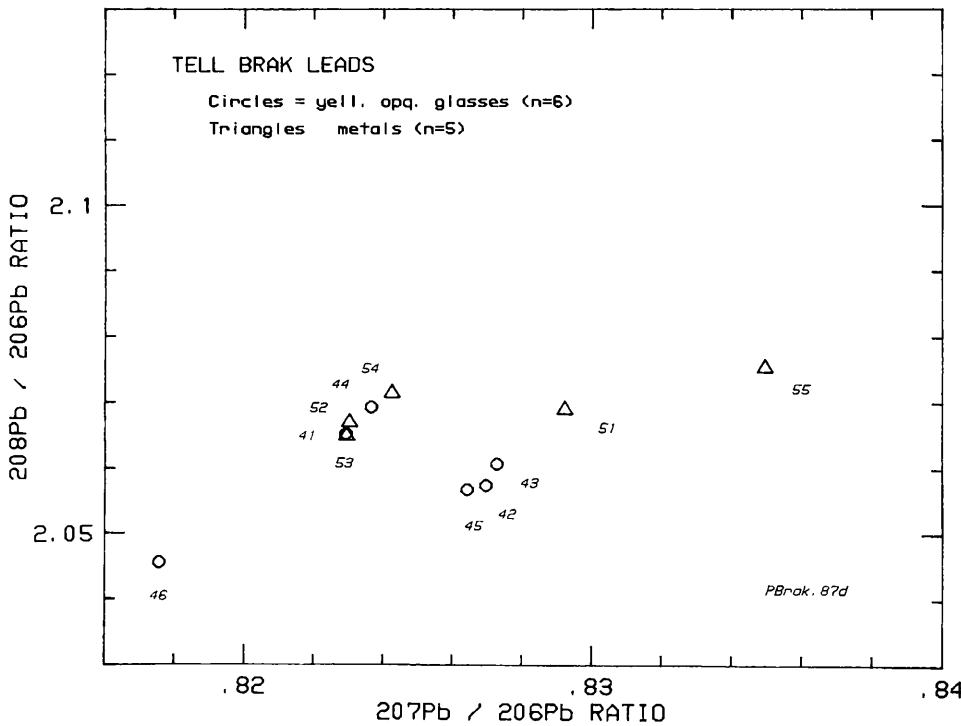


Figure 131. Results for eleven Tell Brak samples reported in this study.

In fact, nine of them do just that, but the other two are outlying points, as can be seen in Table 5 and Figures 131 and 132. The following comments describe the nearest neighbours on the graphs for the various Tell Brak glasses and leads.

Five of the Tell Brak samples (two glasses and three metals) fall squarely within the main cluster of leads defining the Type M leads. These are two Mitanni glasses and three earlier metallic leads. The defining leads date from as early as c. 2200 BC to as late as the seventh century BC. Most come from Tell al Rimah, Nuzi, Hasanlu and Nimrud, but there is a single sample from Tell Taya and a much later glaze from Siraf. A marbleized goblet from the tomb of the three foreign wives of Thutmosis III (cf. Table 14, p. 149) is also in this group. (It is the point lying just below and to the left of no. 2141 in Figure 132.) This goblet is believed to have been brought to Egypt from some Near Eastern location (Brill *et al.* 1993).

The three glasses nos. 2142, 2143 and 2145 match three leads analyzed earlier. They are a small lead ingot from Tell al Rimah, an unprovenanced New Kingdom eye bead from Egypt, and a fifteenth-century BC tin bead from Assasif (unplotted).

The nine squares surrounding no. 2151 include six seventh-century BC glass inlays from Nimrud, a piece of marbleized ware from Nuzi, a red opaque glass from Persepolis, and an orange opaque Islamic(?) glass.

The Mitanni glass

bead no. Pb-2146 has significantly lower ratios than any of the other Tell Brak samples. The only other lead known to the authors that resembles this lead is a galena (lead sulphide) kohl from Abydos dated to Dynasty 12. Although no squares are plotted around no. Pb-2155 (to the far right) that sample actually lies within the cluster of samples from Babylon, Susa, Hasanlu, Persepolis, Lisht and Nippur.

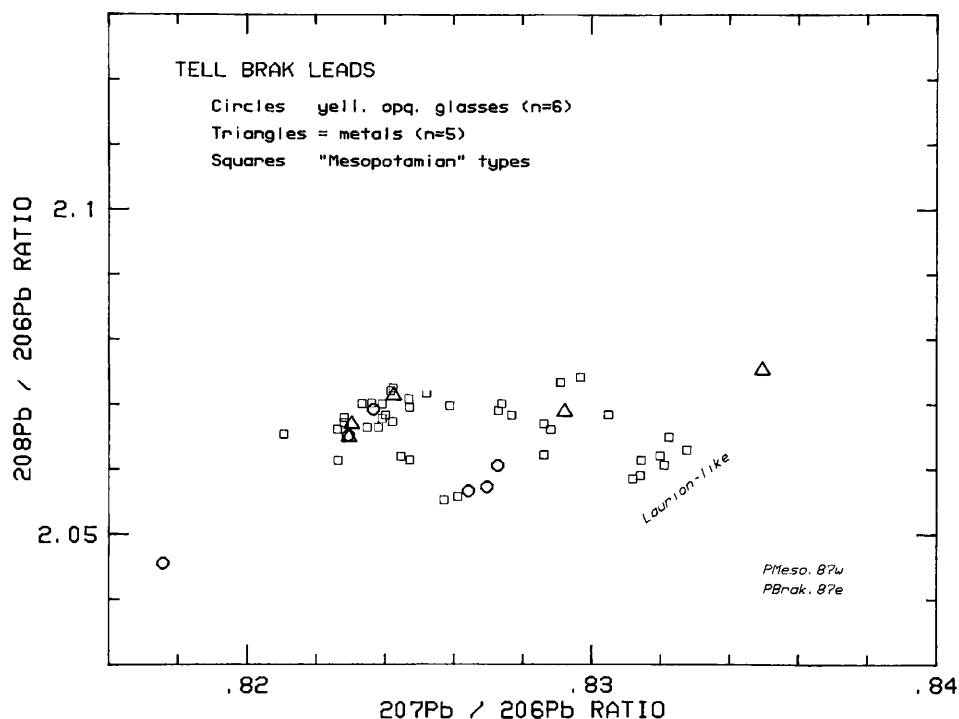


Figure 132. Results for Tell Brak samples with superimposed data for 39 Mesopotamian and Iranian artefacts of various dates and materials. The seven samples of 'Laurion-like' lead contain lead either from Laurion or from some Near Eastern sources that are isotopically indistinguishable from Laurion. The other samples are from Babylon, Tell al Rimah, Susa and Hasanlu.

Table 5. Lead-isotope analyses of some glasses and metals from Tell Brak.

Sample no.	Description	Date	Isotope ratios			2-sigma values		
			$^{208}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{204}\text{Pb}/^{206}\text{Pb}$	$^{208}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{204}\text{Pb}/^{206}\text{Pb}$
<i>Yellow opq. glasses</i>								
Pb-2141	plaque	c. 1300 BC	2.06522	0.82293	0.052367	0.000015	0.000007	0.0000018
2142	cored ves.	c. 1300 BC	2.05736	0.82696	0.052706	0.000014	0.000006	0.0000013
2143	cored ves.	c. 1300 BC	2.06063	0.82727	0.052573	0.000038	0.000009	0.0000025
2144	mosaic dec	c. 1300 BC	2.06925	0.82365	0.052274	0.000022	0.000007	0.0000016
2145	bead	c. 1300 BC	2.05672	0.82642	0.052651	0.000014	0.000006	0.0000014
2146	bead	c. 1300 BC	2.04553	0.81756	0.052105	0.000037	0.000009	0.0000016
<i>Metallic leads</i>								
Pb-2151	wire	c. 3000 BC	2.06894	0.82921	0.052879	0.000020	0.000007	0.0000017
2152	lump	c. 2500 BC	2.06696	0.82302	0.052290	0.000014	0.000009	0.0000025
2153	'plating'	c. 2500 BC	2.06496	0.82294	0.052397	0.000041	0.000017	0.0000063
2154	wire	c. 2200 BC	2.07142	0.82424	0.052228	0.000031	0.000009	0.0000021
2155	wire	c. 1350 BC	2.07535	0.83495	0.053062	0.000070	0.000016	0.0000022

All analyses were performed by Dr Hiroshi Shirahata and his co-workers at the Muroran Institute of Technology, Muroran, Japan. Details of the procedures can be obtained from Dr Shirahata.

Conclusions

Neither the chemical analyses nor the lead-isotope analyses have yielded any surprising results. In both cases the results have proven to be much as expected for glasses of their date and provenance. Nonetheless, the results are of value in that they add to the growing body of information about early Near Eastern glasses. They strengthen the view that there was one basic formulation and one consistent set of batch materials employed for glassmaking over a rather wide geographical region for a long period of time. In particular, the analyses provide further evidence for a continuing deliberation on the differences and connections between Mesopotamian and Egyptian glass. The technologies are similar (although distinguishable from one another); the sources of raw material for colourants (as evidenced by the lead-isotope data) are distinctly different; the basic chemical compositions are similar in some ways, but tantalizingly different in others. Judging from what has been learned about the Mitanni period glasses from Tell Brak, it would be extremely interesting to see if they differ — even in small compositional ways — from earlier glasses uncovered at the same site.

G. Scientific Analysis of Glass and Glaze from Tell Brak and its Archaeological Implications

by Julian Henderson

Ancient glass manufactured during the second millennium BC was the first in the world to have been made in any quantity. Although glass was produced in the third millennium BC, it was not until the second millennium that glass started to be mass-produced. The manufacture of core-formed glass vessels in Syria during the fourteenth century BC is an example of such production; by that period the glass was of a high quality, involving the use of a wide range of translucent and opaque colours in the manufacture of often highly decorated core-formed vessels such as small containers/phials serving as unguent flasks. The precise locations where the glass was fused from primary raw materials are yet to be found; lead-isotope analysis identifies among others a Syrian/north Mesopotamian source.

Few chemical analyses of second-millennium BC glass have been carried out, and some of these are yet to be published. The limited compositional variation so far detected can partly be attributed to the

range of glass colours used rather than the principal raw materials. Chemical analyses of glass that have been carried out include some from Nuzi, Iraq (Vandiver 1982; 1983), possibly of fifteenth-century date (p. 66) and an interim report on glass from the Ulu Burun shipwreck (Brill, in Bass 1986, 282, n. 55). Pollard & Moorey (1982) have published a study of Middle Assyrian siliceous materials from Tell al Rimah which includes the results for potassium oxide levels in one glaze and five glass samples (Pollard & Moorey 1982, appendix, samples 1 & 9–13); some of the potassium oxides are relatively low and, in the absence of results for magnesium oxide, it is possible to suggest that some of the samples may be of a low magnesia soda-lime composition since the levels of potassium and magnesium oxides are invariably correlated in ancient glasses. An alternative explanation is that the glazes analyzed are weathered. Chemical analyses of 18th Dynasty Egyptian glass have been published, such as Turner's analyses of glass from Tell el Amarna (Turner 1954, table I). Lilyquist & Brill's work (1993) has also provided us with very interesting comparable data for Egyptian glasses dating as far back as c. 1500 BC. Most of these glass compositions have proved to be of a soda-lime-silica with high magnesium oxide (MgO) contents, correlated with relatively high potassium oxide (K₂O) levels. This type of soda-lime High Magnesia Glass (HMG) was originally defined in the seminal works of Turner (1956) and Sayre & Smith (1961; 1967). This basic composition is suggestive of the use of crushed quartz as the silica source and a maritime or desert plant ash as the alkali source (see Brill, pp. 89–94).

There are other more specific technological features of second-millennium BC glasses which are worthy of mention here. The use of a cobalt source high in aluminium (a cobalt alum) probably located in Egypt has been inferred from the chemical analyses of cobalt blue Egyptian 18th Dynasty glasses; this cobalt source apparently introduced a relatively high level of aluminium oxide which has only been found in cobalt blue high magnesia glasses (Farnsworth & Ritchie 1938; Kaczmarczyk & Hedges 1983; Kaczmarczyk 1987; however see Lilyquist & Brill 1993, ns. 78 & 94). This does not mean that all cobalt blue second-millennium BC glass was either made in Egypt or coloured using the Egyptian cobalt-bearing source; Middle Eastern cobalt was also used. Otherwise the range of colourants in second-millennium BC glasses includes cupric oxide to make a copper-green (turquoise) colour, manganese oxide to produce a translucent purple colour and calcium antimonate to produce an opaque white glass, which is also com-

bined with copper, manganese or cobalt to produce their respective opaque colours, and lead antimonate to produce an opaque yellow glass. McGovern *et al.* (1991, 401) have pointed out that between c. 1500 and 1200 BC in Mesopotamia the same basic raw materials were used in the manufacture of glass, but that the apparently more localized use of colourants may indicate that there were separate local industries at the time. As will become apparent below, even this model for glass production may be oversimplifying the evidence. Overall, however, it can be stated that the glass industry was sophisticated and of a high standard by the fourteenth century BC, the likely date of most of the Tell Brak glass. That the developmental stage had already occurred is attested by earlier core-moulded vessels at Alalakh, Nuzi, Tell al Rimah and Brak itself.

Before focusing on the Tell Brak material it is worth considering in more detail analyses of some glasses and vitreous materials which pre-date it, so as to link them with Tell Brak glasses. McGovern *et al.* (1991) have published a useful discussion of the chemical analysis of siliceous materials ('frit' and glass) from Dinkha Tepe, northwestern Iran, dating to the early part of the second millennium BC. The results for three blue glasses presented in their paper would seem to suggest that the samples analysed were somewhat weathered, with soda levels of between 1.7 per cent and 9.6 per cent, and an elevated silica level in one sample of 79.1 per cent (McGovern *et al.* 1991, table 2a, comparison of samples g, h and i). Despite the level of weathering, it is still possible to suggest that the glasses were originally of the typical soda-lime-silica chemical composition with elevated levels of magnesium and potassium oxides; relatively high relict levels of magnesia, for example, which is less susceptible to weathering than soda, have survived in the remaining silicate network. The existence of these early second-millennium BC glasses, probably of the high magnesia soda-lime type suggests we should look to an even earlier period in order to identify the primary experimental phase in the production of the first glasses. Isolated glass beads and cullet have been found in Mesopotamia and Egypt, dating perhaps to as early as 2500 BC, and there are Akkadian fragments from Brak (to be published in Volume 2 of the Brak reports). However, no well-stratified glass vessels have been found earlier than c. 1500 BC (see above, p. 81). Beck's original (1934) claim that regular glass production originated in Western Asia rather than Egypt has withstood the test of time. It has been suggested that the earliest glass was a by-product of

the glazing of stone or possibly of faience (Brill 1963). Equally, metal-working, which would have involved similar temperatures and some shared raw materials, may have played a part. However, recent analyses of the vitreous component of faience found in Kerma, Sudan, dating to c. 2000 BC, clearly show that it is not of the expected soda-lime-silica composition (Henderson's analyses in Hatcher *et al.* forthcoming). Although the Kerma faience might be regarded as rather 'late', the origins of glass and its possible connection with faience production still need to be re-examined closely; direct proof of links between glass and metal production are very difficult to find.

Analyses of Tell Brak glass (performed by Julian Henderson)

The samples taken and technique used

Twelve samples of Tell Brak glass and one sample of glaze were analyzed (see Table 6). The objects sampled were a lump of 'layered' glass with weathered layers (Br1), ingot fragments (Br 8, 9 & 10), a fragment of decorated glass vessel (Br 15), bead fragments (Br4, 5, 7, 12 & 14) and a brown fragment of glass with white weathering from a 'bullseye'. The glaze from a large vessel was sampled and analyzed. All the samples are Mitanni in date; most derive from the destruction of the Palace and Temple and must be earlier than 1275 BC. Two samples are earlier still: one, an ingot fragment (Br9) from site locus HH 427 is possibly fifteenth century (see Fig. 26 for location) and the other (Br15) was taken from a small moulded vessel fragment with opaque yellow and opaque white decoration. This is early fourteenth century in date. The samples were chemically analyzed using electron probe microanalysis (see Henderson 1988a for the precise analytical conditions). Microsamples were removed from each object, mounted in epoxy resin and polished so as to remove any weathered layers and to create a repeatable geometry for chemical analysis. The epoxy disc was then coated with a thin layer of carbon to prevent deflection or distortion of the electron beam. The Cambridge M9 wavelength-dispersive electron microprobe with two crystal spectrometers was then calibrated with Corning and European Science Foundation glass standards; the relative analytical accuracy attained was 4 per cent for Na₂O, 2 per cent for MgO, 1 per cent for Al₂O₃, 1 per cent for SiO₂, 3 per cent for P₂O₅, 3 per cent for K₂O, 5 per cent for CaO, 1 per cent for Fe₂O₃, 1 per cent for CuO and 1 per cent for PbO (Henderson 1988a). An 80 micron diameter (defocused) electron beam was used for each analysis.

Results

The levels of magnesium and potassium oxides

The analytical results are given in Table 6a, expressed as weight percentage of the element oxide.

All the glass samples analyzed were of a soda-

lime-silica composition and most contained high magnesia levels which we might expect from glasses of this age, ranging from 3.2 per cent to 7.2 per cent (referred to as *HMG*). At the same time elevated levels of potassium oxide have been detected of between 2.2 per cent and 3.9 per cent, another feature

which is commonly found in glasses of this date. However, as well as these HMGs, one glass sample and a glaze sample, also of a soda-lime composition but with low levels of magnesia and potassium oxides, were identified (samples Br15b and Br16), referred to as *LMG*. Generally LMGs are found from around the eighth century BC onwards and would have been made from a mineral soda source (Sayre & Smith 1967). These compositions are unexpected and rather unusual. Indeed they show a very interesting departure from the normal glass technology of the period. Analysis of sample 1b is also clearly different from the rest. This is because it is badly weathered, with a total depletion of any soda, and only relict levels of magnesia and other minor oxides have survived.

Table 6a. Descriptions and site locus information for samples analyzed by J. Henderson.

Sample no.	Reg. no.	Site locus no.	Locus information	Sample description
Br1a, Br1b	1664	HH 41	Room 5	Chunk of 'layered' translucent brown and weathered opaque white glass
Br2	1698	HH 42	Room 5 doorway	Fragment of blue ingot
Br3		HH 224	Room 11	Fragment of purple-blue bead
Br4		HH 224		Fragment of turquoise bead
Br5		HH 224		Fragment of brown bead
Br7	no context	HH 204	Room 20	Turquoise bead
Br8	4363	HH 548	Corridor 6	Fragment of opaque blue ingot
Br9	3067	HH 427	street between Temple and Palace (pre-Level 2)	Fragment of opaque blue ingot
Br10	4360	HH 581	Corridor 6	Fragment of opaque blue ingot
Br11	4439	HH 545	Corridor 6	Chunk of brown glass with white weathering ('bullseye')
Br12		HH 85	door socket, Room 1	Fragment of turquoise bead
Br14		HH 58	Courtyard 8, SE corner near Corridor 6	Fragment of turquoise bead
Br15	3207	HH 452	a mixed layer, probably c. Level 4	Fragment of bowl with opaque white and opaque yellow decoration (32)
Br16		HH 224	Room 11	Translucent green glaze from pot

All of these samples date to c. 1300 BC, apart from Br9 which derives from deposits in the street between the Mitanni Palace and the Temple (see Fig. 2b, locus 427) of a probable fifteenth-century BC date and Br15 which is probably of early fourteenth-century BC date.

Table 6b. Chemical analysis of glass samples and a glaze sample from Tell Brak determined using electronprobe microanalysis, and expressed as weight percentage of the oxide of each element.

Sample no.	Br1a	Br1b	Br3	Br4	Br5	Br7	Br8	Br9	Br10	Br11	Br12	Br14	Br15	Br16
Object	chunk of 'layered' glass	bead	bead	bead fragment	bead fragment	bead	ingot fragment	ingot fragment	ingot fragment	'bullseye' fragment	bead	bead fragment	decorated vessel fragment	glaze
Colour	pale brown	opaque white	purplish-blue	turquoise	brown	turquoise	opaque pale blue	opaque pale blue	opaque pale blue	brown	turquoise	turquoise	opaque white	green
Na ₂ O	17.2	0.1	12.0	16.0	12.5	15.4	12.6	16.1	16.7	16.7	18.7	17.0	13.9	16.6
MgO	6.4	3.2	4.1	4.4	5.0	4.6	3.2	7.6	5.2	7.0	7.2	5.2	0.4	0.7
Al ₂ O ₃	0.2	0.4	2.2	0.4	0.8	0.4	0.6	1.9	1.0	0.2	0.5	0.5	2.5	2.5
SiO ₂	63.9	90.4	68.8	68.4	71.1	68.3	69.2	62.4	62.2	67.3	62.3	66.8	72.2	68.7
P ₂ O ₅	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.2	0.1	0.1
SO ₂	0.6	0.2	0.6	0.2	0.2	0.2	0.2	0.4	0.3	0.5	0.3	0.2	0.6	0.2
Cl	0.7	0.1	0.9	1.1	0.7	1.1	1.0	0.6	1.1	0.5	1.0	1.1	0.6	1.4
K ₂ O	3.3	0.2	2.9	2.2	2.7	2.2	2.0	3.7	3.3	2.6	2.6	3.2	0.8	0.9
CaO	7.2	0.7	4.1	5.0	3.9	4.7	8.8	6.1	7.8	4.7	6.4	4.9	7.5	7.9
TiO ₂	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cr ₂ O ₃	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MnO	ND	ND	0.2	ND	0.1	ND	ND	0.1	ND	ND	ND	ND	0.4	0.6
Fe ₂ O ₃	0.1	0.1	0.5	0.2	0.3	0.3	0.4	0.3	0.6	0.1	0.5	0.2	0.5	0.4
CoO	ND	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NiO	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CuO	ND	ND	0.3	1.6	ND	1.6	0.8	1.0	0.9	ND	0.7	1.6	ND	ND
ZnO	0.1	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
As ₂ O ₃	ND	ND	0.1	ND	ND	ND	0.1	0.2	0.1	ND	0.1	ND	0.1	ND
SnO ₂	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb ₂ O ₃	ND	0.1	0.3	ND	ND	ND	1.8	5.5	2.1	ND	ND	ND	8.4	ND
BaO	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PbO	ND	ND	0.1	ND	ND	ND	ND	ND	0.1	ND	ND	ND	0.1	ND

ND = Not Detected

Calcium oxide levels

Another interesting feature of the results is the occurrence of relatively low calcium oxide levels in some of the high magnesia glasses. The mean level of calcium oxide with associated standard deviations in eleven of the analyses given in Table 6b is 5.7 ± 1.3 per cent (this excludes the analysis of Br8, with an unusually high level of 8.8 per cent owing to the presence of calcium antimonate crystals, analysis of the weathered sample Br1b, and of Br16, the glaze). Many of these calcium oxide levels are rather lower than might normally be expected in both high and low magnesia soda-lime glass where a level of *c.* 6.5–8.0 per cent might be predicted; analysis numbers Br3 and Br5 with calcium oxide levels of 4.1 per cent and 3.9 per cent are unusually low for a soda-lime glass. In the long run variations in calcium oxide levels may prove to be chronologically diagnostic or conceivably characteristic of a production centre. Sayre (1964) has noted the existence of Egyptian 18th Dynasty glasses with very low calcium oxide levels, some as low as 2.5 per cent. Indeed 'black' glass from Nuzi contains comparably low levels (Vandiver 1983, 243), so these Brak samples fall into the same category. The only other ancient glasses with very low calcium oxide levels are some which were possibly made in northern Italy in the eleventh or tenth centuries BC but which are otherwise very different, being of a mixed-alkali composition (Henderson 1988b; 1995). It is worth noting that with a Low Magnesia (soda-lime) Glass (LMG) calcium is thought to be introduced during glass melting as shell fragments in sand. For High Magnesia Glass (HMG) on the other hand the same argument cannot be used, because the quartz pebbles which were probably the source of silica would not have had a calcium impurity; thus a third, calcium-rich, raw material would have been used. It is interesting to note, that a calcium-containing compound is *not* alluded to as a major additive in the manufacturing process for *zuku* (probably a high magnesia soda-lime glass) in the ancient cuneiform texts found in the palace of Assurbanipal, King of Assyria (664–627 BC) at Nineveh. These texts are thought to describe much earlier procedures than their seventh-century date (Brill, in Oppenheim *et al.* 1970, 109). There does not seem to be any correlation between the level of calcium oxide and glass colour or opacity. The wide variations of calcium levels in HMG must be due to the use of a range of calcium-bearing raw materials.

Aluminium oxide levels

If we turn to the aluminium oxide levels in the Tell Brak samples, low aluminium oxide (Al_2O_3) levels have been detected in almost all the samples, at around 0.5 per cent, and this is another typical feature of HMG. However, amongst the glasses analyzed here there is a rather wide variation in the alumina levels: in two low magnesia glasses (LMGs), the alumina levels are about five times higher than found in most HMGs, perhaps because alumina has been introduced as a mineralogical impurity in sand (Henderson 1985, 270–71). This is another distinctive difference between LMG and HMG technologies used at Tell Brak. The levels of alumina of 2.2 per cent in Br3 and 1.9 per cent in Br9 are also unusually high for glass of this period and require an explanation (see below).

Colourants and opacifiers

The colour of the glasses is largely due to the use of mineral-rich colourants in the glass melt. Only one of the 'bluish' glasses tested contains a significant level of cobalt oxide (Br3) which is associated with a high level of alumina as well as 0.5 per cent ferric oxide, 0.3 per cent cupric oxide, 0.1 per cent zinc oxide and 0.3 per cent antimony trioxide. The latter was detected at a lower level than found in the opaque glasses analyzed, so it may have been introduced as an 'impurity' with the cobalt. The elevated alumina level in Br3 is possibly due to the use of an Egyptian cobalt alum source as a colourant (see above).

A pale translucent amber matrix (Br1a) contained only 0.1 per cent ferrous oxide, which, in combination with 0.6 per cent SO_3 , is likely to be the cause of the colour (Schreurs & Brill 1984 and Brill, above). The other translucent brownish glasses (Br5, Br11) contain 0.3 per cent and 0.1 per cent ferrous oxide respectively, and the combination with 0.5 SO_3 in Br11 must be responsible for the glass colour. The turquoise and blue colours of Br4, Br7, Br8, Br9, Br10 and Br12 are all due to cupric oxide dissolved in the glass. Indeed the group of pale opaque blue glasses Br8, Br9 and Br10, all of which are ingot fragments from site loci 548, 427 and 581, respectively, contain similar levels of cupric oxide of between 0.8 per cent and 1.0 per cent and are opacified by calcium antimonate reflected in the levels of antimony trioxide of between 1.8 and 5.5 per cent. The relatively high levels of alumina in Br9 and Br10 are notable and difficult to explain; it may be significant that Br9 is probably fifteenth century BC in date, the find being sealed by two Mitanni street levels (see Fig. 26). The analyses of these ingot samples compare quite closely

with the analytical results for a blue ingot published here by Brill (Table 3, sample no. 1230). As mentioned above, the use of calcium antimonate as an opacifier is normal for the period; it is often, as here, added to coloured translucent glasses (i.e. the opacifying crystals are developed by heat treating the glass) to produce opaque colours. Indeed it has long been acknowledged that the principal glass decolourant used before c. the second century BC was antimony trioxide, in combination with calcium- and lead-produced opacifiers; thus the low levels of antimony detected in Br1b and 3 may be due to the technological environment in which the glasses were made. The opaque white glass in Br15b apparently contains 8.4 per cent antimony trioxide, which would be present as crystals of calcium antimonate ($\text{Ca}_2\text{Sb}_2\text{O}_7$, Turner & Rooksby 1961; Henderson 1985, 285; 1989). The actual level of antimony oxide may be slightly lower in the bulk analysis of Br15b, but in the case of this electron microprobe analysis the opacifying (antimony-rich) crystals have probably contributed at a relatively high level to the composition of the glass within the 80 micron area, producing elevated levels. It is also significant that this glass, apart from being opaque white and containing low levels of magnesia and potassium oxides (LMG), also contains a relatively high level of manganese oxide (0.4 per cent); so perhaps a sand with an impurity of a manganese-rich mineral (such as pyrolucite) was used.

Indeed, it is notable that almost all the HMGs analyzed contain very low levels of manganese oxide, or it has not been detected at all; the lower limit of detection for manganese oxide under the

conditions employed is 150 parts per million (0.015 per cent). The only glass and glaze samples which fall into the low magnesia soda-lime category from Brak (Br15b and Br16) also contain a much higher manganese oxide level than most of the other glasses analyzed. After the second century BC antimony was replaced by manganese oxide as the principal decolourant in ancient glass (Sayre 1963; Henderson 1985; 1989). This adds another characteristic which substantiates the distinction drawn here between HMG and LMG glass technologies. The only HMG glass analyzed which contains a high manganese level is Br3, but this is a deep blue colour, and the manganese may well have been introduced with the cobalt-rich colourant used in the glass (Henderson 1985).

Discussion of the analytical results produced by Dr Bruce Velde

All glasses sampled by Dr Bruce Velde and chemically analyzed using electronprobe microanalysis were from the site locus HH 224. His results are given in Table 7.

All seven samples analyzed turned out to be of a soda-lime-silica composition and all contain high levels of magnesia associated with relatively high levels of potassium oxide (HMG). Only one of the samples analyzed (described as purple: Table 7, no. 4) was found to contain a relatively high level of aluminium oxide (2.1 per cent). As noted above, this suggests an aluminium-rich source for the 0.04 per cent cobalt oxide detected. This glass is also the only one with elevated manganese oxide levels, which

again was probably associated with the use of a cobalt-rich colourant. The other colours of the glasses analysed were blue-white, opaque blue, blue, deep blue, purple, 'black' and brown.

Again the results indicate that some of the glasses made in the fourteenth century BC contained relatively low calcium oxide levels; the lowest level detected by Velde was 3.9 per cent. If the opaque blue glass with an anomalously high calcium oxide level of 10.7

Table 7. Chemical analysis of glass samples from Tell Brak, Syria, determined using electron probe microanalysis, and expressed as weight percentage of the oxide of each element.

Sample no. Object	2 bead	3 bead	4 bead	5 bead	6 bead	8 bead	10 bead	+	++ %	moulded frag. glass
Colour	blue-white	blue	purple	deep blue	'black'	opaque blue	brown			yellow
Na ₂ O	16.2	17.1	19.6	15.9	19.0	15.0	17.6		0.9	5.1
MgO	6.4	4.7	3.7	3.9	6.2	4.2	6.5		1.2	2.0
Al ₂ O ₃	0.2	0.4	2.1	0.3	0.7	0.6	0.2		7	3.9
SiO ₂	68.6	66.9	66.0	69.9	64.1	63.7	67.7		0.4	41.5
P ₂ O ₅	0.2	0.1	0.1	0.1	0.3	0.1	0.1		7	0.2
SO ₃	0.5	0.2	0.6	0.2	0.6	0.4	0.5		10	1.0
Cl	0.5	0.7	0.4	0.6	0.5	0.6	0.4		10	0.9
K ₂ O	2.6	3.2	2.0	2.2	3.4	2.1	2.6		2.5	2.3
CaO	3.9	4.9	4.1	5.1	4.6	10.7	4.0		2	1.9
MnO	0.1	ND	0.3	ND	ND	ND	ND	0.08		0.1
Fe ₂ O ₃	0.1	0.2	0.4	0.2	0.3	0.3	ND	0.08		1.2
CoO	0.09	ND	0.04	0.08	ND	0.61	ND	0.3		ND
CuO	ND	1.66	0.34	1.55	ND	ND	ND	0.08		29.2
Sb ₂ O ₃	ND	0.17	0.10	0.07	ND	1.14	ND	0.03		ND
BaO	ND	ND	ND	ND	ND	ND	ND			ND
PbO	ND	ND	0.1	ND	ND	ND	ND			ND

ND = Not Detected

++ = detection limit

++ = error in the percent amount present

All of the samples analyzed come from the Mitanni Palace, Room 11 and date to c. 1300 BC.

per cent (probably owing to calcium oxide crystals) is ignored, the mean and standard deviation for calcium oxide levels in the remaining six glasses analyzed is 4.4 ± 0.46 per cent. These glasses are about 2.0–3.0 per cent calcium oxide lower than might be expected in glasses of this period; for example two of the results for (translucent) glasses given in Table 6 contain 6.4 per cent and 7.2 per cent calcium oxide.

The colours of the glasses analyzed by Velde are the same as those discussed above with some variations: the translucent purple glass (sample 4) is coloured by manganese oxide and cobalt oxide, associated with copper, the latter quoted as a level of 0.34 per cent; the blue sample 3 is coloured by cupric oxide and probably modified by 0.2 per cent antimony trioxide — the elevated alumina level in the glass suggests that an Egyptian cobalt source may have been used (see above); the 'blue-white' sample (number 2) is coloured by 0.09 per cent cobalt oxide; it is notable that the glass does *not* contain an elevated aluminium oxide level so it is likely that an Egyptian cobalt source was not used. Indeed the manganese oxide impurity in the glass may indicate that the cobalt source lay in Western Asia. The deep blue sample (number 5) is coloured by 0.08 per cent cobalt oxide in the presence of 1.55 per cent cupric oxide; sample number 8 apparently contains 0.61 per cent cobalt oxide in the presence of 0.3 per cent iron oxide and 1.14 per cent antimony oxide, and again the normal low levels of aluminium oxide found in HMGs suggest that a non-Egyptian cobalt source was used. The 'black' (= deep translucent) glass is probably a deep brown or green, coloured by ferrous and/or ferric oxide; the analysis of the brown sample (number 10) has not revealed the presence of any mineral-based colourants, so the cause of the colour remains unknown.

Sample number 11 from a 'moulded fragment of yellow glass' contains 29.2 per cent copper oxide. It has a number of other unusual features (high magnesia associated with high alumina, low soda, low silica and low calcium oxide). There is a possibility that this is not a glass, but some other vitreous material; if a glass, the yellow colour is difficult to explain. Examination using a scanning-electron microscope, which would provide a means of identifying any crystalline opacifiers, might provide an answer.

Overall conclusions

In total, twenty-eight samples of glass and one sample of glaze have been analyzed by Dr Robert H.

Brill, Dr Julian Henderson and Dr Bruce Velde. All the samples date to the late fourteenth century BC apart from sample 15 in Table 6 from locus HH 452 which has been dated to the early fourteenth century BC and the ingot fragment Br 9 which may be even earlier. Although electron probe microanalysis and wet chemistry have been used to analyze glass samples and a glaze sample from a variety of object types (ingot, raw glass ('cullet'), moulded vessel fragments and beads) the result for most samples is that a soda-lime-silica glass with high levels of magnesia and associated elevated levels of potassium oxide (HMG) was used. This is predictable for the period and would have involved the fusion of silica in the form of crushed quartz, ashes of a maritime or desert plant and possibly a calcium-rich raw material. The low calcium oxide levels detected in some of the glass samples analyzed may eventually prove to be characteristic of a regional tradition or to be chronologically diagnostic.

However, unexpectedly, in addition to HMG, evidence was found for the use of another technology in the manufacture of Tell Brak glass. Only two samples analyzed were found to have been made using a low magnesia-soda-lime technology (LMG), one an opaque white decorative glass (Br15) and the other a green glaze of fourteenth-century date. The early fourteenth-century date for the glass may be of significance. This type of glass would probably have been manufactured using a mineral source of alkali, such as natron, and sand perhaps containing crushed shells which would have provided the calcium source. The accompanying elevated levels of alumina in the LMGs substantiate the distinction between the two technologies, because aluminium is normally considered to have been introduced as a mineral impurity in sand (Turner 1956; Henderson 1985); it does not occur in quartz, the principal source of silica thought to have been used in HMG.

The archaeological inference that can be drawn from the existence of these two technologies in the fourteenth century BC is that two production systems must have been employed. A mineral alkali used to manufacture LMG may have derived from Wadi el-Natron in Egypt where a deposit of this evaporite is to be found (Turner 1956; Henderson 1985, 272–3). Other sources of a suitable soda-rich mineral with the same specific impurity pattern are difficult to suggest. One possible implication is that these examples of LMG were made in Egypt because the soda source is there, but, as in the case of fourteenth-century BC Western Asiatic glasses, most Egyptian glasses of the period are of the HMG composition

and would not have been made with natron (Lilyquist & Brill 1993). Whatever the answer, and we still do not have evidence of where these different glasses were fused, these findings from Tell Brak show that two different recipes were used in the manufacture of fourteenth-century BC glass in Western Asia. Unpublished analyses of four thirteenth- to twelfth-century BC glass bead or bead fragments from Pella, Jordan (Henderson in prep.), show that low magnesia soda-lime glasses were in use there as well, but it is difficult to determine where they were made. The fact that the glaze sample was also of this composition serves to add a further fascinating complication to the story.

McGovern *et al.*'s suggestion that a number of production centres existed in Western Asia at which glass of slightly different compositions was made with the use of different colourants needs to be examined more closely with the findings from Tell Brak in mind (1991, 401). If colourants were added at a number of sites, then logically we could suggest that the actual fusion of glass from raw materials occurred at a more restricted number of specialized sites and that ingots of colourless or faintly tinted glasses were traded or exchanged with the sites where the colourants were added. In addition, we could suggest that there may have been sites where the glass was only worked and not modified (with the addition of a colourant) or made by fusing raw materials.

On the basis of the results from Tell Brak we can note several things. Firstly, with the existence of two available glass types the exchange networks would have been wider than with one. Secondly, if a colourant was added at a number of sites we would expect to find the use of colourless or faintly tinted glass ingots, but this appears not to be the case, and thirdly, we need to explain the existence of coloured ingots such as those from Tell Brak itself. Moorey suggests that in the second half of the second millennium BC there were glass production centres in northern Mesopotamia, in Khuzistan (Susiana) and perhaps in Babylonia (1994, 201–2). The evidence from Assur, Aqar Quf, Nuzi and Susa indicates that

glass workshops operated within the orbit of major royal or temple establishments and, it is suggested, served local needs. Moorey also suggests that Syria had its own very active glass industries (1994, 202). With no primary evidence for a glass-working industry at Tell Brak, we have to consider the industrial environment in which the glass ingots and lumps of raw glass were found. Given the range of other industries at the site, the presence of raw glass and glass ingots could suggest that glass-working occurred here as early as the late fifteenth century BC (Br9 and see p. 86). In addition, it is possible that the site was involved in redistributing ingots and lumps of raw glass as part of a trade network. At the same time the lead-isotope analyses support the likelihood of a North Syrian production centre.

With the available evidence of the existence of and trade in coloured ingots, such as the contemporary 'hoard' of cobalt blue glass ingots from the Ulu Burun shipwreck near Kaş, off the coast of Turkey (Bass 1986, 282, n. 55; Bass 1987, 716–18), it is possible that certain sites specialized in the production of ingots for trade. The use of at least two different cobalt sources is likely in the Tell Brak glasses, one in Western Asia and the other possibly in Egypt, so there would also have been exchange networks linking colourant sources and glass-making colouring sites.

The most economic production procedure would have been to centralize all aspects of production so that the initial fusion of the glass (fritting), addition of the colourant/opacifier and the forming of ingots for use on glass-working sites occurred on the same site. The actual *working* of glass (as opposed to *making* it) did, apparently, occur on sites which specialized in making glass artefacts, witness the trade in glass ingots. The occurrence of sites where slightly different colourant materials were used to make the objects may simply result from the melting down of glass ingots which had been made originally with slightly different colourant raw materials. However, much more detailed analytical work needs to be carried out before we can become more confident of such a production model.

Chapter 6

The Beads

(Figs. 223–6)

Helen McDonald

The relative numbers of second-millennium beads at Brak occur in the following order; glass (127), frit or faience (120), stone (37), shell (18), clay (2) and bone (1). The descending order of glass, frit and stone is broadly similar to that at Nuzi. However, at the latter site there are ten times as many glass beads as frit (Vandiver 1982, 74). It appears that during the second millennium glass and frit eclipsed stone as materials used for beads. This may have been owing to a shortage of suitable stone, or possibly because once the technology was generally available, glass and frit beads were less time-consuming to manufacture. It is also possible that it may have been a question of fashion.

Beads were found in all levels of Area HH, but the vast majority came from the destruction level of the Palace and Temple, with a particularly heavy concentration in the large reception room (Fig. 133). This room contained a concentration of both quantity (with 65 per cent of all glass and 35 per cent of all frit and faience beads) and variety (a total of 35 different types, including 4 glass and 13 frit types that were found only in Room 11). It also produced the only lapis bead (76), and two-thirds of all carnelian beads. Chemical analyses of a number of glass bead fragments can be found in Chapter 5.

Stone beads (Fig. 226:74–85)

The majority occurred in simple shapes: cylinder, barrel, sphere and disc, the latter being the most common. The most frequently used stone was carnelian, especially for the spherical beads (77). Other stones included banded agate/chalcedony (74), limestone (78 & 79), steatite (82), rock crystal and lapis (76). To what extent the carnelian and lapis derive from secondary deposition, e.g. in bricks or mortar cannot be established.

Glass beads (Fig. 223)

Monochrome beads were predominant (white 45 per cent, blue 18 per cent, yellow 5.6 per cent, green 4.8 per cent), although many of these beads may originally have been blue. Bi-chrome inlaid blue and white beads made up 11 per cent of the total and polychrome beads 7 per cent. Of the undecorated shapes, the sphere was the most common, followed respectively by the barrel, cylinder and disc. The large cylindrical beads (1) occur predominantly in blue glass and may have been blanks for seals.

Frit and faience beads (Figs. 224–5)

Frit is an easily moulded material, and there were a greater variety of shapes in frit than in either glass or stone. Blue and yellow were equally common (31 per cent each), then white (27 per cent), green (7.6 per cent) and red. The disc was the most common of the simple shapes, followed respectively by the cylinder, sphere and barrel. Red frit is rare and there is only one such second-millennium bead at Brak (55); red frit beads are known from both Tell al Rimah and Nuzi (Starr 1937, pl. 120Q, H and 1939, 447, 449).

Decorated glass beads (Fig. 223:7–22, 25, 27 & 28)

Inlay is the most common form of decoration for glass beads, with spheres the most commonly inlaid shape (13–22). Blue and white is the most frequent colour combination for the banded spherical beads (14–18), with a wider range of colours including green, yellow and black for other patterns of inlay (19–22). Inlaid cylindrical beads (8) are relatively rare at Brak, unlike Tell al Rimah where fourteen



Figure 133. Frit and faience beads from the Mitanni Palace, Room 11; faience rosette inlay (Fig. 220:43) and frit button (59), upper left; 2 glass gaming pieces, lower left.

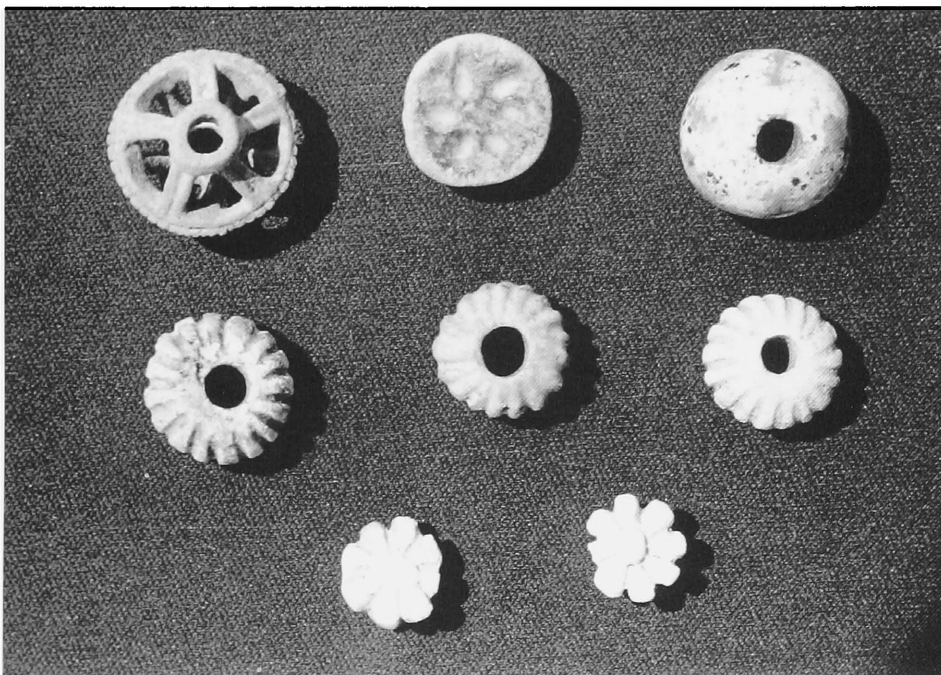


Figure 134. Frit, faience and glass beads and rosettes (see p. 283). (The frit inlay, upper centre, comes from an Akkadian or earlier level.)

different types of inlaid cylinder were discovered. The banded spherical beads (13–14) and those with inlaid circles (19–20) are all paralleled at Rimah. One of the inlaid glass beads (13) is from Level 6.

cylinder (7, 33), and the petalled cylinder (9, 40 & 42). The fluted sphere or melon bead is the most common of all the frit or faience types (46–8). The number of flutes varies from 7 to 24, with most

Decorated frit beads

(Fig. 224:33–42 & 46–51; Fig. 225:58–60 & 62–9)

A variety of moulded and incised frit beads was found. Only one example of each of the decorated cylindrical types (34–9, 41) was recovered, all from the Palace and most from the floor of Room 11. There are no exact parallels for the large, ridged faience bead (39), nor for the crosshatched bead (41), although the latter is found in stone at Brak (76). The 'flower button' (59) differs significantly from the larger Middle Assyrian rosette (Tucker 1992, 162–3, figs. 3–4) of which only one very worn fragment has been found at Brak in a Middle Assyrian level (p. 88). The biconical 'wheel' bead (67) occurs only in yellow frit at Brak, in contrast with Rimah where it is found in blue as well. The fluted lentoid bead (64–6) occurs predominantly in yellow. The number of flutes varies from 16 to 48, with most beads in the 30 to 35 range. The 'cog'-shaped frit bead (68) came from Level 3.

Decorated glass and frit beads

(Fig. 223:7, 9, 25 & 28; Fig. 224:33, 40, 42 & 46–50; Fig. 225:62 & 63)

A number of the more complex bead shapes are found in both glass and frit, for example the fluted

falling in the 14–18 range. This type occurs in green, yellow, blue and white colours, the latter two being the most common. At Brak this shape is rare in glass (only one example, 25). At least one quarter, and possibly all of the frit melon beads are actually faience, that is they have a discernible glaze. In general, those beads identified as faience are those with an incised pattern in which the glaze has survived. This raises the possibility that some of the beads currently identified as frit may once have been glazed.

Spacer beads (Fig. 223:28; Fig. 225:62 & 63)

Spacer beads are equally common in both glass (28) and frit (62 & 63). The glass examples are mainly green, but also white and blue. The frit beads occur in yellow, and also white frit and blue glazed faience. Frit spacers generally have more perforations than the same shape in glass. It has been suggested that the relative weakness of frit compared with glass necessitated the greater number of perforations in order to spread the load (Vandiver 1983, 246). The glass spacers range between Levels 4 and 5, (with a possible fragmentary example from Level 8) and provide further evidence that moulded glass beads were being manufactured at least as early as the fifteenth century BC (Barag 1970, 192).

Clay, bone and shell beads (Fig. 239:36 & 37; Fig. 236:93)

There are only two possible baked clay beads (Fig. 239:36 & 37) and just one bone disc bead (reg. no. 2622, from Room 20). The number of shell beads is surprisingly small, perhaps an indication of how this material had been replaced by glass and frit at this date. However, they include a number of marine shells, such as dentalia beads (TB 7202 & TB 8295, from Room 5 and 11, respectively); an *Arcularia* or basket shell bead (Fig. 236:93); a *Conus* bead (reg. no. 3992, from the vaulted shrine in Level 8) and a fragment of cowrie shell (reg. no. 4559, from the drain in Room 6). A flat, square bead (reg. no. 2247: dimensions 1.6 × 1.5 × 0.5 cm. from Room 20) had obviously been cut from a large, thick species of shell, possibly conch or a similar type. Twelve small (d. 0.5–0.8) disc/ring beads of indeterminate shell species were found. Nine of these come from the floors of Level 2, one from Level 3, one from the fill of the vaulted shrine in Level 8, and one was unstratified. As there are huge numbers of such small shell beads on the site, in particular from the Eye Temple and the third-millennium levels, it is possible that these beads were picked up from the surface of the site and re-used, or that they derive from mud-bricks or wall plaster.

Chapter 7

Stone Objects

(Figs. 226–31)

A. Sculpture (Figs. 33, 41, 227 & 228)

Human statues from the second millennium at Brak include a limestone seated male figure (92 and Fig. 41), heavily burnt and calcined, its face deliberately smashed in antiquity; the head and other fragments of (a) large basalt statue(s) (Figs. 33 & 135); and three small figures, two males carved in limestone and a basalt female (Figs. 136 & 228). The statue was found face down in the doorway leading from the courtyard portico into Room 11. It is made of fine-grained limestone and is just under 42 cm high. The figure wears a toga-like garment with a large asymmetric

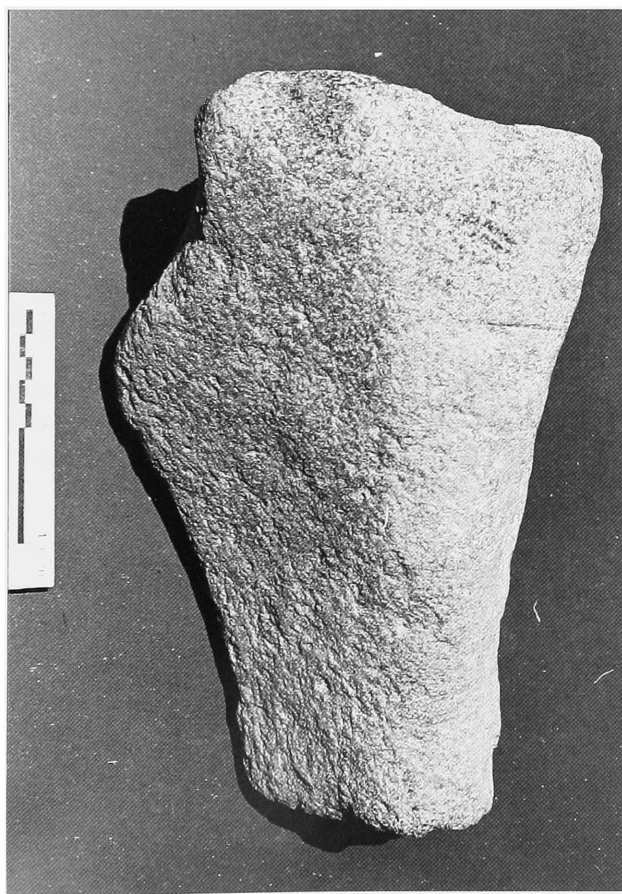


Figure 135. Fragment of large basalt animal leg (stone 124), found on the surface of the tell.

counter-weight apparently attached to his belt. The object held in his hand is broken at the top, but is possibly a vase. The proportions of the figure seem to the modern eye unbalanced, with its very heavy upper body, exaggerated arm length and spindly legs. Whether this was a convention of Mitanni sculpture cannot be established on the basis of a single piece. Its closest parallel lies with the well-known statue of Idrimi from Alalakh (Smith 1949), where the upper body is also exaggerated, but the latter piece is much more finely carved. To what extent the apparently mediocre quality of the Brak statue can be attributed to the heavy damage it suffered in the Middle Assyrian sack cannot be established, but it is clear that the back is far better-preserved than the front. It is important as the sole example of human sculpture from a site within the homeland of the Mitanni kingdom. The figure represented is likely to have been a ruler, or some important official, within the Mitanni establishment; it was presumably for this reason that the face was deliberately disfigured.

The fragments of large basalt sculpture were unfortunately found on the surface of the tell, as was the large, heavily stylized statue, now in the Louvre, recovered by Father Poidebard in 1930. Recent discoveries include a single human head (Fig. 33) and part of the leg of what may originally have been a bullman (Fig. 135), both of substantial size. A further heavily worn basalt piece had been shaped in a manner that resembles a human shoulder and upper arm. It is, of course, impossible to establish their date with any degree of accuracy, but the closest parallels for the recently discovered fragments lie with Tell Halaf, suggesting a possible Aramaean attribution. The quality of the stone is similar and one very worn fragment resembles, at least superficially, the headdress of von Oppenheim 1931, fig. 44B. The sole architectural evidence for the presence of a monumental building of this time at Brak is the massive red-brick platform that lies at the very summit of Area HH (see the Mitanni Palace courtyard section, Fig. 25). Unfortunately nothing survives either of the building it was constructed to support or of any directly associated finds (see also discussion, pp. 153–4).

The small statuettes (Fig. 136) belong to a broad class of stone figures of which the features are schematic and the shape either slab-like or, like the Brak figures, squat and dumpy. The large Louvre statue is of the same general style. Where these figures have been found in a meaningful context, they would seem to have been associated with ritual of some kind (*inter alia*, the Tell al Rimah example from a Middle Assyrian shrine, *Iraq* 27, 1965, fig. 20; a similar example found by the north jamb of the doorway to the Middle Assyrian cella of the Great Temple, *Iraq* 27, 1965, 77; and Brak 95, found on the floor of the Level 8 shrine). Brak 93 and 94 lack an informative context; both came from levelling fill beneath a Level 4 house in Trench D. Brak 94 is clearly female, in the amply proportioned style usually assumed to suggest 'fertility'. The other two figures would appear to be male. This is particularly clear in the case of the bearded example from the Level 8 shrine (95) which closely resembles another specimen from Rimah (*Iraq* 30, 1968, pl. 35d). The Rimah examples of this general type and most others would appear to be of Late Bronze Age attribution (e.g. Woolley 1955, pl. 44; Alalakh Levels V-IV). The Level 8 Brak example, on the other hand, is certainly of Old Babylonian date, while a slab-like piece from Tell Halawa (Orthmann 1989, fig. 51:2), attributed to the Early Bronze Age, is earlier still.

The animal hoof 127 is possibly part of a statue but may equally have come from a composite figure (see reference in the Aqar Quf texts to stags with bodies of carnelian and hooves of lapis, Gurney 1953, text 20).

B. The alabaster problem

With a view to the general reader we have, in earlier chapters, used the term alabaster to refer to the well-known Egyptian stone of which many Brak vessels

are made, but this term appears in inverted commas. The reason for this is that half of the so-called alabaster vessels recovered in Mitanni contexts at Brak are in composition not true alabaster. The latter is a calcium sulphate, which is found locally in north-eastern Syria. By far the majority of the most attractive 'alabaster' vessels published here are made not of the true sulphate alabaster but from a translucent calcium carbonate, which is easily identified by the application of hydrochloric acid. This 'limestone' comes from a number of sources in Egypt, and is harder than true alabaster. The fact that this very beautiful Egyptian 'alabaster' is not compositionally alabaster presents a problem in terminology to which no entirely satisfactory solution has yet been offered; indeed it is normally referred to as alabaster. Geologically, 'Egyptian alabaster' is a variety of limestone known as 'travertine', and recently Harrell (1991), followed by Aston (1994), has advocated the use of the latter term. This is compositionally correct but potentially misleading for those acquainted with other travertines. Indeed Egyptian travertine is not the porous 'calcareous tufa' which forms around springs in limestone terrains (including the famous deposits near Tivoli from which the name derives), but a dense banded material, a 'calcareous sinter' or, less accurately, 'onyx marble', which forms in subsurface caverns and occasionally around hot springs (Harrell 1991, 38). True alabaster is both softer and more porous than Egyptian travertine, which was consequently in demand for the manufacture of unbreakable and therefore easily transportable containers for cosmetic oils and other unguents, items much sought after in the Late Bronze Age.

Brak alabaster occurs in a relatively dense form (*inter alia* 113) and in a coarser stone which often has a 'greasy' appearance (e.g. reg. no. 4342). In the general text the imported travertines are referred to as 'alabaster' when the identification is uncertain. At

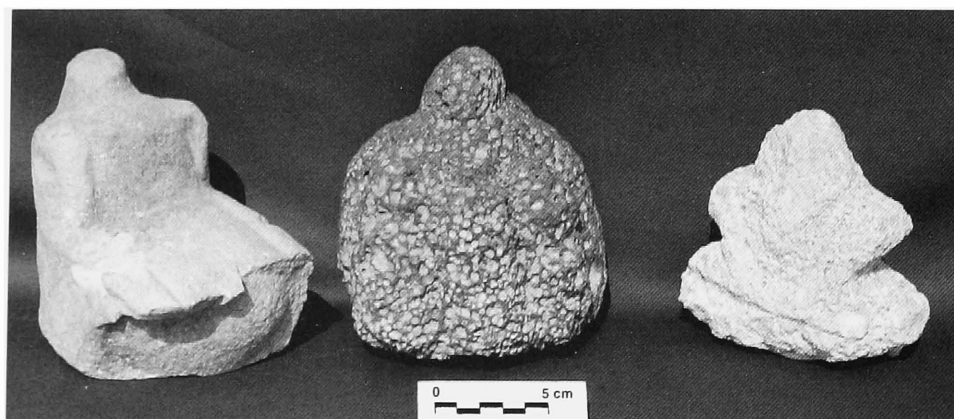


Figure 136. Stone statuettes: limestone male 93, basalt female 94, both from fill below the earliest Level 4 floor, Trench D; limestone male 95, from floor of Level 8 shrine.

Brak these are usually banded, though in some cases the banding is only visible in the section (e.g. 98). Heavily banded examples in pale brown and cream include the Level 6 example 103 and a single fragment from Room 5; vessels like 104 are also banded but in paler colours. The alabastron 103 is of considerable importance in signalling relations with the West, and perhaps even Egypt, in the very earliest phase of Mitanni rule.

In the text and charts the use of the term alabaster, without qualification, refers solely to the sulphate form. The imported travertines are referred to either as travertine or, when the identification is less certain, 'alabaster'. Those fragments which have actually been tested with hydrochloric acid are marked in the chart accompanying Figure 229 with a following '(t)'.

C. Alabaster, Travertine and Other Stone Objects

by Helen McDonald

1. Alabaster and travertine (Fig. 229)

Vessels of Egyptian travertine were much in demand in the Late Bronze Age world, presumably to hold substances such as scented oils or ointment or possibly even for display purposes. It is perhaps not surprising that at Brak the vast majority of fragments of both travertine and alabaster vessels are from the Level 2 public buildings. The distribution is as follows: one inscribed Old Babylonian fragment from the surface (alabaster, text 1, Chapter 2), one from old spoilheap/surface clearance, seven fragments (probably representing three vessels) from Levels 4 to 6, and the remainder, some sixty vessel fragments (representing perhaps thirty-seven different vessels) from the monumental buildings in Level 2. The comprehensive nature of the sack of the Mitanni Palace and Temple is reflected in the fragmentary condition of these objects. The only virtually complete item was potstand TB 7048 (Fig. 137). Within the Palace the greatest number of fragments was found in Corridor 6 (sixteen pieces representing one potstand, two bowls and three other vessels). The distribution in other rooms is as follows: Room 14, ten pieces representing six different jars; Courtyard 8, eight pieces of five jars and one potstand; Room 2, seven pieces from at least two jars and Room 5, three pieces, representing a probable potstand and two otherwise unidentified vessels. Room 9 produced three pieces of two different jars, Room 7, two pieces of potstands, and Rooms 1, 3 and the street between



Figure 137. Travertine potstand from Room 1, TB 7048 (cf. 102); ht 7 cm.

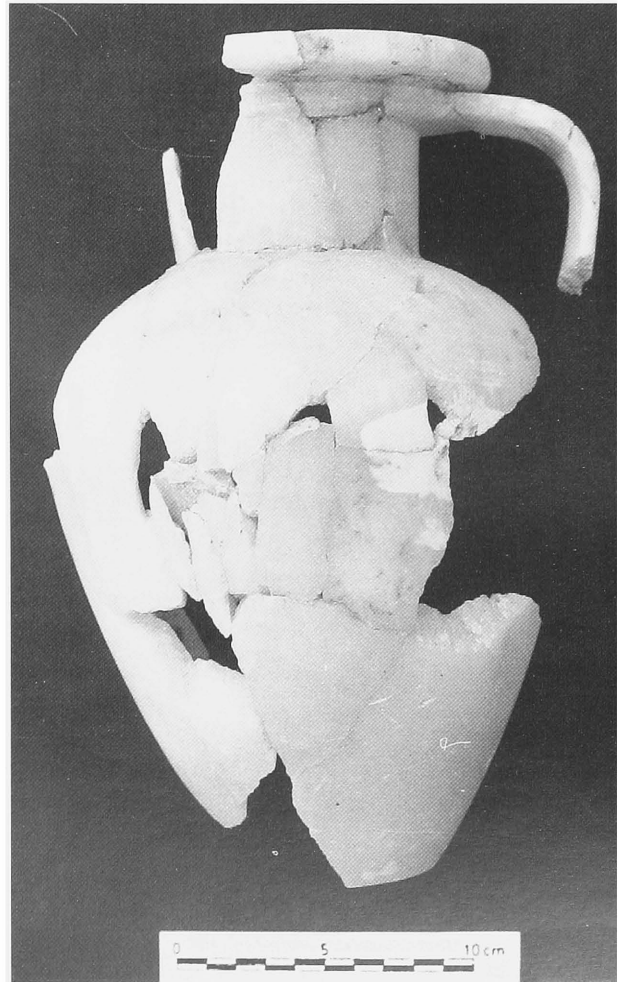


Figure 138. Two-handed travertine amphora 96, from the Palace courtyard.

the Palace and Temple, one piece each, a potstand and two jars, respectively. In the Temple cella were found five pieces of four different jars. Room 21 produced two pieces of the same jar and Room 22, just one jar fragment. Some of the body fragments hint at larger vessels than those illustrated, reg. nos. 1604 & 4342 (from Rooms 5 and 6, respectively) have wall thicknesses in excess of four centimetres.

Jars of various sorts, often with handles or pierced lugs, constitute the most common vessel shape (96–9, 106, 110–13, 116, and reg. nos. 2652, 2653, 2390, 2823 & 2771). The closest parallels with the shape of Brak amphora 96 are from Ugarit (Caubet 1991, pl. XI, 9; pl. IV, 3). The former has a built-in potstand base, as do many travertine/alabaster vessels, but is made from serpentinite, while the latter is described as alabaster and has a knob-base and a rather more bulbous body than the Brak example. They are from the 'ville basse ouest, tombe XIII' and the 'maison aux alabâtres', respectively. The marked wear on amphora rim 104 is consistent with the presence of a heavy, presumably travertine, lid. At Brak the potstand is the next most frequent shape, if the

rim fragments 105, 107, 108 and reg. no. 2026 are also parts of stands like 102 and Figure 137. One slight problem with these potstands is their orientation, since they could have been used either way up, depending on the shape of the supported vessel. With the narrower part uppermost, such stands would hold knob-based vessels like 115; inverted, they could support round-based vessels such as 103. The closest parallels again come from Ugarit (Caubet 1991, pl. X, 4–6, and it is interesting to note that the potstand RS 1-31.012 is illustrated one way up on pl. X, 4, and oriented in the other direction in the photograph, pl. III, 5). Alabaster vessels with attached stands generally have the opening of smaller diameter uppermost (e.g. Tell al Rimah, *Iraq* 30, 1968, pl. 35:a, b; Assur, Haller 1954, pl. 31). However, most Mitanni potstands in clay are broader at the top than at the base (see for example, the piercrust potstands where surviving *in situ* examples at both Rimah and Brak demonstrate the orientation we have illustrated). Brak's least common stone vessel shapes were bowls, of which there was evidence for only two, both from Corridor 6 (reg. no. 4494). Also unusual, and of much earlier date, is the alabastron 103 (Fig. 139) of which there was a single example.

A hydrochloric acid test on selected samples revealed that many of our vessels are of the imported



Figure 139. Travertine alabastron 103 from Level 6/5 boundary, Trench C5.



Figure 140. 'Alabaster' jar 111 from Temple cella (probably travertine).

travertine; where known this is indicated on the chart facing Figure 229. On the basis of descriptions made in the field it has not been possible to classify all of the fragments, but many are of a true alabaster, a softer, coarser stone which would appear to be local, not only because it is the most common, but also because the third-millennium alabaster vessels are of identical stone.

The banded travertine vessel **103** is of particular interest since it indicates the importation of such vessels by early Level 5 (at the very latest), not long after the construction of the Mitanni Palace. In Egypt vessels with this ovoid body and flared grooved rim are common during the 12th Dynasty (Aston 1994, 142). To the west of Brak there are exact parallels at Ugarit from a tomb dated to late Middle Bronze Age/early Late Bronze Age (Caubet 1991, pl. I, 3), and Ebla, from the tomb of the 'Signore dei Capridi', dated to MB II, c. 1750–1700 BC (Matthiae 1995, 501, no. 464). The only other pre-Level 2 pieces of 'alabaster' are a jar rim from a Level 4 floor in Trench B (reg. no. 2771), and base **115** from approximately Level 4/5 in the street between the Palace and Temple.

2. Other stone objects (Figs. 226:86–91; 230:117–25; 231:126–44)

Undoubtedly the finest object in this category is the very heavy, fine basalt plate from Room 11 (**122** and Fig. 141). It was beautifully made, and enormously heavy, which made its on-site repair extremely difficult. One of the most interesting stone objects recovered is the pivot stone (**123** and Fig. 15) from the Room 1 door socket. The stone would have fitted within the wooden post to which the door was fastened; it had a flat side to prevent it turning within the door post. Another interesting piece is the large 'pole holder' **125** from the Level 8 shrine. Its precise function remains obscure.

The unusually large eye idol came from general fill in Level 4, Trench A. It may derive from the much earlier Eye Temple, but no eye idol of this size has ever been found there or in contemporary levels elsewhere on the site. This example is unique not only for its size but also for the presence of bone inlay within the pupil of the eye. The original Eye Temple was suppressed when the Naram-Sin Palace was built, and we do not know whether the cult was moved

to some other location on the site, though this seems unlikely. At present we can only assume that this large example derives from the fourth- or early third-millennium temple.

The function of many of the small stone objects remains obscure, but some were almost certainly weights (**128**, **129** & **130**), gaming pieces (?**132**), etc. Disc **135** is of interest. The circular excisions probably once held inlays, and the object itself may have been part of some decorative object such as horse harness. There is a similar object in frit (Fig. 220:47). The chisel (**140**) was from the surface and so provides no context for its use.

Information on various grinders and grinding slabs is summarized in Table 8, below. The types are as follows; the number of examples of each type is given in brackets.

- A. Roughly cuboid with use/wear on all surfaces (33 examples).
- B. Roughly conical pestle with use/wear on its convex base (17). (For shape cf. Akkermans 1993, 52, fig. 26, 110–11.)
- C. Roughly rectangular with rounded ends and use/wear on the long sides and occasionally on one end as well (16).
- D. Circular, varying from thick discs to squat cylinders with use/wear on upper and lower surfaces (8).
- E. Grinding slabs (12). (For shape cf. Akkermans 1993, 52, fig. 26:106).
- F. Circular/oval objects with a central perforation (11). Possibly loom or net weights.
- G. Mortars (15) (includes Fig. 230:117–19 & 121).

There seems to be a preference for basalt over other types of stone for the pestles (type B), whereas the reverse is true for the cuboid, rectangular and circular

Table 8. Grinding equipment and other large stone objects.

Type	Material	No.	Range of dimensions			Mean dimensions			Levels		
			L.	W.	Th.	L.	W.	Th.	1	2	3–10
A	stone	22	4.5–10.4	4.2–10.0	3.6–7.2	5.96	5.5	4.80		5	17
A	basalt	11	3.9–8.4	3.4–6.6	3.3–6.2	5.88	5.23	4.61	4	2	5
B	stone	6	5.2–8.5	4.2–5.1	2.8–4.9	7.21	4.66	3.66		3	3
B	basalt	11	5.9–10.3	5.2–9.7	5.2–9.7	8.3	6.54	6.20		10	1
C	stone	14	4.8–17.0	3.1–8.7	1.7–6.2	9.93	5.72	3.59		3	11
C	basalt	2	7.4–11.6	6.1–10.5	4.5–8.0						2
D	stone	4	5.1–8.0	5.1–7.5	2.6–5.2	6.72	5.87	3.82	1	3	
D	basalt	4	5.2–8.0	4.9–8.0	4.5–4.8	6.35	6.27	4.62		1	3
Rubbbers total		74				Rubbbers total for levels			5	29	40
E	basalt	*12	16–68	10.3–40	2.7–35.0	36.80	22.50	12.60		8	4
F	stone	2	7.5–10.5	7.5–10.5	3.5–5.3	2					
F	basalt	9	4.1–15.0	4.1–13.2	2.7–6.8	12.63	10.36	4.54	2		7
			Ht	Rim D.				Ht	Rim D.		
G	basalt	**15	5.2–17.0	13.1–34.0		11.18	22.38		1	7	6
Grand total		112				Totals for levels			8	44	59

*This figure does not include incomplete examples.

**This figure includes one unstratified example.

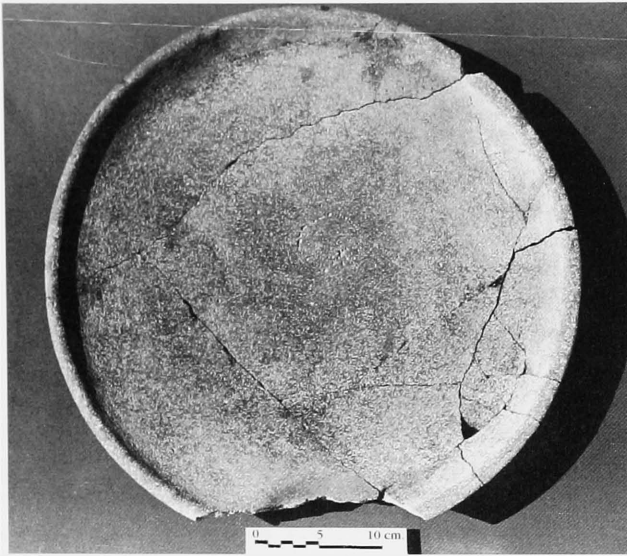


Figure 141. Fine basalt plate from Room 7; d. 41 cm.

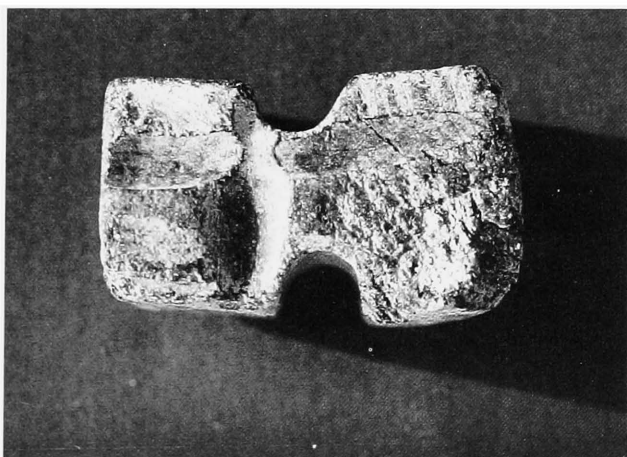
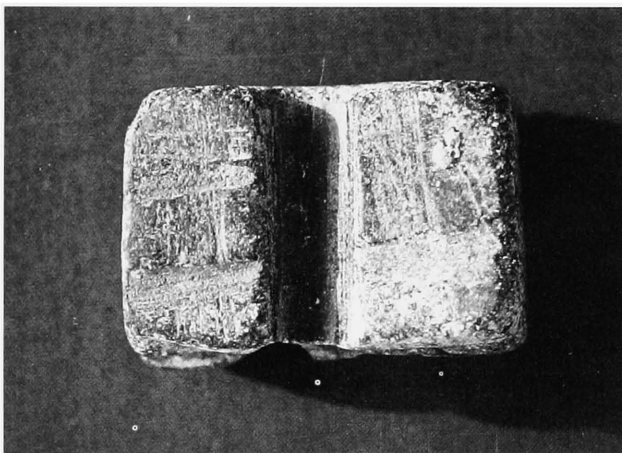


Figure 142. Two views of stone bead polisher from the Palace workroom (7); 4.8 × 3.3 × 2.4 cm.

rubbers (types A, C and D). Unlike the distribution of clay objects between the public buildings of Level 2 and the earlier, generally household contexts (p. 129), the distribution of stone objects is more complex. Overall, the domestic buildings contained slightly more stone objects than the Level 2 public buildings, but within some categories the position is occasionally reversed. The Palace and Temple, for instance, contained a greater proportion of grinding slabs and mortars and more of the Type B conical pestles, presumably reflecting their role as manufacturing institutions. Such a distribution may equally represent the difference between a large-scale destruction level in monumental buildings, from which only the most valuable items were looted, leaving the heavier, everyday objects behind, and the more varied depositional environment of the Levels 2–10 houses, where abandonment may have been less sudden, allowing for the removal of useful tools. Such comparisons between the Level 2 public buildings and the generally household contexts of the rest of HH are valid in a generalized quantitative sense, since the volume of soil removed in the two separate operations was approximately equal.

D. Stone contexts by Helen McDonald

The greatest concentration of grinding slabs was in the lower fill of Workroom 7, where three complete and twelve fragmentary slabs were found. The lower fill and floor of this room also had the widest range of stone tools of all types, including a tripod mortar (118), two whetstones (143 & 144), a palette (TB 7062, see below for details), a bead polisher (Fig. 142), a stone pestle (type B), a rectangular pumice rubber, as well as the two weights (129 & 130). These suggest a variety of activities from heavy duty pounding to cutting and polishing and the weighing of exact quantities. Rooms 5 and 12, the two rooms leading off Room 7, contained a number of stone items that may also have been used in manufacturing activities. The floor of Storeroom 5 produced two rectangular rubbers (one stone and one basalt), a whetstone (reg. no. 1557), four grinding slabs and a polisher (reg. no. 1606). In Room 12 was found another piece of the same mortar as that found in Room 7 (118), two cuboid stone rubbers, two conical basalt pestles and a conical stone pestle. The lower fill of Corridor 6 contained two grinding slabs, a palette (120), a whetstone (139), and a rectangular basalt rubber, while the drain produced a jar stopper (134). Most of these objects are unlikely to have been used in Corridor 6 itself; they may represent some of the contents of Rooms

5 or 7, displaced during the sack of the building.

Across the courtyard from Room 7 there seems to have been another locus of related activities in Rooms 9 and 15. There were five conical basalt pestles, a conical stone pestle and a cuboid stone rubber in Room 9, and the floor of Room 15 produced four rubbers, one stone and one basalt cuboid, a circular basalt rubber and a rectangular stone rubber.

Other rooms in the Palace yielded smaller collections of ground stone objects. The fill of Room 13 produced only a celt (141). In Room 3 were two conical basalt pestles and a celt (reg. no. 1434). Rooms 11 and 20 produced a combination of functional and decorative objects. Two of the macehead fragments (reg. nos. 2436 & 2321) and an inlay fragment (Fig. 226:87) came from the lower fill of Room 20, as well as a tripod mortar (reg. no. 2549); a conical basalt pestle and a possible palette stone came from the fill. In the Temple the ancillary chambers 21 and 22 showed some evidence of workroom function, for example ground stone tools, a celt (TB 8166), a mortar (117), a cuboid rubber and a conical pestle in Room 21, and in Room 22 a circular rubber and a fragment of a basalt mortar. Room 11 produced a large number of luxury items, but also contained a weight (128), inlay pieces (Fig. 226:88 & 89), three possible gaming pieces/counters, a polisher (reg. no. 2631), a conical basalt pestle and a circular pumice rubber.

Several concentrations of ground stone objects were found associated with floors in pre-Level 2 contexts. The Level 4 floors (HH 432, 462 & 463),

produced a complete grinding slab and several fragments, a conical stone pestle, a circular basalt rubber and a polisher (reg. no. 3078), a burnisher/weight fragment (132), a gypsum sealing (reg. no. 3236), and a cuboid polisher (reg. no. 3266). In level 5b two floors produced collections of ground stone objects. On floor HH 442 were an incomplete basalt tripod mortar, two rectangular stone rubbers, a conical stone pestle, a possible palette/whetstone and a perforated basalt weight. A second room (floor HH 444) produced a tripod mortar and a conical pestle, both basalt (see Figs. 51 & 52). On the Level 7 'white plaster floor' (HH 509) were two stone rubbers, one rectangular and one cuboid.

There was a surprisingly large number of ground stone objects from the lower fill and floor of the vaulted shrine in Level 8. These include six cuboid stone rubbers and one cuboid basalt rubber, two rectangular stone rubbers, two perforated stone weights and the base of a stone bowl (reg. no. 4119, see also p. 112), perhaps re-used as a palette. The fill of the shrine also produced a fragment of a magnetite polisher (reg. no. 3338). A floor of the same level in Trench A (HH 328) produced a tripod mortar, a basalt pestle with a handle (reg. no. 2854), a cuboid stone rubber, a spindle whorl and a basalt ovoid (138). The latter object, identified as a sling bullet, is a rare example in stone of a shape more familiar in unbaked clay. Clay sling bullets are found in huge numbers in third-millennium levels at Brak, and their aerodynamic properties have been fully tested by members of the dig staff.

Additional Stone Objects (not illustrated)

Information for objects illustrated only in photographs.

Figure 33

TB 7217 reg. no. 1999 Sculptured basalt head, incomplete. Ht 22.5; w. 29.5; th. 22.0 max.; HH 90, found above a recent grave.

Figure 142

reg. no. 1901 Rectangular object with grooves on 3 of its faces. Bead polisher. Dimensions 4.8 × 3.3 × 2.4; HH 91, Rm 7, lower fill.

Additional alabaster fragments (for definition of stone types see p. 106).

reg. no. 1604 Fragment from the body of a vessel. L. 12.4; w. 10.4; th. 4.8; HH 44, Rm 5 floor.
 reg. no. 1801 Fragment from the body of a vessel. Cream with white bands. Type 1. L. 5.2; w. 2.6; th. 0.5; HH 44, Rm 5 floor.
 reg. no. 2026 Potstand rim. Ht 3.5; w. 5.2; HH 91, Rm 7, fill on floor.
 reg. no. 2652 Fragment from the shoulder of a jar. Type 3. Ht 10.5; w. 6.6; HH 241, Rm 21.
 reg. no. 2653 Jar rim fragment. Type 3. D. 11.0 approx.; ht 2.0; HH 241.
 reg. no. 2823 Jar rim fragment. Ht 2.8; w. 4.0; HH 323, Courtyard 8 floor.
 reg. no. 2390 Fragment from the body of a jar with the remains of a lug. Type 3. Ht 11.5; est. d. 14.0; HH 210, Rm 9, fill on floor.
 reg. no. 4494 Two simple bowl rim fragments & ten vessel body fragments; Rim d. of the larger bowl 30.0 approx.; ht 2.0; Type 3. HH 548, Corridor 6 fill.
 reg. no. 4261 Body fragment from close to vessel base. Type 3. Ht 5.6; w. 5.0; th. 1.2; HH 581, Rm 6, debris on bottom of stairs.
 reg. no. 4341 Body fragment. Ht 12.5; max. body d. 16.0; HH 572, Corridor 6, upper fill of drain.
 reg. no. 4342 Body fragment from close to vessel base. Type 3. Ht 8.1; th. varies 2.2–4.3; HH 581, Rm 6.
 reg. no. 2863 Fragment from the body of a vessel. Ht 7.0; w. 4.2; th. 1.5; HH 353, old spoilheap/surface clearance.
 reg. no. 2771 Rim fragment. Ht 3.2; w. 3.6; HH 294, Tr. B floor, Level 4.

Maceheads

reg. no. 1433 Fragment, polished black stone. Ht 4.4, est. d. 5.5; HH 13, surface clearance.
 reg. no. 2436 Fragment, white stone. Ext. ht 1.2; d. 5.2; HH 248, Rm 20 fill of doorway.
 reg. no. 2321 Fragment, polished haematite. Ext. ht 2.2; ext. l. 3.0; ext. w. 1.4; HH 204, Rm 20 lower fill.

Celts

TB 8168 reg. no. 2047 Blade incomplete. Blue-green granular stone. L. 4.2; w. 4.0; th. 1.7; HH 112, Level 1.
 TB 8167 reg. no. 2254 Grey-green, fine-grained crystalline stone. l. 6.4; w. 3.5; th. 1.7; HH 212, Level 1.
 reg. no. 1434 Incomplete. Polished black stone. Ext. l. 3.6; w. 1.9; th. 1.1; HH 14, Rm 3 floor.
 TB 8166 reg. no. 2427 Grey crystalline stone. Blade polished through use. L. 6.8; w. 3.7; th. 2.4; HH 241, Rm 21, fill on floor.
 TB 10048 reg. no. 3841 Fine-grained grey stone. L. 5.2; w. 4.3; th. 1.4; HH 497, Tr. D, Level 6.

Polishers/Burnishers

TB 9145a reg. no. 2684 Possibly another object like Figure 142. Granite block with groove on one surface. Ht 5.9; w. 8.3; th. 4.0; l. of groove 7.0; HH 258, Tr. A fill, Level 4.
 reg. no. 3266 Roughly cuboid object, with indentations on all surfaces. L. 6.4; w. 5.4; th. 4.6; HH 463, Tr. D floor, Level 4.
 reg. no. 1606 Ovoid pebble, polished. L. 2.8; w. 1.3; th. 1.1; HH 42, Rm 5 floor.
 reg. no. 2631 Ovoid pebble, polished. L. 1.6; d. 2.2; HH 224, Rm 11 floor
 reg. no. 3078 Rectangular red-brown stone, surfaces polished. L. 2.8; w. 1.3; th. 1.1; HH 432, Tr. D, Level 4/5.
 reg. no. 3338 Small fragment of a magnetite polisher, two extant surfaces polished, the rest broken, original shape unclear. Ext. l. 2.4; ext. w. 2.3; ext. th. 1.7; HH 525, Tr. D, fill of vaulted shrine, Level 8.

Whetstones

TB 8169 reg. no. 2299 Grey limestone, perforation incomplete. L. 8.0; w. 2.6; th. 1.4; HH 176, Level 1.
 TB 7065 reg. no. 1557 Sandstone disc with three deep notches. D. 2.6–3.0; th. 1.5; HH 42, Rm 5 floor.
 reg. no. 3842 Grey stone, incomplete. Ext. l. 4.5; d. 1.8; HH 468, Tr. D, Level 4/5

Palette stones

TB 7062 reg. no. 1810 Well-made, highly polished black stone palette. Circular depression on upper surface. L. 9.6; w. 7.8; th. 2.2; d. of depression 3.6; HH 68, Rm 7, tannur 68, cf. Fig 21.

There were a further 6 flat pebbles that show signs of use/wear in the form of depressions or polish. These may have been palettes or whetstones, three are from Level 1, one from the fill of Rm 20, one from HH 442, floor in Tr. D, Level 5b, and one from surface clearance.

Counters/Gaming pieces

It is quite possible that some of the following came from bricks or plaster and are thus earlier in date.

reg. no. 2430 Disc of grey-black crystalline stone, polished. D. 1.9; th. 0.4; HH 224, Rm 11 floor.
 TB 8160 reg. no. 2393 Grey stone sphere, highly polished. D. 3.8; HH 224, Rm 11 floor.
 reg. no. 2598 Brown stone, polished sphere, incomplete. D. 1.4, HH 209, Rm 11 fill.

Stone vessel fragments

reg. no. 1749 Blue stone bowl rim. Ext. ht 2.0; rim d. 11.0; HH 48, Courtyard 8.
 reg. no. 2181 Dark grey-green crystalline stone, serpentinized peridotite. Bowl rim fragment, interior polished. Ext. ht 4.8; rim d. 12.0; HH 184, Level 1.
 reg. no. 2596 Polished grey crystalline stone, serpentinized gabbro. Body fragment. 3.7 × 3.5 × 0.9; HH 136, Level 1.
 reg. no. 2862 Black and green, marble-like stone (possibly serpentine?). Body fragment with highly polished exterior surface. L. 7.9; w. 5.4, th. 1.1; HH 348, Tr. C fill, Level 4
 reg. no. 4119 Stone bowl base, an igneous breccia grey matrix with large dark green & dark red inclusions. Shows signs of reworking in its broken state and may have been reused as a palette. Ht 2.3; base d. 7.0; HH 530, Tr. D, floor in vaulted shrine, Level 8.

Spindle whorls

There were a further 4 conical stone spindle whorls, two from surface clearance, one from HH 328, Tr. A, Level 8, and one from HH 557, fill in Tr. A4, Level 9

Basalt tripod mortars

reg. no. 2657 Incomplete, one foot extant. Ht 5.6; rim lost; w. of frag. 9.5; HH 242, Rm 22, fill on floor.
 reg. no. 2549 Incomplete, all three feet extant. Ht 17.0; rim d. 33.0; HH 204, Rm 20, lower fill.
 reg. no. 3139 Incomplete, one foot extant. Ht 12.4; rim d. 28.0; HH 444, Tr. D floor, Level 5b.
 reg. no. 3140 Incomplete, one foot extant. Ht 8.0; rim d. 15.0; HH 442, Tr. D floor, Level 5b
 reg. no. 2853 Incomplete, all three feet extant. Ht 12.8; rim d. 24; HH 328, Tr. A, beaten surface, Level 8.

There are a further 6 incomplete vessels (one each from Levels 1, 2, and 3; two from Level 6 and one unstratified) and three small rim fragments (two from Level 1, one from Rm 12), these latter fragments are not included in the ground stone table.

Chapter 8

The Metal Objects

(Figs. 232–6)

Graham Philip

A. Copper/Bronze

The material from Brak, that from the destruction of the public buildings of Level 2 in particular, provides a valuable, well-dated corpus of metalwork from north Syria/north Mesopotamia, from a period which is otherwise poorly documented. The paucity of comparanda from contemporary sites in the region means that, despite the fact that the assemblage includes several unusual artefacts, it is not yet possible to identify stylistic traits characteristic of local north Mesopotamian metalworking traditions. In practice, the discussion frequently draws on material from more distant areas such as the Levant, where LBA material culture is more fully documented. However, given the well-known ‘internationalism’ of LBA metalworking styles generally, this may well prove to be an accurate reflection of the wider situation. Evidence for the smelting of iron-rich copper was recovered from both the Palace and Level 5.

Projectiles

Projectile-heads comprise the single largest group of identifiable metal finds from Area HH, probably reflecting the large numbers which were in production at this time when the composite bow in combination with the chariot seem to have formed key items of military equipment (Moorey 1986; Philip 1989, 146–7). In fact, one of the tablets from the Palace refers to GI.MEŠ, almost certainly a delivery of arrows (text 7, pp. 43–4). All examples are made from copper alloy and were mounted by means of a tang. Those from Level 2 contexts form a contemporary assemblage, providing a good sample of early thirteenth-century BC projectile heads.

The outstanding feature of the Brak projectile heads is the wide range of shapes and sizes in which they appear (Fig. 143). A similar variety of forms occurs at Nuzi (Starr 1937, pl. 125), among the material from levels III and IV at Alalakh (Woolley 1955,

285, pl. LXXI), and from contemporary deposits at Palestinian sites (e.g. Tell ed-Duweir: Tufnell 1958, pl. 25:2–6, 17–22). That diversity was in fact the rule in the later second millennium is further emphasized by the variety of arrowheads, probably of Middle Assyrian date, found within one chamber of a single tomb at Assur (Haller 1954, 122, pl. 23f). It is likely that these represent projectiles intended for different functions (e.g. lightweight long-range or heavier armour-piercing varieties). That this is the case casts doubt on the value of a tightly defined shape typology. Second-millennium BC documentary sources indicate that weight was an important element in the classification of projectiles, with examples in a range of weights appearing in the Mari texts (Rouault 1977, 23, 29; Durand 1983, 335).

Most of the arrowheads from Brak possess a rhomboidal-section tang and a distinct, though rarely pronounced, stem with a tapered cut. The stem and cut tend to be more highly developed on the larger arrowheads. The most likely reason for this is the need for projectiles effective against scale armour, which became increasingly common during the latter part of the second millennium BC (Moorey 1986, 211). The fact that it is the larger, heavier examples which most frequently show a developed stem, lends support to this idea. According to Cross & Milik (1956, 18) a similar combination of typological features occurs on Palestinian LBII arrowheads, indicating that projectiles developed along broadly similar lines throughout Mesopotamia and the Levant. Such internationalism is in keeping with the general trend of Late Bronze Age political and military affairs, with warfare involving armies ‘of analogous technical and quantitative weight’ (Liverani 1990, 151).

It is difficult to establish a clear dividing line between arrowheads and spear or javelin heads. A rather coarse grouping might be suggested based on the size of the blade, which is probably a fair indicator



Figure 143. *Mitanni copper alloy projectile points 5, 13, 14, 1, 7, 6, 19, 18.*

of relative weight. In retrospect it might have been useful to have weighed examples in the field, although any study based upon such data would inevitably have encountered problems resulting from the fragmentary condition of many examples, and the accretion of corrosion deposits. Suggested categories are as follows.

Small projectiles (13, 14, 16–19, 21 & 22): blade generally c. 4 cm in length.

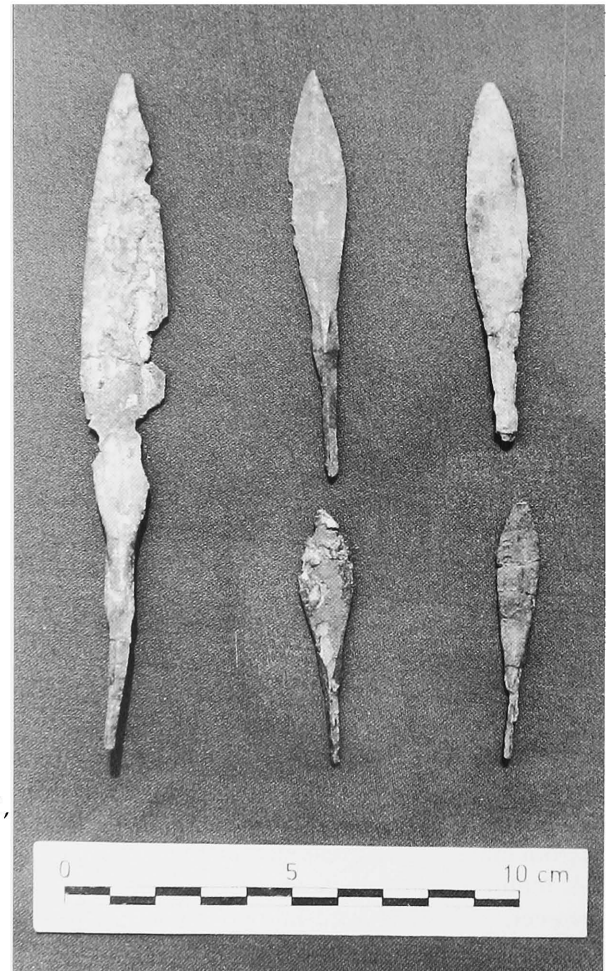
Some examples have rather narrow blades (16 & 18), others are broader (22), but it is not clear whether this represents a significant difference.

Medium-sized projectiles (5–12, 15 & 20): blade c. 5–7 cm in length.

Note that 12 is the only pre-Level 2 projectile point recovered.

Large projectiles (1–4): blade around 8–10 cm in length.

The marked concentration of projectile-heads in the destruction debris of the public buildings of Level 2 is in striking contrast with the spatial patterning of other categories of copper alloy object, which are more evenly distributed throughout the excavated



area. While some projectiles were found on floors, a few come from the upper fills of various rooms. Some of the material may therefore have originated in an upper storey and fallen below during the gradual collapse of the mud-brick superstructure. The heterogeneity and scattered spread of the corpus suggest that we are dealing with the remnants of a much larger body of material, most of which was removed in antiquity. It is impossible to tell whether these projectiles had been stored inside the building or had been fired from the outside during an attack, or perhaps both. Like most finds from the Palace they were scattered throughout the building. Presumably projectiles were stored somewhere in the vicinity, as there are references in the texts from Nuzi to large quantities of 'arrows of the Palace' being issued for use at a siege (Kendall 1975, 26). A fragment of an iron arrowhead was found in a Middle Assyrian context (p. 120).

Pins (Fig. 233)

Many of the Brak pins conform to familiar types.

One example with a globular head (23) is distinguished by having a clear neck and collar between the head and the shaft. Broadly equivalent to Klein's (1994) Type I.10B3, this example has certain similarities to pins with constricted necks which occur in both bronze and bone in Mitanni contexts at Nuzi (Starr 1937, pl. 125T, 127BB) and in large numbers from later second-millennium BC contexts in Iran (Moorey 1971, 182), although the shape of the head differs in the Iranian examples. However, the presence of what seems to be a collar at the junction of the head and shaft suggests some connection with pins with a bulbous head surmounted by a flat disc, which are also known from Iran (Moorey 1971, 188) and from deposits dating to the first half of the second millennium at Chagar Bazar, Tepe Gawra and Nuzi (Mallowan 1937, pl. XVIIb; Speiser 1935, pl. L.I; Starr 1937, pl. 63E). It seems reasonable to suggest that 23 is related, in a general way, to these types. Example 24, with an unusually broad head, bears some resemblance to two Iranian pins in the Ashmolean museum (Moorey 1971, 183, pls. 46 & 47), although the type could also represent a variation on the pins with broad disc heads known from early second-millennium BC contexts at Chagar Bazar (Mallowan 1947, 188, pl. XLI. 2–4).

Pins with rolled heads (26, 33 & 35) fall into Klein's Type I.14B1, a very common form showing wide chronological and spatial distribution. Examples are known from late third-millennium BC contexts at Tell Brak itself (Mallowan 1947, pl. XXXI:6) to much later Neo-Assyrian contexts at Nimrud and Khorsabad (Curtis 1984, 31). It has been suggested that some pins with rolled heads should be interpreted as 'bodkins', that is as thick needles (de Feyter 1988, 609). Surely the key criterion for distinguishing pins from needles is the shape of the head. In a needle, the head must be able to pass easily through the material being stitched. In the case of the roll head pins here, this seems most unlikely.

Pins with hemispherical heads (23) are known from third-millennium contexts in north Mesopotamia (Mallowan 1947, 166–8, pl. XXXI:3–5), whilst examples dating to the earlier second millennium are reported from the palace at Mari (Parrot 1959, 94–5, fig. 69, pl. XXXIII:790) and the cemetery at Baghouz (du Mesnil du Buisson 1948, pls. LXII.11 & LXIII). The example with a four-sided pyramidal head (27) is from a Level 5 context, implying a fifteenth-century date; it should be considered a variant of the hemispherical-head type, the difference lying in the way in which the head has been hammered.

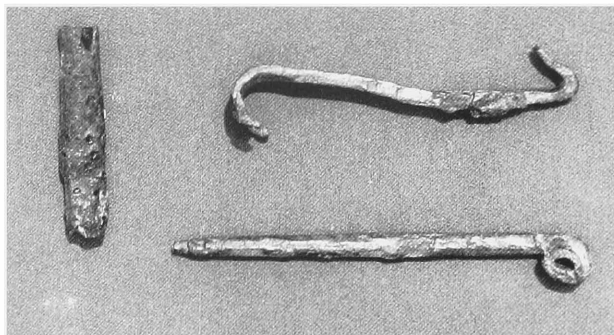


Figure 144. Copper/bronze drinking tube 63 and pin 33; the hook is an Akkanian piece (TB 9022).

Brak has also produced one example of a perforated pin with the head in the shape of a bird (29). A number of pins of this sort are known, from a variety of regions and periods (Klein 1994, 137–8, Taf. 133.1–3, Type I.18A3). One example in particular from a fourth-millennium BC context at Susa (Klein 1994, 115–16, Taf. 138,7) has the bird mounted on a small disc, as in the Brak pin; however, the latter was found within the Level 2 destruction debris, a much later context.

The toggle-pins appear in two distinct forms. That with plain shaft (28) should belong to Henschel-Simon's Type 3 (1937, 192). Toggle-pins with plain shafts are known from Chagar Bazar from both third- and early second-millennium contexts (Mallowan 1936, 132, fig. 12,1; 1947, 188; pl. XLI:7). Starr remarks on the rarity of toggle-pins in the Mitanni levels at Nuzi, in contrast with their greater frequency in earlier periods at the site (1939, 472–3). The second type consists of pins with horizontally ribbed shafts (31 & 32). 31 belongs to Henschel-Simon's Type 8 (1937, 197–200) and comes from Level 1 (Middle Assyrian), while 32 is well-stratified in Level 2. Short toggle-pins with flat heads and ribbed shafts are also a Late Bronze Age feature in Palestine (Tufnell 1958, 81, pl. 24:19). Type 31 may be an import, since none is reported from second-millennium contexts at Assur, Chagar Bazar or Mallowan's excavations at Brak. The apparent rarity in northern Syria of this particular combination — toggle pins with both heads and incised decoration — is confirmed by the few specimens listed in Klein's corpus of needles and pins (1994, 99, Taf. 109:12–13). However, we still know very little about the metalwork of this region in the later second millennium BC.

Nails and tacks (Fig. 233:36–41)

Several of the nails listed were clearly used to attach

sheet-metal to wooden objects such as doors, furniture and various fittings, and are related to the sheet-metal fragments of copper/bronze, silver and gold described below. The concentration of nails in the destruction debris of the Level 2 public buildings stresses their connection with the application of decoration rather than utilitarian carpentry. Those nails with conical heads would have stood proud of the surface and may themselves have formed an integral part of decorative schemes. Although markedly larger than any of the examples from Brak, door-studs, which are clearly a related item, are known from Nuzi (Starr 1939, 473, pl. 123G, Length 5.0; D. head 2.8) and feature in the Mari texts '4 mines de cuivre pour les étoiles des portes doubles' (Kupper 1985, 325).

Needles (Fig. 234:42–6)

The needles identified are generally quite thick, suggesting use on heavy materials. This is as expected, since slender needles are less likely to have survived in the burial environment which has clearly skewed the sample in favour of the more robust examples. The all-important eye of the needle could be formed in two different ways: by folding round the terminal to form a closed loop (e.g. 42) or by perforation (e.g. 44). Both methods are documented at other second-millennium BC sites in the region, for example Khirbet ed-Diniye (Kepinski-Lecomte 1992, 379–80, fig. 164: 4, 7–8, with further parallels listed). The importance of copper-alloy needles should not be overstated. Many, perhaps the majority of such implements, continued to be fashioned from animal bone (Kepinski-Lecomte 1992, 387–8, fig. 169:1–14; Klein 1994), suggesting that metal needles might not constitute a representative sample of needles in use, even were it possible to make allowance for differential preservation.

Tools (Fig. 234:47–53)

The Brak corpus consists of a limited collection of small edged or pointed tools. Several come from contexts within the Palace where the presence of glass ingots is a reminder that manufacturing activities were carried out; indeed 48 and 53 came from the Palace workroom and adjacent store. Small items such as these were probably ignored by looters, or overlooked during post-destruction clearing operations, and are therefore unlikely to form a representative group. Small 'chisels' may actually be gravers used in craft work, although Martin points out that chisels as chopping tools may have had a wide range of domestic uses, by no means restricted

to wood-working (1985, 13). The pointed tools are clearly for piercing: leather and wood are obvious candidates, although other materials such as sheet metal, reed and cloth should also be considered. The main problem with the interpretation of small tools is that many were likely to have been multi-purpose implements, or to have served several different roles during their lifetime. Such objects are hard to interpret, unless found *in situ* in a workshop context.

Rings (Fig. 234:54–8)

Copper alloy rings occur in a variety of shapes and sizes, but none measures more than 2–3 cm in diameter. The ring with overlapping terminals (56) is clearly too small to be worn as a finger ring, at least by an adult. One lead object (58) looks as though it may have been formed into a ring; this remains uncertain since lead is easily bent.

Beer or wine strainers (Fig. 144; Fig. 235:61–3)

Metal strainers are common and are almost certainly connected with wine or beer drinking, in which role they were intended to catch grains, chaff or other material within the liquid. These have recently been reviewed by de Feyter (1988, 611, pl. 190:7–9), who observes that most examples fall in the first half of the second millennium BC, although the type spans the period 2000–1200 BC. Of the four examples from Brak, two come from the same house (Level 5b), to be dated a little after the middle of the second millennium, while one possibly out-of-context fragment derives from the floor of a Middle Assyrian house. A number of examples were found in so-called wine jars in burials at Chagar Bazar (Mallowan 1937, figs. 21 & 22:14); similar finds came from burials at Baghouz where some examples revealed what appears to have been straw lodged within the perforations (du Mesnil du Buisson 1948, Tomb Z47). Recently published examples come from Tell ed-Der in Iraq (Gasche 1989, 99, fig. 42:2), Halawa on the Syrian Euphrates (Meyer & Pruss 1994, 249, Abb. 75:61), and Meskene-Emar, also on the Euphrates (Beyer 1982, 120, fig. 1). A Mitanni cylinder seal from Brak illustrates a figure with a pot and drinking tube (seal 8).

Furniture fittings (Fig. 145; Fig. 235:68)

These items were found at the eastern end of Room 11 (see Fig. 40), together with fragments of lead strips (TB 8086). The shape of these fragments, the presence of wooden cores adhering to the metal, and the discovery within Room 11 of the remains of a large, wooden claw foot and other fragments (Fig. 236:94)

suggest that they pertain to the well known practice of applying sheet metal decoration to items of furniture (Moorey 1994, 264). Four blocks of stone set into the floor of the southeast corner of the room suggest the presence there of an important piece of furniture, further confirmed by the recovery of fragments of ivory inlay, burnt wood and sheet bronze. In the case of 68, the manner in which the metal is folded suggests that it was formed around the corner or end of a wooden object some 8.5 cm in thickness.

Glass- and frit-headed nails (Fig. 220:40 & 41)

The copper-base nail with glass head (Fig. 126), which comes from a fifteenth-century context, belongs within a tradition of decorated nails and studs. Door-studs with silver-covered heads are known from Nuzi (Starr 1939, 142, 473). Although the writer knows of no local parallels for the use of a glass head on a nail at this time, a similar mounting was employed on some pendants from a Middle Assyrian grave at Assur (Haller 1954, 144, Taf. 34:a, f), with a piece of rock-crystal secured by folding the gold setting over the margins of the gem. The technique of setting glass inlay within metal buttons and pendants (usually gold) is documented in the Levant from the end of the Middle Bronze Age, and in Egypt within the broadly contemporary Ahhotep Treasure (Lilyquist 1993, 53–5, figs. 17:d & 25:a–c). The frit-headed nail (Fig. 220:41) is a further example of this type of object, while the glass lollipop on a gold wire (Fig. 220:39) is, so far as we know, unique.

Miscellaneous items (Fig. 235:66 & 67)

A small bell was found in a Middle Assyrian level above the Mitanni Temple Room 22 (66). A small bell from Nuzi (Starr 1937, pl. 126:Y) is of a different, lattice design, although it too encloses a loose ball.

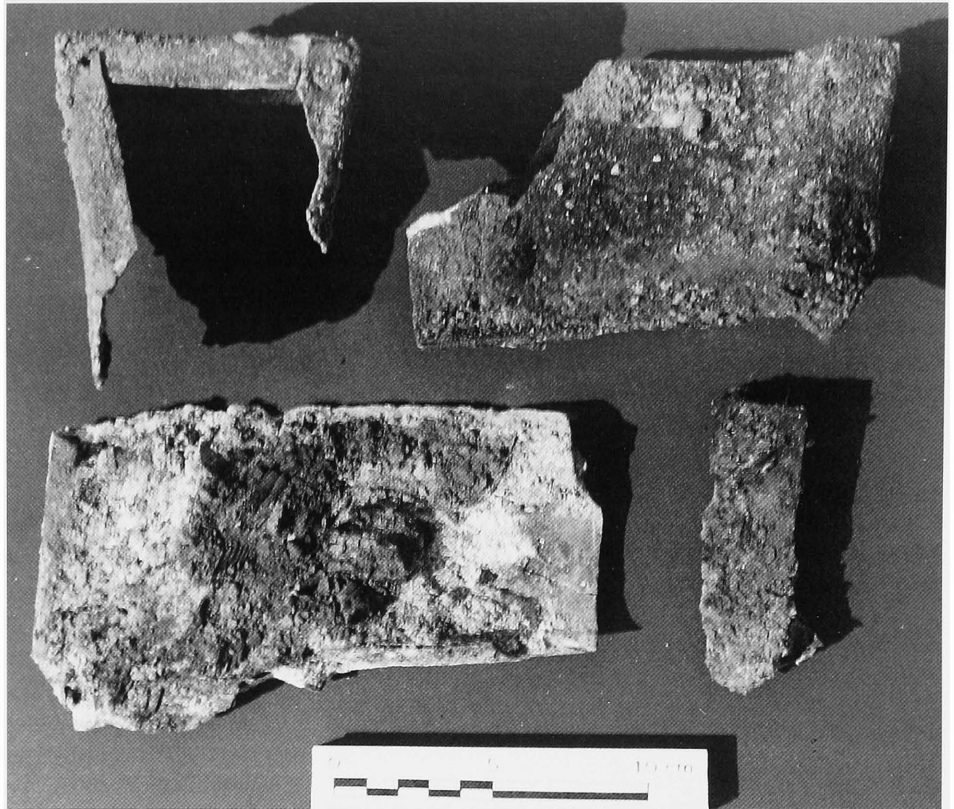


Figure 145. Copper/bronze furniture fittings from Palace Room 11. These include two large flat pieces with their ends bent over; a tubular fragment, lower right, presumably copper or bronze sheathing for a rung or stretcher; and the end piece of a square-ended wooden object (Fig. 234:68). Burnt wood was preserved on all pieces.

The contexts may suggest some connection with ritual paraphernalia, although there is no reason to believe that the Brak bell actually originated in the Temple.

The sheet metal disc (67) has perforations around the margins and was probably designed to be sewn on to a fabric or leather backing. The use of gold appliqué to decorate textiles is widely documented in the ancient Near East (Maxwell-Hyslop 1971), while there are various examples of decorated copper/bronze discs which were attached to belts and the like (Philip 1995, 72). Decorative discs with four holes for attachment, and of similar size but made from gold, are reported from Middle Bronze Age contexts from Tell Mardikh in Syria and Kültepe and Acemhöyük in Anatolia (Matthiae 1981, 220–21, figs. 62 & 63; Özgüç 1986, 85, pls. 72:3; 120:6). One might suspect that copper examples would have been more common than those in gold, but the record is likely to have been skewed by the more deleterious effects of corrosion on small copper artefacts and the

lack of attention paid to such non-precious metal-work by previous generations of excavators.

B. Lead (Fig. 234:58–60)

The purpose of lead rings is not immediately clear, although the use of lead for jewellery cannot be ruled out. We should note the presence at Kültepe of chains composed of such rings (Özgüç 1986, 77, pl. 129:9 & 10), a useful reminder of the range of potential explanations. Matrices for the production of decorated lead discs (59) occur on a number of moulds including an example from Brak itself (*Iraq* 49, 1987, pl. 38:c, a surface find from Area FS; see also Canby 1965; Emre 1971). The Brak example has a matrix for a disc which differs only in detail from the present example.

While a definitive assessment of the function of the disc would require detailed examination of the surface of the artefact, several suggestions might be made as to its likely purpose, the most obvious of which is of course that the piece was itself of some ornamental value, perhaps on cloth. Lead is soft and thus easy to shape. The disc might have been a stamp of some kind, used to apply a coloured pigment to soft materials such as wood or textiles. An alternative suggestion is that artefacts of this kind were used as formers, upon which sheet gold was shaped to produce pendants or decorative discs, these ultimately perhaps intended for application to textiles (see McGovern 1985 for examples). A fourth possibility is that the lead die was repeatedly pressed into a material such as clay, from which moulds for small metal decorative items were made. As clay moulds were frequently broken in order to extract the castings, it is possible that the use of lead dies would have allowed the repeat production of identical pieces.

One of the most interesting surface finds, from the same area as the mould, is a lead female figurine of Anatolian type (Fig. 163). This naked female *en-face* has an elaborate coiffure and wears multiple rings around her neck. The arms are folded across the abdomen, the breasts clearly indicated, and the navel is protuberant. The legs of the figurine are slightly bent, but this may have happened after manufacture. The flat reverse surface indicates flat casting from a mould. This object belongs within Emre's (1971) group of 'naked goddess' figurines, the characteristics of which are summarized in his corpus and which are generally seen as of Anatolian inspiration. Dating is difficult as few have good contexts. Although a number of steatite trinket moulds bearing matrices for casting such figurines are also known, these too lack good contexts. On the basis of

the few datable examples, and parallels for the other trinkets for which these moulds bear matrices, a floruit in the ED III-Akkadian periods has been suggested by Canby (1965, 51), while Emre (1971, 130) noting general, though not exact, parallels from Kültepe (e.g. Özgüç 1959, 105, fig. 34.1), argue for the continuation of these moulds into the early part of the second millennium BC, possibly the date of the Brak piece.

Five lead fragments have been analyzed by Dr Shirahata in connection with the lead isotope analyses of glass (pp. 91–3); of these only one is from a Mitanni context.

C. Gold and silver (Figs. 47, 146 & 147; Fig. 236:69–75)

Findings in precious metal largely consist of small pieces of sheet gold and silver. Not surprisingly, their find spots are heavily concentrated in the public buildings of Level 2. In the light of the looting of the buildings, with fragments of the same artefact frequently found in different places, the absence of complete artefacts should come as no surprise. However, the surviving fragments provide clear evidence for the presence within these structures of a significant concentration of richly decorated artefacts, in glass, stone and ivory as well as metals, reflecting the wealth of the official Mitanni establishment at Brak. In this context, the fragments of gold sheet are likely to represent the remains of decorative coverings attached to items such as furniture, statues or even structural components of the buildings themselves (note the nail-holes visible in several instances and the traces of gold sheet adhering to nail 41). The occasional appearance of nails and studs in precious metals emphasizes the role of visual effect and the all-important message of conspicuous wealth.

Gold work is clearly concentrated in a few locations in the Palace and Temple cella. Within the Palace a few fragments were recovered from courtyard 8, with most of the other pieces found in Room 11, an important reception room on the north side of the courtyard. (For the distribution of objects in Room 11, see Fig. 40.) In the doorway to the courtyard was found one of the most extraordinary finds, fragments of what appears to have been a plaster vessel bearing gold leaf decoration (69 and Fig. 146). The design was carved in the plaster and gold leaf pressed over it. This degree of deception should alert us to the possible existence of an extensive range of vessels produced in imitation of the 'genuine item'. While clearly of less 'value' than true gold vessels when viewed from the perspective of a royal or temple

treasury, low-cost replicas may have sufficed for some functional roles, day-to-day cult activities for example, for which superficial appearance may have been what mattered. There is good documentary evidence from Mari (Bottéro *et al.* 1964, 26, 28–9) for the role of vessels made from precious metals both in the context of royal households and as temple equipment and offerings. The deception may equally be no more than a reflection of the reduction of Mitanni power and prestige in the early thirteenth century, and the consequent lack of gold from Egypt, a problem faced already by Tušratta after the death of Amenophis III (see Amarna letters 26–9). Despite this, and although we are not dealing with a representative sample, the overall impression is that gold played a greater role than silver in the decoration of high-status material in the Mitanni public buildings at Brak, perhaps an interesting observation given the relative proximity of the site to Anatolian silver sources. Gold survives better than silver, but this presumably reflects a culturally determined concept, i.e. the greater suitability of gold than silver as a material through which status should be expressed.

Another interesting gold piece is the fragment of sheet decorated with granulation found in the Temple cella (Fig. 47). The decoration consists of two adjacent rows of granulation running along the edge of the fragment, with pendant triangles also formed in granulation suspended from the inner row. Additional decoration takes the form of double triangle lozenges and small groups of four granules arranged to form a small rosette. The use of granulation as a decorative technique in Mesopotamia dates back to the third millennium BC (Moorey 1994, 231; Maxwell-Hyslop 1971, 7, 36–7). A recent review by Lilyquist (1993, 33–51) has demonstrated not only the widespread use of granulation in the form of pendant triangles but also the variety of objects so decorated. It seems likely that the piece from Brak is fairly characteristic of jewellery in the ‘international’ styles employed in élite contexts throughout western Asia during the latter part of the second millennium BC. Note should be taken of the use of similar decoration, i.e. pendant triangles with rosettes in granulation, on a glass vessel from the site (Fig. 122). Thus the evidence from Brak supports Lilyquist’s suggestion of technical interaction between gold and glass working (1993, 57). The use of yellow and white glass granules upon a dark blue vessel echoes the colour contrasts seen in a Kassite period gold bracelet from Aqar Quf, which features a row of lozenges formed from gold granules with inlays of Egyptian blue.

The animal figurine (74 and Fig. 147) requires

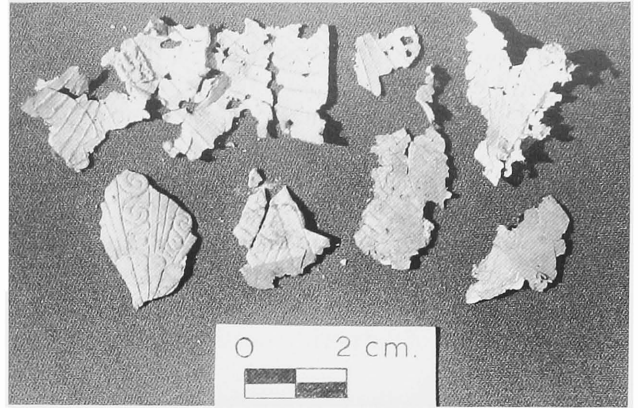


Figure 146. Fragments of a very thin gypsum plaster vessel with incised decoration, onto which a gold leaf surface has been pressed (Fig. 235:69). The pattern closely resembles that on an unusual Mitanni bottle, also with incised ornament and also from the Palace (Fig. 114).

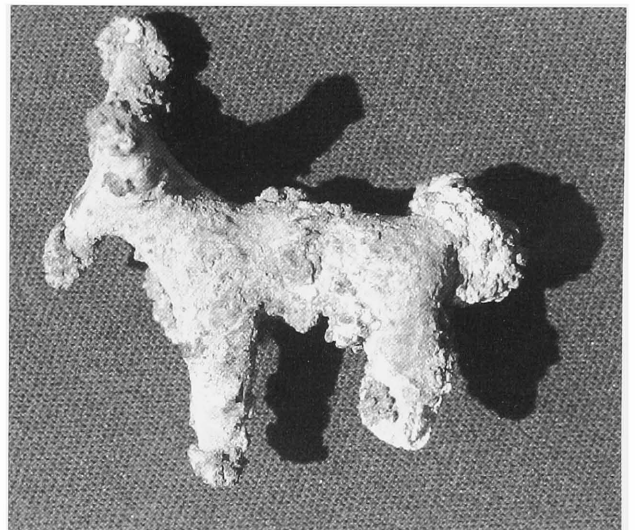


Figure 147. Silver stag, ht 3.3 cm, from a Middle Assyrian context. Photographed before cleaning.

comment. The body is made of silver but patches of copper corrosion visible on the horns, tail, and legs suggest that contrasting metals may have been used. As Spycket (1981, 349) notes, animal figures found in Mesopotamia tend to be made of terracotta, rather than of metal. A similar, though larger, figurine, dating to the Hittite Empire period, is known from Bogazköy (Boehmer 1977, 73–7, Abb. 1–3). The latter piece is made of copper/bronze and an Iranian origin is suggested. In fact, as Spycket observes, the use of the deer as an artistic motif in the later second millennium is particularly prevalent in northern Iran, while links exist between the metalwork of this area

and contemporary work in Anatolia (1981, 353–4). The Brak stag figurine comes from a clear Middle Assyrian context (HH 152, see section, Fig. 26), though it could have been a Mitanni heirloom, in which case its discovery at Brak might best be viewed in the context of the site's location towards the northern limits of 'Mesopotamia' and the presence at the site of Anatolian-style, red-slipped ceramics among other imported items. Silver sheet and a silver nail found in the Palace courtyard may have formed part of the decoration of the portico outside Room 11 (p. 6).

D. The Granulated Gold Fragment TB 8041

by K.R. Maxwell-Hyslop

This fragment of thin gold is carved along the top edge, and was possibly part of the sheet covering for a cup or large pendant or bead. Decorated with lines of minute granules arranged in triangles with border along edge, opposing triangles in centre line and small diamond-shaped patterns in the intervening spaces. Found in the Mitanni temple.

Comparable gold work dating from the sixteenth–fifteenth centuries BC can be found at Alalakh where the goldwork of Niqmepa's palace in Level IV was based on a long tradition. By the fifteenth century at Alalakh expert craftsmen were producing a variety of goldwork often with triangular granular decoration which could be applied to objects of another material or in the production of chryselephantine ornament for furniture and other objects. Texts from Alalakh are also informative for the activities of gold and silversmiths, while the list of jewellery recorded in the Qatna inventories testifies to the extensive production by Syrian craftsmen, many of whom bore Hurrian names and worked at the time of the greatest expansion of the Mitanni kingdom (Wiseman 1953, nos. 224, 227 & 440; Bottéro 1949).

The glass vessel from Brak with pendant triangles consisting of minute globules of coloured glass (Fig. 122) suggests close contact between different workshops. Late Mitanni seals often show the use of triangular patterns for the borders imitating the granular work of the goldsmiths. An impression found in the Palace at Brak was probably discarded at the time of the Middle Assyrian sack (Fig. 60). The same technique of triangular granular pattern was employed on the elaborate almost undamaged bracelet from the fourteenth-century palace at Dur-Kurigalzu. This bracelet is a technically well-made piece with gold granules alternating with a blue paste inlay (Baqir 1946, fig. 8). Valuable objects from the Dur-Kurigalzu palace also

include fluted beads enclosed with a covering of thin gold leaf, as well as pieces of inlaid glass vessels. A fragmentary piece of gold (IM 50932) was decorated in a technique similar to that used for the Brak piece.

Many Kassite seals are also distinguished by their gold caps decorated with a border of granular triangles, a feature found even earlier on seals of the 1st Dynasty of Babylon. A seal of a scribe of Samsuiluna, two seals from Terqa and a seal impression on a census tablet naming two servants of Shamshi-Adad I from Chagar Bazar all have gold caps with triangular granules (al-Gailani Werr 1980, no. 42; Collon 1987, no. 480). Another from Shubat-Enlil (Tell Leilan) can be dated c. 1810 BC (Parayre 1990, fig. 34:17).

It is not easy to assign a place of manufacture for TB 8041. Although there is as yet no evidence for a goldsmith's workshop at Brak, such an atelier would not be out of place among the other manufacturing activities attested in the Mitanni Palace. The Brak fragment may represent the continuation of a technique learnt from Babylonia or perhaps Ebla in the eighteenth–seventeenth centuries BC or from Middle Assyrian craftsmen from Nineveh or Assur. Equally the piece could have been imported from Alalakh or from a Mitanni workshop situated in some as yet unexcavated North Syrian city. If it is part of the covering of a large bead, as suggested by Lilyquist (1994, n. 53), it could have been designed for a statue. If it was part of the covering of a minute vessel or unguent pot, it could have been intended for palace or temple requirements, or it could have originated in a dowry.

E. Analyses of Iron, Copper and Related Materials

by Colin Shell

A set of material from the excavations was brought together for study through the dominant presence of iron rust on the pieces, which though often accompanied by copper corrosion, pointed towards the use of metallic iron at Tell Brak in the fifteenth–thirteenth centuries BC. Included in this material is a small rod of completely corroded iron (HH 149), which derives from a Middle Assyrian arrowhead. The extensive iron corrosion on the rest of the material, though indicating the presence of iron in some form, disguised any identifiable artefact shape and obscured the nature of the original material.

After recording the visual appearance of the objects and guessing their possible identification, small samples were cut by fine diamond saw and

cold mounted in resin. The polished sections were examined by optical metallography, and analyzed in a Philips XL30 high resolution scanning electron microscope, using an Oxford Link Instruments ISIS energy dispersive spectrometer and SEMQuant software for the quantitative analysis of flat specimens. The results of the analysis are summarized in Table 9. The initial guesses from visual examination proved to be even more erroneous than expected. The study has revealed a very important set of material that identifies the presence of sophisticated copper smelting at Tell Brak, where high temperature reducing conditions were achieved to cause substantial co-smelting of iron in the smelting furnace. The copper was produced from the reduction of copper matte, a mixture of copper sulphide and iron oxide obtained from the roasting of chalcopyrite ore.

Two pieces of the copper matte smelting raw material have been identified (HH 326 & 468). In section they show the characteristic mixture of reduced copper sulphide and iron oxide (Fig. 148a). Copper may have arrived at Tell Brak in this form from mining areas such as Ergani (de Jesus 1980, map 6) to the northwest of Tell Brak in Anatolia, with the matte produced by the roasting of the ore at source (Moorey 1994, 247). This may explain the absence of chalcopyrite ore itself in this set of metal production material.

The majority of the pieces studied (HH 10, 14, 21, 150, 442 & 452) are raw copper as cast from the smelting furnace, where the reducing conditions and high temperature reduced both copper and iron from the roasted matte charge. The copper matrix (Fig. 148b) contains dendrites of iron which have separated from the liquid copper-iron mixture during solidification. The copper routinely contains about 2 per cent dissolved iron and the iron 8 per cent dissolved copper, as expected from the copper-iron phase diagram (Butts 1970, fig. 22.14), with the inclusions being mixed copper-iron sulphides (Cu_2FeS_2). The iron content of these raw coppers is often higher than 25 per cent, which indicates temperatures close to or in excess of 1400°C achieved in the smelting furnace whilst maintaining reducing conditions.

The production of this raw liquid copper with its high iron content is likely to have been accompanied by the simultaneous production of a copper-rich iron bloom in the higher part of the charge in the smelting furnace. HH 172B, recovered from an occupation level overlying the Mitanni Palace, is an example of iron, now completely rusted but previously worked, that contains copper traces characterizing its origin from co-smelting in copper

production. The iron produced by co-smelting would have been likely to be low in carbon and consequently a soft material in its uncarbided state.

Found in association with this piece of corroded iron was a small droplet of spilt chill-cast 10 per cent tin bronze (HH 172 A), which provides evidence for the casting of refined copper artefacts in the vicinity. The high-iron copper described above is essentially unusable in its raw form for utilitarian objects and further refinement would have been required. On re-melting, the solid iron in the copper would have a tendency to float on the surface of the liquid copper where it could be removed by oxidation to form a solid scum. Alternatively, it could have been converted to a liquid iron silicate slag by the addition of quartz sand. An example of such a slag (HH 548) with significant copper content was recovered from Corridor 6 in the Mitanni Palace. This slag, however, could equally have been produced from a copper smelting process in which quartz sand had been added as a fluxing agent to form a slag directly from the iron oxide present in the charge. Further research is needed to understand fully the processes involved in the refinement of both the copper and iron obtained from co-smelting copper matte.

Conclusion

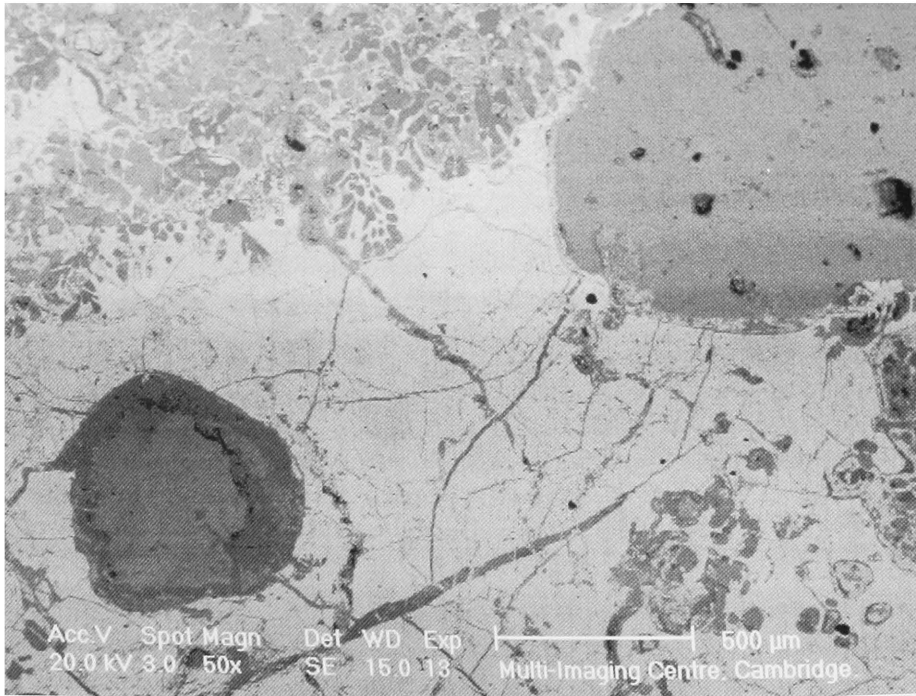
The range of material analyzed provides clear evidence for the co-smelting of copper and iron at Tell Brak during the period of use of the Mitanni Palace and at least as early as the fifteenth century. The material itself was not found directly associated with a metal workshop, but from the quantity discovered and its representation of a full range of metallurgical activities, the working area was probably situated close by the find locations (? Room 7).

The smelting conditions necessary to produce the high-iron content present in the Tell Brak raw coppers are unequivocal evidence that the smelting technology necessary for producing raw iron was achieved at Tell Brak at a time prior to the large-scale production of iron in the region.

Acknowledgements

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a



b

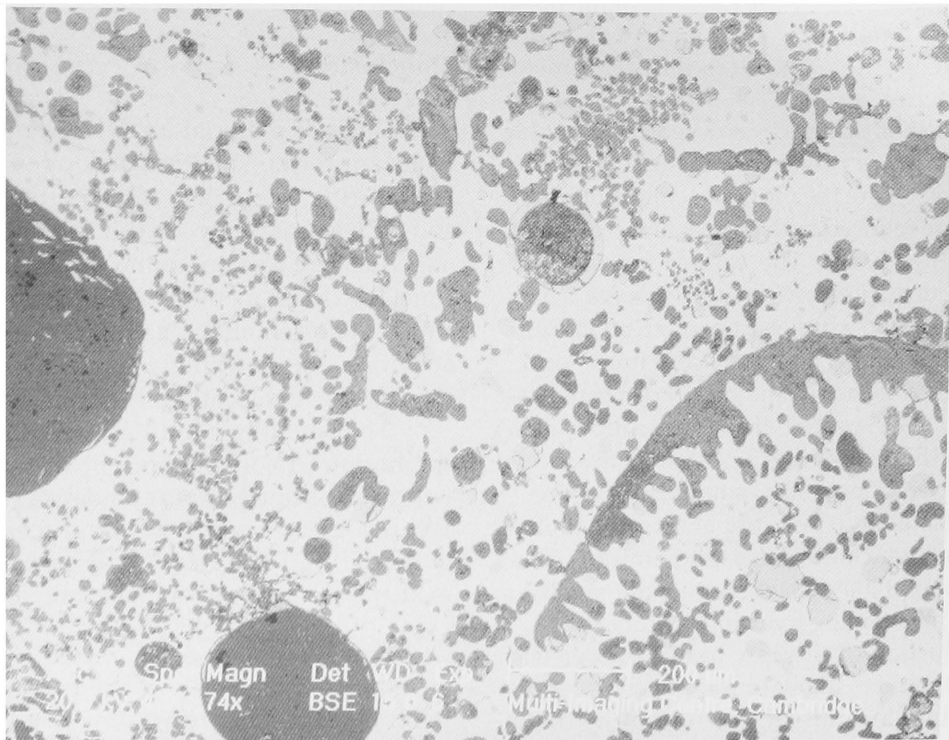


Figure 148. a) Weathered copper matte (HH 468). Large inclusions of iron oxide in a matrix of reduced copper sulphide. Magnification 50×. (Fifteenth century bc). b) Corroded iron-rich copper metal as cast from smelting furnace (HH 14). Dispersion of iron oxide (dark) from the corrosion of iron metal particles in a matrix of copper metal, with some inclusions (light) of copper sulphide. Magnification 74×.

The Metal Objects

Table 9. Summary of identification of materials by metallography and energy-dispersive x-ray analysis in a scanning electron microscope.

<p>HH 10 Reg. no. 1450 Corridor 2 in the Mitanni Palace. Late 14thC./early 13thC. wt 250 g Corroded iron encased in copper corrosion product. Metallic iron survives. Section: corroded ingot of iron-rich copper metal as cast from the smelting furnace.</p>	<p>HH 172B Occupation level overlying Mitanni Palace. 13th C. Middle Assyrian. wt 30 g Completely corroded iron, with superficial coating of redeposited green copper corrosion. Section: Complete corrosion of iron to rust confirmed. Iron oxide includes areas of high copper concentration, which with the relict structure suggests it is worked iron derived from iron produced during smelting of copper.</p>
<p>HH 14 Room 3 in the Mitanni Palace. Late 14thC./early 13thC. wt 110 g Massively corroded iron and copper/copper alloy. Section: corroded raw slab/ingot of iron-rich copper metal as cast from the smelting furnace (Fig. 148b).</p>	<p>HH 326 Occupation level overlying Mitanni Palace. 13th C. Middle Assyrian wt 140 g Corroded iron-rich material over and into which has redeposited copper malachitic corrosion product. Section: weathered copper matte from roasting chalcopyrite ore in preparation for smelting.</p>
<p>HH 21 Storeroom 5 in the Mitanni Palace. Late 14thC./early 13thC. wt 260 g Corroded iron with some surviving metallic iron. Superficial thin copper corrosion product deposited in places. Entrapped charcoal in the rust suggested a piece of raw material, rather than a corroded iron object. Section: corroded ingot of iron-rich copper metal as cast from the smelting furnace</p>	<p>HH 442 Level 5 house. 15thC. wt 1230 g Large piece of corroded iron, probably remains of raw material rather than an artefact. Has the shape of a rough casting at the bottom of a furnace. Section: corroded ingot of iron-rich copper metal as cast from the smelting furnace.</p>
<p>HH 149 Reg. no. 2225 Occupation level overlying Mitanni Palace. 13th C. Middle Assyrian. wt 6 g Possibly an arrowhead. Completely corroded rod of iron, with characteristic expansive, longitudinal splitting and delaminating corrosion, 45 mm in length tapering towards both ends from a present middle diameter of 12 mm. Not sectioned.</p>	<p>HH 452 Level 2 house. Late 14thC./early 13thC. wt 630 g Large piece with surface of iron rust. Metallic iron survives. Section: corroded ingot of iron-rich copper metal as cast from the smelting furnace.</p>
<p>HH 150 Occupation level overlying Mitanni Palace. 13th C. Middle Assyrian. wt 18 g Corroded piece of iron and copper/copper alloy. Magnetic response indicates part survival of metallic iron. Section: Almost completely corroded iron containing some surviving copper metal. Relict structure in the oxide suggests it is raw ingot material as produced from the smelting furnace, similar to HH 10, 14, 21, 442, and 452.</p>	<p>HH 468 Level 5 house. 15thC. wt 75 g Iron corrosion with small entrapped copper corrosion product in the rust. Section: matte of copper sulphide and iron oxide from roasting of chalcopyrite ore in preparation for smelting (Fig. 148a).</p>
<p>HH 172A Occupation level overlying Mitanni Palace. 13th C. Middle Assyrian. wt 5 g Small globule of corroded copper metal/alloy. Section: Droplet of chill-cast copper 10% tin bronze, probably spillage from casting.</p>	<p>HH 548 Corridor 6 in the Mitanni Palace. Late 14thC./early 13thC. wt 7 g Probable corroded iron or iron-rich material. Non-magnetic. Section: iron-rich silicate slag containing copper and sulphides, possibly from copper refining process rather than the primary smelting to produce the iron-rich coppers.</p>

Table 10. Metal objects not illustrated.

<p>Copper/bronze Projectile heads</p>			
TB 7004	reg. no. 1628	Small arrowhead, badly corroded, similar to 1627. L. 5.6+; HH 42, Rm 5 floor.	TB 8077 reg. no. 2594 Nail with flat head. Fragment of copper/bronze sheet attached. L. 3.5; d. of head 0.7; d. of shaft 0.4; HH 204, Rm 20 in door socket.
TB 8053	reg. no. 2471	Small projectile, blade badly corroded, square-section tang L. 5.6+; blade w. 1.5; HH 241, Rm 21 fill overlying floor.	reg. no. 2595 (As 38) Three small nails with flat heads and with shafts of circular-section, found together. (a) L. 1.8; d. of head 0.8; d. of shaft 0.3; (b) L. 2.3; d. of head 0.5; d. of shaft 0.4; (c) L. 1.9; head lost; d. of shaft 0.5; HH 204/205, Rm 20 lower fill.
<p>Pins</p>			
	reg. no. 1510	Pin with spherical head, shaft of circular section; broken. L. 3.3+; d. 0.4; d. (head) 0.9; HH 14 Rm 3 floor.	TB 9034 reg. no. 2796 Nail, with flat head and shaft of circular-section. L. 1.9; D (head) 0.7, (shaft) 0.2; HH 301, Courtyard 8, floor
	reg. no. 2574	Perforated fragment from either toggle pin or needle. L. 4.1; d. 0.3; max. w. 0.5, HH 224, Rm 11 floor.	reg. no. 3936 Nail, with circular, flat head, point lost. L. 2.3; d. of head 1.1; d. of shaft 0.3; HH 489, Tr. D. Level 5b.
	reg. no. 2744	Shaft of pin, perforated, of circular cross-section, in poor condition. L. 3.2+; d. 0.5; HH 278, Tr. C surface clearance.	
TB 9044	reg. no. 2794	Fragment of pin shaft, bent, square-section L. 6.4; w. 0.2; HH 317, Pit in Tr. A. Level 6.	
	reg. no. 3014	Fragment from shaft of pin, circular cross-section. Broken at both ends and with three lateral grooves round the object L. 2.0; d. 0.8; HH 391, Tr. C4. Level 7.	
<p>Nails, Tacks</p>			
	reg. no. 1638	Head of nail, hemispherical. d. 1.0; HH 21, fill above Rm 5. Level 1.	
TB 9046	reg. no. 2935	Nail, complete, with square head and shaft of circular section. L. 1.3; w. of head 0.4; shaft d. 0.3; HH 326, upper clearance, above Rm 14. Level 1.	
	reg. no. 2583	Three small complete nails with flat disc heads and shafts of circular section. (e) L. 0.4; d. of head 0.5; d. of shaft 0.3; (f) L. 1.6; d. of head 1.6; d. of shaft 0.4; (g) L. 1.5; d. of head 0.4; d. of shaft 0.3; HH 224, Rm 11 floor.	
			<p>Needles All circular in cross-section</p>
			reg. no. 2934 Needle, eye intact, point lost. L. 3.1, d. 0.2; HH 326, upper clearance, above Rm 14. Level 1.
			reg. no. 1633 Needle, eye intact, point lost. L. 1.9; d. 0.2; HH 41, Rm 5 lower fill.
			reg. no. 1730 Needle, eye partially broken, point lost. L. 2.8; d. 0.2; HH 65, Rm 7 lower fill.
			TB 7188 reg. no. 1965 Small, slender needle with eye at one end. L. 3.8; d. 0.15; HH 91, Rm 7 north end fill on floor.
			reg. no. 1966 Needle with eye, shaft twisted and point broken. L. 5.2+; d. 0.15. HH 91, Rm 7 north end fill on floor
			reg. no. 4687 Needle, complete, robust form with large eye formed by flattening and doubling over the end of the shaft, similar to 42, except for circular cross-section. L. 9.8; d. 0.3; w. of head 0.5; HH 581, Rm 6.
			reg. no. 3915 Needle, eye intact, point lost. L. 5.6; d. 0.2; HH 452/476, Tr. C and C/B baulk. Levels 2-5

Tools			
reg. no. 4684	Incomplete object that is similar to a very large needle, except that the head is very wide. It could be part of a skewer or stake. Square section shaft and point lost. Ext. l. 5.0; w. 1.4; th. of stem 0.5; HH 548, Rm 6.	TB 8042	reg. no. 2418 224, Rm 11 floor. Small fragment of sheet gold. L. 2.8; w. 1.2; HH 224, Rm 11 floor.
reg. no. 4282	A fragment of the working end of a tool. The shaft is incomplete and the working end is shaped like a mall spoon. L. 1.4; w. 0.5; max. th. 0.35; HH 556, Rm 6 floor.		reg. no. 2792 Four fragments of sheet silver. Largest L. 3.0; w. 2.4, smallest L. 1.3; w. 1.2; th. 0.1. HH 271, Courtyard 8 floor.
reg. no. 4286	A tool blade fragment, possibly the end of an awl. Triangular in plan and in section. L. 1.2; w. 0.5; th. 0.4; HH 556, Rm 6 floor.	TB 9015	reg. no. 2840 Fragment of gold leaf. L. 1.4; w. 0.5, th. 0.05; HH 323, Courtyard 8 floor.
reg. no. 2795	Flat, rectangular strip of copper-alloy, broken at one end. The curvature of the piece suggests that it could be a fragment from one of the blades of a pair of tweezers. L. 0.85; w. 0.5; th. 0.2; HH 278, Tr. C surface clearance. Levels 2-4.	TB 9048	reg. no. 3013 Small silver nail with flat head, clearly a decorative item. L. 0.9; d. (head) 0.6; HH 301, Courtyard 8 floor.
reg. no. 3322	Tool resembling Fig. 52. Complete, shape of shaft obscured by corrosion deposits. L. 2.6; w. 0.5; th. 0.5; HH 468, Tr. C fill. Levels 4/5.		reg. no. 1958 Fragment of gold leaf. L. 0.9; w. 0.7; HH 99, Rm 7 deposit on floor.
reg. no. 3864	Fragment of cutting edge of a small chisel-type tool, shaft square in section and incomplete. End of shaft widens towards cutting edge which has a convex profile. The blade is similar to that of 48. L. 0.9; w. 0.6; th. 0.3; HH 481, Tr. D. Level 5b.	TB 9014	reg. no. 2666 Fragment of gold sheet. L. 0.7; w. 0.4; HH 258, Tr. A. Level 4.
reg. no. 4059	Small tool, pointed at one end, while the other comes to a flat, tapering end, possibly intended for insertion into a handle. L. 3.5; w. 0.35; HH 515, Tr. C5 fill. Level 8b.		
Rings			
reg. no. 1935	Strip of metal bent to round to form a loop in the centre, both ends project some way beyond the loop. L. 2.1, total th. 1.9; w. of band. 0.3; HH 0. Surface find.		
reg. no. 1816	Circular section fragment of wire bent into a loop. Part of an earring? L. 1.1; d. of section 0.2; HH 55, Rm 7 fill nw end. Level 1.		
reg. no. 1496	Short, curved fragment, of circular cross-section. L. 1.8; d. of shaft 0.25; HH 14, Rm 3 floor of bathroom.		
reg. no. 3863	Short, curved fragment of triangular cross-section. L. 2.6; w. 0.7; th. 0.3; HH 476, Tr. C5. Level 6.		
reg. no. 4131	Short curved length of metal, probably part of a ring. L. 1.4, d. of section 0.3; HH 513, Tr. D. Level 6/7.		
Tubes and strainer fragments			
reg. no. 1511	Short fragment of metal tube, cylindrical in shape. L. 1.7; d. 0.9; dp. 0.5; HH 1. Surface find.		
reg. no. 2753	Fragment of tube (as 57). L. 3.1; d. 1.0. HH 318, Floor of MA house. Level 1.		
TB 10148	reg. no. 3193 Conical strainer (as 61), surface corroded. L. 7.5; d. 1.1; HH 441, Tr. D floor. Level 5b.		
Late Assyrian fibula			
TB 4026	reg. no. 588 Rectangular head section (0.9 × 0.7), spiral decoration on shaft. L. 4.0. Tell Majnuneh (Site EH, Iraq 55, 1993, 183).		
Lead fragments			
reg. no. 1369	Straight length of metal of circular cross-section. L. 4.1; d. 0.4; HH 14, Rm 3 floor.		
reg. no. 1518	A length of metal of circular cross-section bent at right angles, both ends hammered out to form flat rectangular terminals (2.4 × 1.8; and 1.8 × 1.2), perhaps a mounting of some kind. HH 14, Rm 3 floor.		
TB 8086	reg. no. 2584 Three lead strips, probably formed round a wooden core. Lengths, between 5.5 and 7.5 cm; w. 2.5. One strip has two lead nails <i>in situ</i> . L. 1.4; d. (head) 0.6; HH 224. Found with copper sheet fragments 68. All these fragments should relate to a decorated wooden item.		
reg. no. 2585	Two pieces of lead sheet. L. 1.4; w. 1.4; and L. 0.7; w. 0.7, and a lead nail, L. 1.4, d. (head) 0.6. Clearly related to 2584, HH 224.		
Gold/silver fragments			
TB 7191	reg. no. 1663 Tangle of copper/bronze wire, one part overlaid with thin sheet-gold, probably fragment of jewellery or decorative item; HH 21, upper fill. Level 1.		
reg. no. 2230	Fragment of thin gold sheet with nail hole. L. 2.5; w. 2.0, HH 205, Rm 20 lower fill.		
TB 8039	reg. no. 2408 Small fragment of sheet gold. L. 1.4, w. 0.4, HH 224, Rm 11 floor.		
TB 8042	reg. no. 2416 Small fragment of sheet gold, once folded over something round like a knob. L. 1.3; w. 1.8, HH		
			reg. no. 2225 Fragment, badly corroded. L. 4.3, w. 1.1; HH 149, above Courtyard 8. Level 1.
			TB 9039
			reg. no. 2908. Nail, with hemispherical head. The head would have been visible when in use. L. 1.2; d. (head) 1.9; (shaft) 0.2; HH 251, Surface clearance, Tr. A and B.
			Appendix of fragments
			Fragments of copper/copper alloy, of circular cross-section
			reg. no. 1425 Point intact. L. 5.8; d. 0.35; HH 2, surface clearance.
			reg. no. 2285 L. 2.7; d. 0.2; HH 191, above Rm 22. Level 1.
			reg. no. 1933 Section becomes square at one end. L. 2.5; d. 0.2; HH 48, Courtyard 8 floor.
			reg. no. 2472 L. 3.4; d. 0.2; HH 318, floor of MA house. Level 1.
			reg. no. 2937 One end bent into a hook. L. 2.4; d. 0.2; HH 326, Upper clearance, above Rm 14. Level 1.
			reg. no. 2492 L. 3.4; d. 0.2; HH 218, Level 1.
			reg. no. 2583 Three fragments. (a) L. 2.4; d. 0.2; (b) L. 2.5; d. 0.3; (d) L. 2.2; d. 0.2; HH 224, Rm 11 floor.
			reg. no. 2577 L. 3.5; d. 0.1; HH 224, Rm 11 floor.
			reg. no. 2579 L. 8.0; d. 0.2; HH 224, Rm 11 floor.
			reg. no. 4461 (c) L. 3.0; d. 0.35; HH 548, Rm 6.
			reg. no. 2740 L. 3.3; d. 0.2; HH 301, Rm 8 floor.
			reg. no. 3854 L. 3.5; d. 0.2; HH 425, Tr. D & C1, surface clearance. Level 3/4.
			reg. no. 2741 L. 6.8; d. 0.3; TB 9041; HH 280, Tr. A, fill. Level 3/4.
			reg. no. 2906 L. 8.2; d. 0.3; HH 251, Tr. A and B, surface clearance.
			reg. no. 3855 L. 3.0; d. 0.25; HH 463, Tr. D floor. Level 4
			reg. no. 3935 L. 4.1; d. 0.3; HH 472, Tr. C/D bauk. Level 4.
			reg. no. 3846 L. 1.9; d. 0.2; HH 462, Tr. D floor. Level 4
			reg. no. 3191 L. 4.0; d. 0.3; HH 432, Tr. D1 a surface. Level 4/5.
			reg. no. 3853 L. 3.9; d. 0.2; HH 481, Tr. D a surface. Level 5b.
			reg. no. 3194 L. 5.4; d. 0.4; HH 444, Tr. D floor. Level 5b.
			Fragments of copper/copper alloy, square in section
			reg. no. 2576 Slightly bent. L. 4.0; w. /th. 0.3 × 0.2; HH 116. Level 1.
			reg. no. 1631 Section varies from circular at either end, to square in the middle of the object. L. 6.2; w. /th. 0.3; HH 37, Upper fill. Level 1.
			reg. no. 1500 Tapers to a point, no dimensions. HH 14, Rm 3 floor.
			reg. no. 4646 Section becomes circular towards one end. L. 9.9; w. /th. 0.75; TB 11139a. HH 548, Rm 6.
			reg. no. 1918 L. 5.4; w. /th. 0.4; HH 58, Courtyard 8 floor, e. end.
			reg. no. 1964 Possibly an awl. L. 2.9; w. /th. at the thicker end 0.3; w. /th. at the thinner end 0.1. HH 91, Rm 7 fill above floor.
			reg. no. 2380 L. 4.6; w. /th. 0.4; HH 204, Rm 20 fill of shrine below level of daïs.
			reg. no. 2383 L. 3.8; w. /th. 0.4; HH 207, Rm 12, floor fill.
			reg. no. 2573 L. 5.5; w. /th. 0.8; HH 204, Rm 20, fill of shrine below level of daïs.
			reg. no. 2575 L. 3.7; w. /th. 0.3; HH 224, Rm 11 floor.
			reg. no. 2583c L. 1.6; w. /th. 0.3; HH 224, Rm 11 floor.
			reg. no. 3859 L. 3.7; w. /th. 0.4; HH 468, Tr. C fill. Level 4/5.
			reg. no. 3849 L. 2.6; w. /th. 0.3; HH 451, Tr. D ? outdoor surface. Level 5a.
			reg. no. 847 L. 4.4; w. /th. 0.45; TB 10138; HH 473, Tr. A. Level 6.
			reg. no. 4112 Bent in the middle at a 90° angle. L. 3.7; w. /th. 0.3; HH 530, Tr. D floor of vaulted room. Level 8.
			Fragments of copper/copper alloy sheet or strip
			reg. no. 1921 L. 2.7; w. 0.7; HH 78. Level 1.
			reg. no. 2171 L. 4.6; w. 2.3; th. 0.25; HH 159. Level 1.
			reg. no. 2186 L. 4.1; w. 0.4; th. 0.2; HH 150, fill above Courtyard 8. Level 1.
			reg. no. 1523 L. 4.3, w. 4.3; th. 0.2; HH 24, Rm 4 floor.
			reg. no. 1727 Sheet folded over. L. 1.8; w. 2.5; th. 0.1; HH 46, Rm 7 fill.
			reg. no. 1922 (a) L. 4.7; w. 0.45; th. 0.15; (b) L. 1.5; w. 0.45; th. 0.1; HH 58, Courtyard 8, floor, e. end.
			reg. no. 2329 L. 2.2; w. 1.2; th. 0.05; HH 207, Rm 12 floor fill.
			reg. no. 3861 L. 4.5; w. 0.4; th. 0.1; HH 425, Tr. D & C1 surface clearance. Levels 3/4.
			reg. no. 3941 L. 3.5; w. 1.2; th. 0.5; HH 468, Tr. C fill. Levels 4/5.

Chapter 9

Organic Materials

A. Ivory (Figs. 42 & 43; Fig. 237:1-7, 9-27)

In the Mitanni Palace and Temple ivory is relatively common, and there is clear evidence that objects of both elephant and hippopotamus ivory were being made in the Palace workshops. Of these the most striking is the lower part of a cosmetics dish (1), made of hippopotamus ivory and visibly unfinished (Fig. 149). It is very like examples from Alalakh and Ugarit, and the completed piece would presumably have borne a similar, swivelling duck's-head lid (Woolley 1955, pl. 125). Three pieces of unworked elephant ivory were found in the Palace courtyard, one of which was of roughly pyramidal shape and measured $5 \times 5.5 \times 4 \times 3$ cm; the curvature of the ivory reveals a minimum tusk diameter of 13-14 cm. Fragments of several ornamental ivory box lids were found, decorated with various geometric schemes (Fig. 150). The circular lid diameters measure between 8-9 and 14 cm. These come from Room 11 and the Temple cella, with a single fragment (7) found in Trench A3 and therefore possibly from a private house, unless of course it was dropped by a marauding Assyrian.

Over 190 pieces of ivory and bone inlay came from Level 2, the majority of which were of ivory. Just under 100 ivory inlays were found in Room 11, including long strips of guilloche forming what appears to have been a large rectangular box or possibly part of a piece of inlaid furniture (Fig. 151). 22 ivory dowels were also found (10 & 11); 6 of the smaller dowels had fitting holes cut in the side. Over 50 inlays came from the courtyard, and a smaller

number from the Temple cella; the latter included 3 guilloche strips like those from Room 11. Among the Room 11 inlays were a number of undecorated, petal-like pieces (12 & 13) and several attractively carved animals (18-20 and Fig. 151). Also recovered were simple rectangular, hemispherical and rhomboid shapes, each with one or two dowel holes; these obviously served the same purpose as similar bone examples from the Room 7 workshop.

The most unusual ivory objects were a group of carved bulls' hooves, resting on low supports. These all came from the Temple, two each from the cella and Room 21 (25 & 26). A fifth example was much larger (27); it too came from the Temple cella. No other fragments were found that could have come from the bodies of such animals, and one must wonder whether these were of more precious materials, from which the ivory legs/hooves had been ripped. An ivory comb was found in Room 21 (2 and Fig. 152), as was an ivory eye (9). A small heavily burnt comb fragment, probably ivory, came from Room 11 (Fig. 236:86).



Figure 149. *Unfinished cosmetics container made of hippopotamus ivory; see also Figure 43. Similar but complete examples from sites like Alalakh and Ugarit identify the body shape as that of a duck which would have borne a swivelling head as a lid.*

B. Bone (Fig. 236:76–92)

Bone objects include a variety of pieces of inlay (76, 79, 87–91), of which the six-pointed star (79) and the rosette (76) are the most interesting (Fig. 153). Of 12 pieces of bone inlay from Level 2, 9 come from the workshop (Room 7) and 2 from the nearby courtyard. The ivory inlays, on the other hand, came for

the most part from Room 11 and the Temple cella. Three larger pieces of bone in- or over-lay came from Room 5 (Fig. 237:8) and the Temple cella (the latter measured $5.3 \times 2.5 \times 0.2$ and $8.4 \times 3.4 \times 0.2$, and were pierced with holes for attachment; reg. no. 2613). Five perforated, button-like discs were found (77 & 78), conceivably spindle whorls. Four bone needles were recovered, one each from Rooms 5 and 7, two from Level 5 (reg. nos. 3206 & 3268). Two bone points came from the Level 2 courtyard (92) and Level 6 (reg. no. 3903). In general bone tools were far less common than in third-millennium levels, perhaps a reflection

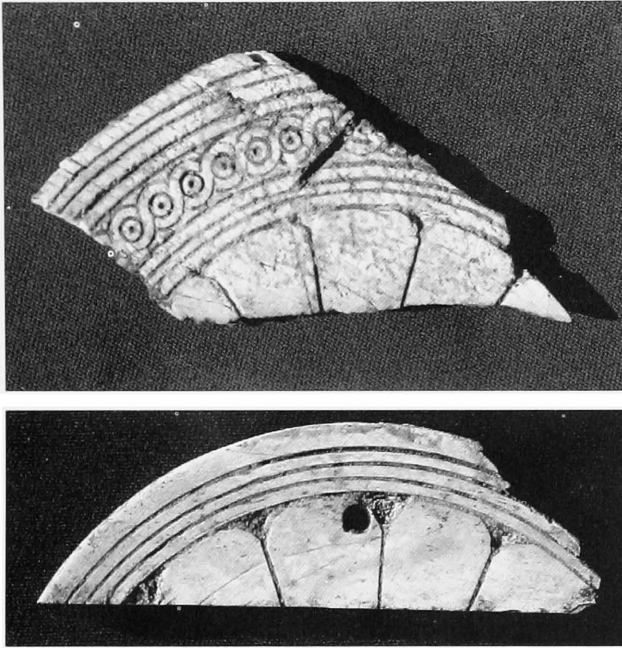


Figure 150. Ivory fragments 3 and 7, from the lids of circular boxes; est. d.s 9 & 14 cm.

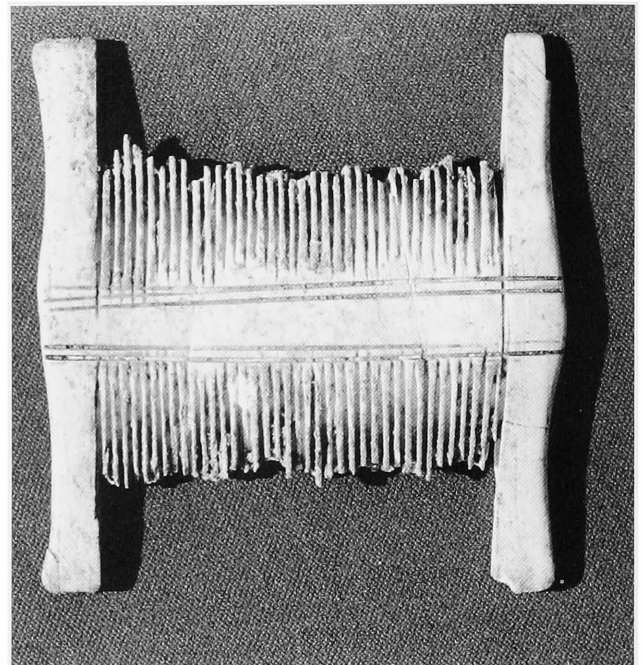


Figure 152. Ivory comb (2) from Temple Room 21; $6.0 \times 6.2 \times 0.5$ cm.

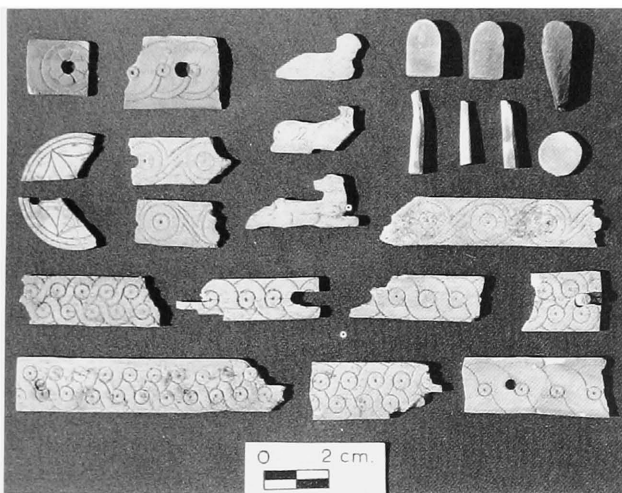


Figure 151. Ivory inlay and dowels from Palace Room 11; Figure 42 reconstructs the various guilloche patterns found on the long ivory strips (identified in Figure 40 as 17 and 22).

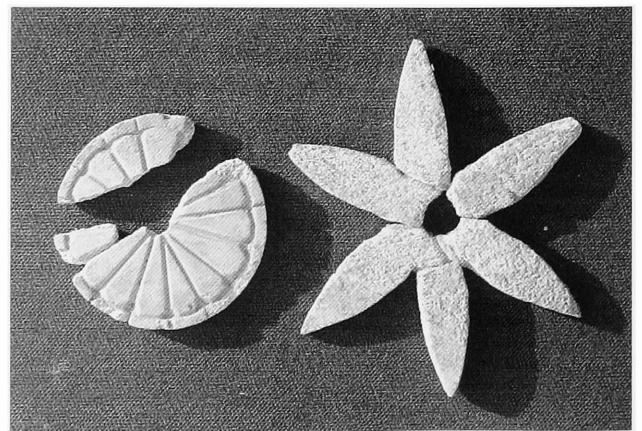


Figure 153. Bone inlay 76 and 79; 76 is from the workroom (Room 7); d. 3.0 cm.

of the greater use of copper/bronze under the Mitanni.

The very large object **80** is likely to have been a needle rather than a pin, perhaps for making some soft material, for example a net; **81** is the only decorated pin from the second-millennium levels. Among the more interesting bone objects are a fragmentary comb (Middle Assyrian, reg. no. 1961) and three bones which have been worked at the ventral end for use conceivably as stamps or, in the case of the two phalanges from Levels 5 and 8/9, as gaming pieces (**83-5**). Some 93 sheep/goat astragali were recovered from the Mitanni Temple, many of them pierced, coated with (?) gypsum plaster and stained a blue-green colour. 19 unpierced examples came from Room 11. A (?red) deer antler came from Level 8 (reg. no. 3001), as did an unusual pierced, thimble-shaped object (reg. no. 4013). A number of small scratch marks were visible on the antler.

C. Shell

Perhaps not surprisingly, river mollusc shells (freshwater bivalves) comprise the largest single group at Brak at all periods. These were used both for food (cf. the post-Akkadian 'kitchen' scene, *Iraq* 44, 207 & pl. 16c) and as a source of mother-of-pearl, cut from the shell lining. In late fourth-millennium Area TW we found shells from which neatly cut geometric inlays had been removed. In the Mitanni levels only roughly gouged out perforations occur; the latter are particularly common in Levels 5 and 6.

The most unusual shells in the Mitanni levels were a number of large, badly broken, very heavily burnt conch shells, recovered from the area in front of the Temple dais. Only a small number of other types of marine shell were found. Again the emphasis in the Mitanni workshops was on other types of material. The marine shells include the illustrated *Arcularia* bead (**93**) and four further *Arcularia* beads from Room 11 and the upper fill of the workroom (**7**), dentalia from Room 5 (reg. no. 1842) and Room 11 (reg. no. 2606) and a bivalve *Glycymeris*, with a holed umbo, all Mediterranean types. A fragment of a large cowrie (length 3.9 cm, reg. no. 4559), an Indo-Pacific type, came from the fill of the Corridor 6 drain (HH 572, Fig. 31); four further cowries came from upper fill in Room 9. A small Indo-Pacific button shell, flattened on one side and perforated as a bead, was found in Level 6. A *Conus* bead from the Level 8 shrine (reg. no. 3992) could have come from either the Mediterranean or the Arabian Gulf/Indian Ocean.

Among the recognizable shell objects are two

rings from the Trench D Level 7 white plaster floor (d. 2.5) and the Level 2 Temple cella (d. 1.4), and a number of small beads, at least some of which may originate in earlier levels at the site when such small shell beads were far more common.

D. Wood

The most interesting preserved wood consisted of 9 carved pieces recovered from Room 11, presumably from some large item(s) of furniture and very 'Victorian' in style. A large claw foot, apparently square in section, was found in association with a quantity of gypsum plaster which appears to have lined an interior piece of wood and provided backing for the outer carved claw (reg. no. 2646). This must have been part of a furniture leg or some similarly heavy object. Six small pieces of carved wooden moulding and two large flat pieces of apparently circular profile were found together with the foot (**94** and reg. no. 2645, radius at least 4.0 cm, thickness 3.3). A second large piece of wooden furniture was overlaid with heavy copper/bronze sheet metal (Fig. 142). Other wood identified in the Mitanni Palace includes the Room 1 door post fragments, which provide our single dendrochronological date (*Pinus* sp., see below), a large juniper or cedar post in Room 1 and other conifer and *Ulmus* fragments (? roof beams) from Corridors 2 and 4 and Room 7.

E. Ostrich shell

Ostrich shell was common in the Area TW Uruk excavations and was found also in the Akkadian monumental buildings. It is rare in the Mitanni Palace, however, possibly reflecting a decreasing ostrich population in the Late Bronze Age but equally possibly an interest in more valuable materials such as gold and silver. 14 ostrich shell fragments were found in the Palace ablution room (reg. no. 1377), perhaps originally a container for cosmetics.

F. Dendrochronology

by Peter Ian Kuniholm

All samples are from the Mitanni Palace.

BRA- 1 Area HH, Locus 85. Charcoal fragments associated with door socket into south reception room (Room 1).

Pinus sp., 13 fragments, the longest of which

had 71 rings, have been combined into a 90-year sequence.

Relative date: 1139–1228vv.

Year 1228 on the Gordion Midas Mound Relative Dating System is 1293 ± 37 BC (radiocarbon wiggle-matching done by Bernd Kromer in Heidelberg).

Supporting external crossdating statistics for BRA-1:

Gordion Midas Mound Tumulus, distance 865 km, t-score 3.14, overlap $n = 90$, trend 61.8 per cent, D-score 37.03.

Other charcoal samples submitted lacked adequate ring sequences; the woods were identified as follows:

2. Room 11, locus 224, plan Figure 40, no. 6. Large post supporting damaged roof (cf. p. 6), possibly inserted after Adad-nerari I destruction c. 1280 BC. *Juniperus* (?) and or/*Cedrus* sp. Maximum ring counts are 41, 30 and 22.
3. Corridor 2, Locus 24. Charcoal fragments from corridor floor (?? roof beams). Three elm (*Ulmus* sp.) fragments with maximum ring count of 9 and two other conifer fragments with maximum ring count of 21.
Corridor 4, Locus 20. Five charcoal fragments from Palace roof beams (?), conifer. Maximum ring count 14.
4. Room 7, Locus 46. Three charcoal fragments, conifer. Maximum ring count is 15.

G. Palaeobotany

by Mike Charles & Amy Bogaard

Old Babylonian period

A 1.75 litre soil sample was taken from the fill of the Old Babylonian pit AL 21. Charred plant remains were recovered by bucket flotation using a 300 micron sieve and sorted, identified and scored under a low-power microscope. The following were used as units for counting: for cereal grains and grass caryopses generally, embryo ends; for cereal rachis, internodes; for straw, culm nodes and bases; for the seeds of dicotyledons visual inspection yielded a 'minimum number of seeds'. The archaeobotanical contents of the sample are given in Table 11. The density of scored items in the soil sample, 98 items per litre, is probably too high to represent back-

ground 'noise', that is, occasional charred remains deposited piecemeal over a period of time. Rather, the sample probably represents a single, small-scale deposition event. The only definitely attested cereal in the sample is hulled barley, identified as two-row (*Hordeum sativum* var. *distichum*) based on the morphology of the rachis material and the absence of twisted, lateral grains indicative of the 6-row form. The ratio of rachis internodes to barley grain (c. 1:1) and the presence of large, potentially cereal-derived culm nodes and culm bases in the sample suggests that the barley was unprocessed (present as whole plants) or that the crop was at an early stage of processing (e.g. threshed).

In addition to the crop material itself, physical properties (e.g. size, aerodynamic properties) of weed seeds accompanying the crop in archaeobotanical samples can be used to infer which crop processing stage(s) is represented (Jones 1984). For example, weed seeds similar in morphology to crop seed tend to remain with the crop through the processing sequence and thus characterize cleaned products. In the AL 21 sample, an abundant weed seed type,

Table 11. The archaeological contents of soil sample 34 from the Old Babylonian pit AL 21.

Context	AL 21
Soil sample no.	34
Context type:	pit
Period:	OB
Area phase:	HH 10
Litres of soil floated:	1.75
Scorable items per litre:	98
<i>Cereal grain</i>	
Hulled <i>Hordeum sativum</i> , straight	1
Hulled <i>Hordeum sativum</i> , indet.	26
Cereal indet.	1
<i>Cereal chaff</i>	
Hulled <i>Hordeum sativum</i> var. <i>distichum</i> rachis	16
Hulled <i>Hordeum sativum</i> indet. rachis	20
<i>Hordeum</i> indet. basal rachis	2
<i>Hordeum/Triticum</i> indet. basal rachis	1
large culm nodes (>1 mm diameter)	6
large culm bases (>1 mm diameter)	5
<i>Pulses</i>	
<i>Lens</i> sp.	1
<i>Wild taxa</i>	
<i>Silene</i> sp.	1
<i>Centaurea</i> indet.	1
<i>Lolium</i> cf. <i>perenne</i>	1
<i>Bromus</i> indet.	26
<i>Bromus</i> cf. <i>tectorum</i>	25
<i>Hordeum</i> sp.	2
<i>Hordeum</i> cf. <i>spontaneum</i>	3
<i>Coronilla scorpioides</i>	1
<i>Medicago radiata</i>	1
<i>Melilotus/Trifolium</i>	1
<i>Trigonella</i>	18
<i>Ziziphora</i> sp.	1
Malvaceae	6
Umbelliferae	1
<i>Indeterminate grain</i>	
<i>Hordeum</i> indet.	12
Gramineae indet.	2

Table 12. Contents of hand-picked second-millennium BC samples (Mit = Mitanni, MA = Middle Assyrian; x = <10 units, xx = 10–50, xxx = >50).

Sample	HH 529 Mit (c. 1550 BC)	HH 494 Mit (c. 1500 BC)	HH 207a Mit (c. 1275 BC)	HH 207b Mit (c. 1275 BC)	HH 243 Mit (c. 1275 BC)	HH 150 MA (c. 1200 BC)	HH 172 MA (c. 1200 BC)	HH 177 MA (c. 1200 BC)
Date Level Context	7 private house	6 private house	2 Palace, Room 12	2 Palace, Room 12	2 Temple, floor of storeroom	1	1	1
<i>Triticum monococcum</i> (one-grained) grain						x		
<i>Triticum monococcum</i> (two-grained) grain	x							
<i>Triticum monococcum/dicoccum</i> grain	x	x						
<i>Triticum dicoccum</i> grain		x	x				x	
<i>Triticum aestivum/durum</i> grain		x						x
<i>Triticum</i> indet. grain								x
Hulled <i>Hordeum sativum</i> grain	x	xxx	x			x	xx	xx
<i>Triticum durum</i> rachis							x	
<i>Pisum sativum</i>						x		
culm nodes		x						
<i>Aegilops</i> grain		x					x	
<i>Aegilops</i> spikelet forks		x					x	
<i>Punica granatum</i> pips and peel				xxx				
sheep/goat dung pellets					x			x

Bromus cf. tectorum, is small and light and would tend to be separated from the crop by winnowing. Furthermore, several other weed seed types in the sample (*Silene* sp., *Centaurea* indet., *Coronilla scorpioides*, *Medicago radiata*, Malvaceae) tend to remain enclosed in pods or seed heads and hence would be removed by coarse sieving of the winnowing product. The presence of all these weed seed types, together with the more or less equal ratio of rachis to grain, suggests that winnowing has not yet taken place. The barley in the sample appears, therefore, to represent a more or less unprocessed crop. Barley in this condition could have been brought onto the site for further processing or for use in an unprocessed state (e.g. as animal fodder). The single lentil seed in the sample may mean that occasional lentil plants grew along with the barley or could simply be the result of post-harvest contamination. Most or all of the wild taxa in the sample probably represent field weeds growing with the barley and harvested along with it. The flowering/fruitlet times of the four taxa identified to species (*Coronilla scorpioides*, February–June; *Medicago radiata*, March–May; *Bromus tectorum*, March–May; *Lolium perenne*, April–June) certainly suggest that all would be in fruit by harvest time (late May) (Zohary & Feinbrun-Dothan 1966–86).

The low maximum plant height (25 cm) of *Medicago radiata* (represented by a single seed) suggests a low harvesting height (Zohary & Feinbrun-Dothan 1966–86). Indeed, the presence of potentially cereal-derived culm bases in the sample may reflect uprooting of whole cereal plants. Low harvesting or uprooting of cereals means that the straw is available for use as animal fodder, tempering, etc.

The distribution in modern Iraq of the four taxa identified as to species may tentatively be used to

estimate their minimum annual rainfall requirements (Guest & al-Rawi 1966; Townsend *et al.* 1966–85). *Coronilla scorpioides* has the highest minimum annual rainfall requirement (200–500 mm/annum), a requirement which could be met in the Brak area today (with a present-day average annual rainfall of 250–300 mm).

Mitanni period

Hand-picked archaeobotanical samples were recovered from some later-second-millennium BC contexts. In these cases, visible charred plant remains were recovered in the trench rather than separated from the soil matrix by flotation. Charred plant remains recovered in this way will tend to be biased toward larger items (e.g. whole cereal grains) and thus cannot be treated as representative of the archaeobotanical contents of these contexts. However, since these later periods at Tell Brak are not otherwise represented archaeobotanically, the contents of these samples are described here. The charred plant remains were quantified in the manner described in the previous section and are summarized together with date and context information in Table 12. Two of the samples contain charred dung pellets of sheep or goat. In order to determine whether the dung was a source of charred seeds or chaff (cf. Charles 1989), the pellets were dissected and examined under a low-power microscope. No recognizable seed or chaff material was observed.

Hulled barley (*Hordeum sativum*) is the best-represented crop type in the samples. No twisted barley grains (reflecting the presence of 6-row barley) were observed. Other cereal crops — einkorn (*Triticum monococcum*, both one- and two-grained types), emmer (*Triticum dicoccum*), and free-threshing wheat (*Triticum aestivum/durum*) — are represented

as single grains in some samples. The only cereal chaff type in the samples is a single fragment of free-threshing wheat rachis identified as macaroni wheat (*Triticum durum*). Pulses are represented by a single seed of common pea (*Pisum sativum*). The range of crop types present in the samples is similar to that more substantially represented among third-millennium BC samples from Tell Brak (Charles & Bogaard forthcoming). The only weed type represented is *Aegilops* (grain and spikelet forks). The grains of *Aegilops* mimic those of cereals and tend to characterize crop processing products.

Pips and peel fragments of pomegranate (*Punica granatum*) were recovered from one context (HH 207, Mitanni Palace Room 12). All of the remains, 48 pips and a number of peel fragments including one bear-

ing the pedicel attachment scar, probably derive from a single fruit. Pomegranate seeds have previously been found at a number of Bronze Age sites in the southern Levant, Egypt, Cyprus and Greece (Zohary & Hopf 1994, 162) and in Mesopotamia in the Northwest Palace at Nimrud (Helbaek 1966). Cuneiform references to pomegranate, the earliest dating to the Akkadian period, give evidence of cultivation for its rind (used for tanning in the leather industry) as well as for its fruit (Postgate 1987). Ur III texts from Ur show that pomegranate trees could be interplanted with date palms, as they are today for purposes of shade, and a second-millennium description of fruit plantations from Mari lists small plots of pomegranates among other fruits (Postgate 1987, 122; Kupper 1983, text 329).

Chapter 10

The Clay Objects

(Figs. 238–9)

Helen McDonald

Baked clay

There were 203 baked clay objects from the HH excavations. The most frequent types were wall cones (56 examples), animal figurines (48 examples), spindle whorls (26 examples), model chariot wheels (20 examples) and pot discs (12 examples). The wall cones (Fig. 238) are discussed in Chapter 1, p. 11. The animal figurines comprised fourteen equid, six bovid, of which four were zebu (20–23), two sheep, one bird (18), and twenty-five figurines too fragmentary for identification. The zebu figurines demonstrate the presence of these Indian cattle in northern Mesopotamia in the second millennium. Similar figurines have been found at a number of other sites (see references in table opposite Fig. 239). Two of the four zebu figurines are from the vaulted shrine in Level 8 (22 & 23). As to the findspots of the animal figurines as a whole, six are from surface clearance, two are from Level 1, two from the public buildings of Level 2, and thirty-eight are from the domestic

buildings in Levels 3 to 8. A similar pattern can be seen with regard to the model chariot wheels, of which three came from surface clearance, three from Level 2, and fourteen from Levels 3 to 8. This underlines the essentially domestic nature of these objects, some of which may have been toys for children. (It is easy to see how the hollow bird figurine (18), with its ability to pass water, would be amusing to a small child.) There was a surprisingly small number of chariot fragments, only two (24 and reg. no. 4061), from Levels 7 and 8 respectively.

The house model (14, and Fig. 155) from the fill



Figure 154. *Figurine fragment 17 with design incised after firing. The incised human figure can be of almost any date, but is too worn to be recent. From Level 4.*

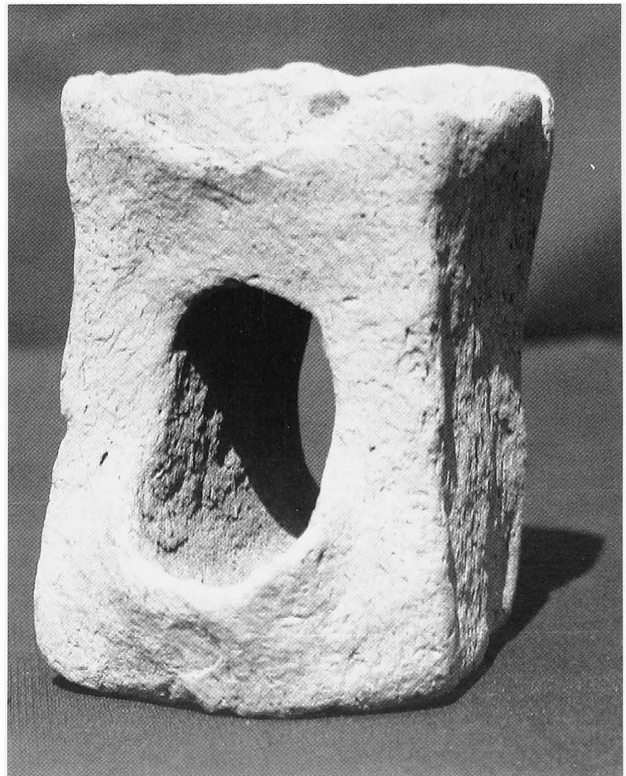


Figure 155. *'House model' from the Level 8 vaulted shrine; ht 10 cm.*

of the vaulted shrine in Level 8 may be a toy or it may have had a ritual function, since there is a long tradition of house- and tower-shaped altars and offering stands in Mesopotamia and Syria (Margueron 1976, 193ff.). The Brak model is smaller and simpler than the majority of these items, but it does have parallels among a number of small house-shaped incense burners, such as the one from Munbaqa, which has clear signs of burning (Rouault & Masetti-Rouault 1993, 370). The Brak house model shows no sign of burning, although there is interesting evidence that its shape may have been ideal for such a purpose. At Busra, a clay flue fragment almost identical in shape with the Brak house, and with the same two openings, had been found and re-used as an incense burner (Seeden 1983, 173).

The female figurine fragment (15) is unfortunately from the surface and cannot be dated precisely. It differs from many of the moulded plaque-like female figurines familiar from the second millennium (for type cf. Starr 1937, pl. 100 A–U) in that the reverse is not flat. It would appear that when complete the Brak figurine may have been hollow, made in two halves, and then joined. In fact the manner in which it has broken is consistent with

its having been formed in this way (Fig. 156). Moreover, at least parts of the figurine appear to have been formed by modelling rather than moulding, although the basic form may have been produced by clay being pushed into a mould. Features such as the eyes, breasts, hand and parts of the headdress are all applied. A combination of modelling and moulding is unusual, as one of the potential advantages of moulding is that this method can be used to provide complex detail with no need for the time-consuming modelling of facial and other delicate features. Interestingly, several aspects of the figurine are reminiscent of the limestone human-headed bull found in the third-millennium monumental building in Area SS (Iraq 53, pl. XXVI). The two figures have similar facial expressions with the same enigmatic smile and, although the headdress of the HH figure is incomplete, it would appear to be horned. In addition the hand of the HH figurine and the right front hoof of the SS statue are in similar positions. In view of the differences between the two, however — material, size, gender, the SS statue has hooves whereas the HH figure has at least one human hand — as well as the fragmentary nature of the HH figure, too much emphasis should not be placed on their superficial similarities.

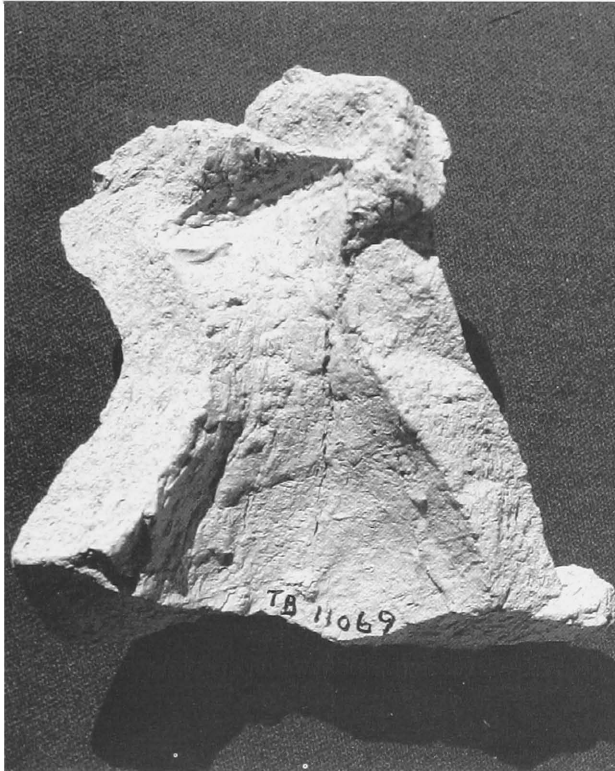


Figure 156. Front and back views of figurine fragment 15. Surface find. The figurine would appear to have been moulded, with added appliqué detail; ht 7.3 cm.

The spindle whorls were predominantly conical (20 examples), although there were also two biconical, two disc-like, one hemispherical and one indeterminate fragment. The only two decorated examples are illustrated (38 & 39). The breakdown of findspots is as follows: one from surface clearance, five from Level 1 (including one from HH 318, the floor of a Middle Assyrian house), five from the monumental buildings of Level 2, and fifteen from the domestic buildings of Levels 4 to 8. The spindle whorls exhibit a similar distribution to that of the animal figurines and model wheels, with the greatest number coming from the domestic buildings. Apart from wall cones, the only other class of terracotta object of which the slightly greater number derive from the Level 2 monumental buildings is the pot disc. This may not be of great significance as only a relatively small number were found: two from Level 1, six from Level 2 (Rooms 3, 5, 6 & 21) and four from Levels 4/5. These simple objects are merely potsherds trimmed into regular discs and may have had a variety of purposes, including use as palettes, lids, scoops or tokens, depending on size. Four pot discs had diameters between 8 and 11 cm and are sufficiently large to have been palettes or lids. (Two of these came from Room 3, one from Room 21 and one from Tr. C, Level 5.) Two discs with diameters of 2.5–2.9 cm may have been counters or tokens. The remaining seven discs have diameters between three and five cm.

There are a number of intriguing objects of which the exact purpose and complete form elude us. Object 26 may possibly be part of a figurine, although its ware closely resembles grey-burnished pottery (Fig. 189), so we cannot rule out the possibility that it may once have been attached to a vessel. Object 28 may be part of a shallow rectangular tray with a notched rim and perforations in the base. On the other hand, it could be part of a model vehicle, perhaps a piece from the front of a wagon with perforations through which to pass the reins. An even more puzzling item is the incomplete 'foot-shaped' object from the floor in Room 13 (Fig. 157). This has three perforations and must therefore have been fastened to some other object.

As well as the bobbin/toggle items (29–31), there are a number of small perforated objects which may have been used to weigh down the end of a cord or string. These include two perforated discs (reg. nos. 3890 & 3108 from Tr. D, HH 484, Level 5b/6 floor and HH 538, Level 6 fill, respectively), a perforated sphere (reg. no. 3035, from HH 401 floor in Tr. D, Level 6), and two longitudinally perforated cylinders (reg. nos. 2327 & 3274 from HH 150, Level 1, and HH

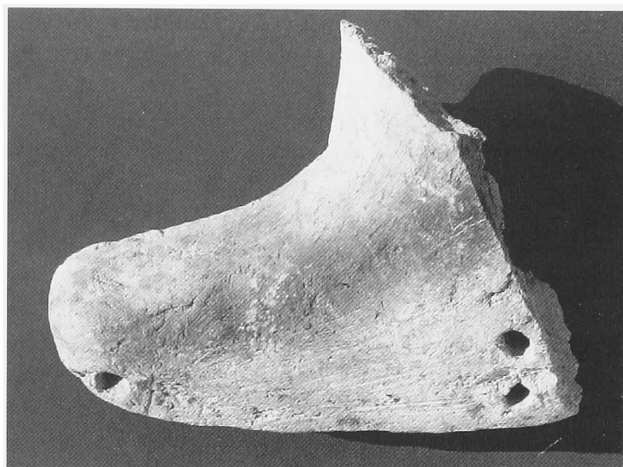


Figure 157. Foot-shaped clay object of unknown function, Room 13 floor. TB 8142. Length 13.9 cm.

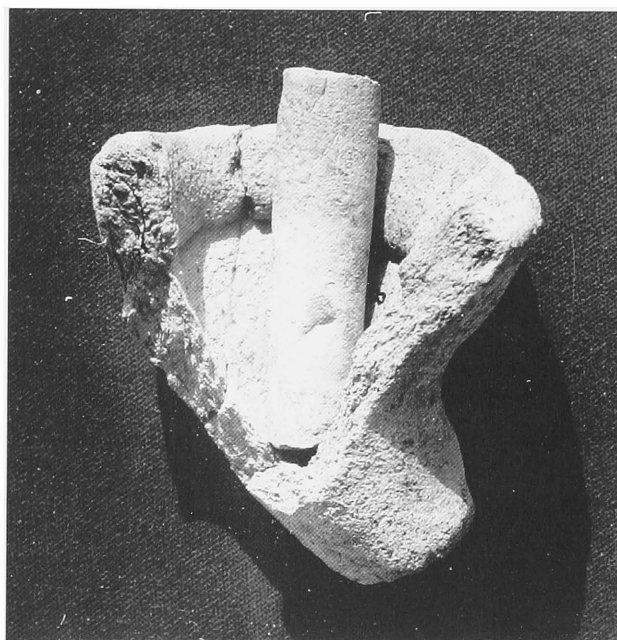


Figure 158. Funnel-like object 27 found as illustrated, with a fragment of an Uruk wall cone used in association with it; extant ht of funnel, 5.8 cm.

478, Level 5). The latter are probably fourth millennium in date, since cylindrical objects like these have been found in larger numbers in levels of that date elsewhere on the site. It is unlikely that the two discs are chariot wheels, since they lack hubs and are slightly oval in shape.

Fragments of cylindrical stands with slightly splayed bases constitute a final group of baked clay objects. Four were found, with base diameters varying from 4 to 9 cm and extant heights from 4 to 13 cm.

Their contexts were not particularly informative (surface clearance, baulk removal, the street between the Palace and Temple and HH 432, a beaten surface in Level 4/5). The smaller ones could have been spools or figurine bases and the larger ones may be stands of some sort; in the absence of their upper portions, it is impossible further to identify these objects.

Unbaked clay

There were a small number of unbaked clay objects (apart from tablets and sealings). There was one equid figurine (reg. no. 4039 from HH 484, Level 5b/6 floor), an unstratified chariot wheel from Trench A, two small tokens from surface clearance, a sphere and an egg shape (which may be of fourth-millennium date), and five fragments of jar stoppers. Two of the jar stoppers came from surface clearance, two from the floor of Room 3, and one each from the fireplace in Room 14 and the floor of Room 11.

The floor of Storeroom 5 produced a 'horn-shaped' object, roughly conical with broken base and well-finished surfaces (reg. no. 1573, ext. ht 8.4,

max. d. 7.4 cm.). This fragment may be part of a 'horn of consecration', as Mallowan called the object that he found in debris associated with the Eye Temple (1947, pl. 39:2). Because of the Eye Temple association and the existence of horned altars, he envisaged a ritual purpose for such an object. Similar objects have been found in houses at Nuzi (Starr 1937, pl. 118:A, B) where they are described as 'loom-stands' (Starr 1939, 443). The suggestion is that the 'horns' held a horizontal cross bar between them, and an ethnographic example is cited in support (Starr 1937, pl. 30B). Since the Brak example is fragmentary, it is not possible to say whether it belonged to an object with a ritual or craft function. Both fourth-millennium 'loom-stands' and third-millennium 'ritual horns' have been found in the recent excavations at Brak.

Painted wall plaster

Fragments of thin gypsum plaster coated with a red pigment were found in the destruction debris on the Corridor 6 staircase (HH 581).

Chapter 11

Microstratigraphy and Micromorphology of Depositional Sequences

W. Matthews, C.A.I. French, T. Lawrence, D.F. Cutler & M.K. Jones

The microstratigraphy and micromorphology of depositional sequences above Courtyard 8 in the Mitanni Palace were examined as part of a three-year Natural Environment Research Council project at the McDonald Institute for Archaeological Research. The aim of this project is to develop the application of micromorphology to the study of site formation processes and uses of space in different social, cultural, economic and environmental contexts at three early urban settlements in the Near East (French *et al.* 1996). The research was conducted by Dr Matthews, Dr French and Professor Jones in Cambridge, and Mr Lawrence and Dr Cutler at the Royal Botanic Gardens Kew.

Tell Brak is one of three sites which were selected on a northwest-southeast transect through major geobotanical zones in the Near East (Zohary 1973, map 7). The complex Neolithic settlement of Çatalhöyük currently lies north of the Mediterranean woodland climax zone, on the boundary between Xero-Euxinian *Quercus artemisietae anatolica* steppe-forest and central Anatolian dwarf-shrub steppes of *Artemisietae fragrantis anatolica*, in the Konya plain in central Turkey, c. 7000–6200 cal. BC. Tell Brak is located in the Mesopotamian steppe of *Artemisietae herbae-albae mesopotamica* in north-eastern Syria. The site lies on the edge of the 300 mm isohyet in an area of extensive alluvial and colluvial Quaternary and sandy silts derived from calcareous mountains in southern Turkey (Courty 1994). The trading settlement at Saar is in the Sub-Saharan vegetation zone on the island of Bahrain. Results have been compared with a previous case-study at the Sumerian city of Abu Salabikh, which lay on an ancient branch of the Euphrates in the Saharo-Arabian desert vegetation zone in southern Iraq (Matthews 1992; Matthews & Postgate 1994).

At Tell Brak, sampling focused on fourth-millennium BC levels in Area TW, Akkadian levels in FS and SS, fourth- to third-millennium BC levels in HS

and HF, and second-millennium BC deposits in HH. The depositional sequence published here has been compared with sequences in monumental courtyards in Areas FS and SS, which will be discussed in Volume 2, and with samples from roofed and unroofed areas in domestic, ritual and administrative contexts at all three sites in the project.

The specific objective in selecting samples for analysis in Courtyard 8 is to investigate the nature of deposits which accumulated after abandonment of the Mitanni palace prior to Middle Assyrian resettlement.

Method

The sequence in Courtyard 8 was cleaned, photographed and drawn (Fig. 159). One intact block, sample no. TB93.85, 13.5 × 6.5 × 8 cm, was cut out of the section face and wrapped tightly in tissue and tape for export. All blocks of deposits have been impregnated with a crystic polyester resin under vacuum, and cut, ground and polished into large thin sections, 13.5 × 6.5 cm, in the Geoarchaeology laboratory, Cambridge (Murphy 1986). The thin-sections have been analyzed as hand-held specimens and at both low and high magnifications from ×5–400. They have been described using internationally standardized terminology and procedures (Bullock *et al.* 1985; Courty *et al.* 1989). The relevance and interpretation of micromorphological attributes to study of site formation processes and uses of space is discussed in Courty *et al.* (1989) and Matthews (1995).

Previous applications of micromorphology to studies of occupation sequences and uses of space within archaeological sites include analysis of deposits within Palaeolithic and Neolithic caves, and a range of settlements in the Near East and elsewhere in the world in conjunction with experimental and ethnoarchaeological research (Courty *et al.* 1989; Macphail & Goldberg 1995; Matthews *et al.* 1996).

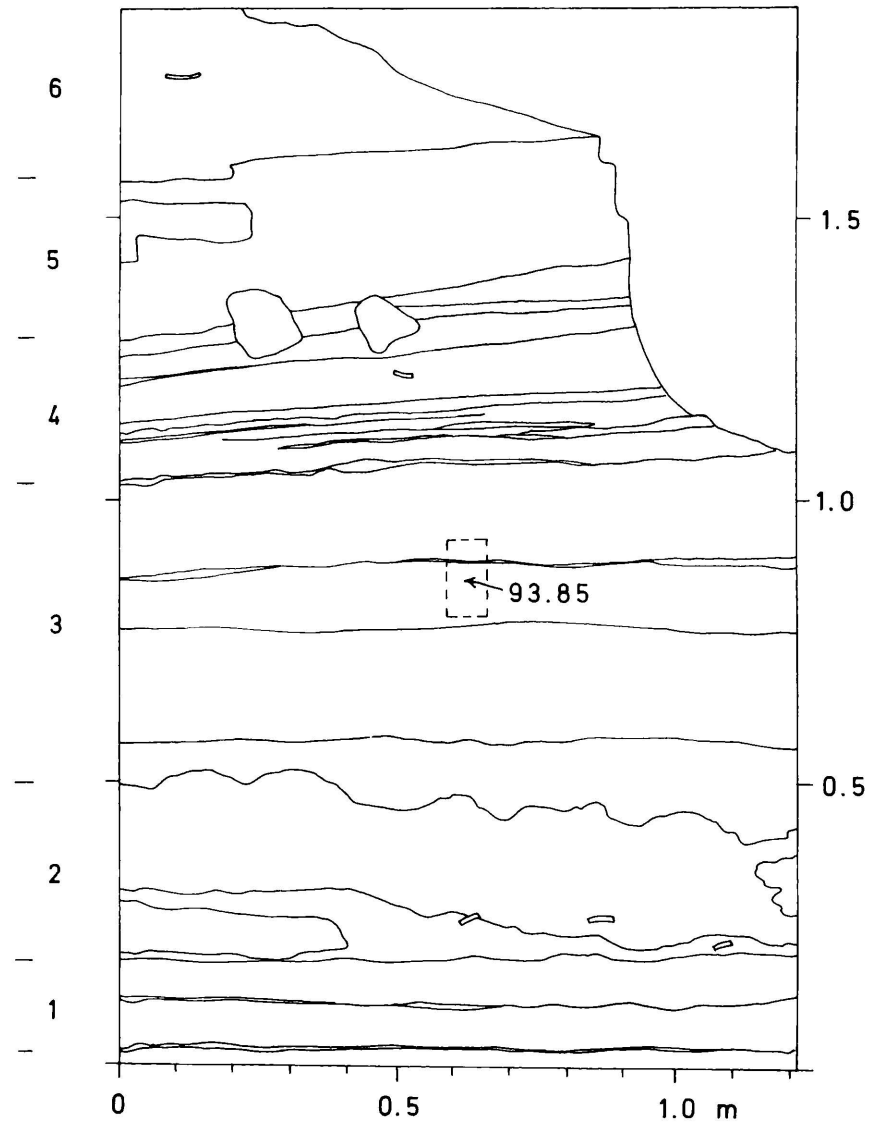
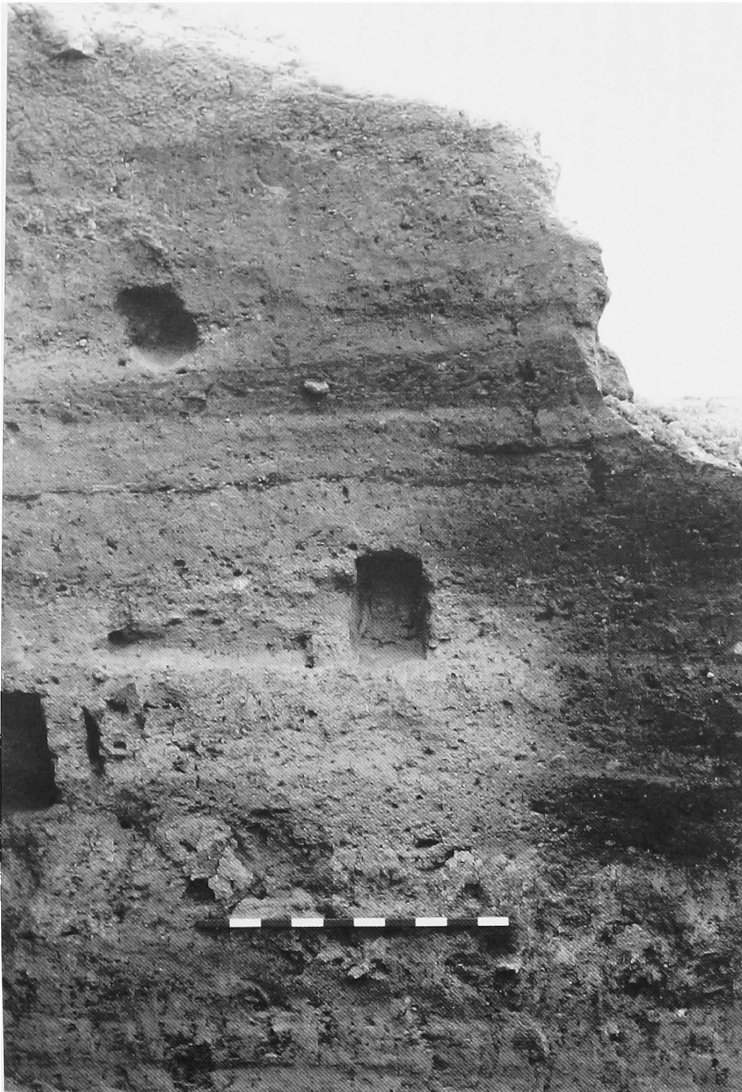


Figure 159. Photograph and section of microstratigraphic sequence in and above Palace Courtyard 8.

Key to section: 1) Deposits of silty clay with two phases of discontinuous burning and reddening of underlying sediments (Fig. 25:8). 2) Tumbled building debris and ash, representing a late stage in the collapse of the Mitanni Palace (Fig. 25:7, lower deposits). 3) Series of at least four thick bands of grey ashy deposits, representing uppermost ashy layers in the Mitanni Palace courtyard (Fig. 25:7) and construction level and floors of Level 1b Middle Assyrian occupation (Fig. 25:6). 4) Complex series of dark ash lenses and bands with multiple layers of plaster floors, Level 1a Middle Assyrian (Fig. 25:2–4).

5) Disturbed layer of ashy deposits and decayed building materials. 6) Thick band of laid mud-bricks (uppermost red capping, Fig. 25:1).

Results

The stratigraphic sequence illustrated in Figure 159 comprises six major bands of deposits which are described in the accompanying key. The thin-section sample TB93.85 was taken at the boundary representing the uppermost courtyard deposits and an open area associated with the earliest Middle Assyrian occupation. Six microstratigraphic units have been identified: 3.1–3.3 correspond with the transition between the uppermost layers in the Mitanni Palace courtyard and Level 1b Middle Assyrian construction (Fig. 25: upper 7), while 3.5–3.6 correspond with Level 1b Middle Assyrian floors (Fig. 25:6). A summary of the descriptions of these units is presented in Table 13.

Microstratigraphic units 3.1–3.3

Units 3.1–3.3 are 19–30 mm thick. They principally comprise subrounded aggregates of orange-brown and greyish brown mud-brick and building materials (10–20 per cent), fragments of fibrous herbivore dung (2–20 per cent), and uncharred, charred, siliceous and melted plant remains burnt at both low and moderately high temperatures <600–800°C (5–12 per cent) (Fig. 160). These deposits are loose and unoriented, and principally comprise subrounded sand size aggregates of finer sediments. Many of these aggregates resemble soil faunal pellets (20–50 per cent), others may be wind blown or rolled. The disorganized orientation, high percentage of complex packing voids, and more than 10 per cent channels and chambers, indicate that these deposits have been subject to extensive bioturbation in the form of disturbance by soil fauna, insects and root action. Sparse water-laid silty crust fragments have been identified in unit 3.3 (2 per cent) (Fig. 160). Two per cent of chambers and pseudomorphic voids have silt post-depositional silt hypococoatings.

Microstratigraphic unit 3.4

Unit 3.4 is 23–28 mm thick. It is very similar to units 3.1–3.3, but includes increasing quantities of uncharred, charred and melted siliceous plant remains burnt at both low and moderately high temperatures (25 per cent), burnt aggregates and bone.

Microstratigraphic unit 3.5

Unit 3.5 is only 5–8 mm thick. It comprises dense burnt plant remains, principally reeds and grasses (64 per cent) and burnt aggregates (10–20 per cent) (Fig. 161). These deposits are not as disturbed by insect and root activity as units 3.1–3.4 or 3.6.

Microstratigraphic unit 3.6

Unit 3.6 is more than 25 mm thick. It comprises compacted building materials (20–30 per cent) and heterogeneous plant remains (17 per cent), five per cent of which have since decayed and are represented by pseudomorphic voids or 'casts' in the surrounding sediments (Fig. 162). There has been some bioturbation.

Discussion

Origin of depositional components

All units except 3.5 include 10–30 per cent building

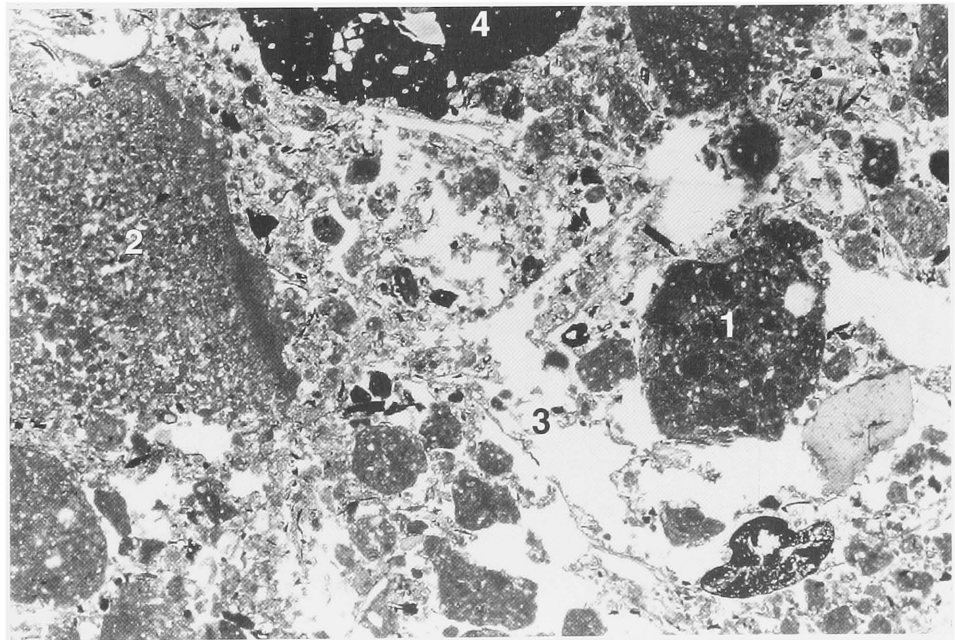


Figure 160. *Microstratigraphic unit 3.3. Unoriented deposits comprising subrounded aggregates of building materials (1) and natural wind- and water-laid deposits with a surface crust (2), interbedded with finely fragmented fibrous herbivore dung (3), charred plant remains, bone and pottery (4). Disturbed by extensive insect and ?root activity. Plane polarized light. Frame width = 7.2 mm.*

Table 13. Summary descriptions of the individual units in thin section sample TB 93.85 (cf. Fig. 159).

Unit	Deposit thickness mm	Particle size Fine material Coarse/Fine ratio	Related distribution Microstructure Orientation and distribution	Inclusions: artefactual and anthropogenic aggregates	plant remains and dung	inorganic remains	rocks and minerals (+ aggregates)	Post-depositional alterations	Interpretation
1	>19-20	Loamy 'sand' pale brown, poorly sorted. Mineral + organo-mineral, crystallitic. C/F 80/20	Intergrain aggregate. Complex packing voids 20%. Unoriented with random unpreferred and unrelated distribution.	Building aggregates: mudbrick 10%, <21 mm plaster 2%, <3 mm. Burnt aggregates 2%, <5 mm.	Pseudomorphic voids 2%, <2 mm. Charred 2%, <1 mm. Melted silica 1%, <0.4 mm. Dung 2%, <1.2 mm.	Bone 1%, <3 mm. Shell 1%, <2 mm.	Quartz 2%, <0.7 mm.	Soil faunal pellets 50%, 0.07-0.25 mm. Hypocoating of chamber + pseudomorphic voids (silt) 2%, <0.5 mm thick. Amorphous organic staining 2%. Channels + chambers >10%. Extensive bioturbation.	Derived from aggregates of mud-brick and plaster, and burnt aggregates, with 5% plant remains and 2% dung. Extensively reworked by soil fauna, making interpretation of deposition difficult.
2	28-30	Loamy 'sand', pale brown, moderate-poorly sorted. Mineral, crystallitic. C/F 80/20-70/30	Intergrain aggregate. Complex packing voids 20%. Local, parallel referred + related undulating orientation and distribution.	Pottery 2%, <6 mm. Building aggregates: mud-brick 20%, <7 mm. Greyish brown aggregates 2%, <3 mm. Burnt aggregates 2-5%, <2 mm.	Siliceous 2%, 0.2 mm. Charred 2-5%, <2.2 mm. Melted silica 1%, 0.04 mm. Dung 7%, <3 mm (fibrous + y.br).	Bone 1%, <0.7 mm.	Calcareous rock 2-5%, <4 mm.	Soil faunal pellets 30%, 0.1-0.25 mm. Channels and chambers >10%. Extensive bioturbation.	Derived from aggregates of mud-brick and plaster, and burnt aggregates, with 8% plant remains and 7% dung. Extensively reworked by soil fauna, making interpretation difficult.
3	24-28	'Sandy' loam, pale brown + dark yellowish brown, poorly sorted. Mineral, crystallitic and organo-mineral undifferentiated (80/20). C/F 60/40-70/30.	Intergrain aggregate and bridged (80/20). Complex packing voids 20%. Moderate parallel referred and related orientation and distribution.	Flint flake 1%, 4.3 mm. Building aggregates (pale greyish brown) 10-20%, <5 mm. Burnt aggregates 2%, <2 mm.	Siliceous 2%, <1 mm. Charred 5-10%, <1.1 mm. Dung 20%, <12 mm (fibrous + y.br)	Bone 1%, <1 mm.	Calcareous rock 5%, <7 mm. Water-laid silty clay crust fragment 1%, <1 mm.	Soil faunal pellets 20%. Channels + chambers >10%. Extensive bioturbation.	Derived from aggregates of mud-brick and plaster, and burnt aggregates, with 12% plant remains and 20% dung. Extensively reworked by soil fauna, making interpretation of deposition difficult.
4	23-28	'Sandy' silt loam, pale brown, dark brown and black, moderate-poorly sorted. Organo-mineral, undifferentiated and crystallitic (60/40). C/F 60/40.	Bridged and intergrain aggregate (60/40). Complex packing voids 20%. Moderate parallel undulating referred and related orientation and random distribution.	Building aggregates: ?mud-brick (p br) 10-20% plaster 2-5%, burnt 2-5%.	Pseudomorphic 2-5%, <3 mm. Siliceous 5-10%. Charred 10%, <2.5 mm. Ashes 2%. Melted silica 1%, 0.2 mm. Dung 2%, <5 mm.	Bone 2%, 1 mm.	Calcareous rock 2%, <3 mm. Water-laid silty clay-coarse silt aggregates, 2%, <6 mm.	Soil faunal pellets 20%. Channels + chambers 2-5%. Bioturbation of fabric 10%.	Derived from aggregates of mud-brick and plaster, and burnt aggregates, with 30% heterogeneous plant remains and 2% dung. Some water-laid aggregates. Extensively reworked by bioturbation making interpretation difficult.
5	5-8	'Sandy' silt loam, yellowish brown PPL, dotted yellowish orange on black XPL, moderately sorted. Organo-mineral, undifferentiated and crystallitic (70/30). C/F 60/40-70/30.	Complex bridged, intergrain aggregate and single grain (50/30/20). Complex packing voids 2-5%. Moderate parallel undulating referred and related orientation and random distribution.	?Unburnt plaster 2%, <2 mm. Burnt aggregates 10-20%, <4 mm, brown and dark brown (60/40).	Pseudomorphic voids 2%, <4 mm. Siliceous 30%, <1 mm. Charred 20%, <1 mm. Ashes 2%. Melted silica, <2%, 0.75 mm. Dung 2-5%, <7 mm.	Bone, <2%, 0.25 mm.	Calcareous rock 2-5%, <5 mm. Water-laid silty clay surface crust 1%, 0.6 mm.	Microbial filaments, 2%, <2 mm. Channels + chambers 5-10%.	Single depositional episode from discard of burnt fuel principally comprising siliceous and charred grasses and reeds 50%, and burnt aggregates 10-20%. Sparse sweepings may also be present represented by unburnt plaster aggregates and freshly decayed pseudomorphic plant remains.
6	>25	'Sandy' silt loam, pale greyish brown, poorly sorted. Mineral, crystallitic. C/F 60/40.	Complex compacted bridged and intergrain, resulting in some embedded (30/30/30). Complex packing voids 10%. Local parallel undulating referred and related orientation and random distribution.	Building aggregates 20-30%, <7 mm. Burnt aggregates 2-5%, <5 mm.	Pseudomorphic voids 5%, <3 mm. Charred 10%, <1 mm. Melted silica 2% 1.5 mm.	Bone 1%, <0.7 mm.	Calcareous rock 5-10%, <3 mm. Water-laid aggregate of grey silt, 1%, <1.5 mm.	Soil faunal pellets 5%, 0.04 mm. Channels + chambers 10-20%. Bioturbation of fabric 10-20%.	Derived from subrounded building aggregates, and burnt aggregates and heterogeneous plants remains 17%. Deposits are more compacted than those in Units 1-3, and were probably subjected to moderate trampling.

material aggregates, many of which resemble mud-brick fragments (Figs. 160 & 162). These aggregates are subrounded and occasionally stressed, perhaps indicative of erosion and alternate wetting and drying, or abrasion by wind or trampling. The large size of some these aggregates, at greater than 2 cm, suggests that these are either locally derived, perhaps from the eroding walls, or that they have been introduced by dumping from elsewhere.

The other principal components in these deposits comprise heterogeneously burnt and unburnt plant remains and dung. Plant remains are moderately sparse and poorly preserved in units 3.1–3.3, but by contrast are more abundant in units 3.4–3.6. Unit 3.4 includes fragments of charred cereal grain. Unit 3.5 includes a range of siliceous and charred grass and reed epidermises, in association with burnt aggregates. This unit resembles burnt fuel rake-out from hearths and ovens sampled elsewhere at this and other sites in steppic regions (Matthews & Postgate 1994, pl. 15.10; Matthews *et al.* forthcoming). Sparse unburnt plaster aggregates and pseudo-morphic plant remains may either originate from

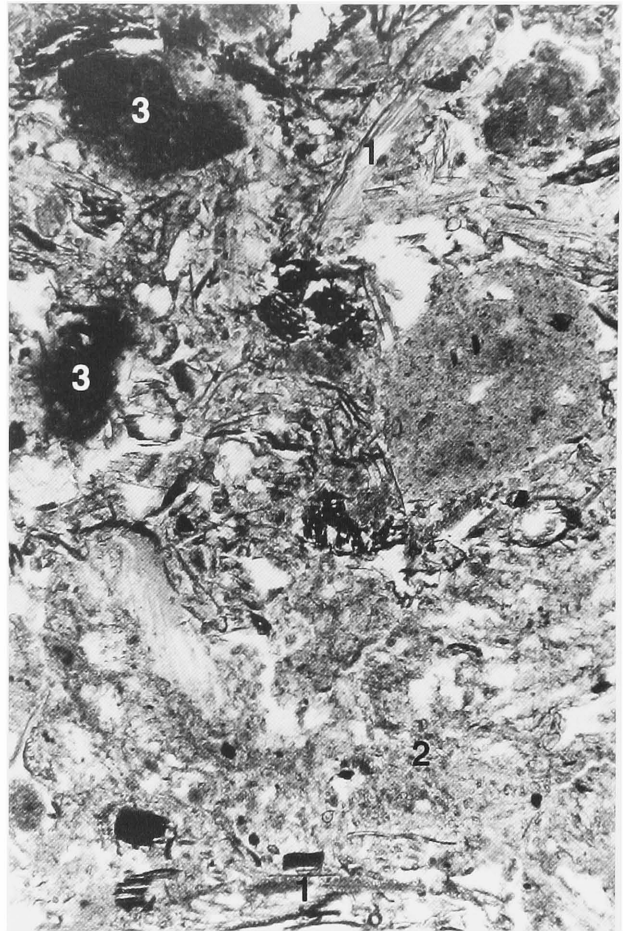


Figure 161. Microstratigraphic unit 3.5. Dense layer of charred and siliceous plant remains, principally from reeds and grasses (1), with herbivore dung (2) and burnt aggregates (3), which closely resembles discard from hearth/oven rake-out. Plane polarized light. Frame width = 1.3 mm.

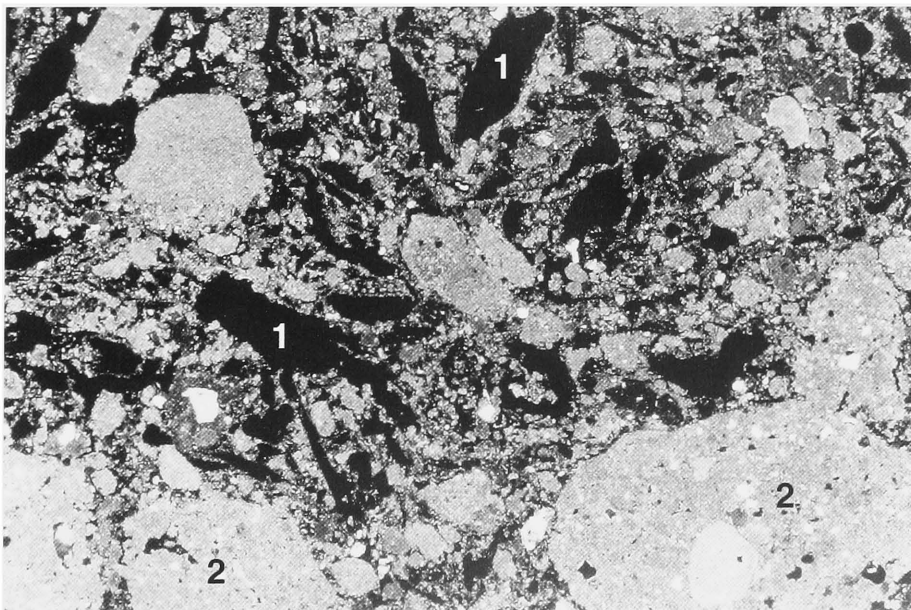


Figure 162. Microstratigraphic unit 3.6. Deposits with pseudomorphic voids of plant remains which have since decayed (1) and subrounded aggregates of building materials (2), which are very similar to deposits in streets and courtyards from this and other sites. Cross polarized light. Frame width = 7.2 mm.

sweepings, or from eroded wall surfaces. Pseudomorphous voids or 'casts' of plant remains which have since decayed are preserved in some deposits, and may originate either from vegetal stabilizers eroding from mud-brick and plaster or from fresh or decaying plant remains which were brought into the courtyard.

At least two types of herbivore dung are present in units 3.1–3.4, i) a fibrous dung with fine pseudomorphous vegetal voids, and ii) a yellowish brown dung with spherulites (Brochier 1992; Canti *in press*; Courty *et al.* 1991; Matthews *et al.* 1996). Moderately well preserved dung pellets occur in these units, in conjunction with dung fragments which have been finely integrated into the more minerogenic deposits, perhaps by trampling by either humans or animals. It is not clear whether or not the dung has been burnt. The dung pellets are rich in digested siliceous plant remains, which do not have any occluded carbon and may either represent remains which have not been subject to burning, or remains which have been burnt at temperatures at which carbon has been fully oxidized, in the range of 400–600/800°C (Boardman & Jones 1990). Silica in plant remains within this dung has not melted, indicating that the dung had not been burnt at temperatures greater than 600–800°C. Until further experimental and ethnoarchaeological research is undertaken we are unable to determine whether the dung pellets originate from animals grazing on the tell or, for example, from dung burnt as fuel. Bone and pottery fragments are generally sparse and poorly preserved.

Depositional and post-depositional agencies and processes
Extensive disturbance by soil fauna, insect and root activity in units 3.1–3.3, and in unit 3.4, has disrupted much of the microstructural and organizational evidence for analysis of depositional agencies. Although many of the micro-aggregates resemble reworked deposits in soil faunal pellets (Bullock *et al.* 1985, 133–9), some may be wind-laid, and others have been stressed by erosion or trampling. The effects of natural depositional agencies are attested by the presence of water-laid crusts and aggregates in units 3.3–3.6 (Fig. 160). In shape, these are subrounded to subangular, and may have been disturbed by trampling of localized puddles within the courtyard. It is likely therefore that some of the sediment input in the depositional sequences in band 3 originates from erosion of surrounding walls and wind- and water-laid deposits. Extensive reworking of these deposits by insect and root activity and wind is probably indicative of periodic exposure to natural agencies during episodes of less frequent in-put of dung- and plant-rich deposits.

The presence of silt hypocoatings of chambers and pseudomorphous voids in unit 3.1 suggests occasionally moist post-depositional conditions.

Boundaries between deposits are diffuse and irregular, and tend to represent changes in the proportions of depositional components, such as an increase in aggregates in unit 3.2, or dung in unit 3.3 and plant remains in unit 3.5. Unit 3.5 was deposited as a single discard event, and has massive undisturbed bedding, similar to many deposits in other street, courtyard and pit contexts (Matthews & Postgate 1994, pls. 15.3–15.4).

Unit 3.6 comprises compacted building materials and heterogeneous plant remains, and resembles trampled deposits in streets and courtyards elsewhere (Davidson *et al.* 1992; Gé *et al.* 1993; Matthews & Postgate 1994, pl. 15.8).

Conclusions

Deposits in units 3.1–3.4 have been extensively disturbed by post-depositional plant and insect activity, and although difficult to interpret, may derive from wind- or water-laid deposits and periodic deposition of plant remains from hearth/oven rake-out and herbivore dung. The intensity of biological disturbance in these levels may in itself be an indicator of a reduction in the intensity of activities. Deposits in units 3.3 and 3.4 include increasing concentrations of plant remains from hearth/oven rake-out and animal dung. The occurrence of dung and unburnt and burnt plant remains in all units attests at least the periodic presence of animals and humans. Deposits in unit 3.5 closely resemble discarded rake-out from hearths and ovens, at this and other sites in steppe regions, while those in unit 3.6 appear to be compacted from light trampling and include both burnt and unburnt deposits from plant and building remains, similar in structure and composition to other street and courtyard deposits.

Future ethnoarchaeological and experimental research is required in order to study further the interaction between natural and cultural agencies of deposition in the built environment, and to enable us to begin to ascertain rates of deposition.

Acknowledgements

We are very grateful to the Syrian Directorate-General of Museums and Antiquities for permission to export these samples, and to the Natural Environment Research Council for supporting the research in Grant no. GR3/9559. We also wish to thank J. Boast for preparing the thin sections.

Chapter 12

Historical Commentary

Evidence from the third-millennium excavations at Brak points increasingly to the identification of the site with ancient Nagar, a city mentioned not only in the Ebla texts but also in those found more recently at nearby Tell Beydar, which lay within the kingdom of the **en** of Nagar. At that time, the mid-third millennium, Nagar was the most important urban centre in northeastern Syria, while the tell at Brak occupied an area of over 40 ha. To this period at Brak may possibly be assigned the original foundation of two monumental temples later adapted and enlarged by the south Mesopotamian provincial administration under Naram-Sin. At the end of the third millennium, Nagar was the seat of a Hurrian dynasty, witnessed by the seal impression of a king Talpuš-ati, 'sun(god) of the country of Nagar' (Matthews & Eidem 1993). The fourth-millennium city, which had close relations with the Uruk south, was even larger, covering a total area of at least 100 ha as early as 3500 BC (*Iraq* 55, 1993, 183). These early cities are the subjects of the second and third final reports.

The second-millennium city which is the concern of this volume was of smaller though still substantial size, the southern half of the tell having been abandoned sometime around or shortly before 1950 BC. On this lower area of the tell the latest occupation material includes Isin-Larsa pottery types and surface evidence of Cappadocian contacts (Fig. 163). In Area SS there survives also some surface pottery suggesting Mitanni occupation. Beyond the limits of the tell there is extensive evidence, in the form of baked brick pavements and pottery, for the presence of Mitanni houses in the plough to the northwest, a situation perhaps comparable with that at contemporary Nuzi where residences of substantial size and wealth were situated in the outer town in preference to the crowded tell.

Not only the physical size but the political status of Nagar seems to have been reduced in the early second millennium, when the city is known in historical sources largely for its famous goddess, Bēlet-Nagar, who claimed rights of possession of towns and woods and whose statue was taken on ceremonial tours of their territories, possibly even as far as

the boundaries of Mari (Guichard 1994, 270). There is no evidence for a king of Nagar at this time, but the goddess, and presumably her temple personnel, were clearly of considerable importance. Indeed she seems to have played some role in the legitimation of kingship, and the kings of Šehna/Šubat-Enlil (Tell Leilan) and as far afield as Mari looked to her for their well-being. A letter to a king of Leilan sent from a ruler of Kahat (Tell Barri) includes the following information,

Previously Mutiya [a Leilan ruler], before he ascended his throne, several times made the following vow:



Figure 163. Lead figurine, female. Anatolian type, ?early second millennium BC. Surface find, Area FS.

'If I am allowed to ascend my throne, I shall donate silver, gold, cups of silver, cups of gold, and clever maids to Bēlet-Nagar, my Lady!' — This vow he made several times, but when this man ascended his throne, he did not send greetings to the goddess, and he never saw the face of the goddess. *Now it is you the goddess has touched with her finger, and you have ascended the throne of your father's house. From this day — 14 days hence — the goddess will leave her house and the boundary markers will be (re)arranged. And the face of the goddess will be set towards the town Alā. You must grant the goddess her wish — do not withhold it.*' (L87-1317, Eidem 1991a, 125; authors' italics; see also Fig. 164)

Another letter written to Zimri-Lim, ruler of Mari, by one of his officials reminds the king that the Lady of Nagar 'protects the existence of my Lord [i.e. Zimri-Lim] and gives my Lord eternal life' (Mari letter A.221, Guichard 1994, 237–9). The Lady of Nagar is also invoked in the curse formula of the famous Hurrian foundation inscription of Tiš-atal, a late third-millennium king of Urkesh (Tell Mozan).

Unfortunately we have not so far identified the site of her temple at Brak. It must lie under the

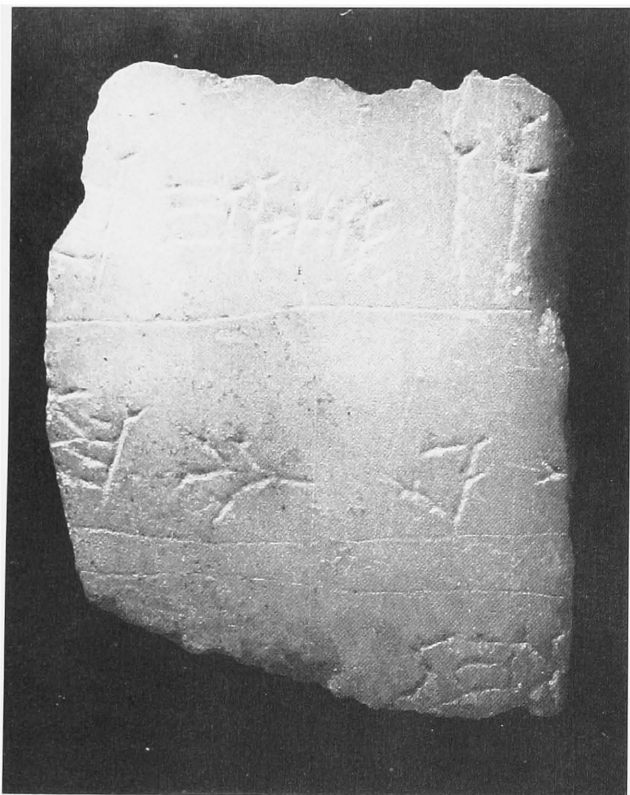


Figure 164. Old Babylonian alabaster jar fragment, bearing inscription 1 (see ch. 2). Probably a dedication to the 'Lady of Nagar' by a king of Leilan.

accumulated occupation deposits of the vast north ridge of the tell, since neither of the two great temple institutions identified in our excavation of third-millennium levels continued in use beyond the time of the Akkadian administration, while the so-called Eye Temple ceased to exist slightly earlier, sometime in the middle of the third millennium. Moreover, we believe the Area SS and Area FS temples to be, respectively, those of Shamash and Shakkan. On present evidence the most likely situation of Bēlet-Nagar's temple must be beneath the Mitanni Temple and Palace, where there has been found a deep platform of grey *libn*, suggesting the possibility of its deliberate suppression by the non-Semitic Mitanni. Unfortunately, with the possible exception of the alabaster fragment (Fig. 164), we have no Old Babylonian inscribed material from Brak itself. A plausible reconstruction of this fragment, however, would derive it from a dedication to the Lady of Nagar by the last Old Babylonian king of Leilan, a younger brother of the recipient of the letter quoted above, one Yakūn-Ašar (c. 1745–28 BC, cf. p. 40 and Eidem 1991b), yet another piece of evidence apparently attesting the cultic importance of Brak at this time.

The earliest excavated pottery from the north ridge can be dated on evidence from Tell al Rimah to the time of Shamshi-Adad (Postgate *et al.* in press), while a reference to Shamshi-Adad and Nagar can be found in a year-name of Yahdun-Lim of Mari, commemorating his decisive victory over Shamshi-Adad 'before the gates' of that city. Variations of the year-name state that 'Yahdun-Lim seized Nagar'. A year later the Mari king returned to his newly conquered territory and stayed at Nagar, where he made offerings to the 'horned goddesses' and presented a dais and a throne (presumably to the Lady) (Charpin 1990, 69; Guichard 1994, 271). Yahdun-Lim was not to control Nagar for long, however, and that city together with the other cities of the Khabur basin were soon to constitute the heartland of the kingdom of Shamshi-Adad, whose capital lay at Šehna/Tell Leilan, then renamed Šubat-Enlil. After the death of Shamshi-Adad, Nagar appears to have come under the control of neighbouring Kahat (Tell Barri), its status, as we have seen above, reduced to that of a cult centre, albeit an influential one.

Archaeologically we know little of Old Babylonian Nagar. There is unequivocal evidence that it was walled, with a massive structure, probably part of the defences of a gate, surmounting the small mound that constitutes our Area TW (tell plan, Fig. 3, and Figs. 165–6). Evidence of a city wall was found also on the ridge below Trench D and on the ridge west of Area FS (just

visible as a crop mark in the background of Fig. 165). At Brak, pottery of the time of Shamsi-Adad comes almost exclusively from the large pit found in a small sounding in Area AL (Fig. 167), which produced also our only extensive second-millennium palaeobotanical data (p. 128). Similar pottery was found in Trench A4, Level 10, which must also be dated sometime early in the eighteenth century BC. Level 8 provided considerable Late Old Babylonian material (*inter alia*, Fig. 168 and 635), in particular from the small shrine in Trench D (p. 35). On the basis of comparisons with the pottery from Tell al Rimah, we believe Level 8 should be dated no later



Figure 165. *The Old Babylonian fortified structure in Area TW appears here as a crop mark. Traces of a probably contemporary wall can be seen on the ridge to the left (west side of Area FS).*

than the early seventeenth century BC. Certainly it significantly pre-dates the establishment of Mitanni hegemony at Brak.

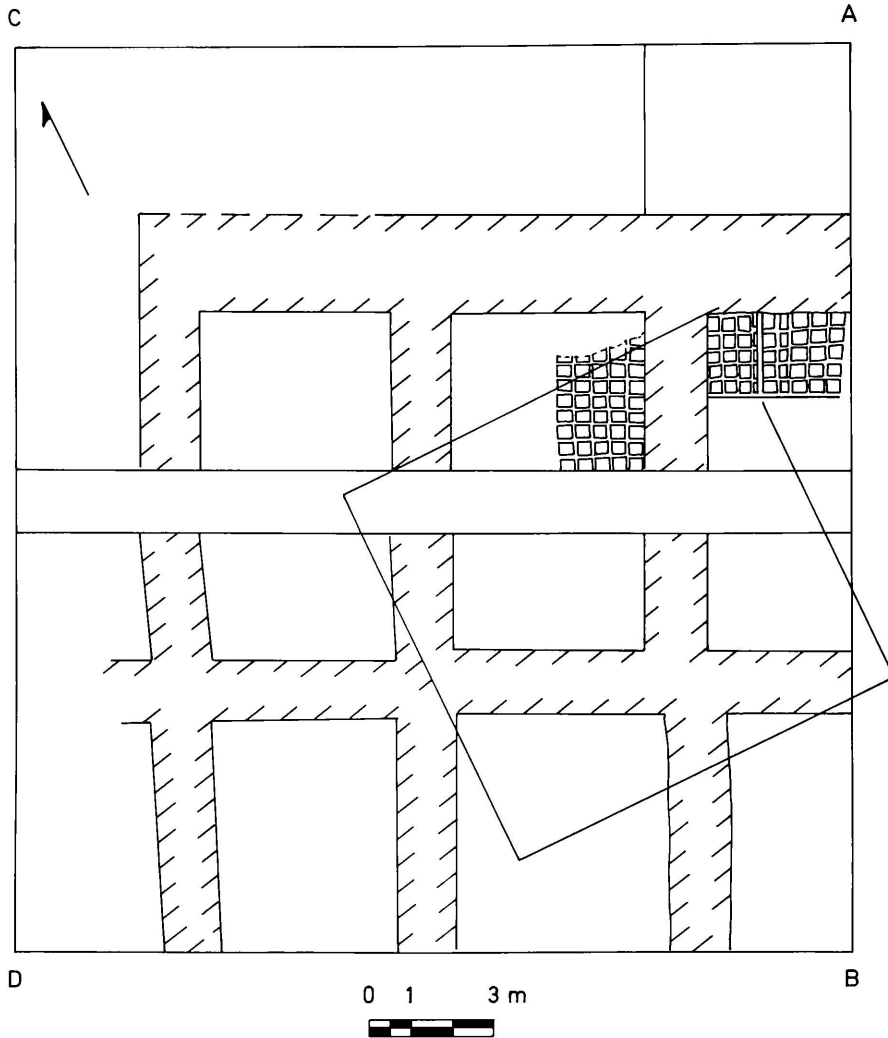
One further comment should be made about the name of the site. It would appear that the place name Nagar was also written Nawar as early as the Old Babylonian period. A treaty from Tell Leilan defines the territory of Kahat as 'between Nawar and Nawar' (Matthews & Eidem 1993, 204), establishing the existence of two such cities at this time (eighteenth century BC), one probably north and the other south of Kahat. The name Nawar occurs in two Mitanni tablets from Brak. Indeed the southern Nawar seems increasingly likely to be Tell Brak, the shift from Nagar to Nawar possibly reflecting an original pronunciation closer to Nagwar (for a different derivation, cf. Matthews & Eidem 1993, 204–5). The Brak Nagar/Nawar is consistently written Nagar in the third millennium, and the Lady remains 'of Nagar' in the Old Babylonian texts, despite the spelling on the Leilan treaty. In Mitanni times the writing Nagar is no longer found.

The Late Bronze Age: the Mitanni Kingdom

The seat of Mitanni power was focused on the Khabur triangle. The location of its capital city, Waššukanni, remains to be established but an identification with

Tell Fakhariyah at Ras al 'Ain, the source of the Khabur River, though probably incorrect, is often proposed. Tell Fakhariyah is now known to have been Late Assyrian Sikani, but the possible relationship, if any, between Sikani and Waššukanni remains problematic. A further argument for rejection of the identification of Fakhariyah with the Mitanni capital has been made on the basis of neutron activation analysis of fragments of Mitanni letters found at Tell el Amarna and assumed, not unreasonably, to have been written at Waššukanni. These analyses reveal no relationship between the trace elements in the clays of which the letters are written and the clays of the Khabur basin and, particularly, of Fakhariyah itself (Dobel *et al.* 1977). This would not be surprising, however, if the surviving letters are in fact Egyptian copies, which some of the evidence, including the appearance of the clay itself, suggests is likely (see also Kühne 1973, 44 ff.).

The Mitanni state, which coincides chronologically with the Late Bronze Age, appears to have been dominated by a Hurrian-speaking population, whose origins lie to the northeast, probably in the area of the Caucasus. At Brak we have already encountered earlier Hurrians in the late third-millennium kingdom of Talpuš-atili. At this time Hurrian rulers are well-attested at nearby Tell Mozan (ancient Urkesh), where current excavations are demonstrating the



close relationship of this important Hurrian kingdom with southern Anatolia (M.K. Buccellati, pers. comm.). A Hurrian ruler of Nineveh, Tiš-atal, is mentioned in two Ur III tablets from Eshnunna (composed in 1970 BC, Whiting 1976), while an **endan** of Urkish of the same name has left us the earliest surviving text in the Hurrian language, the foundation inscription cited above in which the 'Lady of Nagar' is invoked in the curse formula (Wilhelm 1989, 11).

Few if any Hurrian names occur in the pre-Sargonic texts from Tell Beydar, and none has yet been identified in the Akkadian administrative texts from Brak, but the number of Brak texts is small. Evidence from Tell Mozan, however, suggests that there was a strong Hurrian element already in the northern Khabur basin at this time, or not long thereafter. Given the well-documented presence of Hurrian kingdoms across northern Mesopotamia at the end of the Early Bronze Age, it is not surprising to find Hurrian names in the Old Babylonian (Middle Bronze Age)



Figure 166. Plan and photograph of Old Babylonian foundation walls in Area TW. The now eroded superstructure was supported on a brick platform, which survives only in the northeastern corner of the foundations (visible in Iraq 44, 1982, pl. 10c).

tablets from Chagar Bazar, just north of Brak, and at Tell al Rimah, south of Jebel Sinjar in modern Iraq (Sasson 1979), though the populations in these areas remained essentially Semitic. It is the collapse of Shamshi-Adad's short-lived empire not long after 1780 BC and the destruction of northern cities by Hammurapi's son, Samsu-iluna (c. 1728 BC), perhaps exacerbated by environmental problems, that almost certainly encouraged the renewed incursions of Hurrian-speaking peoples from the north and east that were ultimately to culminate in the Mitanni state. The apparent mid-second-millennium power vacuum is most sharply illuminated by the Hittite march on northwest Syria and down the Euphrates to Babylon, in this volume conventionally dated to 1595 BC. The establishment of Mitanni power would seem to have occurred shortly after this bizarre episode, though the precise origins of the Mitanni state remain obscure. In particular we do not know whether this was effected as a relatively peaceful transition or by direct military force.

One of the least understood facets of Mitanni society is the fact that among the new Hurrian immigrants were groups with an Indo-Iranian background, presumably speakers of a dialect of this easternmost branch of Indo-European. The linguistic evidence is minimal to say the least and has been the cause of unfortunate racist polemic, yet there is undoubted evidence for the survival of the names of Indo-Iranian gods, known from the Sanskrit Vedas, along with technical terms relating to the training of horses (Kammenhuber 1961). The latter survive in a Hittite tract, Hittite itself constituting the oldest known branch of Indo-European but a branch quite distinct from the Indo-Iranian dialects. The most straightforward evidence for this Indo-Iranian background lies in the names of the Mitanni rulers themselves: Artatama, Tušratta (Tuišeratta), Šattiwaza (Wilhelm 1989, 18). Thus, although the original Indo-Iranians were soon absorbed into the Hurrian cultural milieu,



Figure 167. The foreground test trenches constitute Area AL, excavated in 1984. A large Old Babylonian pit produced pottery of the time of Shamshi-Adad and the palaeobotanical data discussed on p. 128. The ridge in the background is the site of the Eye Temple and the so-called Naram-Sin Palace. Jebel Sinjar is just visible on the horizon.

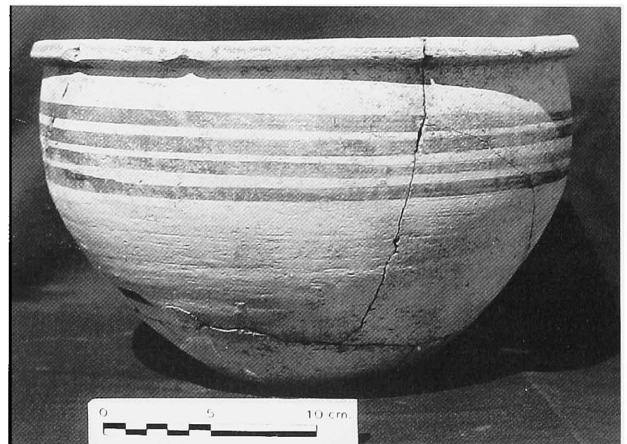


Figure 168. Large urn of Late Old Babylonian date, from Trench A, Level 8 (Fig. 214:635).

their names and perhaps their religion were deliberately maintained by the now Hurrian-speaking Mitanni élite. A combination of equestrian skill, the use of the light two-wheeled chariot (with spoked wheels) and the composite bow are widely thought to have contributed to Mitanni military success. Recent research, however, has emphasized the existence of fast, single-person, equid-drawn two-wheelers by the late third millennium, well-attested among the numerous chariot models of Akkadian Brak, as well



Figure 169. The Mitanni Palace excavations at the end of the 1984 excavations, view from the southwest.



Figure 170. The Mitanni public buildings as revealed at the end of the 1986 excavations, viewed from the west. What survives of the great north reception room (11) can be seen on the left.

as the earlier introduction of the horse (cf. Moorey 1986; Littauer & Crouwel 1996). Indeed, there is now evidence for the use of a bit by the late third millennium (Clutton-Brock & Davies 1993, 214–15; Littauer & Crouwel 1996, 937). Thus recent evidence would

seem to invalidate the idea of a Mitanni ‘introduction’ of the light chariot and the domestic horse to draw it. What does seem to have been new among the Mitanni was a military élite of ‘chariot warriors’ or *mariyanna*, whose high status depended initially on their skills in the military use of light war chariots but whose position seems to have been transmuted into a kind of hereditary aristocracy (at least the Alalakh texts refer to *mariyanna* ‘who own no chariots’, Wiseman 1953, 11, texts 128, 131; see also Brak text 5).

Such is the background of the Mitanni city at Brak, identified as such by the discovery of two legal documents sworn in the presence, respectively, of the fourteenth-century Mitanni kings Artaššumarra and Tušratta (texts 4 and 5, Chapter 2). Unfortunately we have no written documentation for the early period of Mitanni rule, but Brak lies in the heartland of the Mitanni kingdom and must have been under Mitanni control virtually from its inception. At the time of Idrimi of Alalakh we know that Parattarna had extended Mitanni domains as far as the Mediterranean, incorporating the powerful kingdoms of Aleppo and Alalakh, where Idrimi was to be-

come a Mitanni vassal, a history recorded on his famous statue now in the British Museum (Smith 1949). We have assumed that the Palace-Temple complex must have been built by this time, though we have no direct evidence for this assumption beyond

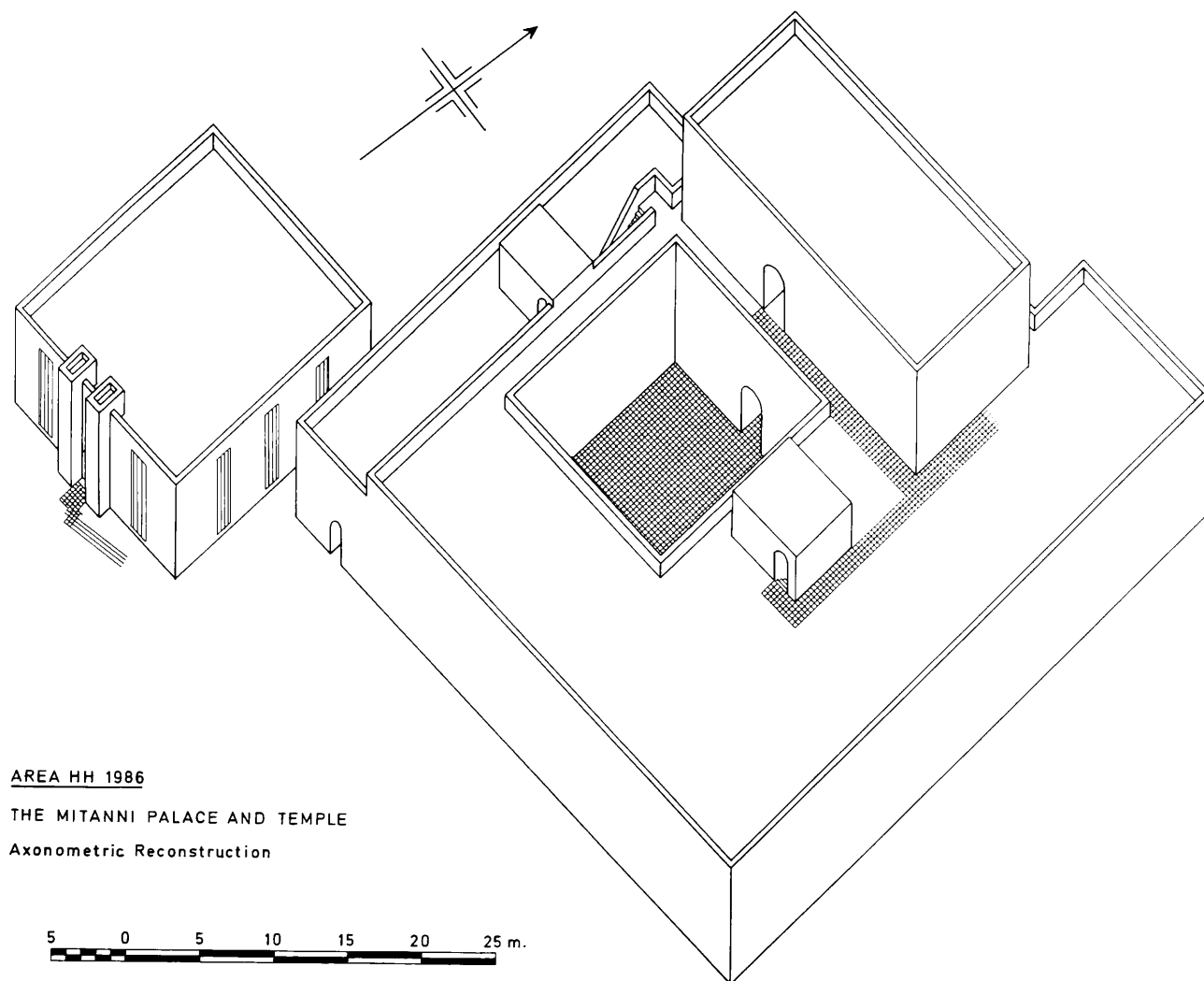


Figure 171. *Axonometric reconstruction of the Mitanni Palace and Temple.*

its demonstrably lengthy period of use, nor do we have a firm historical date for Idrimi.

We have noted that the Palace and the Temple were constructed at the same time (Fig. 26), and in our long north-south trench we have traced the construction level (6) across the north ridge of the tell (section Fig. 35). It is the earliest level in which we have found well-stratified Nuzi ware and unequivocal evidence for the use of glass, artefacts which seem also to identify the arrival of Mitanni hegemony at Tell al Rimah (Fig. 172). Although we cannot directly date the construction of the Brak Palace, our conclusion that it was built during the sixteenth century BC is based not only on historical plausibility but also on archaeological evidence. For example, the Level 5 pottery suggests a date well before the

fourteenth century, and our late Level 6/early Level 5 'Egyptian alabaster' jar (Fig. 139) has its closest parallels in a Middle Bronze tomb at Ebla and in a late Middle Bronze/early Late Bronze tomb at Ugarit.

The early history of Mitanni has to be pieced together from very sparse information, primarily from Hittite and Egyptian sources which, together with the long inscription on the statue of Idrimi, provide narrow windows of enlightenment. In this discussion we have adopted the Assyrian and Kassite chronology proposed by Brinkman (1976, 31; see also the revised edition of Oppenheim 1977, 335-48) and the middle chronology for the 18th Dynasty in Egypt which places the accession of Ramesses II in 1290 BC and Tuthmosis III in 1490 BC. Kitchen (1987, 39-41) prefers the dates 1279 and 1479 respectively. Mitanni



Figure 172. Nuzi ware sherd from the Area HH trenches; ht of sherd 10.2 cm.

chronology depends heavily on references in the Amarna letters which establish synchronisms with pharaohs of the 18th Dynasty, and the acceptance of the lower dating would lead to very long throne tenures by the known Mitanni kings, which are not entirely impossible but seem unlikely. Moreover, both the Assyrian and recent dendrochronological evidence favour earlier over lower dates (Kuniholm *et al.* 1996). The date of 1304 BC for the accession of Rameses II is apparently eliminated by Egyptian evidence (Kitchen 1987); readers who adhere to the lower chronology (Rameses II 1279–13) should deduct eleven years from the Egyptian dates used in this text. The stratigraphy of Area HH is summarized in Table 1, p. 35, while Table 14 provides an admittedly tentative chronological reconstruction.

Not long after its construction the Palace was damaged, but not the Temple. How this damage came about is a matter for speculation. The surviving walls show evidence of serious collapse only on the south side of the courtyard overlooking a steep gully which, in common with other erosion gullies around and within the mound, may have been an ancient feature and a source of structural weakness (Figs. 4, 6, 170 & 173). It should be noted that the

north outer wall of the Palace, which also overlooked a very steep slope, might have been similarly affected, but this wall survives only at its easternmost end and the possibility cannot be investigated. Certainly the east outer wall, and the internal walls where they are founded securely on the crest of the ridge, survived to a height of up to 5 m. It is also relevant to the argument that the Temple, which was founded at the same time as the Palace, continued in use throughout the life of the Palace with no apparent damage to its structure. If we are right in believing that the large deposit of pottery and other debris in Level 5 originated from the collapsed Palace, the span of time between the foundation of the monumental buildings and the reconstruction of the Palace cannot have been very long. The event and the material must be dated sometime in the fifteenth century, and probably in the first half of that century, a period when Mitanni had extended its dominion to its furthest extent and when we have no evidence for serious threats to the Mitanni heartland in which Brak is situated. This leaves us with the possibility that the south and possibly also the north walls of the early Palace might, in view of their potentially unstable situation, have fallen through structural weakness. With an extinct volcano only 23 km to the southwest of Brak, which clearly indicates a geological fault, a minor earth tremor sufficient to trigger the collapse cannot be ruled out. No documents that might mention such an event exist from this period, but from Middle Assyrian building records we have evidence for earthquakes which damaged the temple of Ishtar at Nineveh in the reigns of both Shalmaneser I (1273–44 BC) and Assur-dan I (1178–33 BC), and there is no reason to suppose that such tremors were exceptional. Thus it seems likely, especially in view of the lack of damage to the Temple, a smaller structure, that the fifteenth-century damage to the Palace occurred for structural reasons, perhaps augmented by natural causes, rather than hostile action. This of course does not in itself date the event, since structural failure and natural causes are independent of political circumstances. On the other hand, the deliberate thickening of the east outer wall, when the outer engaged-column façade was suppressed, could be interpreted as indicating a new concern for the defence of Mitanni's frontiers. Whether such hypothetical defence would have been against the Hittites or the Assyrians is not possible to establish, but we know that Assur was weak throughout most of the fifteenth century. It is also possible that this east wall, now 4.1 m thick, was a defence against no more than the possibility of

further natural damage to the building.

To return to historical sources, we know that at the time of Idrimi, Parattarna extended Mitanni hegemony to the Mediterranean, incorporating the kingdoms of Aleppo and Alalakh, and that not long after this time Saustatar even held supremacy over distant *Kizzuwatna* (Cilicia). A text from the Hittite capital tells us that the city of Assur lay under Saustatar's control, and that it was he who carried off a gold and silver door to adorn his palace at Waššukanni. This is likely to provide a *terminus ante quem* for the accession of Saustatar late in the reign of Puzur-Aššur III, since the latter is known to have rebuilt the city wall at Assur, not the action of a subject king. Unfortunately we cannot provide a precise date for the Assyrian king nor for his contemporary Burnaburiash, but his accession must be dated not long after 1500 BC and he ruled for 24 years. Mitanni control over Assur is also reflected in the Hurrian names of officials in fifteenth-century legal texts, while among the remarkable series of stelae erected in that city, two are officials of a later generation whose father and grandfather had been officials of the 'king of Hanigalbat', the Assyrian term for the land of Mitanni. Some years later Artatama's prolonged negotiations with Egypt over the marriage of his daughter to the Pharaoh Tuthmosis IV strongly suggest that at this time Egypt and Mitanni remained on an equal, and elite, footing. Shortly after this, however, the Assyrian king Aššur-bel-nišešu (1417–1409 BC) claims to have rebuilt the walls of Assur, and we know that he formed an alliance with Karaindash of Babylon, political acts that one suspects would not have been tolerated by earlier

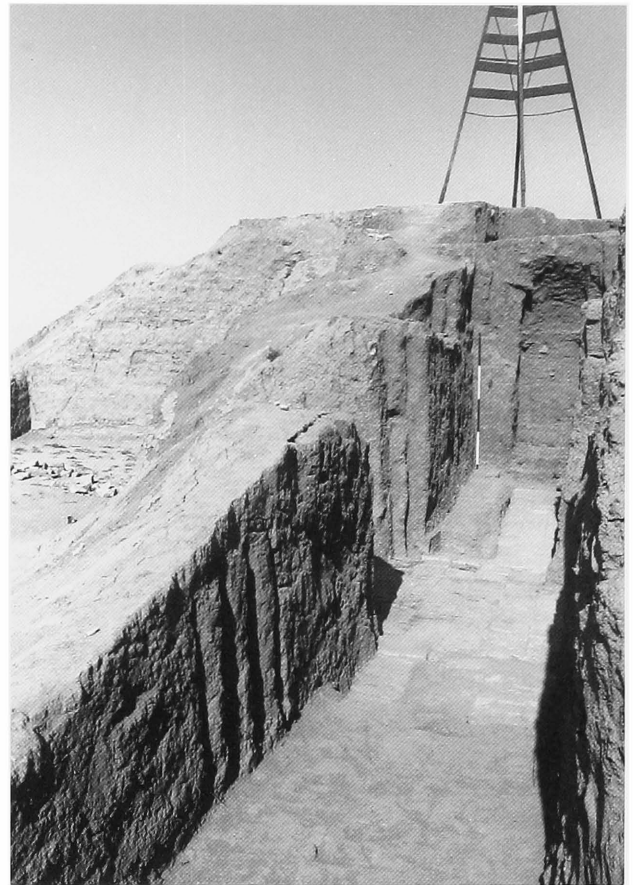


Figure 173. North wall of the Mitanni Palace courtyard, showing cut-back columns which had been plastered over during the fifteenth-century repairs (see also Fig. 10). The vaulted doorway to Room 14 is visible beneath the survey point, with reception room 11 to the north.

Table 14. Chronological approximations.

Date	Mitanni	Alalakh	Egypt	Assyria	Babylon
1595					Fall of Babylon
	(Kirta)				
	Suttarna I, son of Kirta				
1550	Parattarna, overlord of Idrimi	Idrimi			
1500	(Parsatatar)				
	Saustatar, son of Parsatatar	Niqmepa, son of Idrimi	Tuthmosis III		
	[?Parattarna II]		Amenophis II		
1450	Artatama, son of Saustatar				
1400	Suttarna II, son of Artatama	(Kelu-hepa) =	Tuthmosis IV	Aššur-nadin-ahhe (c. 1440)	
	Artasumara, son of Suttarna	(Tadu-hepa) =	Amenophis III	Aššur-bel-nišešu (1417–1409)	Kadašman-Enlil (1374–1360)
	Tušratta, son of Suttarna	(Tadu-hepa) =	Amenophis IV (Akhenaten)	Aššur-uballit (1363–1328)	Burnaburiaš II (1359–1333)
			Smenkhare		
			Tuthankhamun		
1350	Suttarna III, son of Artatama II				
	Šattiwaza, son of Tušratta				
1300	Šattuara I			Adad-nerari I (1305–1274)	
	Wasašatta, son of Šattuara I		Rameses II (1290–1224)	Shalmaneser I (1273–1244)	
	Šattuara II			Tukulti-Ninurta I (1243–1207)	
	(Early Mitanni order speculative)				



Figure 174. The list of Hurrian workmen, cuneiform text 2, cl. 2, was found where it had been thrown aside, beneath a large potstand which had fallen over it at the west side of Corridor 2. A number of large fenestrated stands were recovered here and in the Palace ablution room (cf. Figs. 16 & 175).



Figure 175. Large potstands 687, 680, 685, 681, 683, 686 from Corridor 2 and the ablution room (3); ht of tallest stand 35.7 cm.

Mitanni kings and perhaps the first sign of diminishing Mitanni power, or at least the beginning of a resurgence of the city of Assur which was to culminate in the emergence of the kingdom of Assyria under Aššur-uballit some 50–60 years later.

A number of late fifteenth- and early fourteenth-century BC kings are represented in the famous Amarna letters (latest edition, Moran 1992). We have already had occasion to refer to the information contained in EA 29 that Tuthmosis IV (c. 1411–1401) had obtained in marriage a daughter of Artatama I but only after seven requests. The marriage of the daughter of his son, Šuttarna II, to the pharaoh Amenophis III in his tenth year was commemorated by the issue of a large scarab of which copies have been found in Palestine (Drower 1980, 466). Like his father, Šuttarna II did not immediately accede to the Pharaoh's request, but Kelu-hepa was eventually dispatched with a large dowry and a retinue of 317 Mitanni serving girls. The relations between Artatama, Šuttarna II and the latter's son Tušratta and Egypt reveal a Mitanni kingdom well able to treat on equal terms with the other major powers of what Moran has referred to as the 'cuneiform culture' of the Late Bronze Age.

Brak re-enters the history of the second millennium in the person of Artaššumara, a king of Mitanni (Maitani) previously known solely from EA 17, an Amarna letter sent by his younger brother Tušratta and containing the information that Artaššumara, the eldest son of Šuttarna II, had been assassinated in a conspiracy led by an otherwise unknown Uthi. A legal document recovered from the floor of the Palace ablution room (perhaps originating in the adjacent storeroom (5) and discarded by an Assyrian looter) details a decision concerning the division of property, sworn in the presence of this same Artaššumara (text 4, p. 41). The tablet is written in standard Middle Babylonian and bears the seal of Artaššumara's forebear Saustatar, further evidence of a tradition attested also at Alalakh whereby Mitanni kings deliberately employed ancestral seals, perhaps seen as enhancements of authority. Tablet 4 from

adjacent storeroom (5) and discarded by an Assyrian looter) details a decision concerning the division of property, sworn in the presence of this same Artaššumara (text 4, p. 41). The tablet is written in standard Middle Babylonian and bears the seal of Artaššumara's forebear Saustatar, further evidence of a tradition attested also at Alalakh whereby Mitanni kings deliberately employed ancestral seals, perhaps seen as enhancements of authority. Tablet 4 from

Brak is the sole surviving document of the reign of Artaššumara. A second legal document from Brak (text 5, p. 41, found in Room 11) was sworn in the presence of Tušratta, the younger brother of Artaššumara who acceded to the throne as a minor (*sehru*), apparently the puppet of the conspirator Uthi. This tablet too bears a rolling of Saustatar's seal, on which it is clear that this is the same as the seal used on the famous Nuzi document from which this sealing has long been known (p. 49). In the context of the surviving evidence Tušratta provides a major focus in the close relations between Mitanni and Egypt. His sister Kelu-hepa was married to Amenophis III, his aunt (a daughter of Artatama) had been wife to Tuthmosis IV, and his own daughter was to marry not only Amenophis III but also the latter's successor, Amenophis IV (Akhenaten).

Letter EA 17 tells us that Uthi, who had presumably acted as regent in Tušratta's minority, had forbidden Tušratta the friendship with Egypt that had clearly been a cornerstone of Mitanni policy at least as early as the time of Artatama, a policy perhaps as much influenced by Egyptian access to gold as matters political. In the same letter we learn that ultimately Tušratta avenged his family, and perhaps his own honour as a former puppet king, by 'slaying the slayers of Artaššumara'. Tušratta recounts his defeat of the Hittites, perhaps supporters of the Uthi faction, and allegedly sends part of the spoil to the Egyptian pharaoh. He also sends his sister a gift of gold jewellery and a 'scent container full of sweet oil'. Much of Tušratta's surviving correspondence concerns the marriage of his daughter to Amenophis III and his complaints about the quality of the gold received from Egypt, 'where gold is more plentiful than dust' (EA 20). EA 22 provides an inventory of Tadu-hepa's dowry which includes — oddly since Egypt is the major source of gold — large quantities of gold jewellery and gold chariot fittings, though perhaps this is an example of 'indirect dowry' (Grosz 1981, 170). Scent containers with various perfumed

oils, over 6000 arrows, and several apparently iron objects are listed. The latter include three gold daggers with iron blades, an iron mace overlaid with gold and two iron bracelets overlaid with gold and lapis lazuli. EA 24 refers to cuneiform records listing the dowries of 'my grandfather's daughter' (Tušratta's paternal aunt) and my father's daughter (Kelu-hepa) and remarks querulously that 'my presents are even greater but my gold is much less!' This document is written in the Hurrian language, one of only two Late Bronze Age documents in this language from the Mitanni heartland. The other is of course the fragment of a letter found in the Palace at Brak (text 2, Chapter 2).

Tušratta was murdered by one of his sons, but on this occasion the family of Saustatar did not immediately regain the throne which was seized by Šuttarna III, son of the Hittite puppet Artatama II. Šuttarna III seems to have controlled Waššukanni, since he is stated to have destroyed Tušratta's palace there and dissipated his treasure in bribes to Alše, a northern neighbour of Mitanni, and to Assur on whom he was clearly dependent for support. Aššur-uballit I (1363–28 BC) was now on the Assyrian throne, and it may well have been at this time that Mitanni lost control of Nineveh which now, with Assur, came to constitute the new and increasingly powerful kingdom of Assyria. The prospect of Mitanni as a client of Assyria was not pleasing to the Hittite king



Figure 176. The Mitanni Palace was a fortified official residence, with workshops for specialized craftsmen. The photograph illustrates the north end of the largest Palace workroom, with its baked-brick floor and drain (see Fig. 21).



Figure 177. Canine pawprints on one of the baked bricks in the Palace workshop; Old Babylonian kiln bricks from area TW.

Suppiluliumas, who had previously granted asylum to a son of Tušratta, Šattiwaza, to whom he also gave a daughter in marriage. Suppiluliumas now took the opportunity to place Šattiwaza on the throne of Mitanni, bound by ties of brotherhood and clearly defined political relationships with his own son whom he had installed as king of Carchemish and who marched with Šattiwaza to the conquest of his new kingdom. This event, related in a treaty between Suppiluliumas and Šattiwaza, is one of the few that can be dated with any accuracy within this period. The death of Tutankhamun of Egypt (1338 BC) took place during the siege of Carchemish, and the installation of Šattiwaza of Mitanni followed about three years later, i.e. about 1335 BC. What part Aššur-uballit played in these events is not recorded, but it is more than likely that the internal controversy within the Mitanni kingdom may well have encouraged the rising Assyrian power to the east.

Interestingly, Šattiwaza seems deliberately to have chosen an Indo-Iranian throne-name, his real name having been Hurrian (Kili-Teššup: Wilhelm 1989, 37).

Šattiwaza seems to have restored a degree of internal stability within the Mitanni kingdom, reflected in the wealth of the Palace and Temple at Brak. At the same time the city of Ta'idu, which lay near the Wadi Jaghjagh, to the southeast of Waššukanni (Röllig 1983), seems to have replaced the former capital as the focus of Mitanni power. This may have been a strategic decision in the face of growing Assyrian power though even this threat seems to have receded by the end of Aššur-uballit's reign.

Readers of preliminary reports on the excavations at Brak will know that we once believed Ta'idu to be a possible name for Brak. Evidence for this lay in the public buildings themselves, in the presence of official records of two Mitanni kings, in the frequency of the place name Dātum/Tādum in the Old Akkadian tablets and the presence at Brak of a Roman site, clearly identified as Thebeta on the Peutinger map, some 600 m east of the tell (see discussion in *Iraq* 47, 1985, 169–72; *Iraq* 49, 1987, 189; for further discussion of the Roman sites, see Oates & Oates 1990). It had seemed reasonably certain from the cuneiform texts that Mitanni Brak was either Ta'idu or Nawar, and that if Brak was Nawar, Ta'idu was nearby (see text 7, p. 43). We are now persuaded, however, that the evidence for an identification with Nagar/Nawar is more compelling, and that the most likely location of Ta'idu is Tell Hamidi (Ahmedi), 20 km north of Brak. Nawar is not mentioned in the records of the two Middle Assyrian kings who destroyed the cities of Mitanni. Ta'idu and Kahat (Tell Barri, 9 km to the north of Brak) appear in these lists, however, and their proximity to Brak and the evidence for the violent destruction of the site, lead us to assume that Brak was among those cities to have suffered a similar fate at the hands of the Middle Assyrians.

The final destruction of Brak

Adad-nerari I of Assyria (1305–1274 BC) tells us that Šattuara I 'rebelled against him'. The rebellion was put down and Šattuara was taken to Assur. After swearing an oath of loyalty to the Assyrian king, he was restored to his throne at the cost of annual tribute. A second campaign against his son and successor *Wasasatta* is described in much greater detail and was obviously more savage.

I captured by conquest the city Taidu, his great royal city, the cities Amasku, Kahat, Suru, Nabula, Hurra, Suduhu and Waššukanni. I took and brought

to my city, Assur, the possessions of those cities, the accumulated wealth of his (Wasašatta's) fathers, and the treasure of his palace. I conquered, burnt and destroyed the city Taidu and sowed *kudimmus* over it [a plant associated with salt, Grayson 1972, n.119]. The great gods gave me to rule from the city Taidu to the city Irridu [that is, the Mitanni territory from east to west] . . . As for the remainder of his people, I imposed upon them *corvée* (lit. 'hoe, spade and basket'). (Grayson 1972, 60–61)

In this inscription Adad-nerari claims to have built a palace in Ta'idu, 'When I saw the deserted and uncultivated areas of the city Taidu, I delineated its territory and therein founded a palace' This information is repeated on an alabaster tablet from Assur where the name of the building is deliberately left blank, 'At that time the [blank] of the city Taidu had become dilapidated and I removed its debris. I restored it. I rebuilt it from top to bottom and deposited my stela' (Grayson 1972, 61). Various theories have been offered for the meaning of the deliberately blank space, including the strong possibility that this inscription anticipated a project that never took place. Certainly under Adad-nerari's successor, Shalmaneser I (1273–44 BC), Šattuara II is again in control in Mitanni and, with the aid of his Hittite and Ahlamu allies, caused Shalmaneser considerable difficulties.

When by the command of the great gods and with the exalted strength of Assur, my lord, I marched to the land of Hanigalbat, I opened up the most difficult of paths and passes. Šattuara, king of the land Hanigalbat, with the aid of the armies of the Hittites and Ahlamu, captured the passes and watering-places in my path. When my army was thirsty and fatigued, their army made a fierce attack in strength. But I struck back and brought about their defeat. I slaughtered countless numbers of their extensive army. As for him, I chased him westward at arrow-point. I butchered their hordes but 14,400 of them who remained alive I blinded and carried off. I captured nine of his fortified cult centres as well as the city from which he ruled, and I turned 180 of his cities into ruin hills. (Grayson 1972, 82)

The next part of Shalmaneser's text repeats verbatim the inscription of Adad-nerari, which has led to the view that this was a spurious boast, and that his scribes were simply repeating the formulae of his father's claims. But the preserved stratigraphy within the Palace at Brak indicates two destructions of the site, not far apart in time, and the presence of an Assyrian administration in the Khabur basin is not attested until the reigns of Shalmaneser and his son

Tukulti-Ninurta I. The archaeological evidence is most clearly illustrated in Room 11 and Corridor 6; at the same time our single dendrochronological date tells us that the doorpost in Room 1 was replaced sometime not long after 1300 BC, while the burning of this doorpost must represent the second sack. In Room 11 the ceiling was in need of support not long before the final destruction, and in Corridor 6 there is unequivocal evidence for two destructions in the ash levels delineated in Figure 31. We had originally assumed that the earlier ash level, from which the Hurrian tablet was recovered (locus 577) represented the fifteenth-century destruction. But the fact that the drain was clearly allowed to go out of use at the time of the earlier destruction leads us now to believe that the first ash level must represent the Adad-nerari destruction, to be dated between 1285 and 1280 BC. A new floor was now laid in Corridor 6, suppressing the drain; above this is a second ash deposit (locus 554), overlaid by debris from the collapse of the building (locus 548). Thus at three places in the building there is evidence of damage and repair shortly before the final sack. The door between Room 5 and the workshop was also partially blocked, suggesting damage also to this corner of the building.

After a short interval two levels of Middle Assyrian occupation follow the destruction, reusing the still standing walls of the Palace (Figs. 9 & 31). Traces of a large, red mud-brick platform survive at the top of the tell, above the Palace, but the site is too eroded to allow identification of the character of this Middle or possibly Late Assyrian structure. Whether the large basalt sculpture recovered by Poidebard (p. 18) derives from this latest phase of occupation on the tell, or whether it comes from some earlier building, cannot be established on the basis of surviving evidence. With the possible exception of the large basalt sculpture fragments recovered during the recent excavations (e.g. Fig. 33) no material of Late Assyrian date has been found anywhere on the tell. But in the plough north and northeast of Area FS pottery of possibly eighth-century date has been recovered, while a Late Assyrian bronze fibula was found on Tell Majnuneh (TB 4026). A most important discovery from the foot of Area FS is a 'hand of Ishtar' (Fig. 178), unfortunately uninscribed, but of a Late Assyrian type and very unlike the 'long-armed' variety recovered from an earlier context at Tell Hamidi (Rouault & Masetti-Rouault 1993, pl. 427; see also Frame 1991). The presence of such an object proves the existence at Brak of a monumental building of Late Assyrian date, but unfortunately no



Figure 178. Late Assyrian 'hand of Ishtar'.
 Architectural ornament from a monumental building
 now lost but possibly originally situated on the platform
 at the crest of Area HH. Found in the plough just below
 the west end of Area FS/north end of HH; ht c. 9 cm.

structures or even ground surfaces have as yet been identified either in the heavily ploughed area north of the tell or on the red *libn* platform at its summit. That there was a settlement of this date is, however, beyond doubt. Since by this time the name Nawar seems to have disappeared from the known geographical repertoire in the Khabur, it remains at least a remote possibility that the Late Assyrian settlement at Brak may have been ancient Tabitu, transformed in Late Roman/Byzantine times into Thebeta (see discussion in *Iraq* 47, 1985, 169–70). There is a precedent for such a name change between Middle and Late Assyrian times at the site of Tell al Rimah, originally either Karana or Qatara but refounded in the late ninth century as Zamahu (*Iraq* 30, 1968, 127). A large circular military camp, almost certainly of Late Assyrian date, lies just to the north of Brak, visible in the air photographs taken by Father Poidebard (1934, pls. 1 & 3) but no longer identifiable on the ground. With a stretch of the imagination, this might even be the camp 'at Tabitu' in which Assurnasirpal II spent the night on his way to the River Khabur in 878 BC (Grayson 1976, 137).

Artefact Drawings

Abbreviations used in charts for Figures 179–239 and the list of HH Loci (Appendix 2).

TB cat. no.	Catalogue number for objects in the Deir ez-Zor Museum, prefaced with the letters TB. The first season TB numbers begin with 1000, the second season with 2000 and so forth.
reg. no.	Object or pottery register number. The object register is a continuous series of numbers beginning with 1. The pottery register is separate and the first two digits of a pot register number denote the year of excavation, e.g. 86.1 = 1986 season, pot number 1; and for each season the numbers after the full stop begin with one).
unstrat.	unstratified
s	seals
sb	sealed by
rel	relates to
joins	indicates actual pottery joins between different contexts
assoc.	associated with
Fig.	Figure
Tr.	Trench
C/b	copper/bronze
Pb	lead
cm	centimetres
Rm	Room
EM	Early Mitanni
OB	Old Babylonian
MA	Middle Assyrian
M.West	Mallowan west trench
l.	length
w.	width
th.	thickness
ht	height
d.	diameter
ds.	diameter of shaft
d/w h	diameter or width of head (for pins etc.)
dp	diameter of perforation
bl	blade length (for a projectile point)
bw	blade width
bth	blade thickness
est.	estimated
ext.	extant
max.	maximum
(t)	tested with hydrochloric acid

Codes for ceramic ware types (Figs. 181–239).

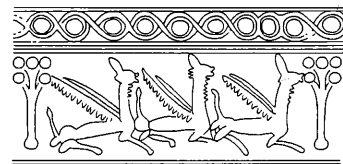
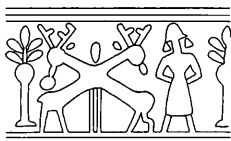
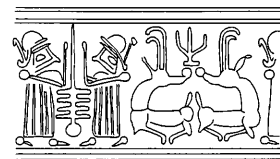
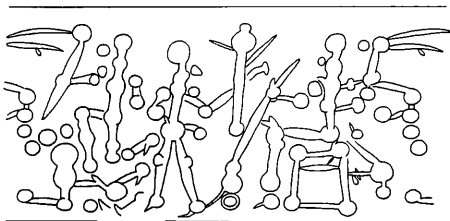
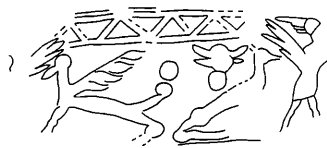
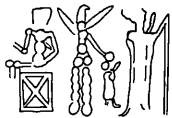
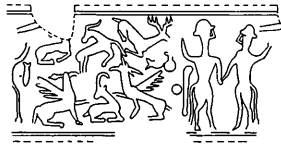
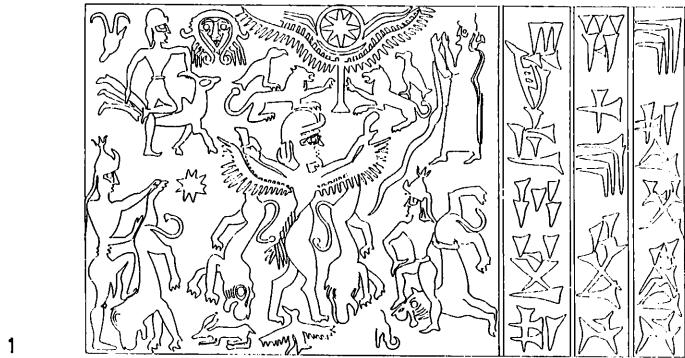
- W1. Fine buff fabric, little visible temper (Nuzi and OB painted wares).
- W2. Gritty buff fabric, little or no chaff visible (OB and Mitanni painted).
- W3. Buff fabric, medium to large white grits, some chaff (bird sherds, some Nuzi ware).
- W4. Buff fabric, chaff temper (generally heavy) plus white grits.
- W5. Buff fabric, chaff.
- W6. Orange to brick-coloured fabric, buff exterior, white grits, chaff.
- W7. Mitanni orange-brown; heavy chaff temper and dark core on larger vessels; fabric also gritty with mica inclusions; core of thin-walled vessels usually light yellow-grey (plain and red-edged bowls).
- W8. Mitanni red-slipped. Fabric as W7. Red-slip Munsell colours include 5 YR 6/6 'reddish yellow', 10 R 4/4–4/8 'weak red/red' and 10 R 3/6 'dark red'.
 - a. burnished.
- W9. Grey ware, usually fine white grits and some chaff; some very well levigated clays. Larger vessels have higher chaff content.
 - a. burnished.
- W10. Brown to cream to pale burnished ware. Fine white grits and mica.
- W11. Coarse cooking ware. Mica and dense shell incusions.
- W12. Glazed ware. Glaze generally blue, weathered to green to yellow to white.

Artefact Drawings

Figure 179. *Seals and sealings, scale 1:1 (except for 2, scale 2:1).*

No.	HH locus	HH level	Dimensions ht. × d. of seal	Comments	Reg. no.	TB cat. no.
1	14/224	2	2.7 × 1.27	Rms 3 & 11. Diana Stein's drawing of the Saustatar seal impression from Nuzi, found also at Brak on tablets of Artašsumara & Tušratta, texts 4 & 5. Figures 62, 66. Stein 1993, 528.	Insc. 6	6002 8001
2	224	2	ht = 0.6	Sealing on text 7. Figure 67.	Insc. 25	8002
3	3, 14, 10, 44	2	1.8 × 1.0	Rms 3, 4 & 5. Impression on 6 clay sealings, some with string marks, some are door sealings. Figures 68, 69.	1469, 1470, 1508 & 2030–32	6016 6017 6028
4	42	2	ht = 1.7	Rm 5 floor. Impression on docket. Figure 70.	1677	7038
5	224	2	ht = 1.8	Rm 11 floor. Impression on bulla fragment, cloth & string on reverse. Figure 71.	2360	8023
6	44	2	c. 1.7 × 1.4	Rm 5 floor. Impression on text 3. Figure 60.	Insc. 13	7035
7	44	2	c. 1.1 × 0.8	Rm 5 floor. Impression on door sealing.	1895	
8	24	2	2.85 × 1.5	Corridor 4 floor. Haematite seal. Figure 72.	1555	7031
9	294	4	2.0 × 1.0; dp. = 0.3	Faience seal. Figure 73. Tr. B, Level 4 floor.	2814	9000
10	471	5	1.8 × 0.9	Impression on compartmented dish 538. Figures 50, 74. Tr. D.	3900	10185
11	461	4		Impression on clay bulla, lump squeezed around string.	3246	10026
12	271	2	2.2 × 1.2; dp. = 0.35	Courtyard 8 floor. Faience seal. Figure 75.	2815	9001

Artefact Drawings

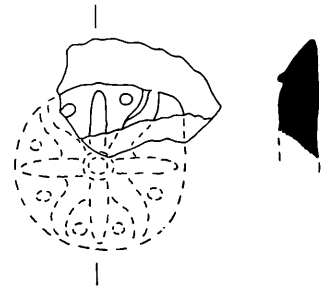
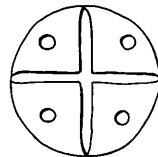
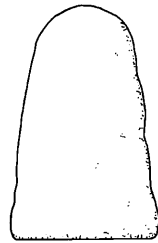
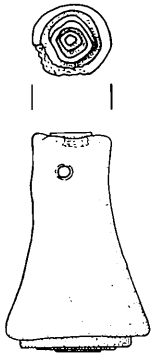
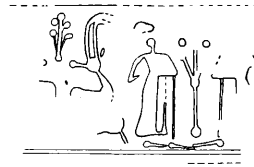
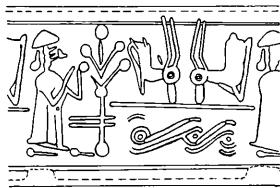
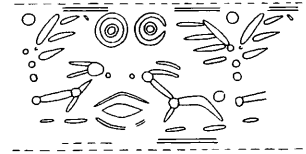
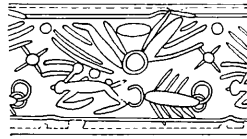
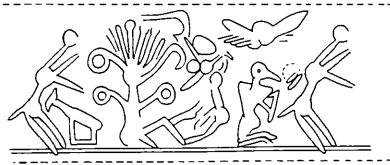


Artefact Drawings

Figure 180. Seals, sealings and clay stamps, scale 1:1 (except for 15 and 17, scale 2:1 and 23–5, scale 1:2).

No.	HH locus	HH level	Dimensions ht. × d. of seal	Comments	Reg. no.	TB cat. no.
13	44	2	1.6 × 0.7; dp. = 0.35	Rm 5 floor. Faience seal, perforation not central. Illustrated only as a photograph, Figure 76.	1621	7032
14	24	2	2.0 (ext.) × 1.0	Corridor 4 floor. Glass seal fragment, incomplete. Design of standing figure & a panel of incised triangles. (Illustrated with the glass objects, Figure 220:38.)	1857	
15			1.6	Mallowan level 2. Three rollings on a clay bulla fragment. (Width of impression 2.8 ext.) Cloth impressions. Figure 77.		BM 126381
16	HH dump		2.3 × 1.05	Mottled grey stone seal, Aleppo. Figure 79. Mallowan 1947, pl. 22:11,12; Hammade 1994, no. 405.	B.819	
17	HH B		1.05 × 0.54	3 rollings on fragment of door peg sealing; peg d. = c. 2.5. Buchanan 1966, no. 920.		Ash. 1939.332 (101)
18			1.6 × 0.7	Goethite seal. Matthews 1990, no. 593.		BM 125809
19			2.0 × 0.85	Seal, medium orange-brown opaque stone. Figure 78. Aleppo label says Tell Brak; provenance uncertain. Hammade 1994, 404.		
20	HH		2.3 × 0.85	Mallowan level 2. Faience seal. Figure 80. Matthews 1990, 609.	B.803	BM 125795
21	HH B		2.3 × 1.0	Two rollings, impressions of jar rim & neck on reverse. Figure 81. Buchanan 1966, 929; Matthews 1990, 610.		Ash. 1939.332 (100)
22	HH B		ht = c. 1.7	At least two rollings on bulla fragment.		Ash. 1939.332 (102)
23	HH surface		5.8 × 2.1–3.8; dp. = 0.3	Clay stamp, possibly prehistoric but resembles 3rd-/2nd-millennium Anatolian types. Cf. Alishar Hüyük stamps (von der Osten 1937, II, fig. 258.) See also Mozan (Buccellati & Kelly-Buccellati 1988, 151, pl. 41).	3072	10033
24	241	2	6.1 × 3.9	Clay stamp. Rm 21 floor.	2402	8101
25	HH surface		l. 4.3; w. 3.3; th. 1.1; d. of stamp 6–7	Stamped impression, terracotta disc-like fragment. Figure 65. Anatolian type. Cf. von der Osten 1937, II, fig. 257.	3337	

Artefact Drawings

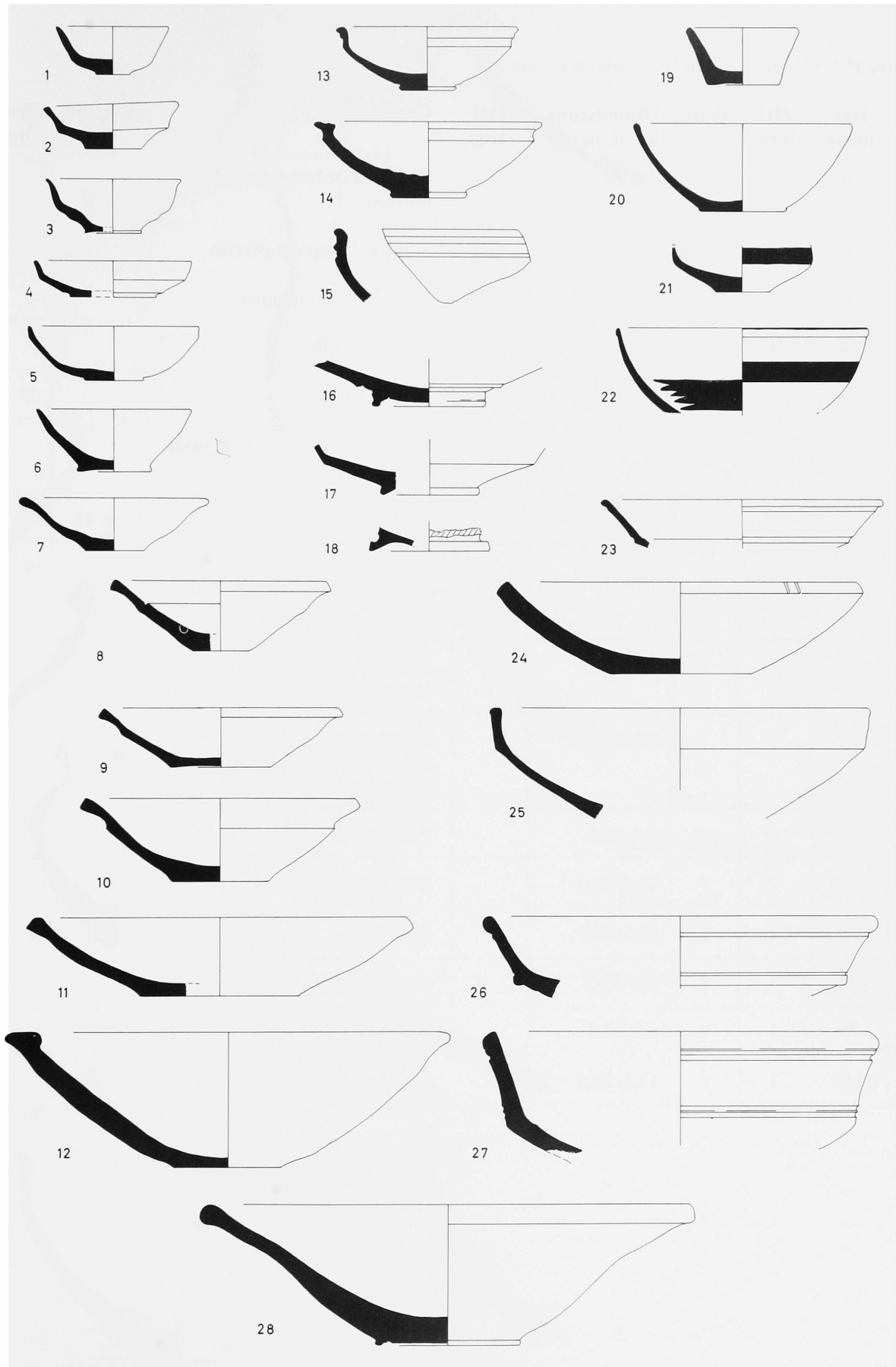


Artefact Drawings

Figure 181. Middle Assyrian bowls, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
1	55	1	7	3.4; 7.8		3 examples.	85.66	
2	151	1	6	3.4; 8.8		A very common MA type; 12 examples. String-cut base.		
3	220	1	6	3.8; 9.2				
4	218	1	5	2.6; 10.7	2-1			
5	198	2	3	3.8; 10.8	2-1	Upper fill Rm 22; possibly MA.	86.56	8251
6	253	1	5	4.4; 10.8	2-1	Rm 11; palace collapse — some MA mix.		
7	149	1	6	3.7; 12.6		2 examples; micaceous grits.		
8	272	1	6	4.9; 14.7		3 examples.		
9	183	1	6	4.2; 16.2		String-cut base, 3 examples.		
10	255	1	7	5.8; 18.8		Common MA type; 9 examples. String-cut base.		
11	326	1	5	5.5; 26.0		Low disc base.		
12	318	1	7	9.5; 31.0		20 examples.	87.27	9191
13	464	surface		4.5; 12.4		Very worn surface; grey paste, large white grits, no chaff; ?originally grey-burnished, dubious MA.	88.12	
14	surface		6	5.3; 16.0		Brown interior surface, tinged with red (?slip).		
15	151	1	6	5.2; 30.0		Micaceous inclusions; 3 examples.		
16	156	1	3	3.2; base d. = 8.0				
17	149	1	6	3.6; base d. = 6.6		Very little chaff.		
18	172	1	1	1.6; base d. = 8.5		Traces of pink slip (?).		
19	172	1	6	4.0; 7.5				
20	326	1	2	6.2; 15.1				
21	80	1	7	3.0; base d. = 3.8		Almost complete to rim; red paint.		
22	91	2-1 mix	2	5.9; 17.6		Red-brown paint..		
23	150	1	7	3.4; 19.5	2-1	6 examples.		
24	91	2-1 mix	7	6.5; 24.6		5 examples.	85.75	7239
25	251	surface	3	7.9; 26.5	4-1	8 examples; micaceous inclusions.		
26	224	2	7	5.8; 27.0		Rm 11 floor.		
27	148	1	7	8.4; 26.3		2 examples.		
28	80	1	7	9.9; 33.6		3 surface examples.	85.93	

Artefact Drawings

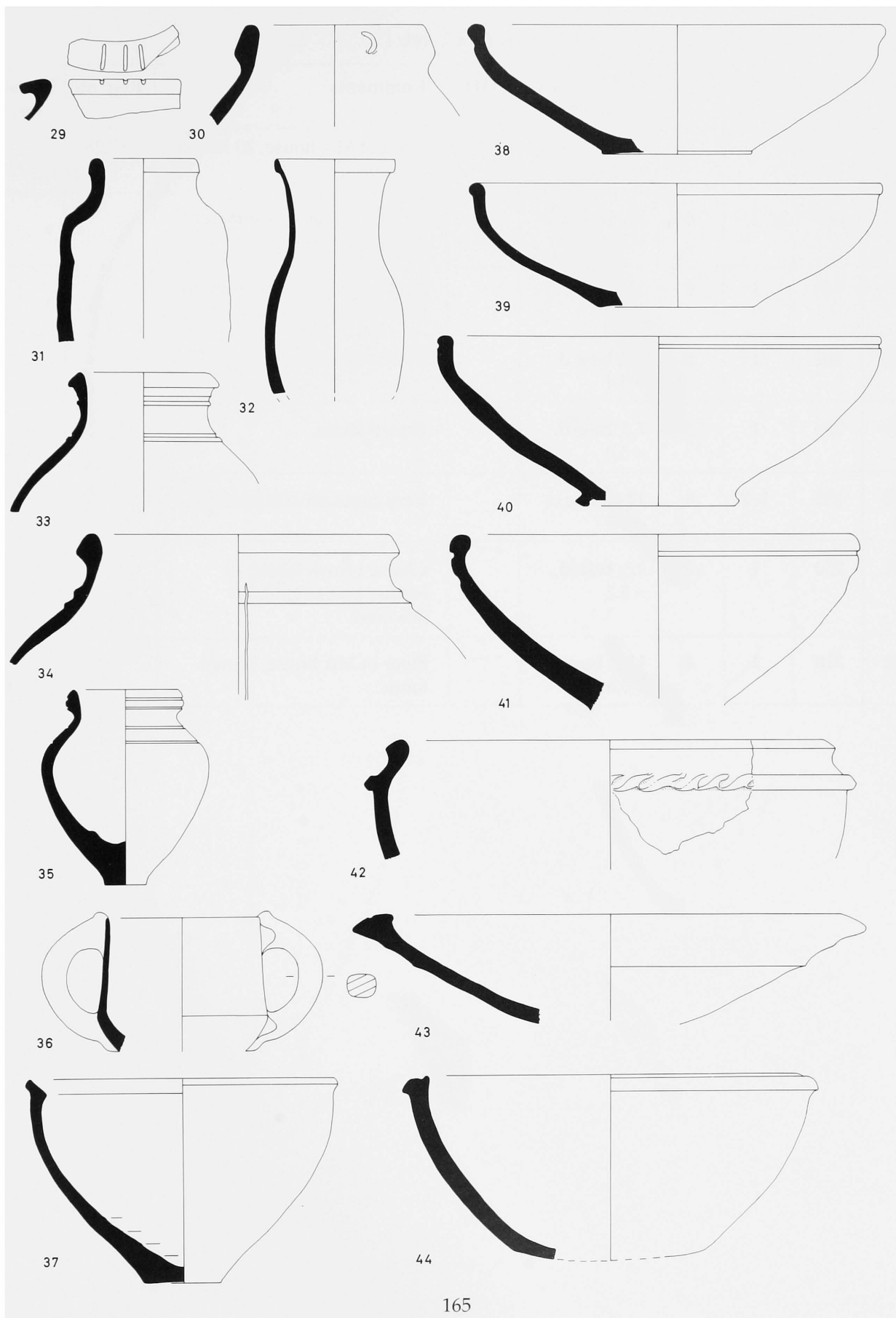


Artefact Drawings

Figure 182. *Middle Assyrian bowls and jars, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
29	149	1	4	3.0; 20.0		Stamped or incised marks on rim.		
30	143	1	4	7.3; 12.8		Stamped crescent on rim.		
31	149	1	4	13.3; 7.2		Micaceous inclusions.		
32	78	1	3	17.0; 8.6		2 similar rims.		
33	255	1	7	10.0; 9.2		Brown fabric.		
34	148	1	4	9.2; 21.6		Dark buff fabric; incised mark on body.		
35	182	1	7	14.2; 7.6			86.41	
36	220	1	4	10.2; 11.0		Pale brown; some micaceous inclusions; only one handle extant.		
37	148	1	7	15.0; 22.0		Heavily burnt; 2 further examples from HH 425 & 146.		
38	21	1		9.4; 29.4		Unusual green surface, grit, a little chaff ; 3 further examples in ware 6.		
39	20	1	6	9.0; 29.6		7 further examples.		
40	148	1	7	12.4; 32.0		2 further examples.		
41	78	1	7	12.5; 28.5		Pink fabric.		
42	150	1	2	8.8; 33.0		Applied cable decoration.		
43	78	1	6	8.0; 27.5		Brown fabric.		
44	144	1	6	13.5; 28.0		Buff-brown fabric.		

Artefact Drawings

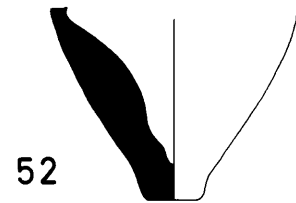
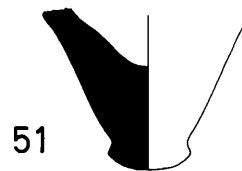
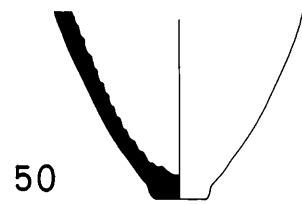
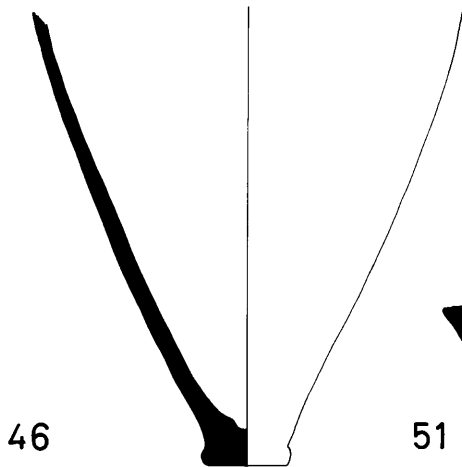
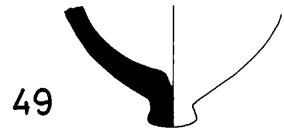
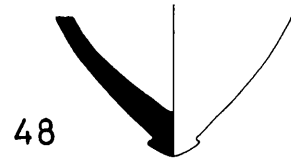
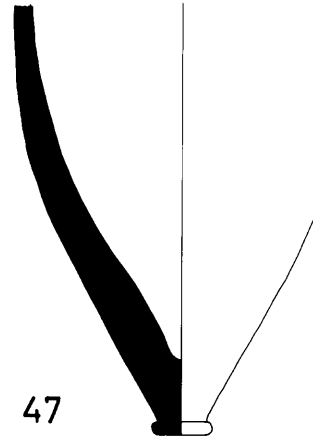
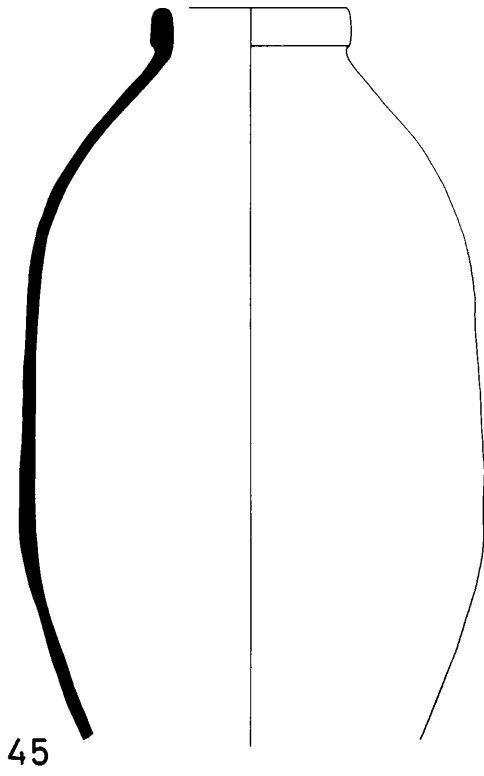


Artefact Drawings

Figure 183. *Middle Assyrian jars, scale 1:5 (except for 47, scale 1:2).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
45	318	1	6	49.0; 12.0		Floor of MA house, 20 further examples.	87.28	
46	318	1	4	30.0; base d. = 5.4		Grey paste, brown surface; 2 further examples.		
47	149	1	6	11.3; base d. = 1.4		Note size difference from no. 46; 10 further examples.		
48	132	1	5	9.0; base d. = 3.4		Brown fabric.		
49	225	1	5	7.3; base d. = 3.0		Brown fabric.		
50	255	1-2	6	12.8; base d. = 3.6		Very common MA jar base.		
51	250	1	2	9.5; base d. = 5.2		Coarse brown fabric; 15 further bases similar to nos. 51-2.		
52	318	1	4	12.0; base d. = 3.6		Floor of MA house, brown fabric.		

Artefact Drawings



Artefact Drawings

Figure 184. Mitanni strainers and plain shallow bowls, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
53	425	3-4 mix	3	2.6; 11.3	3-2	8 further examples.		
54	218	1	3	2.7; 11.0				
55	44	2	6	4.3; 12.2	5a-2	Rm 5 floor, 2 further examples.	85.54	7236
56	213	2	2	3.2; 11.8		Rm 15 floor deposit, pale surface, orange paste.		
57	91	2	2	7.0; 12.2		Rm 7 fill, micaceous inclusions.		
58	14	2	2	5.1; 15.8		Rm 3 floor, red-brown paint, micaceous inclusions.	84.163	
59	58/68	2	1	4.8; 9.2		Rms 7 & 8, handmade, 1 further example.	85.13	
60	224	2	7	6.2; 14.0		Rm 11 floor.		
61	10	2	7	4.8; 19.6		Rm 2 floor.		
62	44	2	7	5.1; 18.6	5a-1	Rm 5, 3 further examples.	85.56	
63	14	2	3	5.5; 24.4		Rm 3 floor, near no. 685 potstand. Complete, barley impression on vessel surface, pale surface, salmon paste.	84.165	6139
64	213	2	5	5.9; 24.8	6-1	Rm 15, 25 further examples.		
65	207	2	5	5.8; 26.5		Rm 12 floor fill, exterior scraped down; patches of burning.		
66	464	surface fill	7	5.5; 23.8	4-2	14 further rim sherds.		
67	20	1-2	6	6.6; 27.5	4-2	6 further examples.		
68	207	2	7	3.3; base d. = 14.0	4-2	Rm 12, 1 further example..		
69	207	2	3	4.6; 19.5		Rm 12, light brown surface, pale salmon paste, 1 further example	86.50	8246
70	44	2	7	4.6; 21.6	4-2	Rm 5 floor, 10 further rim sherds.		
71	278	2-4	7	5.3; 21.4				
72	278	2-4	7	5.5; 20.5		1 further example.		
73	278	2-4	7	5.2; 21.8		Surface clearance Tr. C.		
74	207	2	3	4.3; 20.8		Rm 12, signs of burning; 4 further examples.		
75	44	2	7	5.6; 23.4		Rm 5.		
76	44	2	3	5.5; 23.3		Rm 5, micaceous inclusions.		

Artefact Drawings

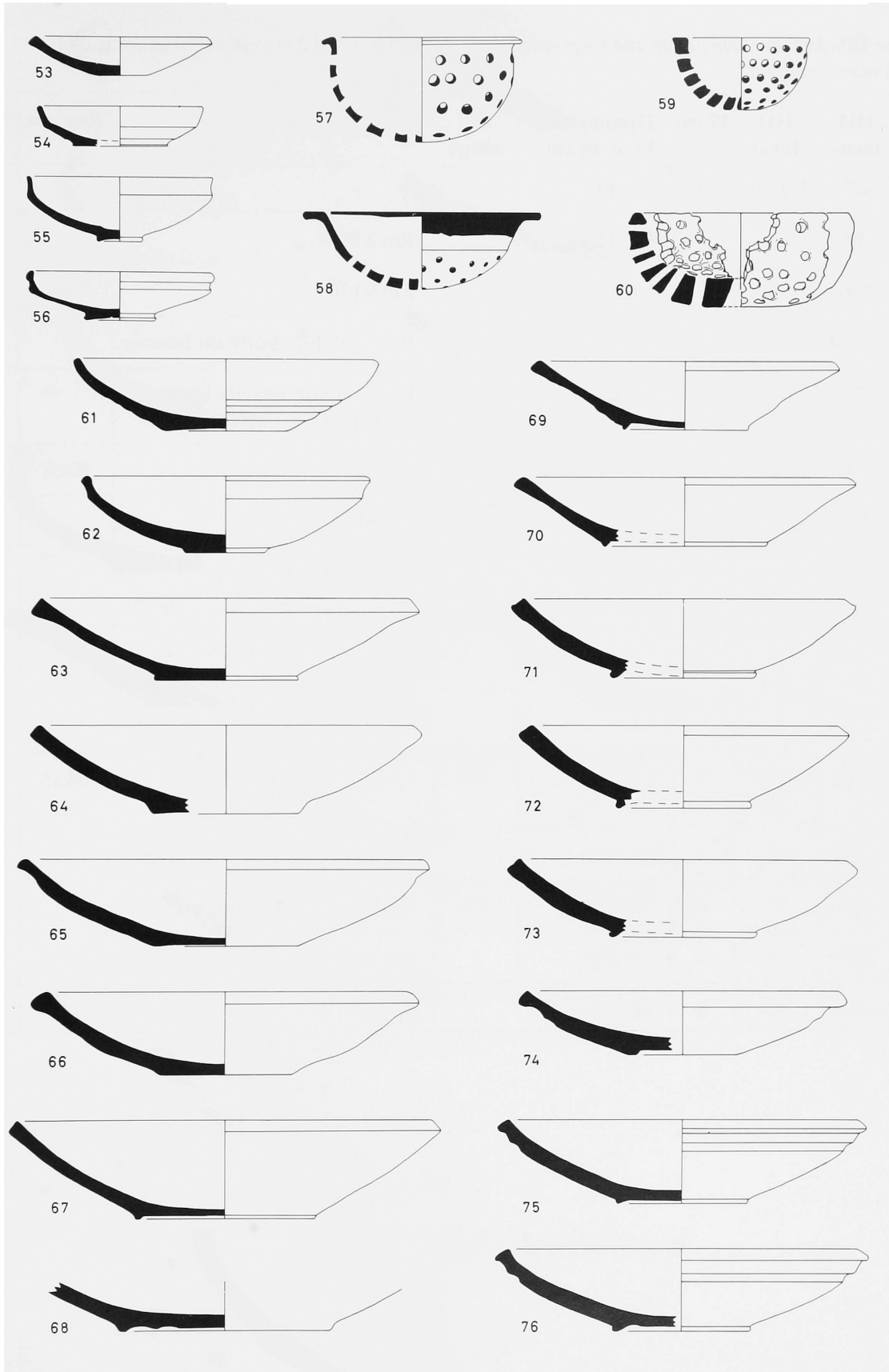
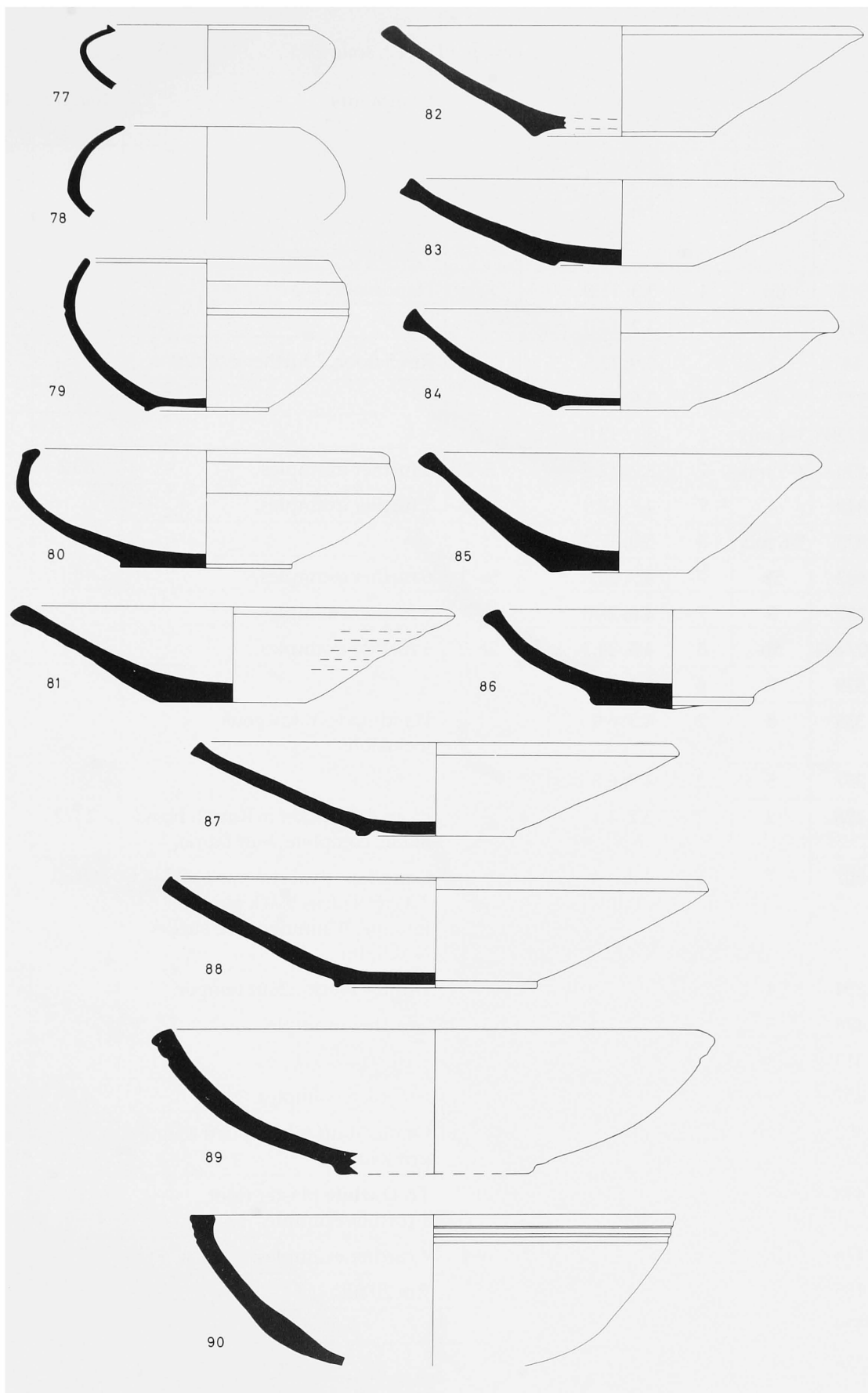


Figure 185. *Mitanni hole-mouth and large open bowls and plates, Level 2 (except for 90 which is Old Babylonian), scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
77	425	3-4 mix	3	4.5; 13.7				
78	10	2	2	6.2; 12.4		Rm 2 floor.		
79	106	2	6	10.3; 16.4		Rm 9 fill.	85.80	
80	41/44	2	4	8.0; 23.4		Rm 5, slightly burnt on interior.		
81	51	2	7	6.5; 28.4		Rm 5 tannur, heavily burnt; 12 further rim sherds.		
82	24	2	3	7.5; 31.2		Rm 4 floor.	85.51	
83	452	3-4 mix	4	5.8; 28.8	3-2	1 further example.		
84	10	2	5	6.8; 28.2		Rm 2 floor, micaceous inclusions. 5 further examples.		
85	263	2	7	8.1; 26.0		Doorway between Rm 11 & courtyard, exterior cut down near the base, 5 further examples.		
86	464	surface fill	7	6.8; 24.0	4-2	4 further examples.	88.15	10205
87	204	2	5	6.4; 32.0		Rm 20 fill, 3 further examples.		
88	10	2	4	7.5; 36.0	4-2	Rm 2, 9 further examples.		
89	207	2	3	9.6; 35.0		Rm 12 floor fill.		
90	AL 21	10	6	10.2; 32.8		OB pit.		

Artefact Drawings

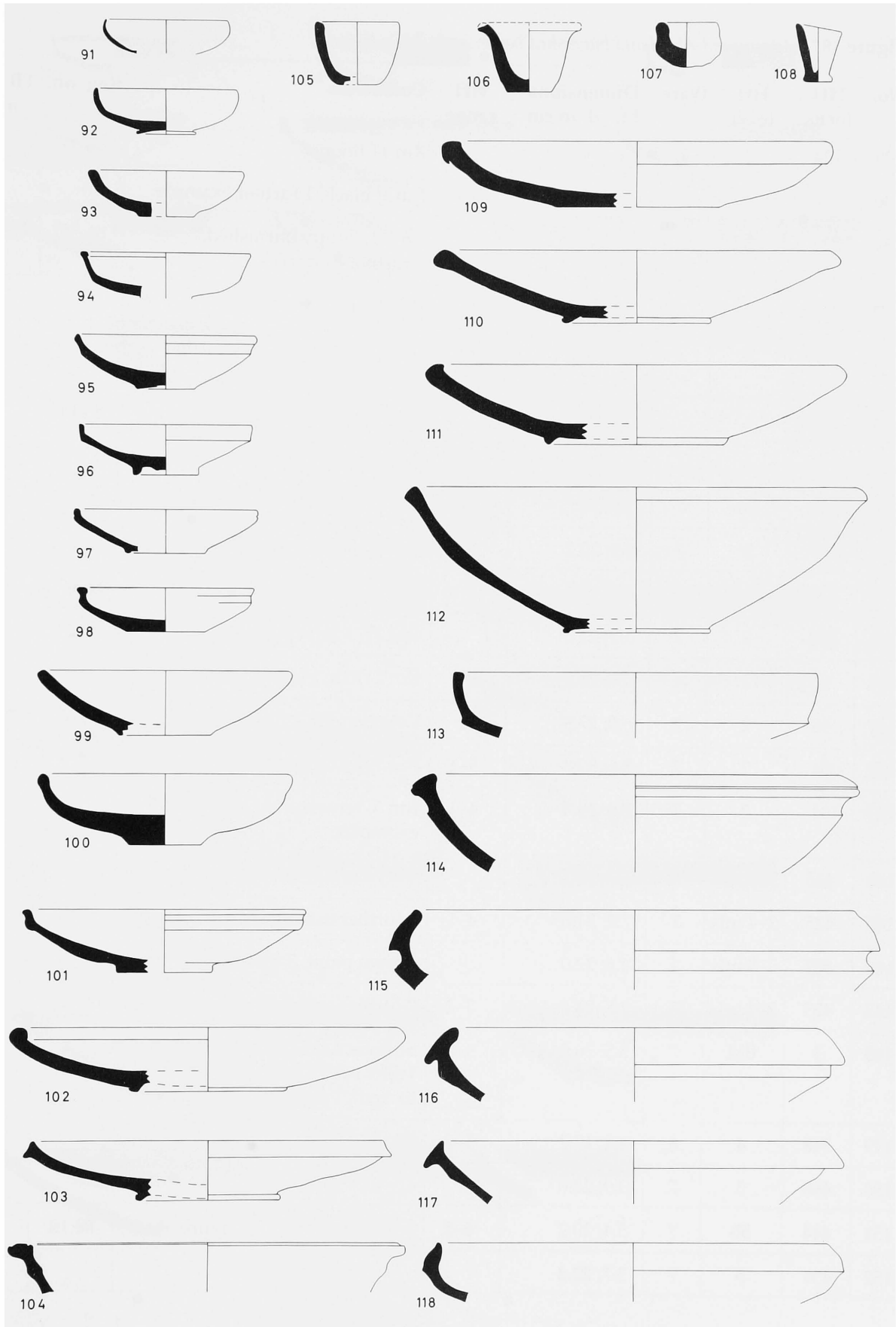


Artefact Drawings

Figure 186. Mitanni and late Old Babylonian bowls, pre-Level 2, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
91	291	5	1	2.4; 8.6	8-4	2 further examples.		
92	489	5b		3.2; 10.0		Salmon paste, pink surface, chaff & grit. 5 further examples.		
93	515	8b	4	3.3; 11.0		Handmade.		
94	461	4	2	3.2; 12.0				
95	44	2		3.9; 12.5		Rm 5 floor, 2 further examples.		
96	372	6	5	3.6; 12.2				
97	294/295	3-4 mix	2	3.1; 13.0				
98	430	3-5 mix	7	3.2; 12.5	5-2	2 further examples.	88.2	10192
99	348	4	7	4.6; 17.5	4-2	7 further examples.		
100	373	5-6 mix	5	5.0; 17.3				
101	482	5b	7	4.5; 20.0	5a-1	6 further examples.		
102	357	5	7	4.6; 27.0	5-3	5 further examples.		
103	440/444	5b	3	4.5; 24.3	5a-2	4 further examples.		
104	529	7	6	3.5; 27.0				
105	335	8	2	4.5; 6.0		Handmade, micaceous inclusions.		
106	357	5	2	4.9; 6.8				
107	228	2		3.2; 4.1		From doorsocket in Rm 11. Handmade, complete, buff fabric.	2372	8112
108	507	7	6	4.2; 3.3		Complete, oval rim varies 2.1-3.3 cm. Traces black paint on interior. ?Gaming piece shaker. No chaff.	88.63	10159
109	294	4		4.7; 27.0		Orange fabric, chaff temper.		
110	478	5	7	5.2; 27.5	5-2	9 further examples.		
111	315	4	7	5.7; 28.6				
112	457	3-5 mix	3	10.3; 31.6	4-2	6 further examples.		
113	452	2-5 mix		4.7; 26.0		Orange-buff fabric, chaff & fine grit temper.		
114	448	7	3	7.0; 29.0	10-7	Tr. D white plaster floor, 1 further example.		
115	476	6	3	5.7; 31.4	6-4	4 further examples.		
116	185	2	3	5.3; 26.0		Rm 20 fill.		
117	529	7	6	4.5; 27.5				
118	476	6	3	4.2; 27.7				

Artefact Drawings

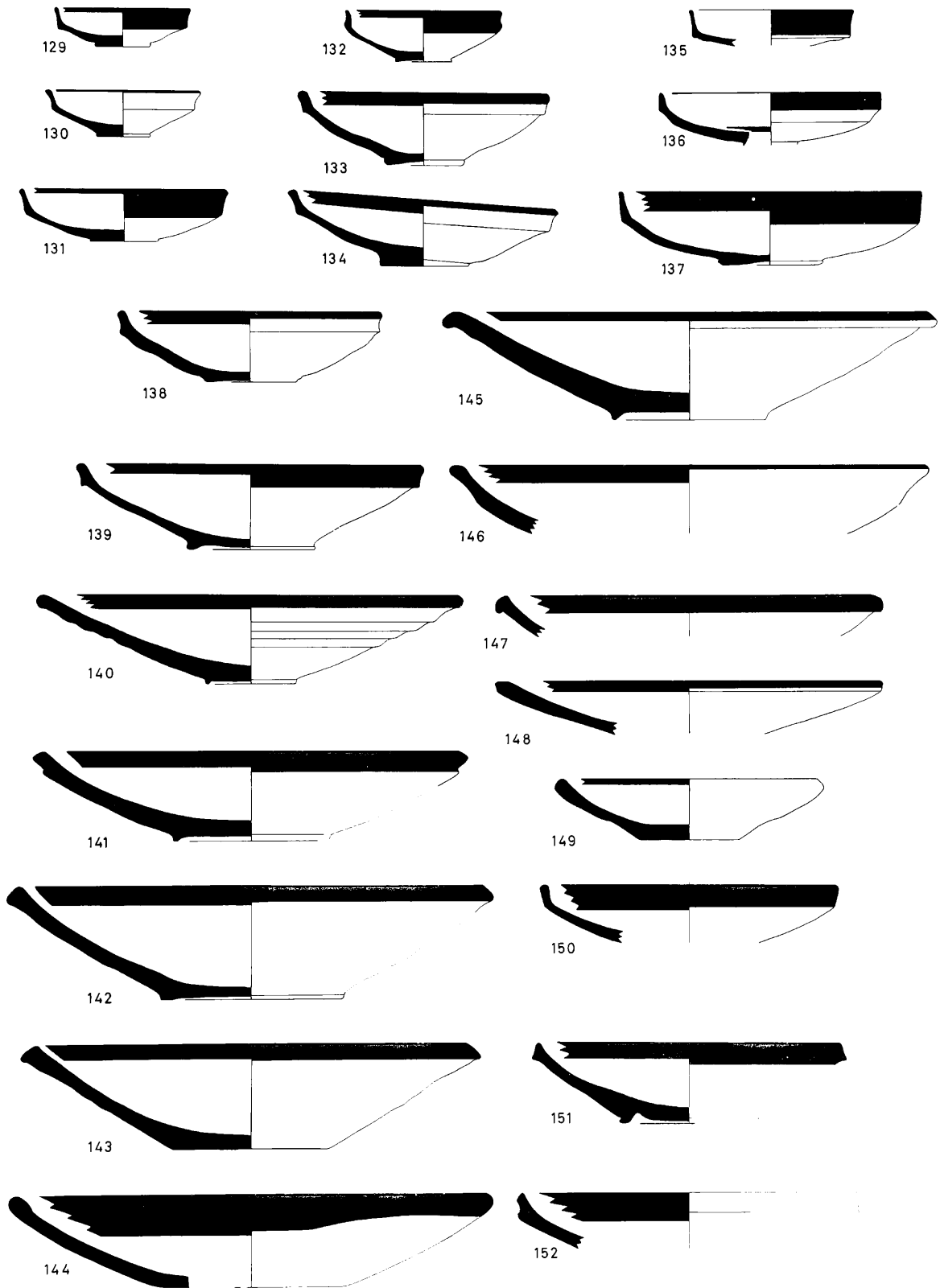


Artefact Drawings

Figure 187. *Mitanni red-edged and burnished bowls, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht.; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
129	224	2	7	2.6; 9.0		Rm 11 floor.	86.59	8252
130	80	1	7	3.1; 10.2	2-1	Burnt black, 1 further example.		
131	224	2	7	3.5; 13.7	2-4	Rm 11, lightly burnished, 2 further examples.	86.58	8255
132	207	2	7	3.4; 10.4		Rm 12 floor fill.		
133	213	2	7	4.8; 16.7	5a-2	Rm 15 floor deposit, 6 further examples.		
134	65	2	7	5.0; 18.0		Rm 7 lower fill.	85.14	
135	348	4	7	2.5; 11.0	4-2	1 further example.		
136	445	5b	7	3.5; 14.7				
137	207	2	7	4.9; 20.2		Rm 12, interior burnished.		
138	224	2	7	4.7; 17.5	2-1	Rm 11, 3 further examples.	86.67	
139	224	2	7	5.7; 23.0		Rm 11, 1 further example.	87.23	
140	10	2	4	5.9; 27.7		Rm 2 floor, brown paint.		
141	48	2	7	6.0; 27.5		Courtyard 8, 1 further example.	85.62	7238
142	91	2	7	7.6; 30.8	5-1	Rm 7, 28 further examples.		
143	41	2	7	7.0; 28.4	4-1	Rm 5, brown paint, 22 further examples.		
144	425	3-4 mix	7	6.1; 31.2		Very burnt.		
145	425	3-4 mix	7	7.2; 31.6	4-1	6 further examples.		
146	452	2-5 mix	4	4.6; 32.0		Brown paint, 3 further examples.		
147	425	3-4 mix	7	2.8; 24.6	3-2	2 further examples.		
148	3	EM	7	3.5; 26.0		Surface, Munsell 10 R 4/6 'red'; fabric 2.5 YR 6/6 to 5/6 'light red' to 'red'. 1 further example.		
149	348	4	6	4.1; 17.2	5-2	Brown paint, 12 further examples.		
150	468	5	7	3.9; 20.0				
151	444	5b	7	5.4; 20.2	6-2	5 further examples. Figure 51.	88.10	
152	451	5	7	3.7; 22.3				

Artefact Drawings

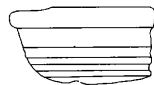
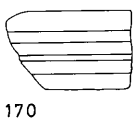
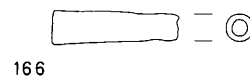
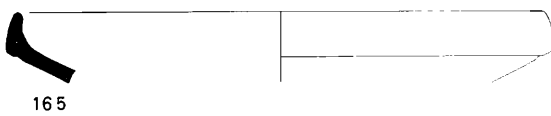
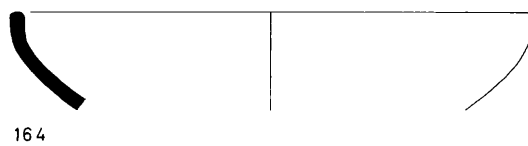
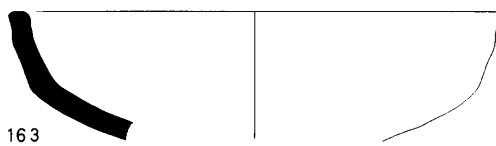
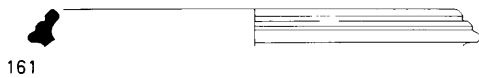
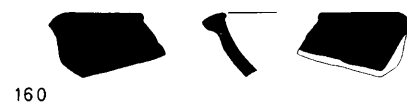
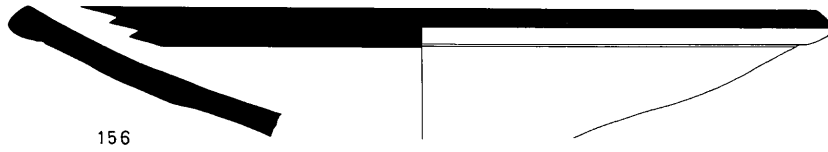


Artefact Drawings

Figure 188. Miscellaneous Mitami red-edged bowls (153–6), burnished bowls (157–60) and burnished grey ware sherds (170–75), scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
153	452	2–5 mix		2.0; 9.4		Orange fabric, white grit.		
154	91	2	6	4.0; 10.9		North end of Rm 7, possibly MA.	85.17	
155	348	4	2	3.0; 10.5		Brown paint.		
156	572	2	7	6.9; 42.0	2	Rm 6, brown paint, 1 further example.		
157	452	5–2 mix	7	4.4; 23.0	5–1	Highly burnished red paint, Munsell 10 R 4/6 'red' to 3/6 'dark red'. 8 further examples.	88.14	10206
158	468	4–5 mix	7	3.4; 32.0	4–2	Burnished red paint, Munsell 10 R 3/6 'dark red'. 2 further examples, cf. Figure 36.		
159	468	4–5 mix	7	5.6; 25.0		Burnished brown paint.		
160	509	7	7	3.5; 28.0	7–2	Highly burnished red paint, Munsell 10 R 4/6 'red' to 3/6 'dark red'. 2 further examples.		
161	291	5	9a	2.0; 21.4		Grey-burnished.		
162	445	5b	9a	3.2; 18.0		Dark grey-burnished.		
163	430	3	9a	6.9; 26.0		Brown surface, exterior burnished.		
164	13	EM	9a	5.3; 28.0		Grey with slight horizontal burnishing.		
165	500	8	9a	3.8; 28.0		Grey-burnished.		
166	468	4–5 mix	9a	l. = 6.8; d. = 1.8		Spout, burnished surface varies grey to brown.		
167	441	5b	10	4.5; 38.0		Brown interior & rim burnished, chaff inclusions.		
168	452	2–5 mix	7	3.2; 30.0		Brown-burnished paint.		
169	468	4–5 mix	7	3.7; 24.0		Interior & upper half of exterior burnished. Munsell 5 YR 6/6 'reddish yellow' on fabric 10 R 8/3 'very pale brown'.		
170	AL 1	OB	9a	4.2; 25.0		Very dark grey, heavily burnished, brown overtones.		
171	AL 32	10	9a	4.2; 19.0		Very dark grey, heavily burnished.		
172	298	6	9	4.4; w. = 3.6		Grey, not burnished.		
173	280	4	9a	3.5; 30.0	4–3	Dark grey-burnished, 1 further example.		
174	452	2–5 mix	9a	3.4; 30.0	5–1	Black-burnished, 2 further examples.		
175	477	5	9a	3.5; 32.0		Black-burnished.		

Artefact Drawings

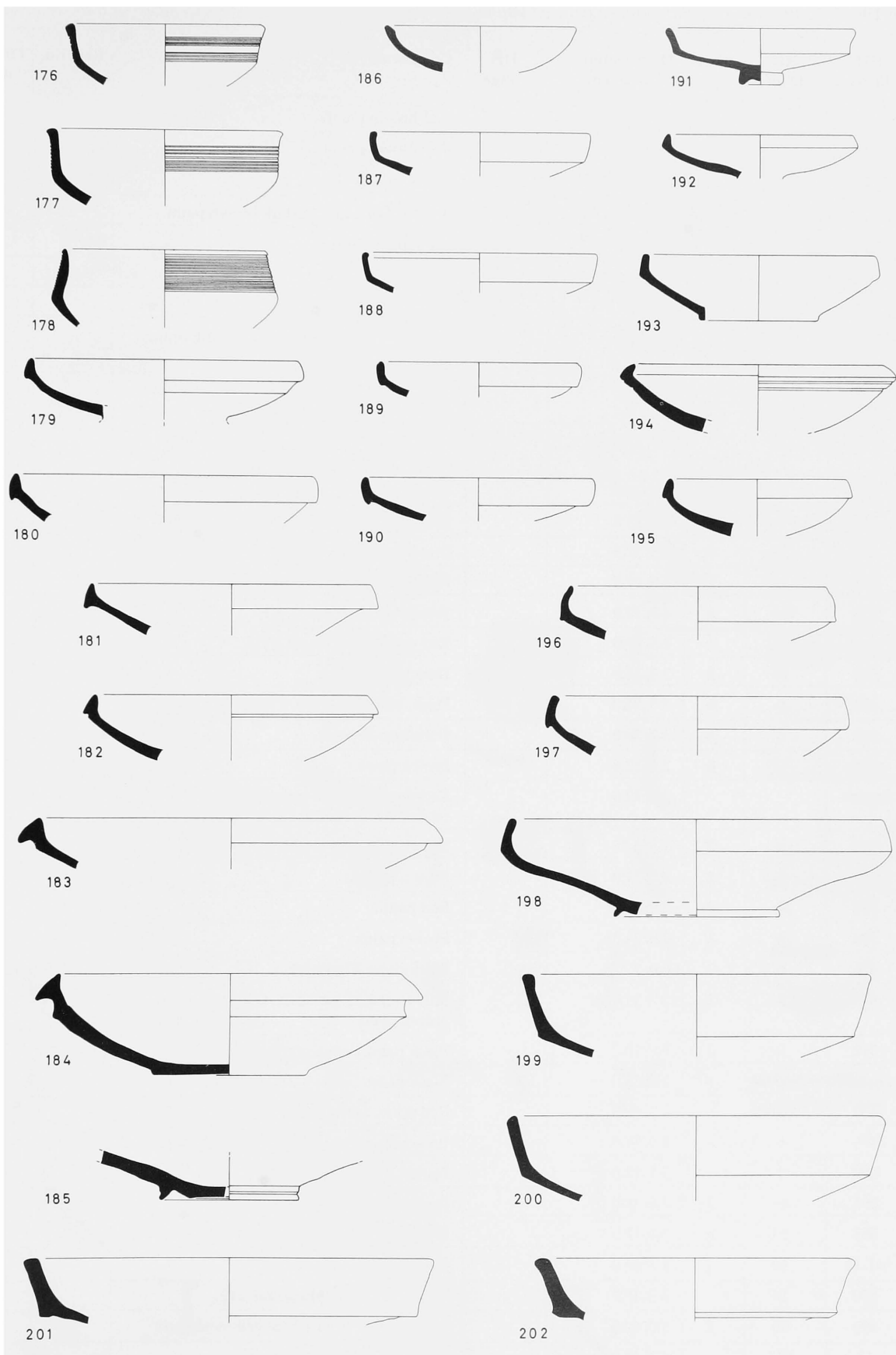


Artefact Drawings

Figure 189. *Mitanni and Old Babylonian grey- and black-burnished bowls, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht.: d. in cm	HH range	Comments	Reg. no.	TB cat. no.
176	476	6	9a	4.3; 13.0		White inlay in grooves.		
177	unstrat.		9a	5.2; 16.0		Unstratified.		
178	AL 21	10	9a	5.3; 14.0		Surface worn, but probably burnished.		
179	433	6	9a	4.1; 18.0				
180	258	4	9a	3.3; 20.0				
181	313	7	9a	3.5; 19.0				
182	529	7	9a	4.5; 18.5				
183	surface		9a	3.5; 26.0				
184	448	7	9a	7.0; 23.3		Tr. D on white plaster floor with beaker no. 556.	88.9	10214
185	468	4-5 mix	9a	3.4; base d. = 9.6		Black, Munsell 2.5 YR 2/0.		
186	568	10	9a	3.2; 13.1				
187	476	6	9a	3.0; 15.0		Black.		
188	468	4-5 mix	9a	2.8; 16.0		Surface worn but probably burnished.		
189	466/468	4-5 mix	9a	2.5; 14.0				
190	476	6	9a	3.0; 16.0				
191	468	4-5 mix	9a	3.9; 13.1		Black, Munsell 2.5 YR 3/0 'very dark grey' to 2.5 YR 2/0 'black'.		
192	446	6	9a	3.0; 12.8				
193	312	6	9a	4.5; 16.0		Black, Munsell 2.5 YR 3/0 'very dark grey'.		
194	347	9	9a	4.5; 17.3		Lowest deposit in Tr. A. Munsell 10 YR 6/1 to 7.5 YR 6/0 'grey'.		
195	258	4	9a	3.9; 12.2				
196	468	4-5 mix	9a	3.7; 17.7				
197	446	6	9a	4.2; 20.0		Surface worn.		
198	476	6	9a	6.7; 25.6		Cut down interior, Munsell 10 YR 5/1 'grey'; Burnished exterior, 2.5 Y 4/0 'dark grey'.		
199	471	5	9a	5.7; 24.0	5-3	1 further example.		
200	surface		9a	5.9; 25.0		Munsell 2.5 Y 5/2 'greyish brown'.		
201	368	5	9a	4.5; 28.0				
202	249		9a	4.2; 22.0		Roadway south of temple.		

Artefact Drawings

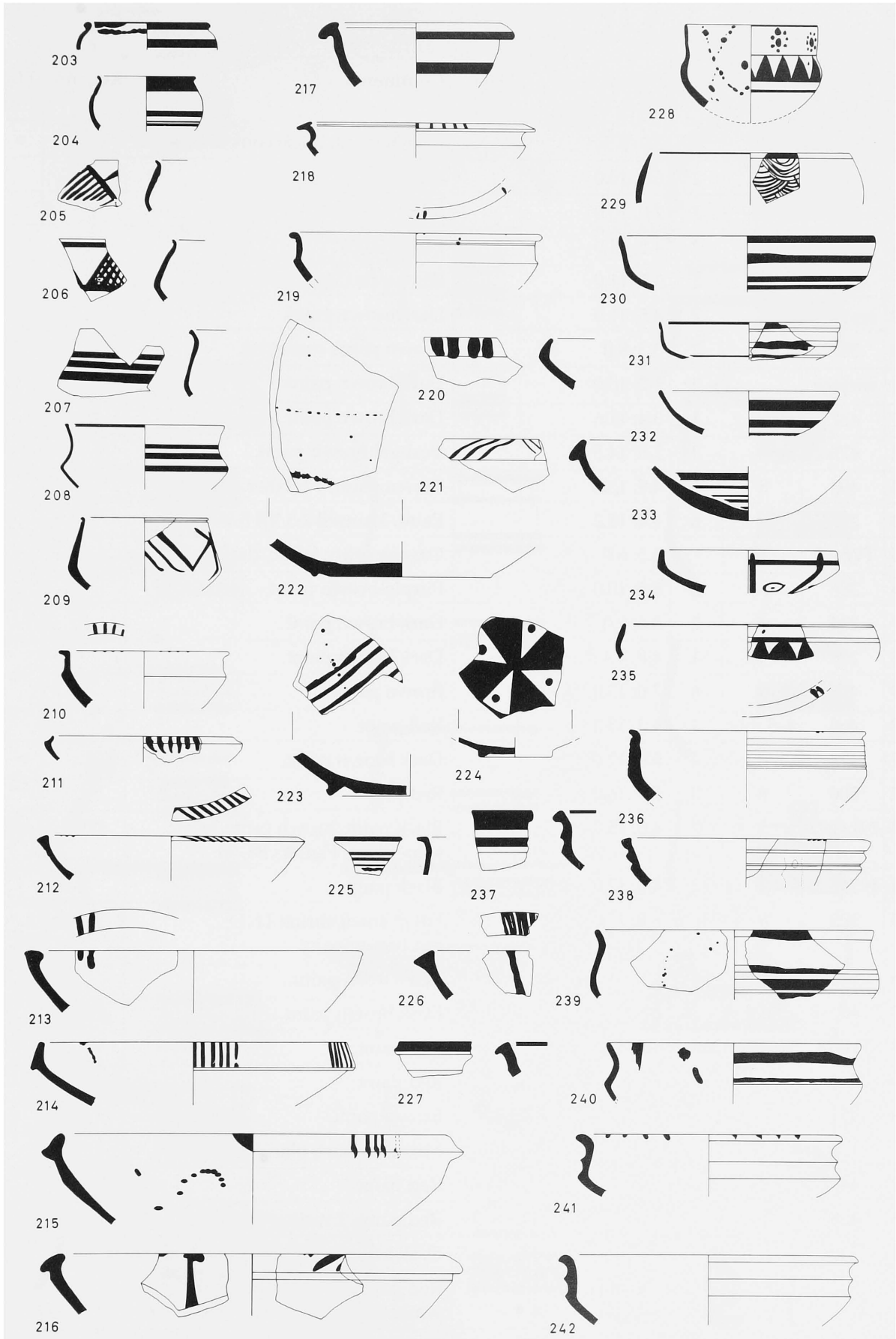


Artefact Drawings

Figure 190. *Mitanni and Old Babylonian painted bowls, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
203	251	3	1	2.0; 9.0		Red-brown paint.		
204	425	3-4 mix	1	4.0; 7.0		Red-brown paint...		
205	surface		2	3.6; w. = 4.6		Brown paint		
206	530	8	2	4.4; 12.0		Shrine floor in Tr. D, dark brown paint		
207	TW 3	OB	2	4.8; 12.0		Black paint, burnt		
208	TW 28	OB	1	4.6; 11.2		Brown paint, 1 further example.		
209	surface		6	5.2; 9.0		Brown paint.		
210	448	7		4.1; 12.0		White plaster floor Tr. D, red paint, orange gritty fabric .		
211	surface			1.8; 13.0		Orange-brown paint, pale surface, orange paste, fine white grit.		
212	526	8	2	3.3; 17.8		Doorway to vaulted shrine Tr. D, dark brown paint.		
213	527	7	7	4.4; 24.0		Brown paint.		
214	525	8	4	4.5; 21.8		Fill of vaulted shrine Tr. D, dark brown paint.		
215	381	6	3	6.5; 27.3		Brown paint.		
216	298	6	5	4.3; 27.5		Paint, Munsell 2.5 YR 4/6 'red'.		
217	503	8a	3	4.7; 12.0		Brown paint, mica.		
218	unstrat.			2.5; 15.0		Red paint, fabric as no. 211.		
219	585	10	2	3.5; 18.0		Dark brown paint.		
220	476	6	6	3.5; 34.0		Paint, Munsell 5 YR 3/2 'dark reddish brown'.		
221	312	8	5	3.7; 26.0		Dark brown paint.		
222	592	10	6	2.6; 12.8		Brown paint.		
223	unstrat.			3.1; 12.0		Red paint, interior surface orange, exterior & paste buff, chaff, mica & white grit.		
224	494	6	2	1.5; 5.3		Brown paint. Figure 54.		
225	433	6	2	2.7; 11.0		Brown paint.		
226	514	8b	4	3.6; 32-5		Red paint.		
227	476	6	3	2.5; 24.0		Brown paint.		
228	476	6	2	6.0; 9.5		Black paint. Figure 89.		10181
229	525	8	2	3.7; 14.0		Fill of vaulted shrine Tr. D, dark & light brown paint.		
230	312	6	2	3.9; 18.2		Black paint, bitumen repair.		
231	unstrat.		1	2.7; 13.0		Black paint.		
232	452	2-5 mix		3.2; 13.0		Red paint, fabric as no. 210.		
233	476	6	3	4.0; 14.0		Brown paint.		
234	269	4		3.1; 12.6		Brown paint, fabric as no. 211.		
235	291	5	2	2.6; 18.0		Dark brown paint.		
236	585	10	6	5.1; 17.0		Brown paint.		
237	AL 15	10		4.3; 25.0		Red paint, fabric as no. 210.		
238	570	10		3.5; 18.0		Vestigial paint, fabric as no. 210.		
239	440	5b	2	5.0; 20.0		Paint, Munsell 5 YR 5/6 'yellowish red'.		
240	13	EM		4.2; 18.0		Brown paint.		
241	403	8	7	4.5; 19.0		Orange-brown paint.		
242	AL 34	OB	2	5.0; 20.6		3 splodges red-brown paint on rim.		

Artefact Drawings

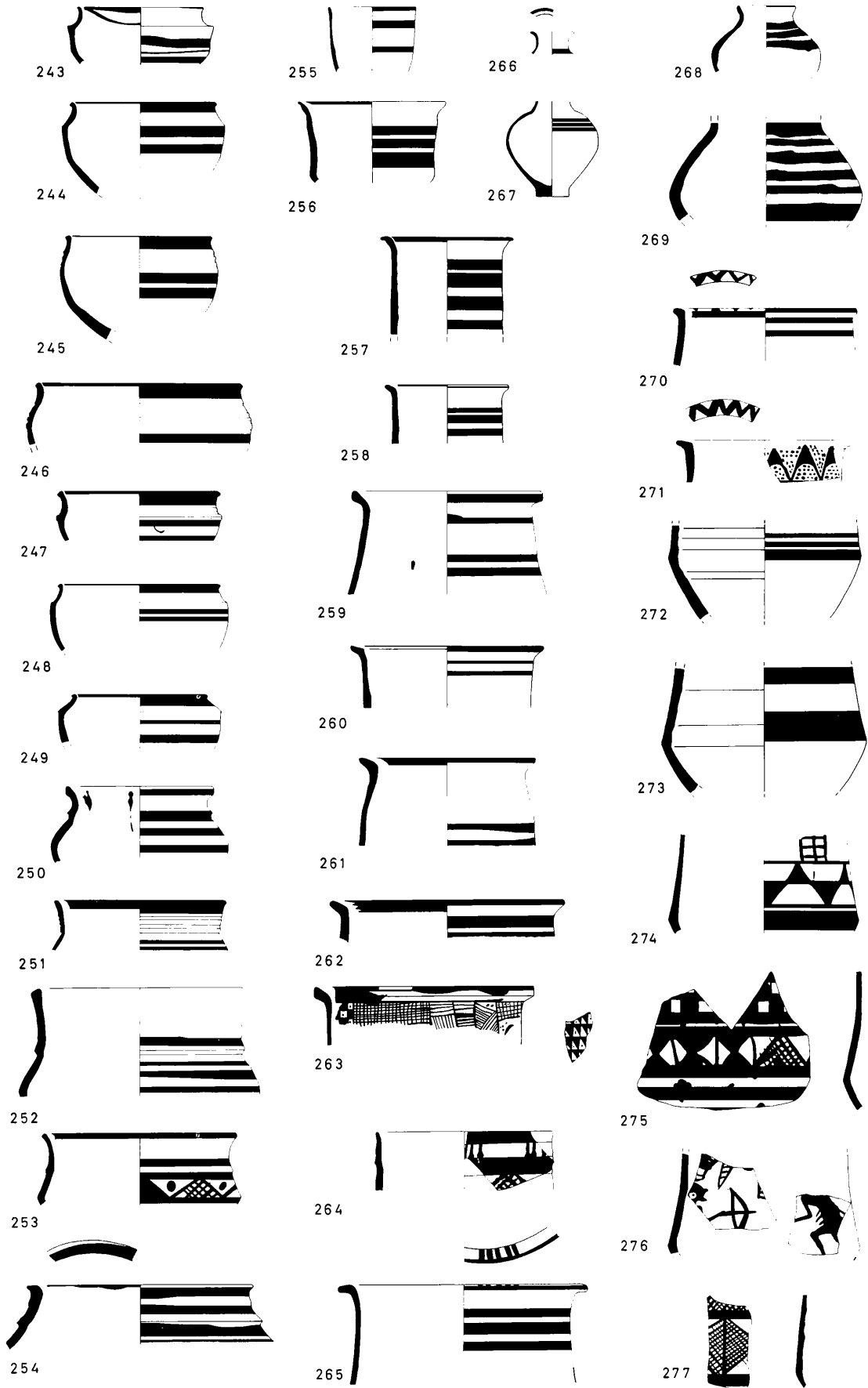


Artefact Drawings

Figure 191. *Mitanni and Old Babylonian painted jars and 'grain measures', scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
243	surface		2	3.9; 8.5		Brown paint, micaceous inclusions.		
244	surface		2	6.3; 10.0		Red paint.		
245	584	10	2	7.0; 10.0		Brown paint.		
246	568	10	2	4.2; 14.0		Black paint.		
247	568	10	2	3.5; 11.0		Black paint, interior burnt.		
248	surface		2	4.5; 11.0		Dark brown paint.		
249	585	10	2	3.3; 9.0		Brown paint, overfired.		
250	surface		2	5.2; 10.0		Dark brown paint.		
251	437	8	1	3.4; 11.6		Dark brown paint.		
252	476	6	3	7.3; 14.5		Vestigial brown paint.		
253	493	8	3	4.9; 13.0		Brown paint, 1 further example.		
254	273	6	6	4.4; 15.2		Paint, Munsell 2.5 YR 5/6 'red'.		
255	TW 23	OB		4.5; 6.0		Orange gritty fabric, dark red paint.		
256	386	8	2	5.5; 10.0		Purple-brown paint.		
257	294	4	2	6.6; 9.0		Dark brown paint.		
258	258	4	1	4.0; 8.4		Dark brown paint.		
259	493	8	6	7.0; 13.0		Brown paint.		
260	468	4-5 mix	1	4.3; 13.2		Red paint.		
261	476	6	4	6.0; 12.0		Dark brown paint.		
262	500	8	3	2.9; 16.0		Red paint.		
263	291/292	5		4.0; 15.0		Black paint, brown gritty fabric, some chaff. Figures 88, 90.	87.26	9228
264	493/500	8	2	4.0; 12.0		Black paint.		
265	525	8	6	6.8; 17.0		Fill in small shrine Tr. D, red-brown paint.		
266	473	6	1	1.5; 3.0		Red-brown paint.		
267	402	6	2	6.6; base d. = 2.2		Dark brown paint.	87.33	
268	TW 18	OB	5	4.5; 4.0		Red paint.		
269	518		3	6.6; max. d. = 13		Red paint.		
270	491	5b	1	3.8; 12.5		Brown paint.		
271	176	1	1	2.8; 12.0		Mixed context, black paint.		
272	440	5b	3	6.4; max. d. = 13		Red paint.		
273	468	5	4	8.5; max. d. = 14	6-5	Red paint, 2 further examples.		
274	342	3	2	6.8; max. d. = 13		Dark brown paint. Figure 87.		
275	503	8a		9.4; max. d. = 15		Red paint, orange fabric with white grit & chaff. Figure 87.		
276	surface		3	6.8; max. d. = 13		Black paint. Figure 86.		
277	312	8	1	6.3; max. d. = 11		Dark brown paint.		

Artefact Drawings



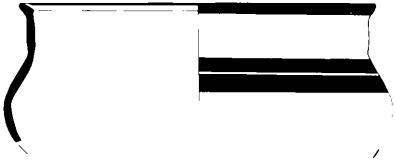
Artefact Drawings

Figure 192. *Mitanni and Old Babylonian large 'grain measures' and painted jars, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
278	476	6	3	7.5; 19.0		Dark brown/black paint, 1 further example. Figure 89.		
279	468	5	6	10.8; 24.4		Red-brown paint.		
280	294	4	4	10.5; 19.0		Brown paint.		
281	unstrat.		6	15.5; 27.0		Black paint.		
282	surface			24.4; base d. = 12.0		D. of base perforation = 2.0; incised cross on base; gritty salmon fabric, grey core.		
283	3	EM	5	4.8; 18.0		Dark brown paint.		
284	525	8	3	6.8; 17.0		Fill within small shrine, brown paint.		
285	493	8	3	7.9; 19.0		Brown paint.		
286	unstrat.		4	5.2; 20.0		Dark brown paint.		
287	435	6	3	4.2; 34.0		Paint varies black to brown.		
288	433	6	4	10.8; 32.0		Orange-brown paint.		
289	AL 34	OB	4	9.1; 29.5		Paint varies red to black.		
290	AL 21	10	6	14.0; 32.5		Red-brown paint.		

Artefact Drawings

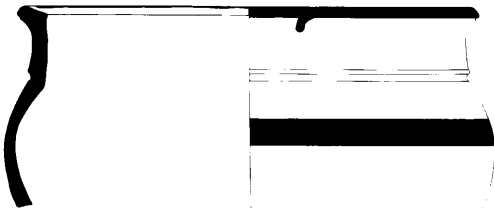
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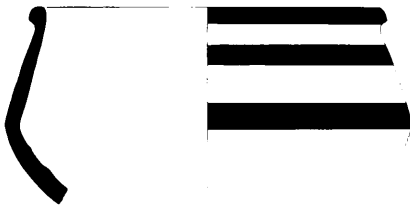
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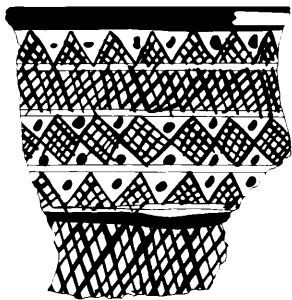
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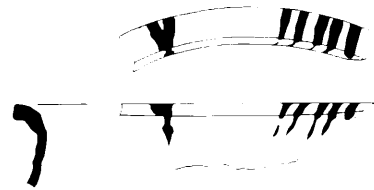
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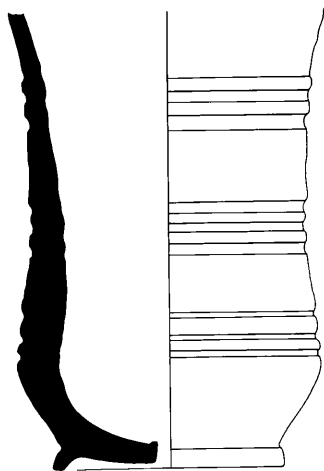
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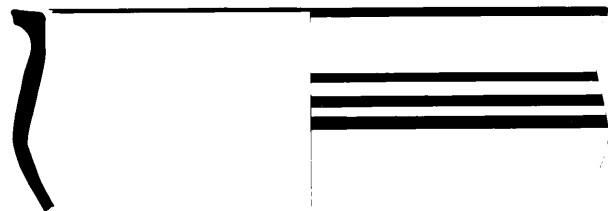
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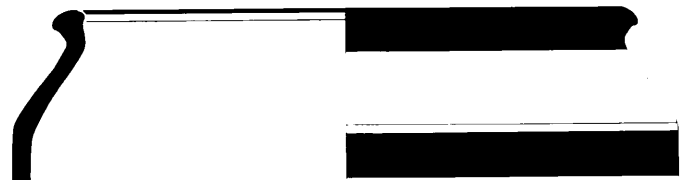
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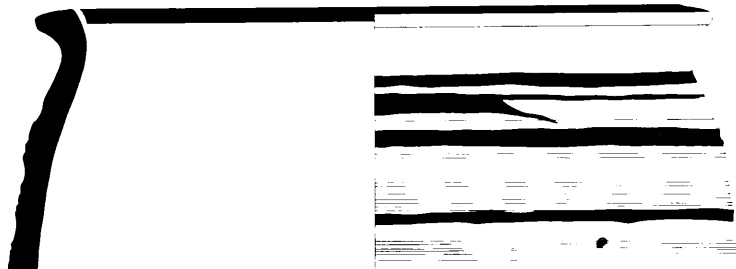
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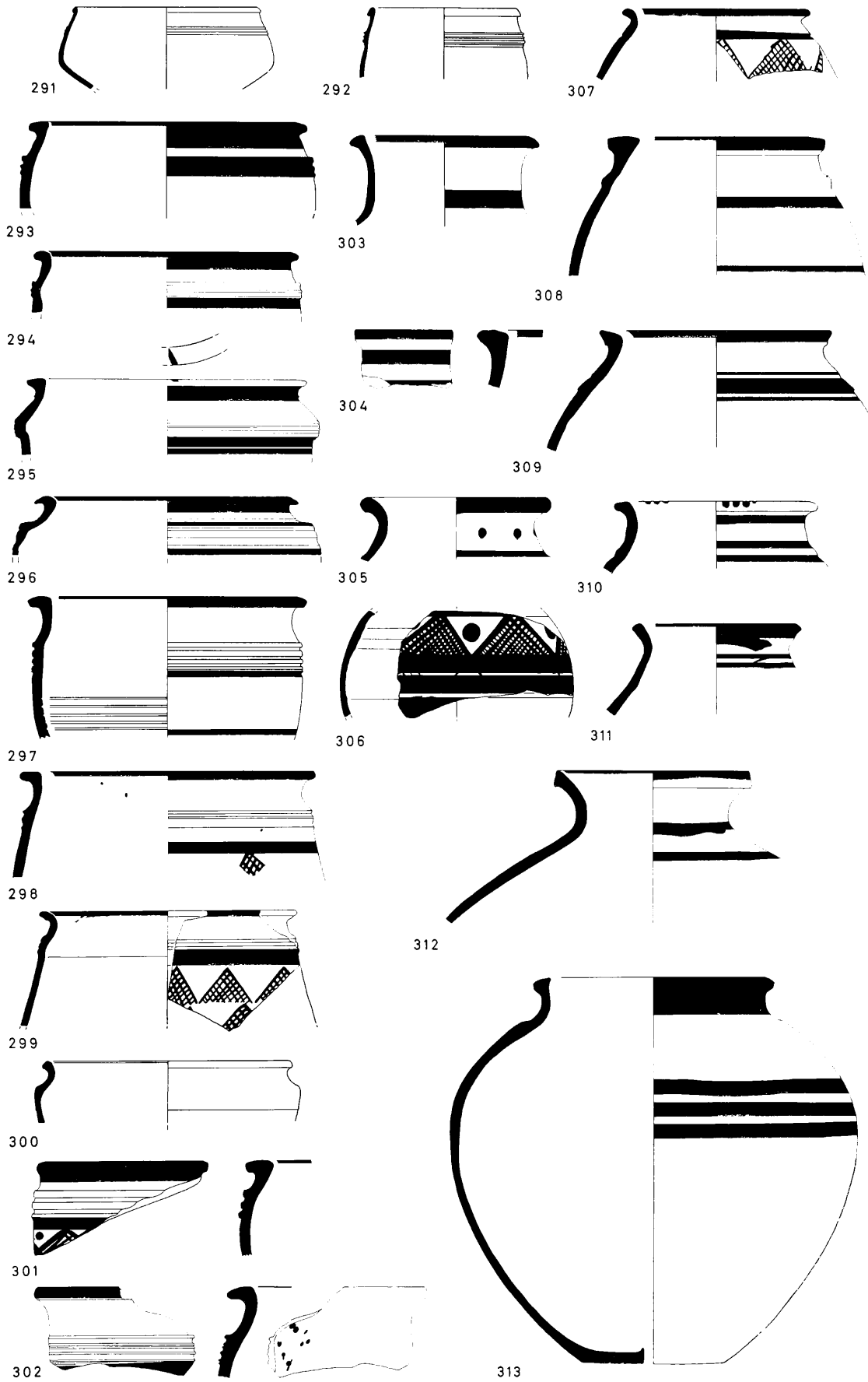


Artefact Drawings

Figure 193. Old Babylonian ribbed bowls and painted jars, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
291	AL 21	10	2	5.7; 12.4		7 further examples from AL 21, AL 15 and HH 408.		
292	AL 21	10	2	4.8; 10.5				
293	AL 21	10	2	6.0; 17.4		Dark-brown paint.		
294	SS 267	OB	2	4.2; 16.8		SS topsoil, red-brown paint.		
295	567/568	10	2	5.2; 19.0		Paint, Munsell 2.5 YR 5/6 'red'.		
296	surface		2	4.0; 16.5		Dark brown paint.		
297	AL 2		2	9.8; 17.5		Red-brown paint.		
298	surface		2	7.2; 20.0		Paint, Munsell 5 YR 3/2 'dark reddish brown', 1 further example.		
299	AL 21	10	2	7.8; 17.5		Paint, Munsell 2.5 YR 4/0 'dark grey'.		
300	570	10		4.1; 16.5		Brown surface, orange gritty paste.		
301	AL 21	10	2	6.5; 19.0		Paint varies orange-brown to black.		
302	AL 21	10	4	6.2; 30.0		Red-brown paint.		
303	528	8	4	6.4; 11.5		Red-brown paint.		
304	403	8	3	4.0; 44.0		Red-brown paint.		
305	391	7	3	4.5; 12.4		Red-brown to dark-brown paint.		
306	312	6	2	7.2; max. d. = 16.0	8-7	Paint, Munsell 5 YR 3/2 'dark reddish brown', 1 further example. Figure 90.		
307	AL 21	10	2	5.0; 12.5		Brown paint.		
308	568	10	3	9.5; 15.0		Shrine vault collapse, dark-brown paint.		
309	468	5	6	8.4; 16.0		Red paint, 2 further examples.		
310	515	8b	4	5.0; 12.5		Brown paint.		
311	280	4		6.3; 11.0		Red paint, pale surface, orange gritty paste.		
312	410	8	4	10.5; 13.3		Fill of small shrine, red-brown paint.		
313	585	10		26.4; 15.0		Brown paint, overfired green & warped, d. of base perforation = 1.2.	90.41	11107

Artefact Drawings



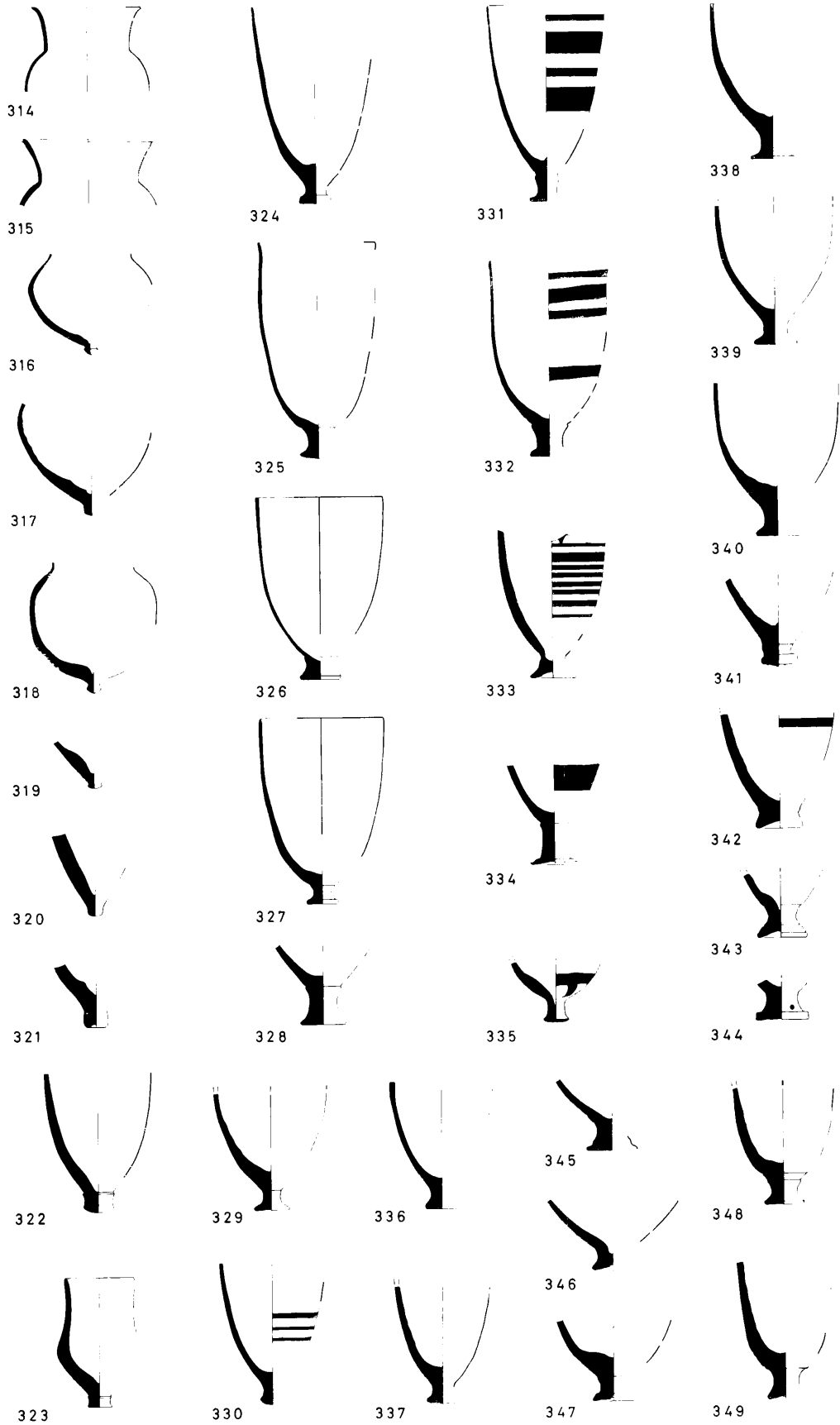
Artefact Drawings

Figure 194. *Middle Assyrian and Mitanni footed beakers, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
314	148	1	3	5.5; 7.0	2-1	9 further examples.		
315	151	1	2	4.4; 8.5		Micaceous inclusions.		
316	251		3	6.5; 0.9*		Surface clearance, 5 further examples.		
317	152	1	2	7.3; 1.0*		4 further examples.		
318	318	1	2	8.5; 1.0*		Floor of MA house, 9 further examples.		
319	150	1	2	3.2; 0.9*				
320	318	1	3	5.5; 1.0*		Floor of MA house, 6 further examples.		
321	surface		3	4.2; 1.6*		1 further example.		
322	204	2	3	9.0; 1.9*		Rm 20 fill below level of dais.		
323	106	2	3	8.3; 4.5		Rm 9 fill.	85.79	
324	207	2	2	12.7; 8.0		Rm 12 floor fill, burnt.	86.49	
325	85	2	2	13.9; 7.6	4-2	Rm 1, 2 further examples.	85.11	
326	65	2	2	11.8; 8.2		Rm 7 fill, 3 further examples.	85.73	
327	74/77	2	2	12.0; 8.0		Rm 7 fill, 2 further examples.	85.92	8271
328	198	2	2	5.3; 3.0*		Rm 22 fill, micaceous inclusions.		
329	8	2	2	7.5; 2.3*		Rm 3 (bathroom) upper fill.		
330	41/44	2	2	9.1; 1.6*		Rm 5 floor, red paint.	85.12	
331	278/425	2-4 mix		12.6; 7.5		Paint, Munsell 10 R 4/6 'red' to 3/6 'dark red', pale surface, gritty salmon paste.		
332	444	5b	3	12.7; 7.8		On floor with nos. 563 & 88.4 (identical with no. 55), dark brown paint, rim warped, overfired greenish. Figures 51, 53.	88.6	10177
333	269	4	2	9.5; 3.0*		Black paint.		
334	463	4	2	6.5; 3.2*		Brown paint.		
335	278	2-4 mix	2	3.9; 1.7*		Dark brown paint.		
336	14	2	2	8.2; 2.2*	4-2	Rm 3 floor, 1 further example.		
337	14	2	2	7.5; 2.1*	4-2	Rm 3 (bathroom).		
338	444	5b	2	10.0; 2.9*		Some chaff on surface.		
339	444	5b	2	9.0; 2.8*	5a-4	1 further example.		
340	444	5b	6	10.0; 2.9*		1 further example.		
341	463	4	3	5.7; 2.4*				
342	471	5	3	7.4; 3.1*		Brown paint.		
343	477	5		4.2; 3.2*		Fabric as no. 338.		
344	434	6		2.6; 3.4*	6-1	Red paint, orange dense fabric, with fine grit, 2 further examples.		
345	425	3-4 mix		4.8; 3.3*		Pale surface, orange gritty fabric.		
346	3	EM	2	4.6; 2.8*				
347	471	5	2	5.3; 2.8*				
348	428	EM		7.5; 2.6*		Salmon gritty fabric.		
349	452	2-5 mix	2	8.9; 2.4*				

*These are base diameters.

Artefact Drawings



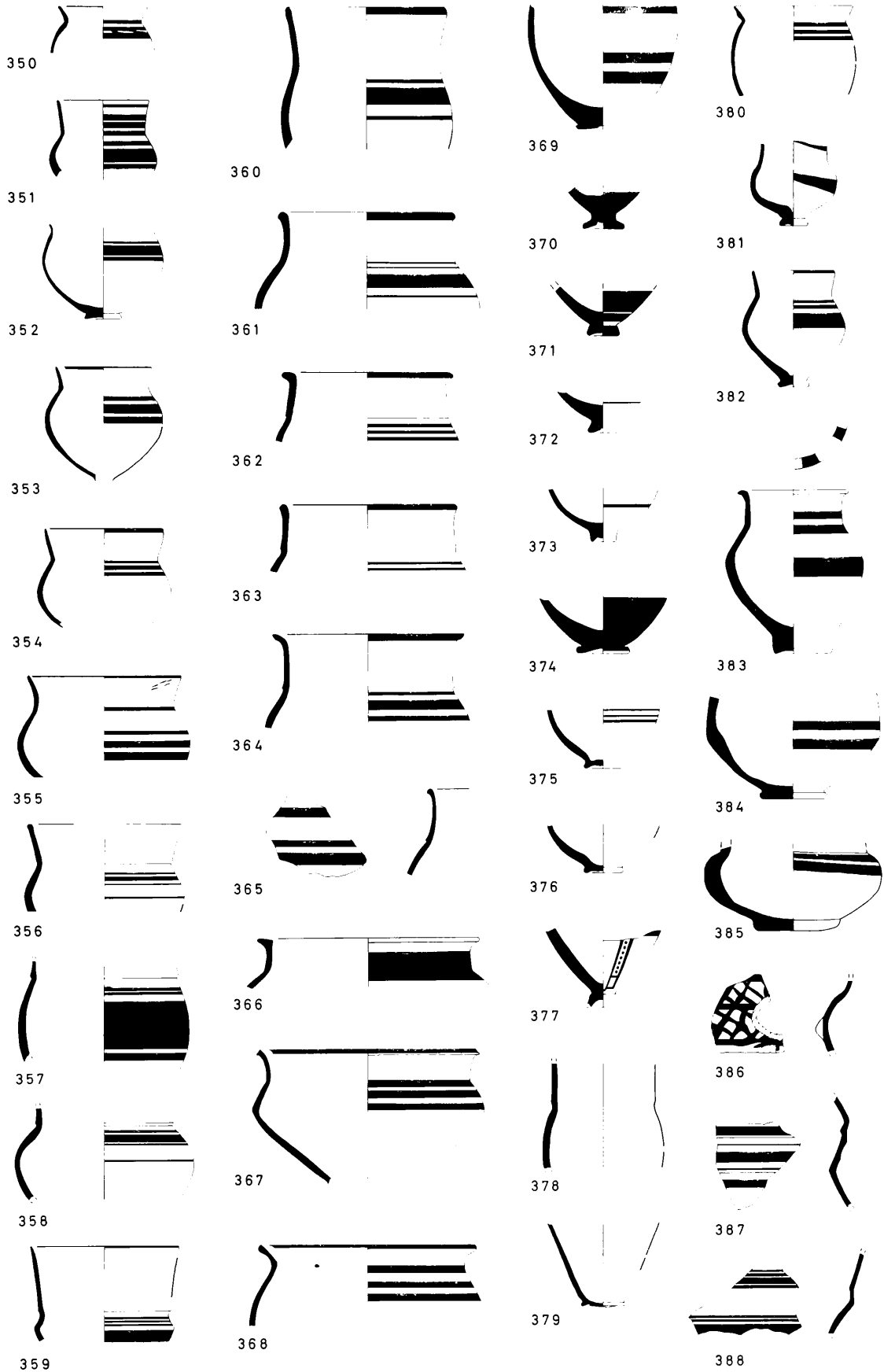
Artefact Drawings

Figure 195. *Mitanni and late Old Babylonian painted shouldered beakers and small jars, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht: d. in cm	HH range	Comments	Reg. no.	TB cat. no.
350	404	9	1	3.2; 6.0	9-7	Brown paint, 2 further examples.		
351	432	4	3	5.3; 6.2	6-3	Floor, orange-brown paint.		
352	280/291	5	2	6.4; 2.5*	8-3	?Overfired, green-brown paint, 4 further examples.		
353	311	5	2	7.8; 6.4	6-5	Orange-red paint, salmon fabric, 2 further examples.		
354	490	7	3	6.8; 8.0		Red-brown paint.		
355	386	8	2	6.8; 10.3		Dark brown/black paint, mica, 1 further example.		
356	521	8	7	5.9; 10.4		Red paint.		
357	425	3-4 mix		6.6; 11.5		Red paint, orange gritty fabric, 2 further examples.		
358	438/448	7	2	6.2; max. d.= 12.0		On white plaster floor Tr. D, red-brown paint, bitumen lined, fabric as no. 357.		
359	M. West		2	6.4; 10.0		Mallowan west, black paint.		
360	425	3-4 mix	3	9.6; 10.9	5-3	Red-brown paint, 4 further examples.		
361	468	4-5 mix	4	6.6; 12.0		Dark brown paint.		
362	430	3-5 mix	2	4.8; 11.6		Dark brown paint, burnt, 2 further examples.		
363	468	4-5 mix	2	4.7; 12.0		Red-brown paint.		
364	unstrat.		2	6.4; 13.0		Dark brown paint.		
365	463	4		6.0; w. = 6.8		Red paint, pale surface, orange gritty paste.		
366	468	4-5 mix		3.4; 15.0		Brown paint.		
367	493	8	2	9.1; 14.5		Brown paint, fabric as no. 365, 2 further examples..		
368	503	8a	3	5.5; 14.7		Brown paint.		
369	463	4	2	8.3; 3.6*		Red-brown paint, fabric as no. 353.		
370	280	4	2	2.9; 2.9*		Red paint which extends to the underside of base.		
371	452	2-5 mix	2	3.3; 2.2*		Red paint, fabric as no. 357.		
372	200	2	2	3.0; 2.0*	3-2	Rm 13 floor, brown paint, 1 further example.		
373	468	4-5 mix	2	3.6; 1.8*	8-4	Dark-brown paint, brown fabric, 1 further example.		
374	470	4	2	3.8; 3.6*	5-4	Brown paint, 2 further examples.		
375	433	6	2	4.0; 2.7*		Brown paint.		
376	527	7	3	3.3; 2.7*				
377	440	5b	2	5.4; 2.2*		Brown paint, bitumen lined.		
378	467	4	2	7.0; max. d. = 8.2		6 further examples.		
379	473	6	2	5.7; 3.0*		Greyish fabric ?calcined.		
380	397	8	2	6.1; 8.0		Black paint.		
381	441	5b	2	5.5; 1.9*		Red-brown paint.		
382	432	4	3	7.9; 5.6	6-4	Red paint, 2 further examples.	88.3	10179
383	425	3-4 mix	2	11.1; 7.5	5-3	Brown paint, 1 further example.	88.1	10180
384	446	6	2	6.9; 4.6*		Red-brown paint.		
385	251		4	5.7; 5.9*		Dark brown paint.		
386	468	4-5 mix	2	5.3; w. = 5.0		Black paint, overfired fabric.		
387	294	4	3	7.5; max. d. = 17.0		Dark brown paint.		
388	468	4-5 mix	2	5.4; max. d. = 13.0		Brown paint.		

* These are base diameters.

Artefact Drawings

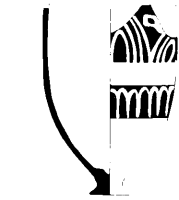


Artefact Drawings

Figure 196. *Nuzi ware beakers and jars, Level 2, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
389	10	2	2	10.0; base d. = 2.1		Rm 2 floor, white paint on red-brown. Figure 100.	85.9	7218
390	295	3	2	14.4; base d. = 2.8		Cream paint on orange.	87.21	9212
391	66	2	2	8.2; 8.8		Rm 7 floor, burnt, white paint on black.		
392	91	2	2	18.2; 10.6		Rm 7 fill, white paint on black.	85.19	
393	296	pre-Level 2	1	2.4; 9.0		Courtyard 8, box set in pavement, paint Munsell 5 Y 8/1 'white' and 7.5 YR 3/0 'very dark grey'. Figure 91.		
394	44	2	2	3.5; 10.0		Rm 5 floor, white paint on red-brown.		
395	185	2	2	4.5; 8.0		Rm 20 fill, white paint on red-brown. Figure 98.		
396	41	2	2	3.2; 8.0		Rm 5 fill, white paint on dark brown.		
397	21/44	2	2	4.3; max. d. = 14.0	2	Rm 5 fill & floor, white paint on black, 2 further examples.		
398	21/44	2	2	13.3; 8.5	4-2	Rm 5 fill & floor, white paint on orange-red, 5 further examples.	85.61	7219
399	207	2	2	10.8; 7.2		Rm 12 floor, white paint on black, heavily burnt.	86.54	8264
400	58	2	2	10.2; 6.6		Rm 8 floor, white paint on black, heavily burnt, much paint lost, design once covered vessel.		
401	44	2	2	5.8; 8.9		Rm 5 floor, white paint on black, but so worn that pattern not reconstructable.		
402	204	2	3	15.5; max. d. = 36.0		Rm 20 fill to west of dais, cream paint on red-brown. Figure 48.	86.65	8242

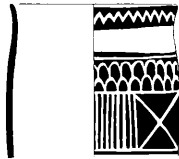
Artefact Drawings



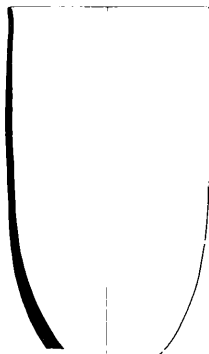
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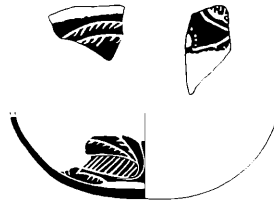
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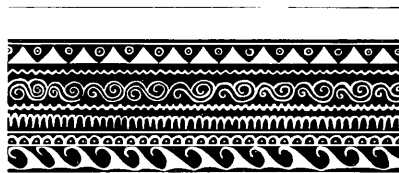
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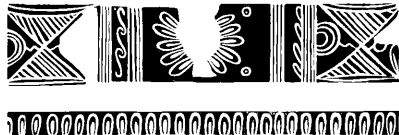
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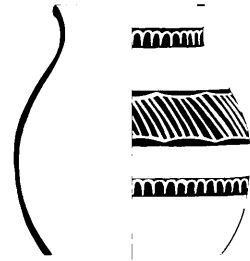
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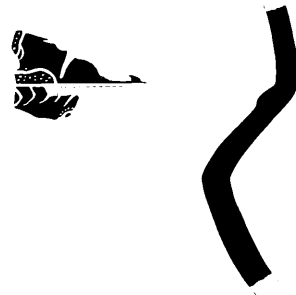
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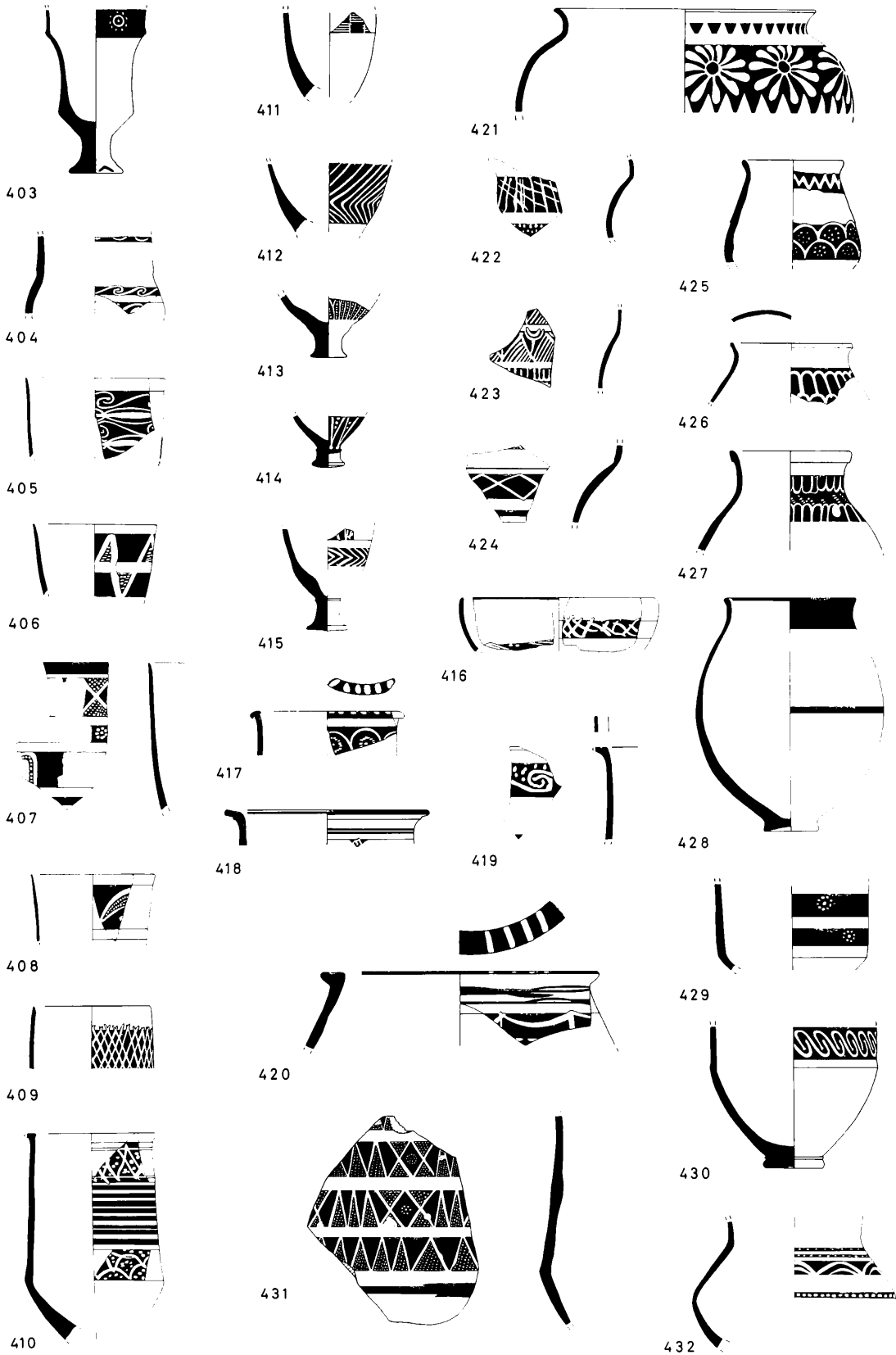
Artefact Drawings

Figure 197. *Pre-Level 2 Nuzi ware, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
403	425	3-4 mix	2	10.6; 3.5*		Rim lost, white paint on black. Vertical burnishing.	88.11	10178
404	452	2-5 mix	2	5.0; max. d. = 9.0		White paint on black.		
405	368/373	5	1	5.2; 9.0		White paint on red. Figure 99.		
406	468	4-5 mix	2	4.6; 8.0		White paint on orange-red. Figures 36 & 96.		
407	468	4-5 mix	2	9.5; 7.5		White paint on dark brown/ black, much of pattern lost. Figure 36.		
408	476/473	6	1	4.2; 8.0		White paint on black.		
409	433	6	1	4.0; 7.5		Cream paint on red. Figure 96.		
410	M.West		2	13.7; max. d. = 9.0		Mallowan west, white paint on dark brown/ black, rim incomplete. Figure 93.		
411	425	3-4 mix	3	5.5; max. d. = 6.0		White paint on dark brown/ black.		
412	294	4	2	4.4; max. d. = 8.0		White paint on red-brown.		
413	425	3-4 mix	1	4.1; 2.4*		White paint on black.		
414	348	4		3.4; 2.2*		White paint on red, pale surface, orange paste, fine black grit, mica.		
415	433	6	1	6.6; 2.8*		White paint on black, mica. Figure 54.		
416	348	4	1	3.5; 13.0		White paint on brown.		
417	348	4	2	2.6; 10.0		White paint on dark brown, mica. Figure 98.		
418	251		1	2.3; 13.2		White paint on black.		
419	466	4-5 mix	1	6.0; w. = 3.5		White paint on black. Figures 36 & 94.		
420	452	2-5 mix	4	4.7; 18.0		White paint on dark brown. Figure 93.		
421	348	4	2	6.7; 17.0		White paint on black.		
422	476	6		5.0; w. = 4.2		White paint on red, pale surface, orange gritty paste. Figures 89 & 98.		
423	348	4	1	5.0; w. = 4.1		White paint on red, pale orange fabric. Figure 99.		
424	441	5b	3	5.0; w. = 5.4		White paint on dark brown.		
425	425	3-4 mix	2	6.5; 6.6	3-2	White paint on red, 1 further example.		
426	348	4	2	4.0; 8.0		White paint on Munsell 10 R 4/3 'weak red'. Figure 99.		
427	348	4	1	6.5; 8.0		White paint on black, mica .		
428	lost		2	15.2; 8.6		Red paint, warped, badly burnt, much paint lost.	87.24	9197
429	468	4-5 mix	2	5.5; max. d. = 10.0		White paint on black. Figure 36.		
430	425	3-4 mix	2	9.0; 3.9*		White paint on black.		
431	477	5	3	13.4; w. = 11.0		White paint on brown. Figure 97.		
432	484	5b	2	8.0; max. d. = 13.0		White paint on orange-red. Figures 54 & 94.		

*These are base diameters.

Artefact Drawings



Artefact Drawings

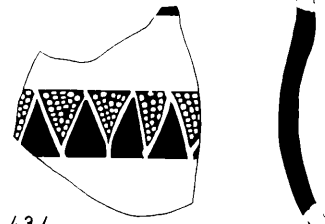
Figure 198. Pre-Level 2 Nuzi ware, scale 1:2.

No.	HH locus	HH level	Ware	Dimensions ht.; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
433	425	3-4 mix		9.6; w. = 8.3		White paint on red, salmon gritty fabric.	88.19	10182
434	453	4	2	5.5; w. = 5.0		White paint on dark brown/black.		
435	425	3-4 mix	2	3.5; w. = 3.4		White paint on black, mica.		
436	348	4	1	3.6; w. = 3.1		White paint on red.		
437	348	4	2	4.0; w. = 6.5		Strainer-spout, paint, Munsell 5 Y 8/1 'white' and 7.5 YR 2/0 'black'.		
438	278/357	3-5 mix	1	3.5; w. = 5.0		White paint on black.		
439	476	6	2	2.5; w. = 4.7		White paint on red.		
440	478	5	2	3.8; w. = 2.7		Black paint.		
441	425	3-4 mix	2	5.7; w. = 5.6		White paint on red/black.		
442	476	6	1	5.0; w. = 5.9		Paint, Munsell 10 YR 8/3 'very pale brown' on 10 R 4/2 'weak red'. Figure 89.		
443	M.West	EM	3	1.5; base d. = 5.2		Mallowan trench west, cream paint on red, pale surface, orange paste. Figure 95.		
444	surface		4	5.2; base d. = 9.0		White paint on Munsell 7.5 YR 3/0 'very dark grey'.		

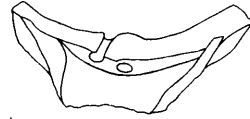
Artefact Drawings



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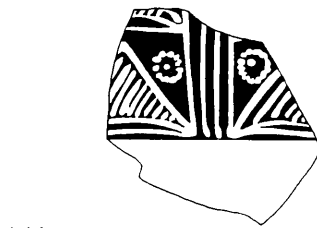
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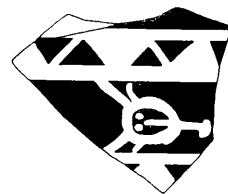
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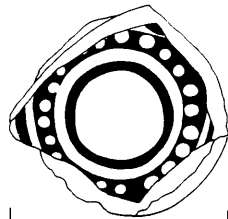
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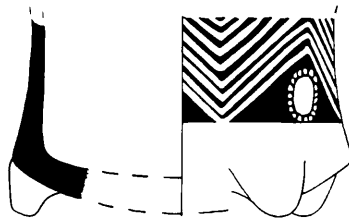
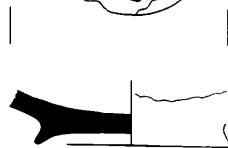
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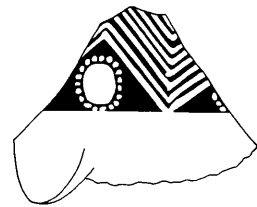
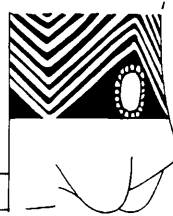
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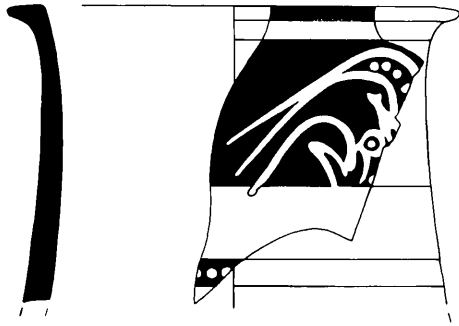


Artefact Drawings

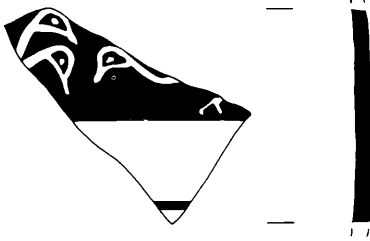
Figure 199. *Bird ornamented and early Nuzi ware, scale 1:2.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
445	478	5	3	7.8; 12.0		White paint on Munsell 10 R 4/3 to 4/4 'weak red'. Figure 54.		
446	478	5	3	5.7; w. = 6.5		White paint on Munsell 7.5 YR 3/0 'very dark grey' to 5 YR 3/2 'dark reddish brown'. Figure 54.		
447	425	3-4 mix	1	4.2; w. = 3.7		White paint on red-brown.		
448	468	4/5 mix	1	2.8; w. = 2.8		White paint on black. Figure 36.		
449	363	3-4 mix	1	7.7; base d. = 2.1		White paint on red.	87.32	
450	195	2	1	2.5; 11.5		Rm 9, white paint on dark brown.		
451	251		2	6.0; w. = 6.3		White paint on black.		
452	437	8	2	3.7; w. = 3.7		Ash layer at bottom of Tr. C1, white paint on black.		
453	500	8	1	1.5; w. = 1.7		White paint on black. Figure 91.		
454	surface		2	9.0; w. = 6.2		White paint on black.		

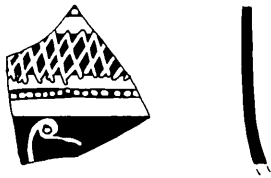
Artefact Drawings



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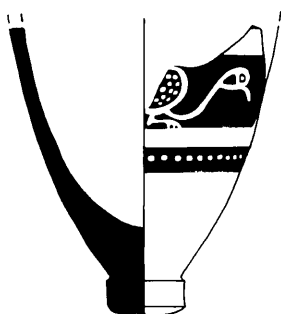
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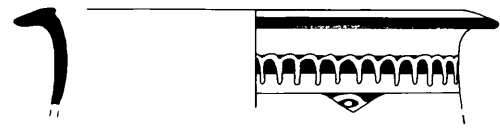
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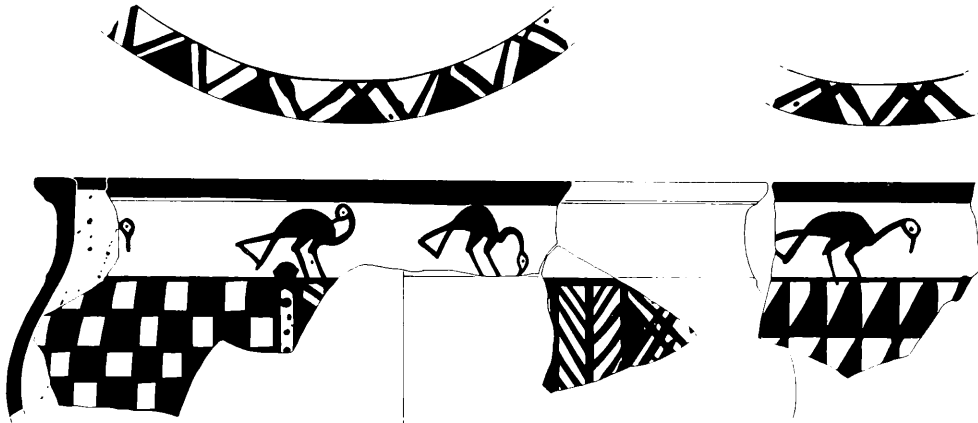


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Figure 200. *Large bowls with bird ornament, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht.; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
455	468	4-5 mix	3	12.5; 39.0		Paint colour varies from red to dark brown. Figure 103.	88.18	10183
456	280/ 258/ 251	4-5 mix	3	15.5+; 48.0		Brown/black paint. Figure 104.	87.22	9227
457	468	4-5 mix	3	14.5; 32.0		Dark brown paint.		
458	478	5	3	6.6; w. = 10.2		Black paint, overfired greenish fabric.		

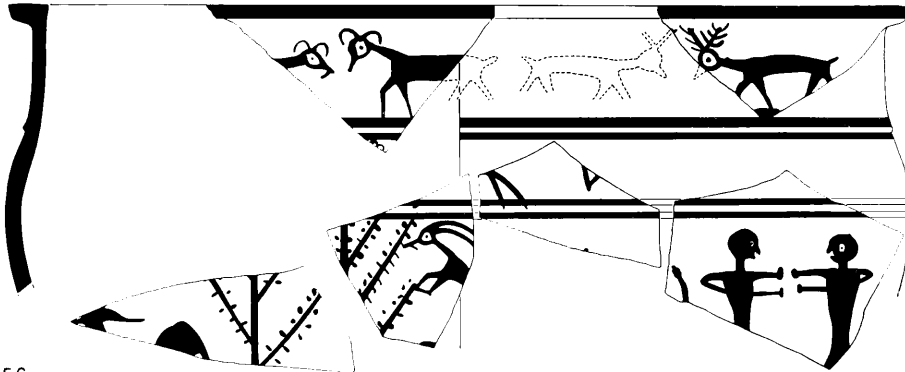
Artefact Drawings



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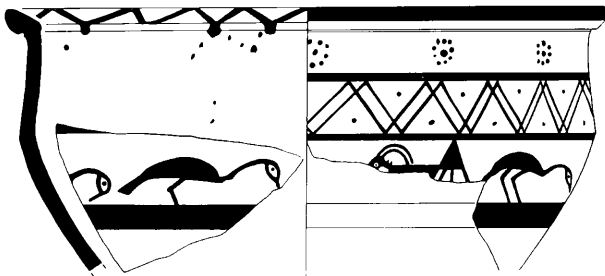
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Artefact Drawings

Figure 201. Pre-Level 2 vessels with bird ornament, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
459	425	3-4 mix	1	5.4; 7.0		Brown paint.		
460	433	6	2	3.6; 9.0		Dark brown/black paint.		
461	258	4	2	6.0; max. = 8.0		Black paint. Figure 102.		
462	unstrat.		1	2.5; 13.0		Dark brown paint.		
463	258	4	7	14.2; base d. = 4.2		Orange-red paint.	87.20	9226
464	529	7	3	10.0; max. d. = 15.0		Brown paint.		
465	258	4		3.3; 9.0		Dark brown paint, very fine pink fabric.		
466	468	4-5 mix	1	5.3; w. = 3.0		Brown paint. Figure 36.		
467	468	4-5 mix	3	7.4; w. = 4.5		Dark brown/black paint, overfired greenish fabric.		
468	468	4-5 mix	3	4.0; 34.0		Red-brown paint.		
469	unstrat.		1	5.8; max. d. = 13.0		Black paint.		
470	251		2	7.2; w. = 5.9		Surface clearance, black paint.		
471	466/468	4-5 mix	3	11.7; max. d. = 11.5		Red-brown paint. Figure 36.		
472	surface		3	6.0; 12.4		Dark brown paint. Figure 86.		
473	430	3-5 mix	1	5.8; w. = 4.9		Dark brown paint.		
474	476	6	2	4.7; w. = 3.2		Paint, Munsell 10 YR 3/2 'very dark greyish brown'.		
475	278	2-4 mix	3	3.0; base d. = 5.0		Surface clearance, black paint. Figure 102.	87.29	9230
476	432	4	3	3.8; w. = 3.4		Dark-brown/black paint.		
477	surface		4	5.0; 28.5		Red-brown to brown paint, mica.		
478	surface		3	7.2; w. = 8.6		Brown paint. Figure 86.		

Artefact Drawings



Artefact Drawings

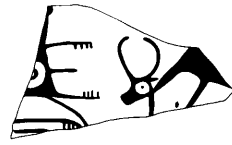
Figure 202. *Miscellaneous painted and Nuzi ware sherds from large vessels, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
479	521	8	4	3.4; 40.0		Brown paint.		
480	258	4	3	8.8; 48.0		Dark brown paint.		
481	525	8	3	7.0; 24.0		Orange-brown paint.		
482	TW 152	OB		6.2; w. = 7.4		Red-brown paint, pale orange gritty fabric.		
483	298	6	2	4.0; w. = 5.5		Dark brown paint.		
484	unstrat.		6	9.7; w. = 8.3		Paint varies red to dark brown.		
485	468	5		4.4; w. = 4.8		Dark brown/black paint, pale surface, orange paste, some grit. Figure 88.		
486	489	5b	2	5.0; 16.0		Red paint.		
487	452	4-5 mix	3	7.1; w. = 12.0		Black paint, overfired fabric.	88.61	
488	468	4-5 mix	3	10.7; max. d. = 12.0		Dark-brown paint.		
489	unstrat.		3	4.5; w. = 4.5		Dark-brown paint.		
490	490	7	2	l. = 7.1; w. = 5.0		Black paint on interior of sherd, overfired fabric. Figures 54 & 86.		
491	269	4	3	4.5; w. = 5.0		Dark-brown paint.		
492	472	4	4	10.2; w. = 9.5		White paint on Munsell 10 R 4/3 'weak red' to 10 R 5/6 'red'. Figure 54.		
493	451	5	4	3.8; w. = 6.2		White paint on dark brown.		
494	468	4-5 mix	4	10.8; w. = 10.5		White paint on dark brown. Figure 36.		
495	472	4	4	8.0; w. = 6.5		White paint on red, possibly same pot as no. 492.		
496	278	2-4 mix	3	7.5; w. = 9.5		White paint on Munsell 10 R 4/4 'weak red' to 10 R 5/4 'red'.		

Artefact Drawings



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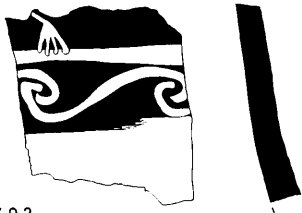
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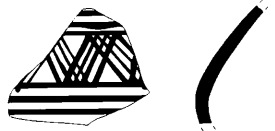
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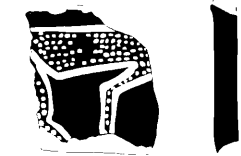
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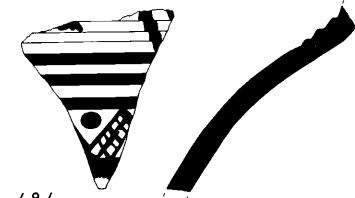
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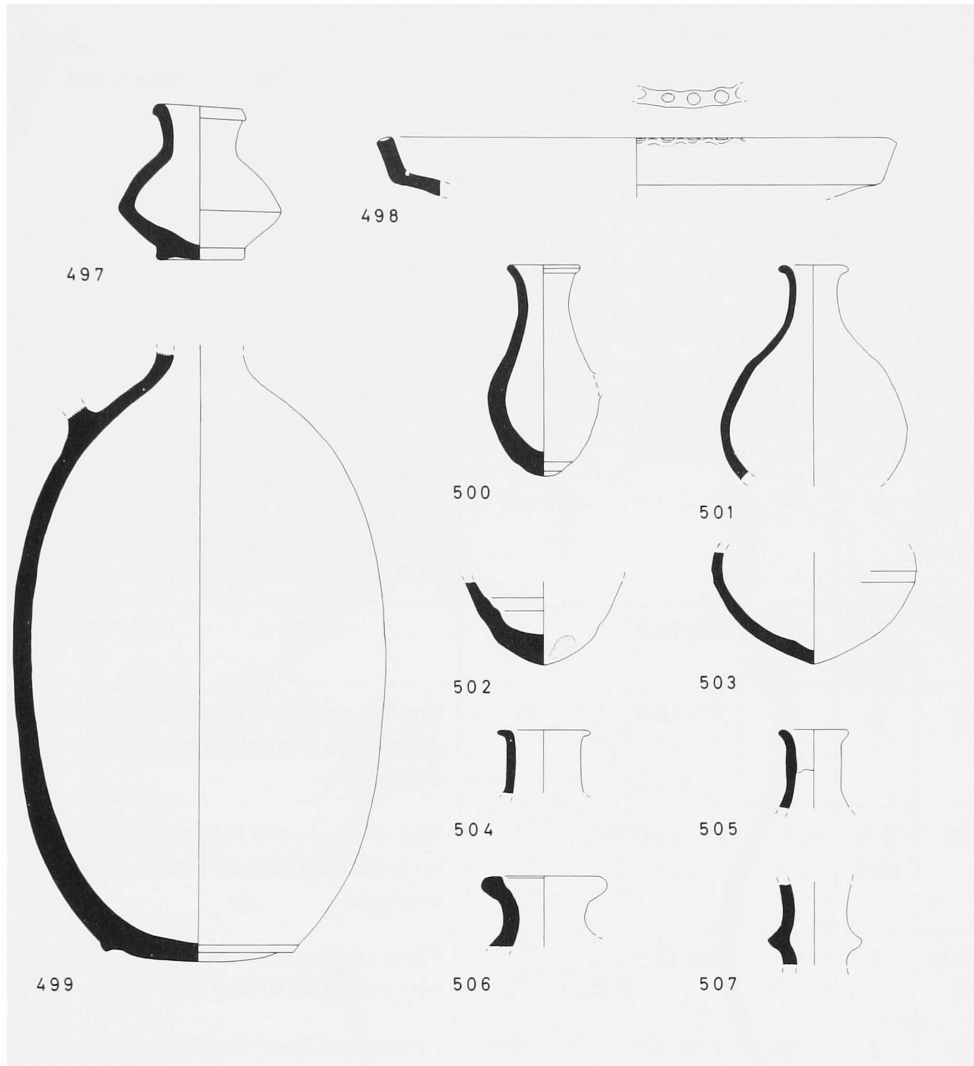


Artefact Drawings

Figure 203. *Glazed vessels, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
497	44	2	12	8.3; 5.0		Rm 5 floor, turquoise blue glaze, buff gritty paste.	85.55	7221
498	348	4	12	3.1; 28.0		Interior & exterior glazed, original colour cobalt blue, now faded to yellow/white, depressions on rim ?to hold inlay.		
499	48/58	2	12	32.5; max. d. = 19.8		Courtyard floor, thick turquoise blue glaze, remains of one strap handle, buff fabric, some chaff visible.	85.15	
500	10/14/24	2	12	11.4; 4.0		Floors of Rms 2, 3 & 4, blue glaze on interior & exterior, buff gritty paste, remains of one lug.	85.53	
501	241	2	12	11.5; 3.8		Rm 21 fill on floor, glazed interior & exterior, colour faded to yellow, buff gritty fabric, 1 further example.		
502	224	2	12	4.5; max. d. = 8.5		Rm 11 floor, glazed interior & exterior, now faded to green/white, from original blue, buff gritty paste.		
503	452	2-5 mix	12	6.0; max. d. = 11.0		Glazed interior & exterior, colour faded to green, buff fabric, little chaff, 4 further examples.		
504	224	2	12	3.5; 5.0		Rm 11, glazed interior & exterior, colour yellow.		
505	10/24	2	12	4.2; 3.8		Rms 2 & 4 floors, glazed interior & exterior, colour blue-green, 1 further example.		
506	204	2	12	3.8; 6.8		Rm 20, blue glaze, buff fabric, some chaff.		
507	204/205	2	12	4.4; max. d. = 5.0		Rm 20, glazed interior & exterior, colour faded to green, pale brown fabric, fine grit, 1 further example.		

Artefact Drawings



Artefact Drawings

Figure 204. *Mitanni red-slipped bottles, jars and beakers, scale 1:4 (except for 508–12, scale 1:10).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
508	136/207	1–2	8	46.0; 5.0		Rm 12 upper fill, very burnt, grit temper, no apparent chaff.	86.57	8237
509	44	2	8a	29.8; 7.7		Rm 5 floor, orange-brown slip, burnished vertically, gritty dark-grey paste, chaff on surface. Munsell 5 YR 6/6 'reddish yellow'.	85.71	
510	224	2		47.5; 13.5		Rm 11 floor, brown-burnished gritty fabric, grey core.	86.71	
511	44	2	6	44.0; 5.7		Rm 5 floor.	85.64	7250
512	10/14/42	2	8a	50.0; 16.2		Floor of Rms 2, 3 & 5, burnished plum-red slip, black core, heavy chaff temper. 1 further example 85.06 (HH 10), Munsell 10 R 4/6 to 10 R 3/6 'red'. Figure 109.	85.60	7249
513	425	2–4 mix	8	8.5; 13.5				
514	58	2	8a	3.7; 10.8		Rm 8 (courtyard floor), red slip extends to rim interior as far as dotted line.		
515	425	2–4 mix	8	8.5; 13.0		Red slip extends to rim interior as far as dotted line shown, 1 further example.		
516	10/14/58	2	8	9.8; 12.5		Floor of Rms 2, 3 & Courtyard 8. Munsell 10 R 4/6 to 4/4 'red'.		
517	58	2	8a	27.0; 8.0		Courtyard floor, burnished red slip extends to rim interior as far as dotted line.	85.20	
518	425	3–4 mix	8	7.4; 10.5		Red slip extends to rim interior as far as dotted line.		
519	482	5b	8a	3.7; 14.0		Burnished red slip extends to rim interior as far as dotted line, Munsell colour 10 R 4/6 'red', 1 further example.		
520	3	EM	8a	9.3; 9.5		Heavy vertical burnishing, red slip on exterior only, Munsell 10 R 3/6 'dark red'.		
521	448	7	8	4.4; base d. = 7.8		White plaster floor Tr. D, brown paint on exterior, Munsell varies 2.5 YR 4/6 'brown' to 10 R 4/8 'red'.		

Artefact Drawings

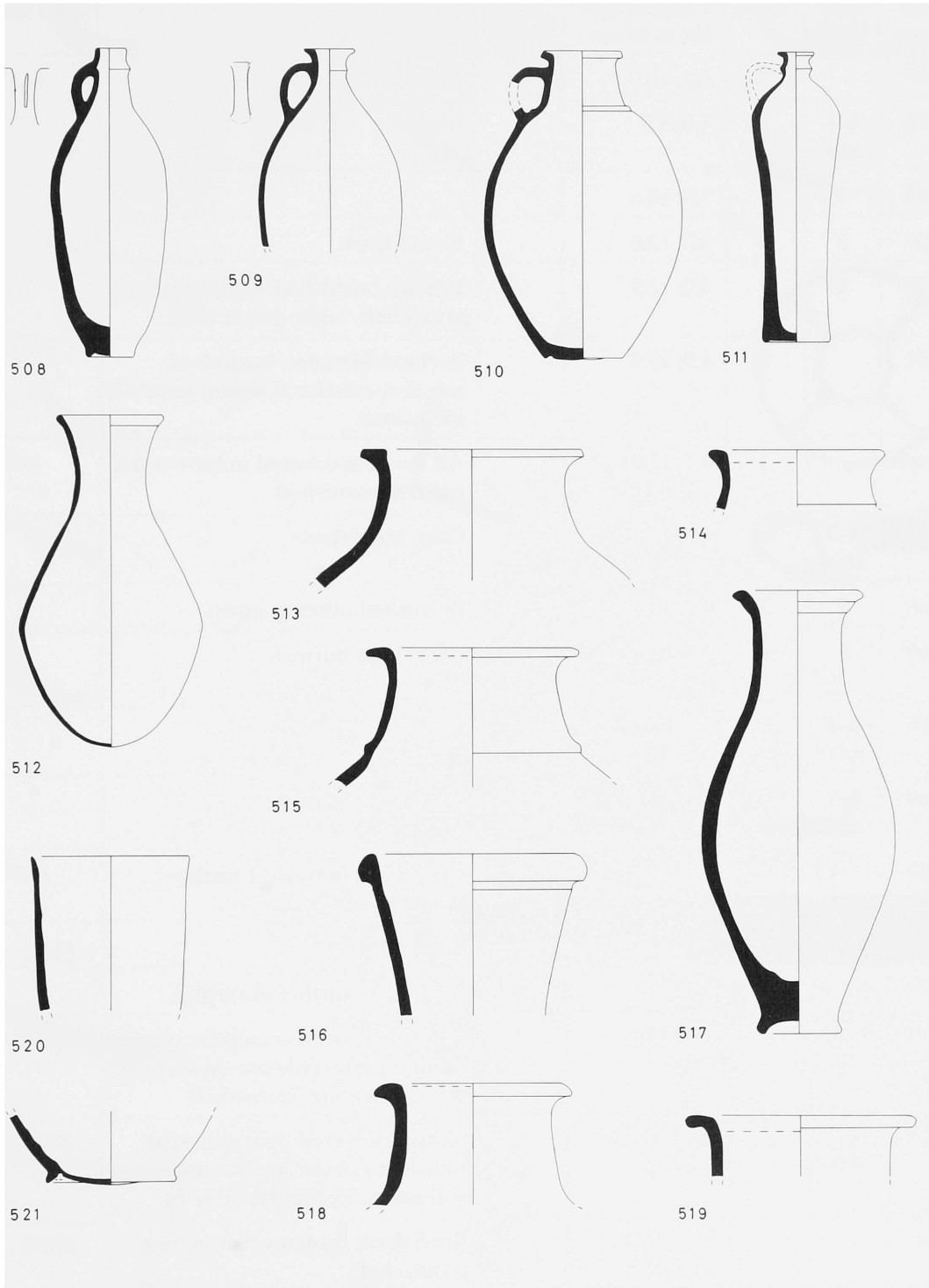
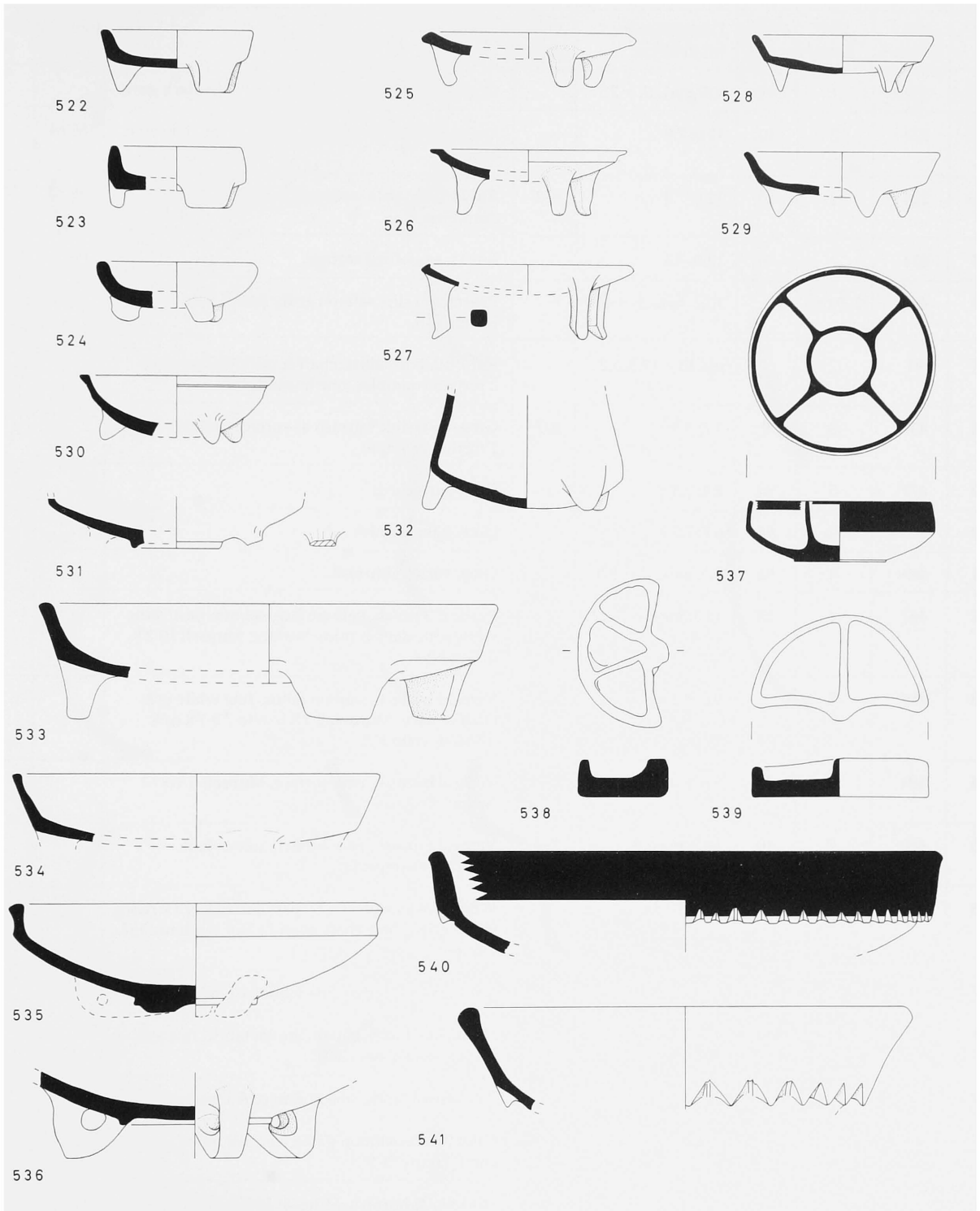


Figure 205. Tripod vessels, compartmented and notched bowls, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
522	13		3	4.1; 10.0		Burnt.		
523	278	2-4 mix	3	4.0; 8.5		Burnt.		
524	294	4	3	3.9; 10.5				
525	200	2	3	3.5; 13.0		Rm 13 floor.		
526	477	5		4.2; 12.9		Interior burnished, salmon fabric, with chaff, white grit & mica.		
527	251		2	4.9; 13.0		Surface clearance, burnished interior, exterior & legs, micaceous inclusions.		
528	unstrat.		3	4.7; 12.0		All surfaces covered in brown-red paint & burnished.		
529	468	4-5 mix	9a	4.3; 13.0		Grey-burnished.		
530	468	5	3	4.2; 12.6		Burnished interior, burnt.		
531	469	5	9a	3.2; base d. = 5.8		Grey, light burnish.		
532	278	2-4 mix	5	7.7; base d. = 12.6				
533	468	4-5 mix	9a	7.5; 30.0		Grey, light burnish.		
534	363	3-4 mix	9a	4.5; 24.0		Grey, light burnish, 1 further example.		
535	91	2	7	7.1; 23.0		Rm 7 fill.	85.18	
536	65	2	7	5.7; 9.8	5-2	Rm 7 fill, 6 further examples.		
537	10	2		4.0; 12.0		Rm 2 floor, red-brown paint on rim, salmon paste, pale brown surface, fine grit & mica, burnished.	84.164	
538	471	5	3	2.5; l. = 9.8; w. = 6.0		Compartmented dish with seal rolled on exterior, for discussion of seal see p. 56; Figures 50 & 74.	3900	10185
539	44	2		2.6; l. = 11.7; w. = 7.0		Rm 5 floor, brown wash, brown paste, chaff.	85.94	7253
540	452	2-5 mix	8a	6.7; 34.0		Burnished plum-red paint, Munsell 10 R 3/6 'dark red'. Figure 108.		
541	surface		9a	6.8; 30.0		Grey-burnished.		

Artefact Drawings

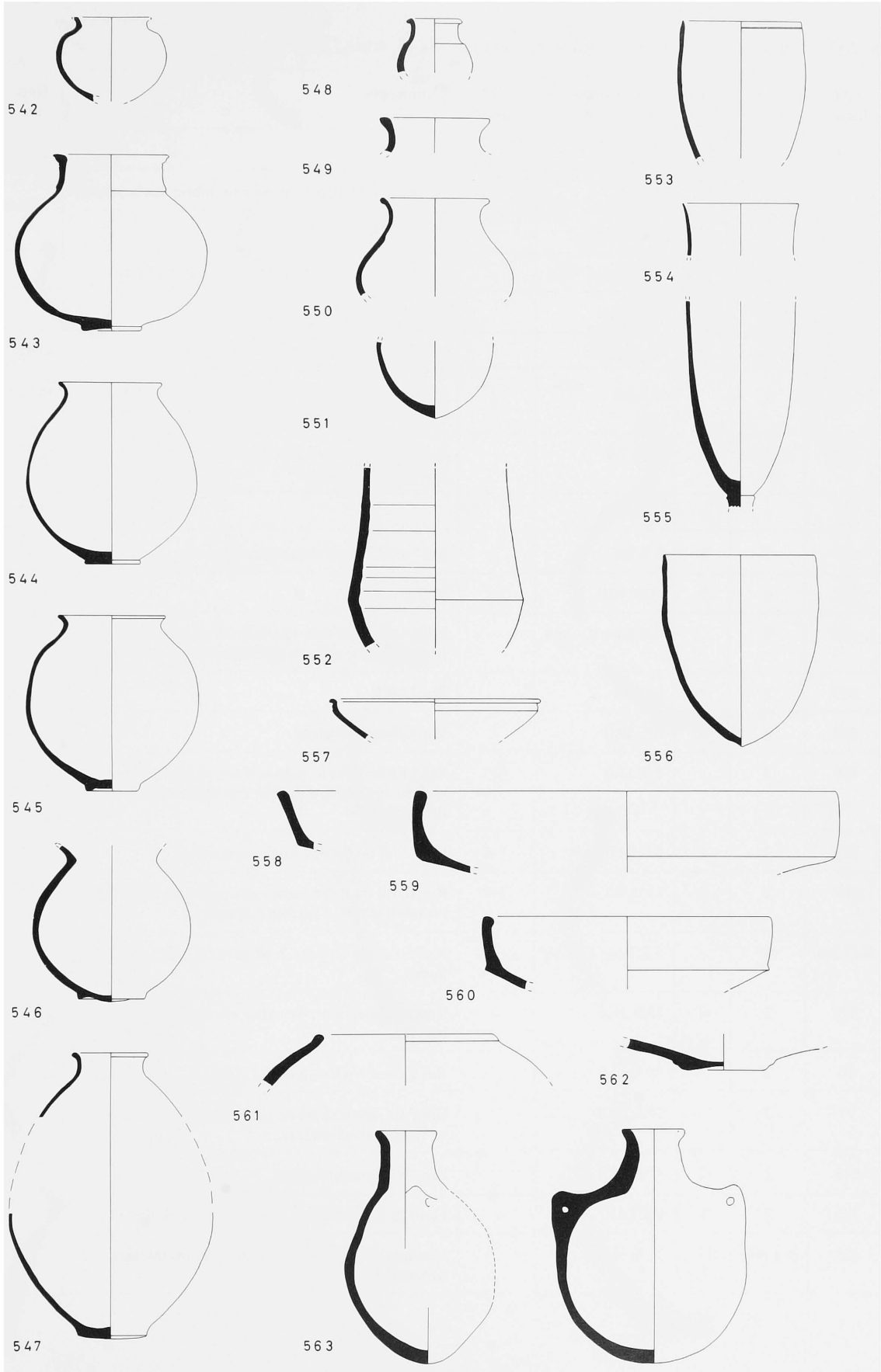


Artefact Drawings

Figure 206. *Mitanni burnished pottery and pilgrim flask, scale 1:4.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
542	152	1	9a	5.8; max. d. = 7.5		Grey, light burnish, Munsell 2.5 Y 4/0 'dark grey'		
543	224	2	10	12.0; 7.9		Rm 11 floor, brown fabric, well levigated, heavily burnt.	86.64	
544	224	2	10	12.4; 7.0	8-2	Rm 11 floor, pale surface, fine chaff, 2 further examples.	86.70	8265
545	224	2	3	12.0; 7.3		Rm 11, smoothed surface.	86.66	
546	430	2-5 mix		10.7; base d. = 4.5		Pale cream slip, salmon gritty paste, & some chaff, no burnish.		
547	91	2		est. ht = 19.5; 5.2		Rm 7 fill, buff fabric, chaff & mica, no burnish, 2 further examples, one burnished.		
548	437	8	9	3.7; 3.5	8-2	Grey, no visible burnish as surface pitted & worn, 1 further example.		
549	477	5	9a	2.4; 7.5		Grey-burnished.		
550	440	5b	9a	6.7; 7.5		Grey, light burnish.		
551	463	4	9a	5.2; max. d. = 8.0		Grey, vertical burnish.		
552	467	4	10	12.3; max. d. = 12.0		Vertical burnish, pale surface, salmon paste, fine white grit, chaff & mica. Surface, Munsell 10 YR 8/2 'white'.		
553	468	5		9.5; 8.2		Vertical burnish, salmon fabric, fine white grit, chaff & mica. Munsell 5 YR 6/6 to 7.5 YR 6/6 'reddish yellow'.		
554	484	5b	10	3.6; 8.0		Vertical burnish, pale surface, Munsell 5 Y 8/2 'white'.		
555	490	7	10	14.2; max. d. = 7.6	7-4	Vertical burnish, pale surface, some chaff, 1 further example.		
556	448	7	10	13.2; 10.5		White plaster floor Tr. D, pale surface, brick paste, white grits, some chaff, found assoc. with no. 184. Figure 113.	88.5	10176
557	207	2	10	2.8; 14.5		Rm 12 floor, orange, fine white grit, mica. Burnt.		
558	425	3-4 mix	10	4.0; 26.0		Horizontal burnish, pale brown fabric, fine grit, mica & occasional chaff.		
559	455	5b	10	5.6; 29.0		Pale brown fabric, fine grit, mica & occasional chaff.		
560	468	5	10	5.0; 20.0		Pale surface, salmon paste, fine grit, mica & some chaff. Figure 36.		
561	584	10	11	3.5; 12.0		Horizontal burnish, Munsell 10 YR 6/4 'light yellowish red'.		
562	207	2	10	2.1; base d. = 5.8		Rm 12 floor, interior burnished, orange-brown fabric, fine grit & chaff.		
563	444	5b	10	15.9; 4.2		Pale cream surface, salmon paste, found with no. 332 & 88.4 (identical with no. 55). Figures 51 & 53.	88.7	10184

Artefact Drawings

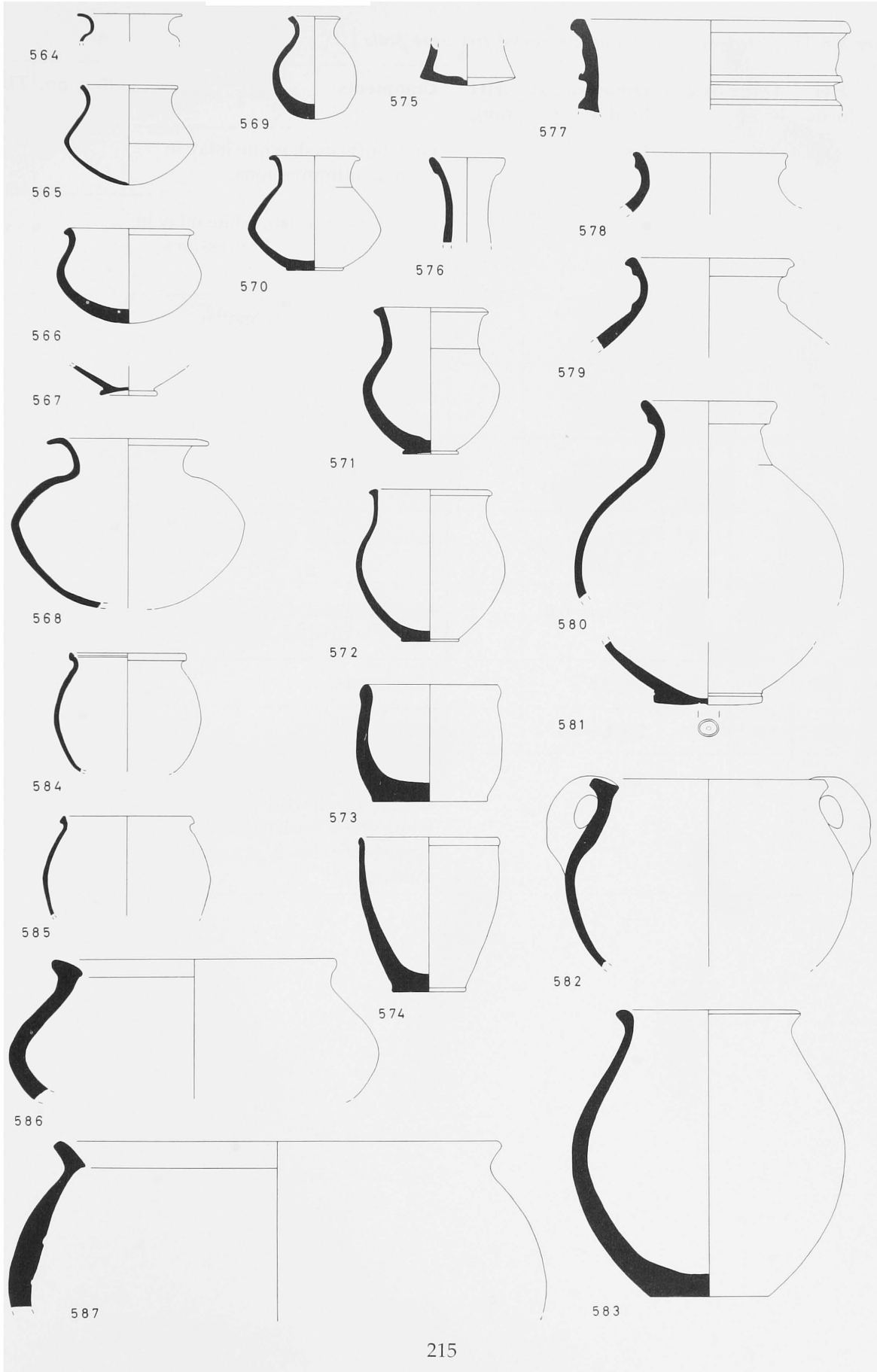


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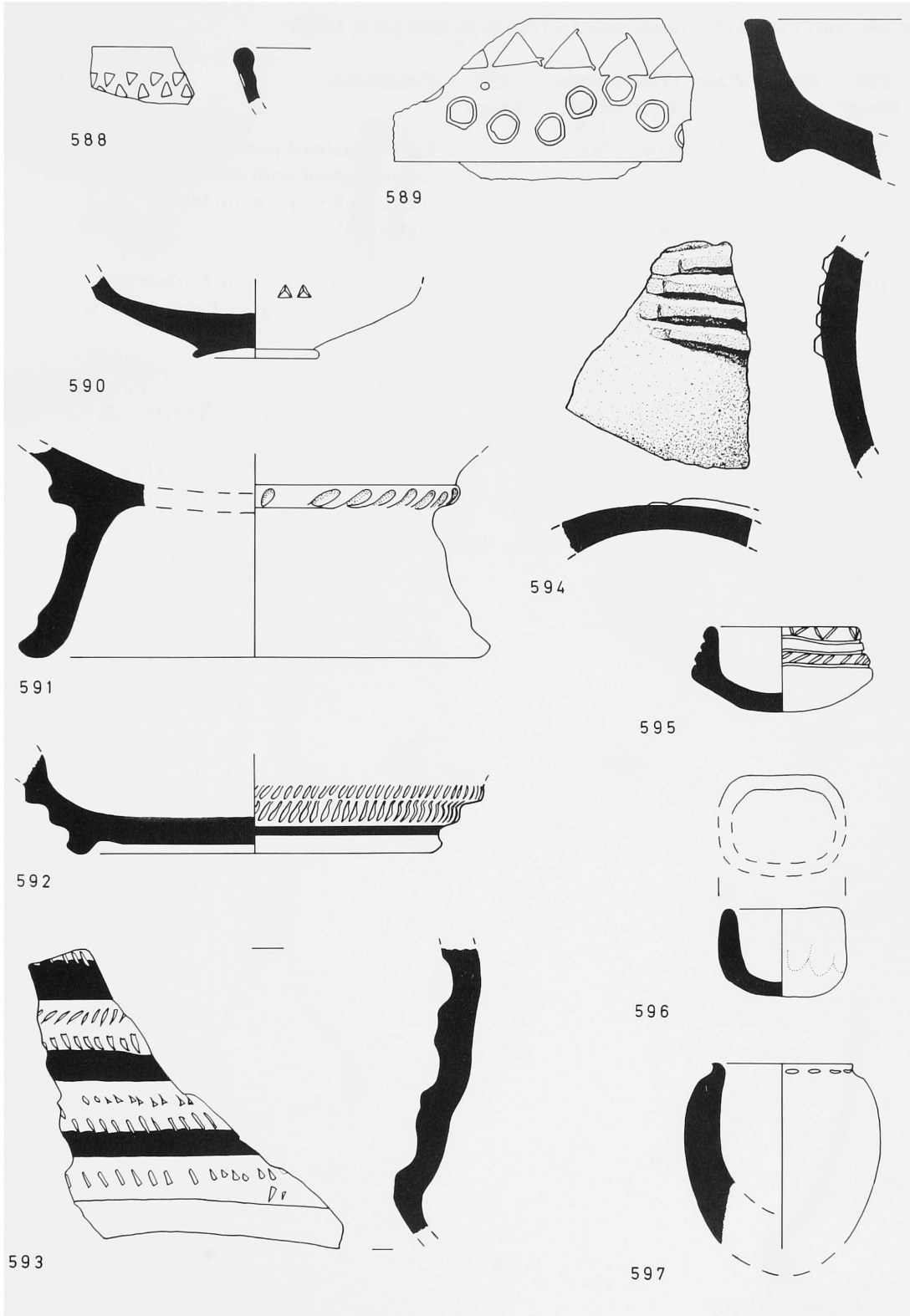
Figure 207. *Plain jars and beakers, scale 1:4, (except for 584–5, scale 1:10).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
564	391	7–8 mix	1	2.0; 7.4				
565	425/463	4		7.0; 6.5		Floor in Tr. D. Red-brown gritty fabric, surface worn.		
566	91	2	11	6.7; 8.5		Rm 7 fill, burnt.		
567	525	8		2.1; base d. = 4.1		Fill of vaulted room Tr. D, orange gritty fabric.		
568	224	2	5	12.0; 10.0		Rm 11 on floor, burnt.		
569	207	2	3	7.3; 3.7		Rm 12 floor, burnt.	86.44	8272
570	224	2		8.1; 6.4	2	Rm 11 floor, well-smoothed pale brown surface, salmon paste, well levigated, 1 further example.	86.72	
571	464	surface fill	2	10.4; 7.4		Salmon paste, well-smoothed surface, 1 further example of the base.	88.17	
572	80	1	3	10.8; 8.3			85.72	
573	91	2	3	8.3; 9.4		Rm 7 fill, shaved down near the base.		
574	432	4	3	10.9; 10.0		String-cut base.		
575	435	6		3.0; base d. = 6.8		Either a beaker base or the knob of a lid, buff surface, gritty salmon paste, occ. chaff & mica.		
576	190	2	2	6.0; 5.4		Rm 13 fill.		
577	503	8	3	6.5; 19.0		Micaceous inclusions.		
578	345	2		4.3; 11.0	6–1	Rm 14 fill on floor, pale surface, gritty buff paste with heavy chaff, 4 further examples, no. 650 lid fits this jar.		
579	199	2	2	6.5; 11.0	7–2	Rm 13 fill on floor, 2 further examples.		
580	207	2	7	14.0; 9.5	4–1	Rm 12 fill on floor, light vertical burnishing, bitumen stains, 3 further examples.		
581	567/568	10		4.5; base d. = 7.8		Incised circle on base, buff surface, gritty salmon paste.		
582	207	2	11	13.5; 16.5		Rm 12 fill on floor, 4 further examples without the handles.		
583	10	2	3	20.1; 13.2		Rm 2 floor, well-smoothed surface.	84.173	
584	91	2		20.8; 20.0		Rm 7 fill, salmon fabric with grit & mica, well-smoothed surface.		
585	213	2	11	17.5; 22.0		Rm 15, deposit on floor.		
586	338	2	3	9.8; 20.0		Floor in doorway between courtyard & Rm 14.		
587	425	3–4 mix	11	11.8; 31.5		Horizontal burnishing on body & rim interior, Munsell 2.5 YR 4/6 'red'.		

Artefact Drawings



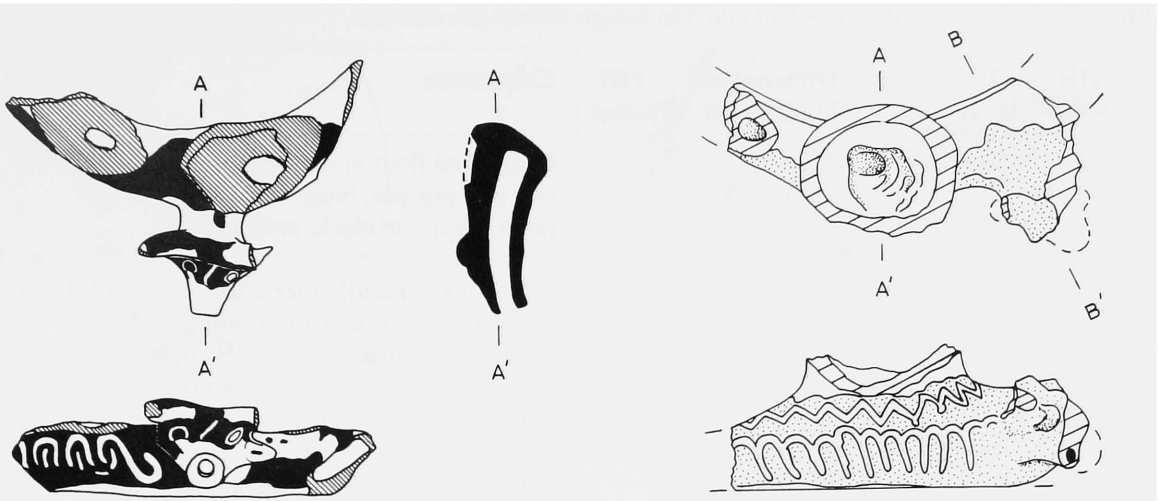
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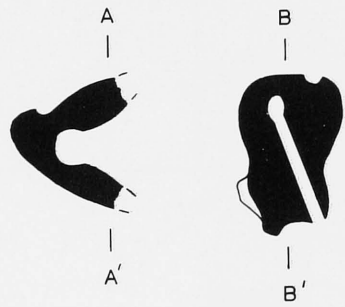
Artefact Drawings

Figure 209. *Nuzi ware kernos rings, scale 1:2 (except for 600, not to scale).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
598	558	2	2	2.6; l. = 9.6		Rm 6, potsherd pavement. Kernos ring fragment with animal head spout. Yellow paint on black. Figure 101.	90.40	11087
599	164	1	2	3.9; l. = 9.6		Fill above courtyard 8. Kernos ring fragment with animal head spout, white paint on red.		
600	10/14	2	2	total ht = 11.0; ht. of goblets = 9.0; d. of ring = 14.2; d. of tube = 1.9		Rms 2 & 3 floor. Kernos ring and goblets; two goblets and further fragments of the ring were found in Corridor 2. The reconstruction is not to scale. White paint on black. Figure 100.	85.10	7220



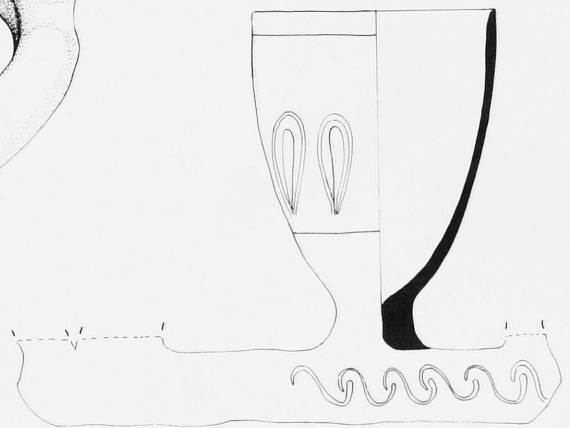
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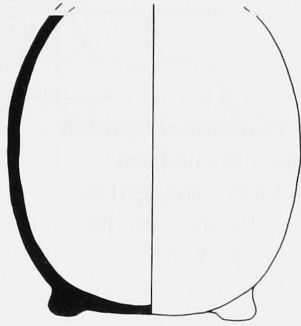


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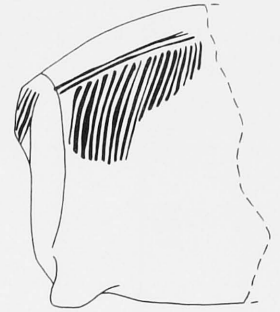
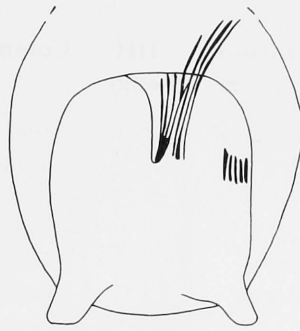
Figure 210. *Mitanni pig-pot, incised jar and Mycenaean stirrup jar, scale 1:2.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
601	58	2	2	8.0; ext. l. = 6.8; w. = 7.8		Courtyard floor at east side, rear end of a pig-pot, Nuzi ware white paint stripes on black, pattern worn.	85.74	
602	207	2	10	24.5; base d. = 3.6; max. d. = 12.5		Rm 12 floor; handled jar with incised decoration, rim missing, brown-burnished fabric with large white grits, burnt; handle found in Rm 14. Figure 114.	86.45	8241
603	220	2/1		5.7; max. d. = 11.2		Late Helladic IIIB1 stirrup jar, spout lost, dark pinkish buff clay, fired dark buff out; hard fired, well smoothed surface; red-brown shaded paint, Munsell 2.5 YR 2/2 'very dusky red' to 5 YR 2/2 'dark reddish brown' to 5 YR 2/1 'black'. Figure 118.	86.74	

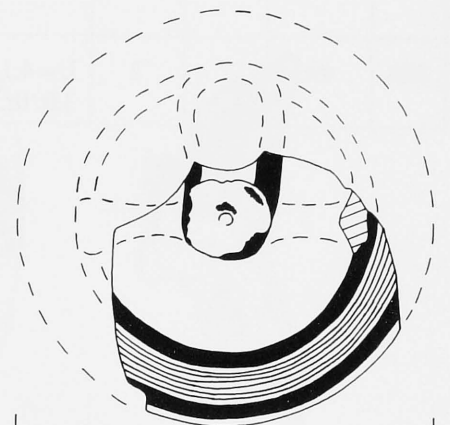
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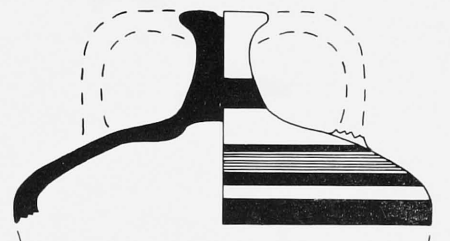
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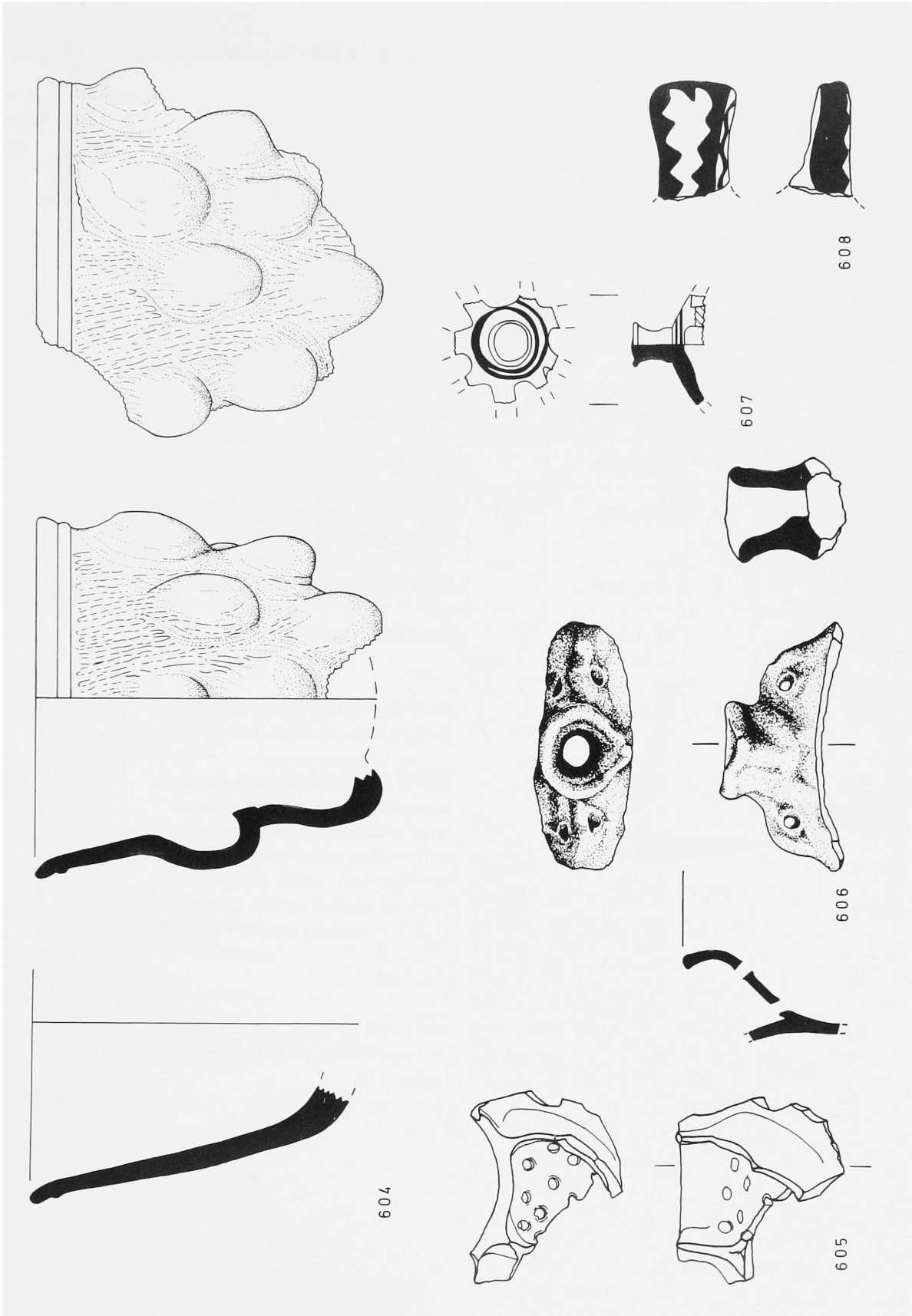
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Artefact Drawings

Figure 211. *Miscellaneous items, scale 1:2.*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
604	SS 1097		10	12.0; 12.5		Anatolian type. Horizontal burnish on interior, vertical burnish on exterior, orange fabric, fine grit & mica. Cf. Alishar Hüyük, von der Osten 1937, II, grape-cluster pitchers, bell-shaped cups (Figs. 174 & 192). Figure 82.		
605	278	2-4 mix	2	5.5; w. = 6.5		Jar-rim with strainer-spout, top view, face-on view & section, 1 further example.		
606	579	2	2	4.3; 3.4		Rm 6 stairs. Pilgrim flask fragment with pouring lip on rim.		
607	8	2	2	2.5; d. of knob = 1.6		Rm 3 upper fill, brown painted lid fragment with several perforations & a knob handle.		
608	490	7	2	l. = 4.1; w. = 3.0; th. = 2.3		Handle, brown paint.		

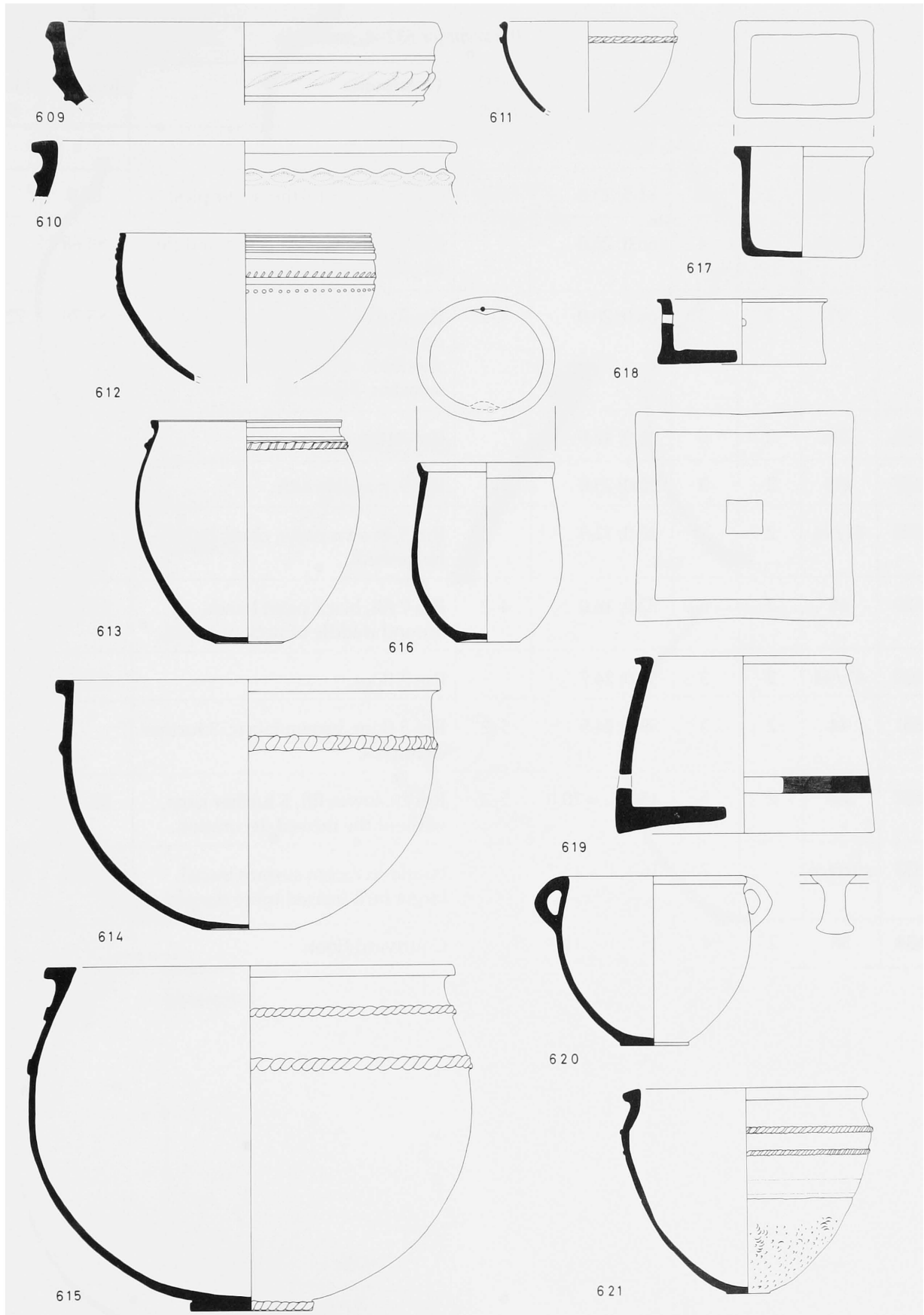


Artefact Drawings

Figure 212. Mitanni large bowls and tubs, Level 2, scale 1:10 (except for 609–10, scale 1:4; 617, scale 1:40 and 621, scale 1:20).

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
609	136	1	7	5.9; 27.0	4–2	Rm 13 upper fill, 2 further examples.		
610	210	2	7	4.0; 30.0		Rm 9 floor fill.		
611	44	2	3	16.2; 31.2	4–2	Rm 5 floor, 4 further examples.		
612	10	2	7	26.0; 44.4	4–2	Rm 2 floor, slashed decoration & impressed circles, 2 further examples.		
613	10	2	3	39.0; 33.0		Rm 2 floor.	84.166	
614	24	2	3	44.0; 67.4	2	Rm 4 floor, slashed decoration.	85.65	
615	24	2	3	61.0; 72.0	4–1	Rm 2 floor, pink gypsum plaster lining, 3 further examples.	85.77	
616	41/44	2	4	31.8; 24.5		Rm 5 floor, 2 perforated interior lugs.	85.59	7248
617	14	2		78; l. = 99; w. = 69		Rm 3 floor (bathroom).		
618	14	2	4	11.5; 30.5		Rm 3 floor, base perforated & 2 perforations in sides, not opposing.	84.162	
619	207	2	5	31.5; base w. = 46.0; fenestrations 13 × 3 cm		Rm 12 floor, square perforation in base, dark brown painted band level with 4 rectangular fenestrations in the sides, more paint on edge of base but very worn, red painted gypsum plaster covers upper part of pot — ancient repair. Figure 22.	86.69	8234
620	91	2	7	30.0; 33.0		Rm 7 fill.	85.76	
621	207	2		72.5; 80.0		Rm 12 fill on floor, jab decoration on lower body, brown gritty fabric. Figure 116.		

Artefact Drawings



Artefact Drawings

Figure 213. *Mitanni large jars, Level 2, scale 1:10 (except for 632–4, scale 1:4).*

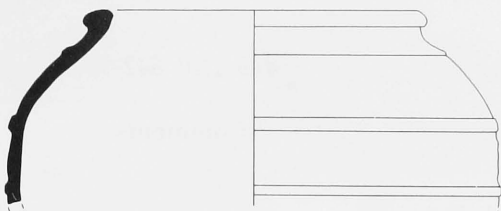
No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
622	207	2	3	10.0; 20.5		Rm 12.		
623	41/44	2	3	61.5; 23.0	8–2	Rm 5 floor, 2 further examples.	85.8	
624	41/44	2	4	66.0; 26.0		Rm 5, rope mark around middle of pot, 1 further example.	85.68	
625	91	2	3	66.0; 20.0	4–2	Rm 7, round punctate decoration on rim & on appliqué band on shoulder, cable below bitumen splashes. Figure 45.	85.78	7252
626	204	2	5	26.0; 42.0		Rm 20 fill.		
627	195	2	3	20.0; 25.0		Rm 9, possibly MA.		
628	41/44	2		40.0; 12.5		Rm 5, brown paste, chaff, lightly burnished.	85.70	
629	65	2	6	52.0; 16.0	4–2	Rm 7 fill, black paint bands around middle of neck, v. worn.	85.16	
630	41/44	2	3	56.0; 24.7		Rm 5 floor.	85.69	
631	44	2	3	59.0; 24.5	5–2	Rm 5 floor, brown fabric, 3 further examples.		
632	204	2	5	15.5; l. = 20.0	5–2	Rm 20, lower fill, 5 further rims without the incised decoration.	86.73	8244
633	surface		7	16.1; l. = 18.7		Found in recent surface burial, larger bird incised more deeply.	86.53	8245
634	58	2	4	15.1; l. = 11.3		Courtyard floor.		

Artefact Drawings

622



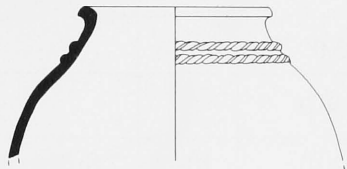
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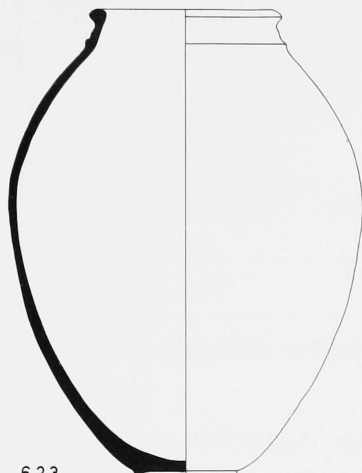
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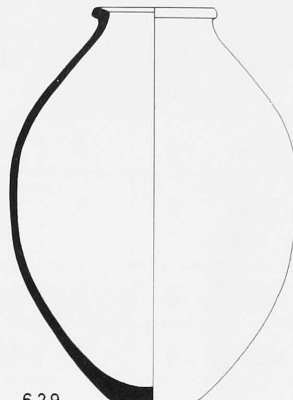
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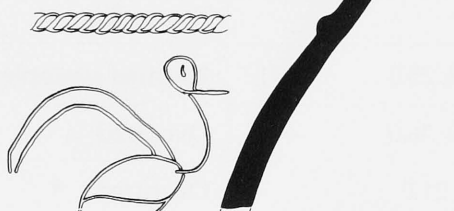
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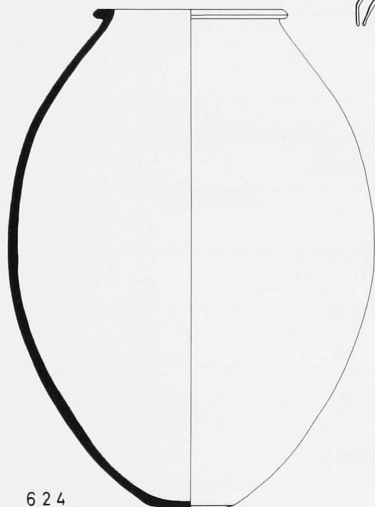
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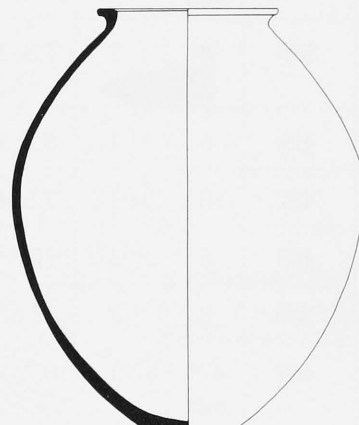
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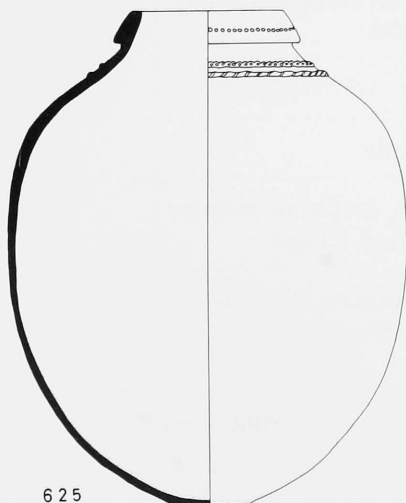
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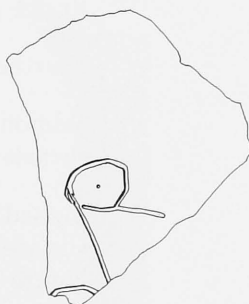
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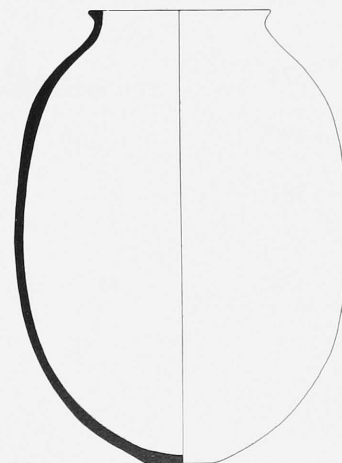
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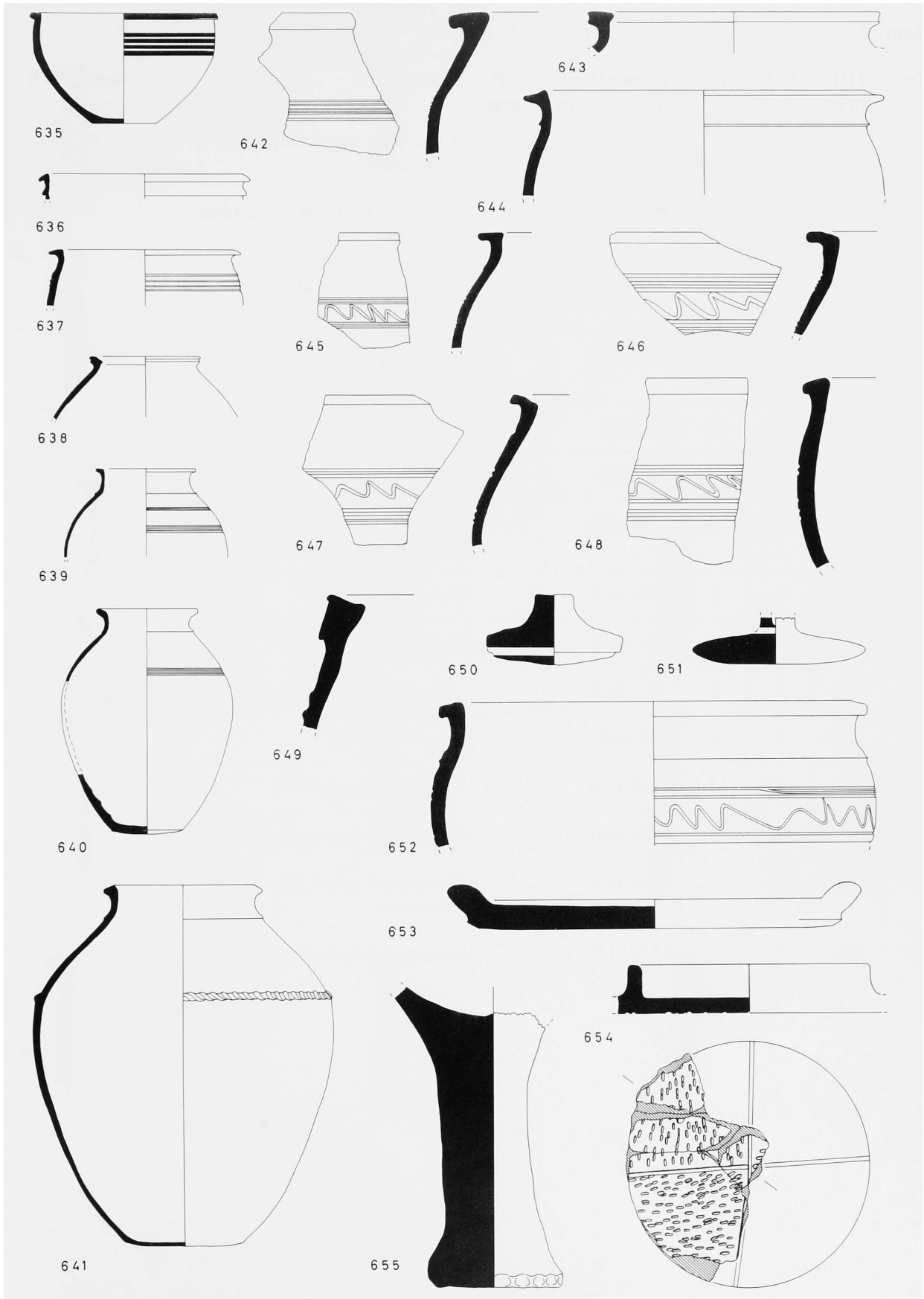


Artefact Drawings

Figure 214. Large bowls and jars, pre-Level 2, 635–41, scale 1:10; 642–55, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht.: d. in cm	HH range	Comments	Reg. no.	TB cat. no.
635	328	8	3	19.9; 33.0		Red-brown paint, pale surface, salmon paste.	87.25	9190
636	520	7	3	4.6; 35.0				
637	AL 21	10	5	10.0; 30.0				
638	468	4–5 mix	4	11.5; 20.0	10–5	2 further examples.		
639	525	8	6	15.8; 17.7				
640	525	8	3	40.4; 17.8	8–2	Salmon paste, 4 further examples. Figure 56.	88.90	10211
641	525	8	3	64.8; 25.0	8–1	2 further examples. Figure 56.	88.91	
642	476	6	3	10.0; 36.0	6–4	Overfired.		
643	468	4–5 mix	3	3.0; 21.0		Overfired.		
644	525	8	3	7.8; 23.0		Tr. D. fill of shrine, greyish fabric with occasional chaff.		
645	429	6	3	8.3; 34.0		Overfired.		
646	437	8	3	7.5; 42.0				
647	435	6	3	10.8; 39.0		Burnt.		
648	500	8	3	13.6; 40.0		Overfired.		
649	468	4–5 mix	3	9.7; >50.0		3 further examples.		
650	345	2	3	5.1; 9.7		Rm 14, lid, cream surface, salmon paste, fits no. 578.	2911	9184
651	374	2	5	3.4; 12.4		Rm 14, lid.	2914	9185
652	490	7	4	10.4; 28.5		1 further example.		
653	501	6	3	3.3; 30.0		Salmon surface, grey core, interior surface burnished, 2 lugs.		
654	478	5	11	3.5; 17.5		Incised decoration on base, brown surface, black core, very gritty. Figure 115.	88.62	
655	337/338	2	5	21.5; base d. = 9.0		Rm 14 doorway, rim missing.		

Artefact Drawings



Artefact Drawings

Figure 215. Middle Assyrian and Mitanni potstands, scale 1:4.

No.	HH locus	HH level	Ware	Dimensions ht.; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
656	38	2	7	7.7; 15.0		Courtyard upper fill, ?MA, coilmade.	85.67	
657	272	2	3	10.4; 15.0		Courtyard fill, ?MA, 2 further examples.		
658	323	2	5	12.0; 12.5		Courtyard floor, disturbed area, ?MA.		
659	136	1	3	12.0; 15.5		Rm 13 upper fill, MA, 1 further example.	86.47	
660	212	1	5	9.5; 16.4		Rm 15 upper fill, MA.		
661	279	1	3	7.8; 10.5		Courtyard fill, ?MA.		
662	326	1	5	12.6; 12.0	5a-1	Rm 14 upper clearance, MA, 1 further example.		
663	299	2	2	12.7; 12.5		Courtyard, ?MA.		
664	136	1	4	10.1; 14.5		Above Rm 13, MA.		
665	326	1	5	11.3; 11.5		Above Rm 14, ?MA.		
666	207	2	4	8.7; 14.0		Rm 12 floor fill.		
667	45	2	3	10.4; 13.4		Courtyard, upper fill.	85.57	
668	92	2	3	12.6; 16.0		Courtyard floor, 1 further example.		
669	38	2	5	13.2; 14.0		Courtyard upper fill, 4 further examples.		
670	322	2	3	11.5; 11.0		Courtyard, below MA floor.		

Artefact Drawings



656



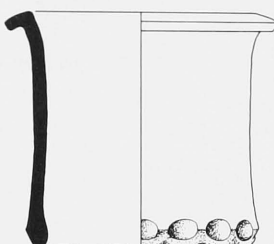
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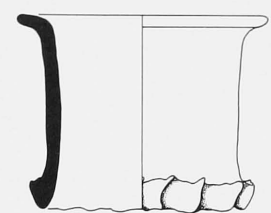
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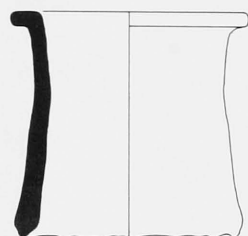
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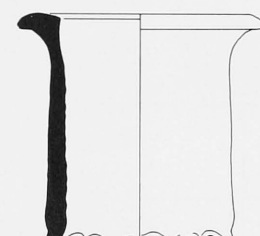
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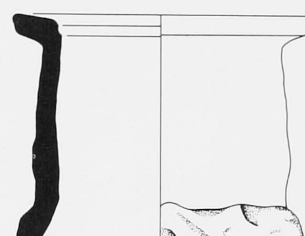
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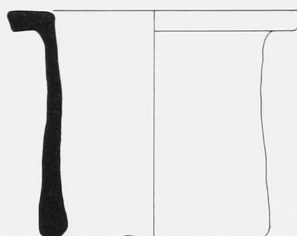
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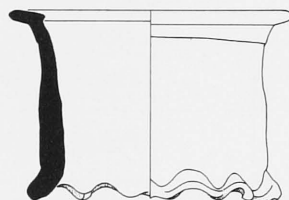
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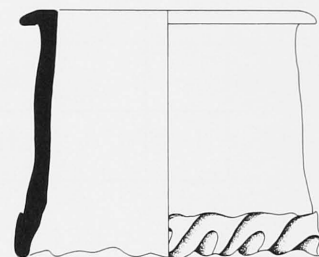
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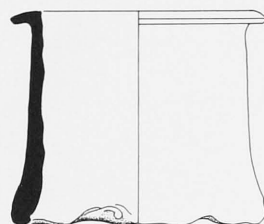
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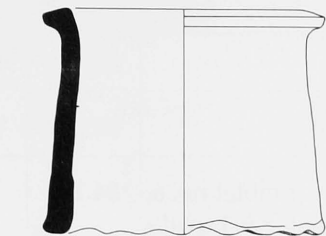


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Artefact Drawings

Figure 216. *Mitanni potstands, Level 2 and miscellany, scale 1:4 (potstands 671–9 and miscellany 695–9).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
671	345	2	4	12.0; 13.0		Rm 14 floor.	88.20	
672	190	2	4	11.3; 15.0		Rm 13 fill.		
673	195	2	5	11.7; 19.0		Rm 9.		
674	246	2	6	10.4; 11.0		Fallen <i>libn</i> s. of S. wall of temple.		
675	188	2	3	11.5; 10.2		1 further example.		
676	190	2	7	12.0; 17.8	8–2	Rm 13, 4 further examples.		
677	210	2	3	11.2; 13.0		Rm 9, fill on floor.		
678	224	2	3	11.0; 16.0		Rm 11 floor, 1 further example.	86.68	8243
679	207	2	4	13.3; 20.0		Rm 12 floor fill.	86.46	
696	CH topsoil			ht = 4.5; l. = 8.8; w. = 6.3		Lamp, probably 1st millennium.	97	57
697	385			3.7; 8.2		Surface clearance, greenish fabric with fine grit inclusions, possibly 3rd millennium. 1 further example from a wall in Level 5a.		
698	SS 262			6.5; 7.5		Orange-brown paint.		
699	JJ 1			5.1; 15.0		Possibly late 1st millennium.		



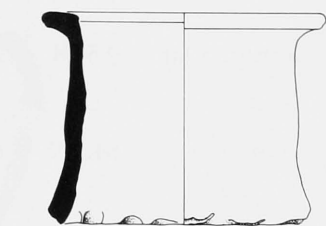
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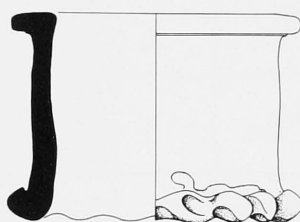
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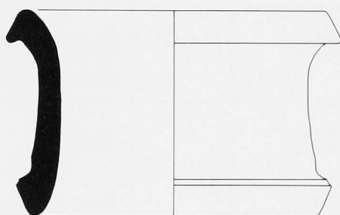
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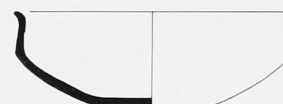
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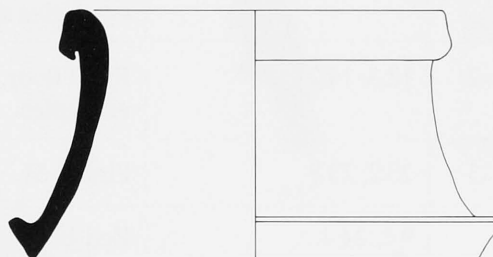
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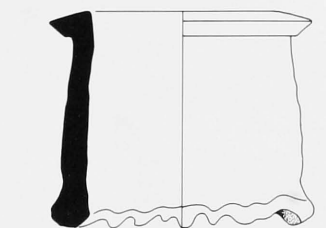
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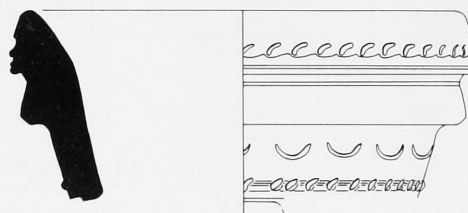
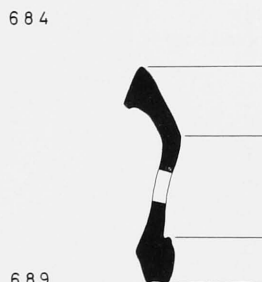
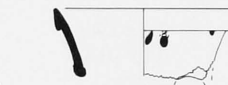
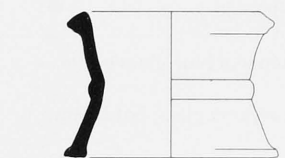
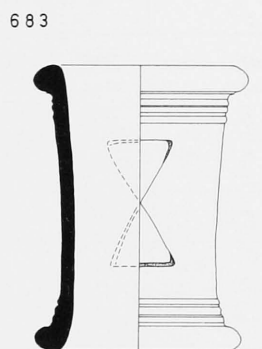
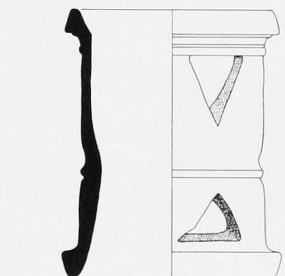
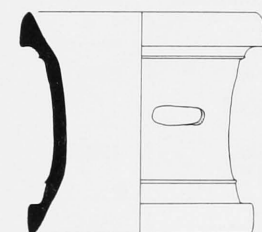
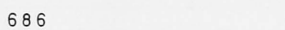
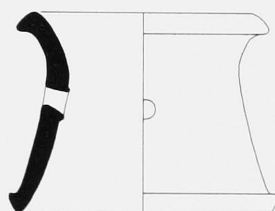
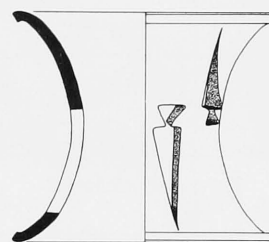
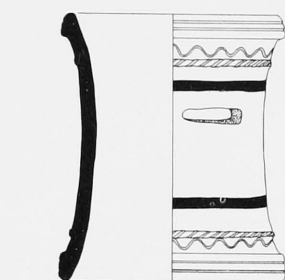
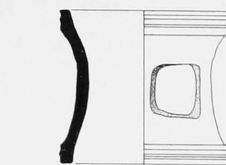
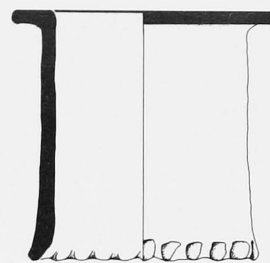
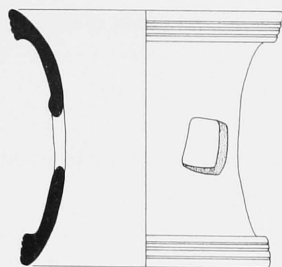
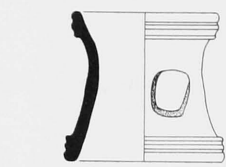
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Artefact Drawings

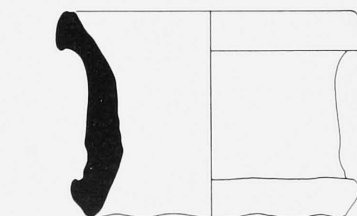
Figure 217. *Mitanni and Old Babylonian stands, scales 1:10 and 1:4 (680–88 and 692–3, scale 1:10; 689–91 and 694–5, scale 1:4).*

No.	HH locus	HH level	Ware	Dimensions ht; d. in cm	HH range	Comments	Reg. no.	TB cat. no.
680	10	2	3	20.0; 19.4		Rm 2 floor.	84.168	6112
681	10	2	3	20.4; 22.4		Rm 2 floor.	84.167	6111
682	10	2	3	26.7; 29.0		Rm 2, found lying over tablet no. 6; 4 fenestrations, 3 circular & 1 oval.	84.169	
683	10	2	2	29.4; 29.8		2 opposing fenestrations.	84.161	
684	44	2	2	37.6; 23.0		Rm 5 floor, roughly cut triangular fenestrations.	85.58	7251
685	14	2	3	34.1; 36.0		Rm 3 floor, burnt, 3 rectangular fenestrations.	84.172	6110
686	14	2	3	35.7; 28.0		Rm 3, dark brown paint, 2 slashed ribs, traces of blue frit on rim & base edges, 2 opposing rectangular fenestrations.	84.170	6109
687	14	2	3	35.7; 26.5		Rm 3, opposing triangular fenestrations.	84.171	6108
688	91	2	5	19.4; 23.0		Rm 7.		
689	207	2	3	11.8; 19.5		Rm 12 floor fill, 3 circular fenestrations, brown fabric.	86.51	
690	91	2	6	13.3; 14.0		Rm 7, red-brown paint, 4 further examples all unpainted.	85.91	7232
691	41/42	2	2	12.3; 14.2		Rm 5 floor, warped, 2 further examples.	85.52	7222
692	444	5b	3	25.2; 23.8		Figure 51.	88.16	10210
693	surface			9.2; 24.4		Red-brown paint, pale surface, orange gritty paste with heavy chaff & mica.		
694	140		3	10.1; 24.0		Cleaning around s. edge of temple, impressed decoration.		
695	345	8	4	10.9; 15.2		Floor in Tr. C4.		

Artefact Drawings



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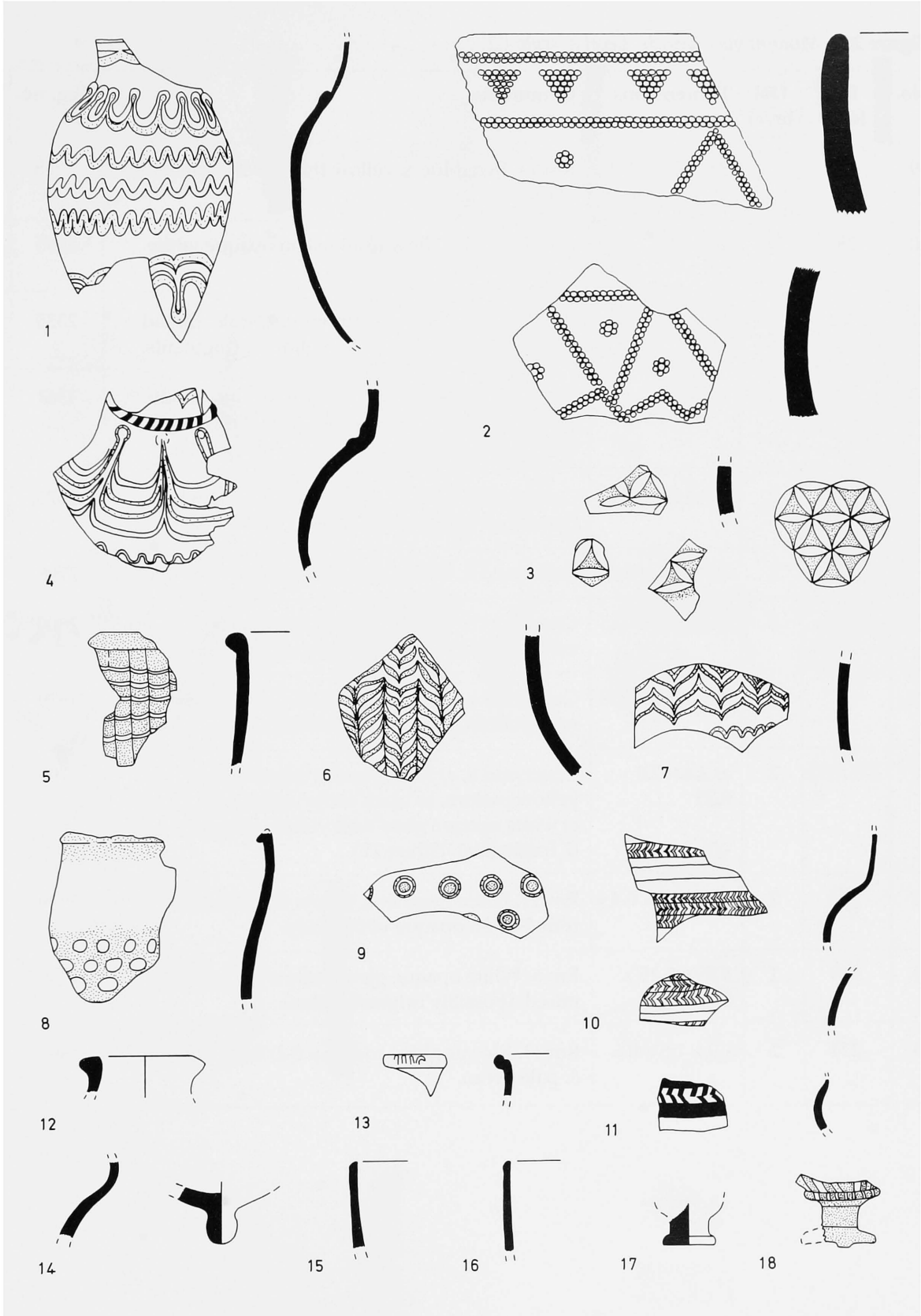


Artefact Drawings

Figure 218. *Mitanni glass vessels, Level 2, scale 1:1 (dimensions given of largest fragment).*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
1	66	2	10.5; th. = 0.45	Rm 7. White & yellow festoons on blue body, cf. Rimah, <i>Iraq</i> 32, pl. 3e. Figures 11 & 119.	1877	7023
2	58	2	3.0 × 1.5 × 0.25	Rm 5. Beaker ornamented with tiny spheres of yellow & white glass on dark, now grey, body. Unique. Figure 122.	1878	7028
3	204	2	2.8 × 1.7 × 0.5	Rm 20. Ten fragments of mosaic bowl/beaker. Intersecting white lozenges on a blue ground. Cf. Late Assyrian example from Assur tomb 311 (Haller 1954, pl. 12:d,e).	2413	8186
4	572	2	6.1 × 6.1 × 0.5	Rm 6. Black & white rope twist at base of neck, blue body with white & orange brown festoons. Upper fill of drain. Figure 120.	4434	11002
5	572	2	4.5 × 2.3 × 0.7	Rm 6. Fluted neck, dark blue glass with lighter blue scalloped threads. Figure 120.	4435	11003
6	224	2	3.7 × 4.5 × 0.6	Rm 11. Fluted bottle fragment. Dark blue & white feathered chevrons. [Corning no. 1235] cf. Rimah <i>Iraq</i> 32, pl. 3b.	2524	
7	345	2	5.2 × 2.8 × 0.4	Rm 14. Yellow thread festoon on decayed white lower body.	2888	9152
8	224	2	5.5 × 4.2 × 0.4	Rm 11. White roundel; green/white body; pattern continues on neck.	2523	
9	271	2	6.3 × 3.1 × 0.35	Courtyard 8. Bottle fragment, raised roundels, yellow around green centre, white body.	2798	9149
10	91	2	5.0 × 3.0 × 0.2	Rm 7. Twisted rope bands of dark blue, yellow/white, producing herring-bone effect. Third fragment, HH 136.	1982	7158
11	136	2	2.4 × 1.7 × 0.15 – 0.3	Rm 13. Twisted rope glass; black & yellow/white, surface badly flaked.	2253	8185
12	224	2	d. = 3.0	Rm 20. Blue body, faded to white. Twisted rope pattern on rim.	2347	
13	271/272	2	2.2 × 1.4 × 0.3	Courtyard 8. Yellow design on rim.	2799	9149
14	224	2		Rm 11. 40 fragments of blue glass bottle.	2423	8183
15	204	2	th. = 0.3	Rm 20. Opaque creamy glass, bottle rim.	2610	
16	204	2	d. = 6.0; th. = 0.2	Rm 20. 2 rim fragments of creamy white glass.	2611	
17	108	2	d. = 1.8	Rm 10. Beaker base, cobalt blue.	1981	
18	581	2	ht = 2.5; d. of stem = 1.3	Rm 6, on lower stairs. Blue vessel with yellow & white vertical ornament; blue & white rope twist above footed base.	4316	11004

Artefact Drawings

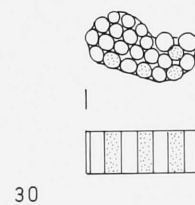
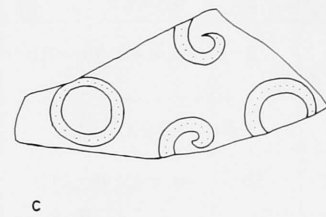
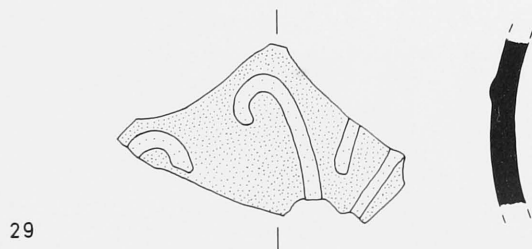
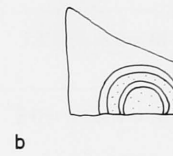
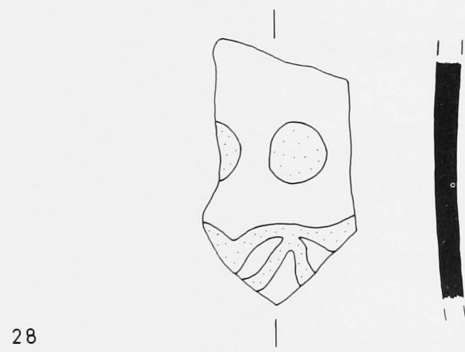
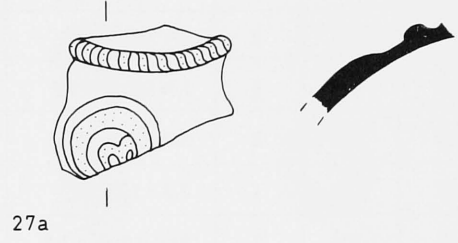
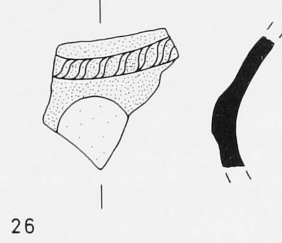
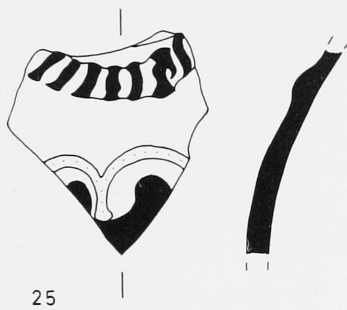
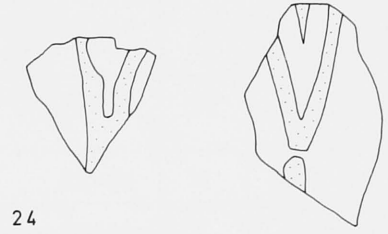
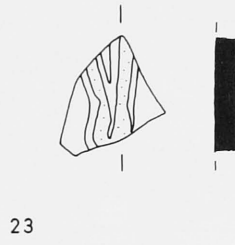
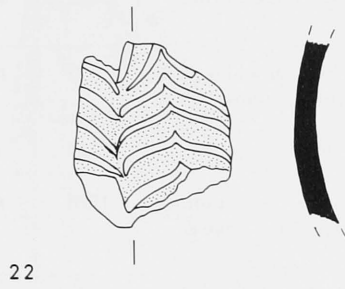
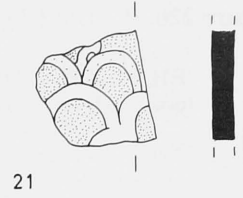
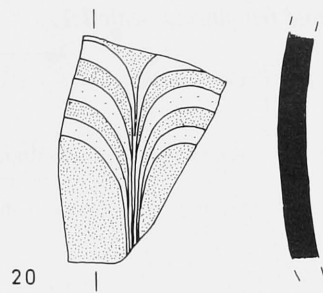
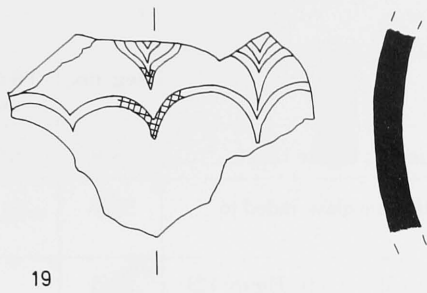


Artefact Drawings

Figure 219. *Mitanni glass vessels, Level 2, scale 1:1.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
19	345	2	3.9 × 2.7 × 0.4	Rm 14. Red, blue & yellow thread festoon on blue glass.	2968	9151
20	287	2	2.2 × 2.8	Courtyard 8. Yellow festoons on opaque white glass.	2675	
21	204	2	1.5 × 1.5 × 0.3	Rm 20. White & yellow 'mountain scale' thread, glass body faded to green/yellow. 2 fragments.	2335	8184
22	575	?5/6	th. = 0.2	Rm 6. Chevron pattern in green & white. Body glass faded to pale yellow & green. From top course of red <i>libn</i> pavement.	4361	
23	287	2	1.3 × 1.0 × 0.3	Courtyard 8. Yellow, dark blue/black & white pattern on opaque white glass.	2675	
24	271	2	1.5 × 1.6 × 0.4	Courtyard 8. Yellow chevrons on white ground.	2798	9149
25	272	2	2.5 × 2.85 × 0.3	Courtyard 8. Yellow & black twisted rope pattern; yellow & black thread festoons. Figure 121.	2800	9155
26	58	2	4.4 × 3.0 × 0.35	Courtyard 8. 2 fragments of blue glass bottle with rope pattern and inlaid raised roundels.	1879	7026
27	271/272	2	a) 2.4 × 2.0 × 0.25	Courtyard 8. a) Rope band & raised roundels, yellow pattern; b) black circle within yellow ring; c) white opaque glass with yellow pattern. (7 fragments). Figure 121.	2799	9149
28	209	2	3.4 × 1.9 × 0.4	Rm 11. Bottle fragment, yellow thread festoon & roundels on opaque white body.	2599	8191
29	559	2	3.85 × 2.25 × 0.45	Rm 6. White opaque glass, yellow inlay, slightly raised, (possibly originally blue).	4359	11006
30	224	2	1.0 × 1.6 × 0.6	Rm 11. Mosaic glass, rods d.= 0.2, faded to white & pale-green.	2593	

Artefact Drawings

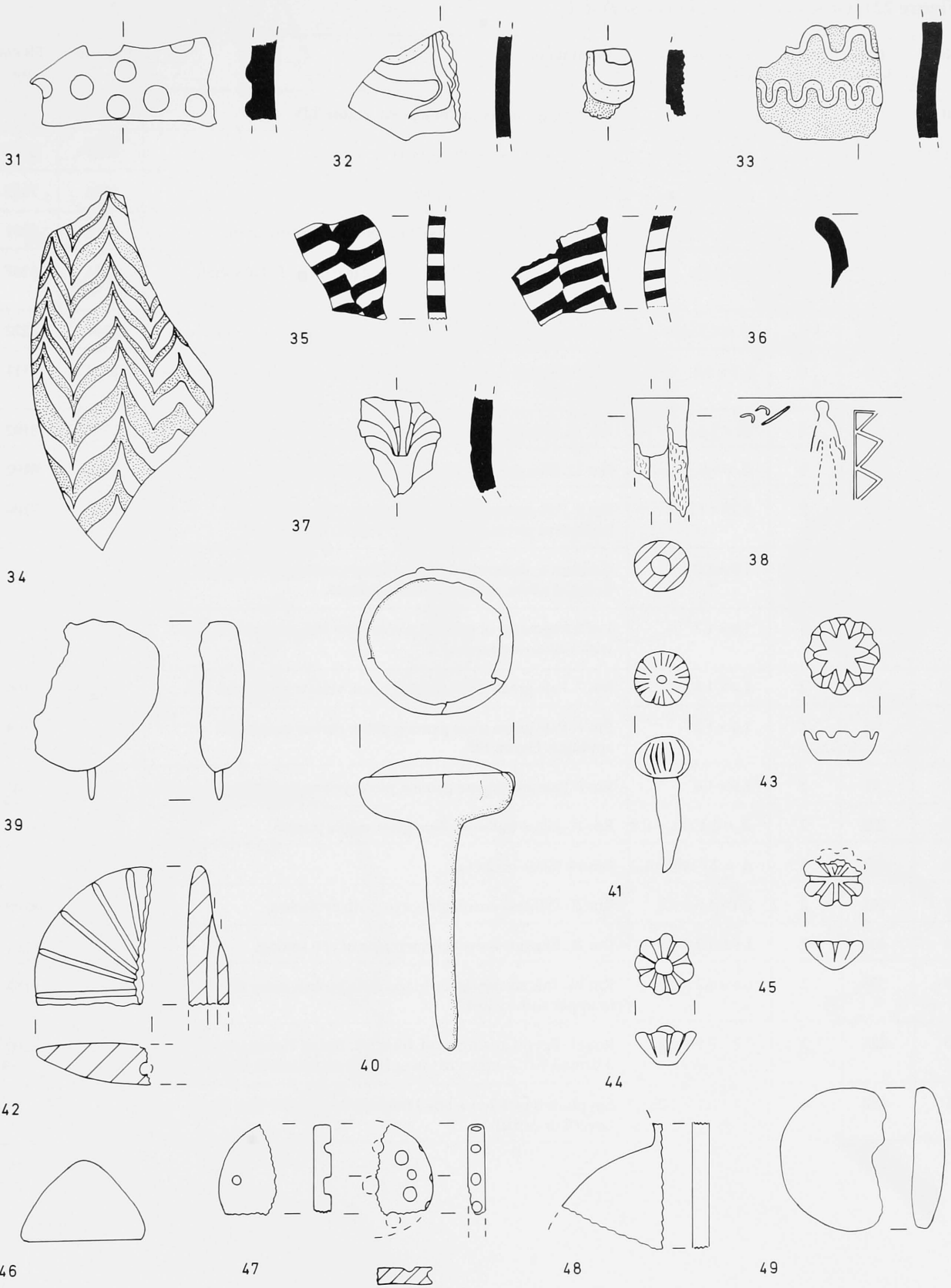


Artefact Drawings

Figure 220. *Pre-Level 2 glass; glass and frit objects, scale 1:1.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
31	339	3/4	3.2 × 1.5 × 0.4	White opaque glass with raised roundels. Figure 121.	2889	9154
32	452	2-5	2.0 × 2.05 × 0.25	White & yellow pattern on originally blue glass, faded to green. Figure 123.	3207	
33	461	4	2.2 × 2.05 × 0.35	White & yellow threads on green to yellow body. Figure 123.	3865	
34	471	5	6.1 × 0.35-0.45	Feather pattern created by deep fluting. Blue vessel, white inlay. Figure 123.	3273	10080
35	441	5b	2.0 × 1.3 × 0.3	Rectangular dark grey (?originally cobalt blue) & white glass; diagonal pattern. 4 fragments (unique at Brak). Figure 123.	3122	10081
36	449	?6	th. = 0.4	Rim of blue glass vessel faded to green/white.	3121	
37	3	5	1.8 × 1.4 × 0.4	Fragment found in plaster covering original palace columned façade. Yellow-green body (originally blue) with orange & white festoons.	1278	6180
38	24	2	2.0 (ext.) × d. = 1.0	Corridor 4 floor. Fragment of glass cylinder seal. Standing human & panel of incised triangles. Seal 14.	1857	
39	224	2	3.1 × 0.2 × 0.9	Rm 11. Glass lollipop on gold wire; decayed glass now white.	2537	8188
40	311	5	l. = 5.1; d. = 2.7	C/b nail with inset glass head. Figure 126.	2842	9016
41	224	2	3.0 × d. = 1.6	Rm 11. C/b nail with frit or faience head.	2566	8063
42	78	1	2.3 × 1.7 × 0.7	MA rosette, faience, yellow glaze.	1880	
43	224	2	ht = 0.5; d. = 1.2	Rm 11. 8-petalled rosette inlay; faience, yellow glaze. Figure 133.	2433	8217
44	92	2	ht = 0.6; d. = 1.1	Courtyard 8. 8-petalled rosette inlay, blue frit. (2 examples). Figure 134.	1948	7128
45	24	2	d. = 1.1; th. = 0.5	Corridor 4 floor. Miniature 8-petalled rosette, faience, yellow glaze.	1570	
46	58	2	4.3 × 2.8	Courtyard 8 floor. Faience jar stopper.	1672	7029
47	224	2	d. = 4.0; th. = 0.6	Rm 11. Heavily calcined frit disc with traces of dark ?adhesive in circular indentations.	2508	
48	65	2	4.3 × 4.5 × 0.6	Rm 7 fill. Flat, blue frit object fragment.	1984	
49	536	1b	d. = 4.9; th. = 1.3	Dark blue glass disc.	4319	11008

Artefact Drawings

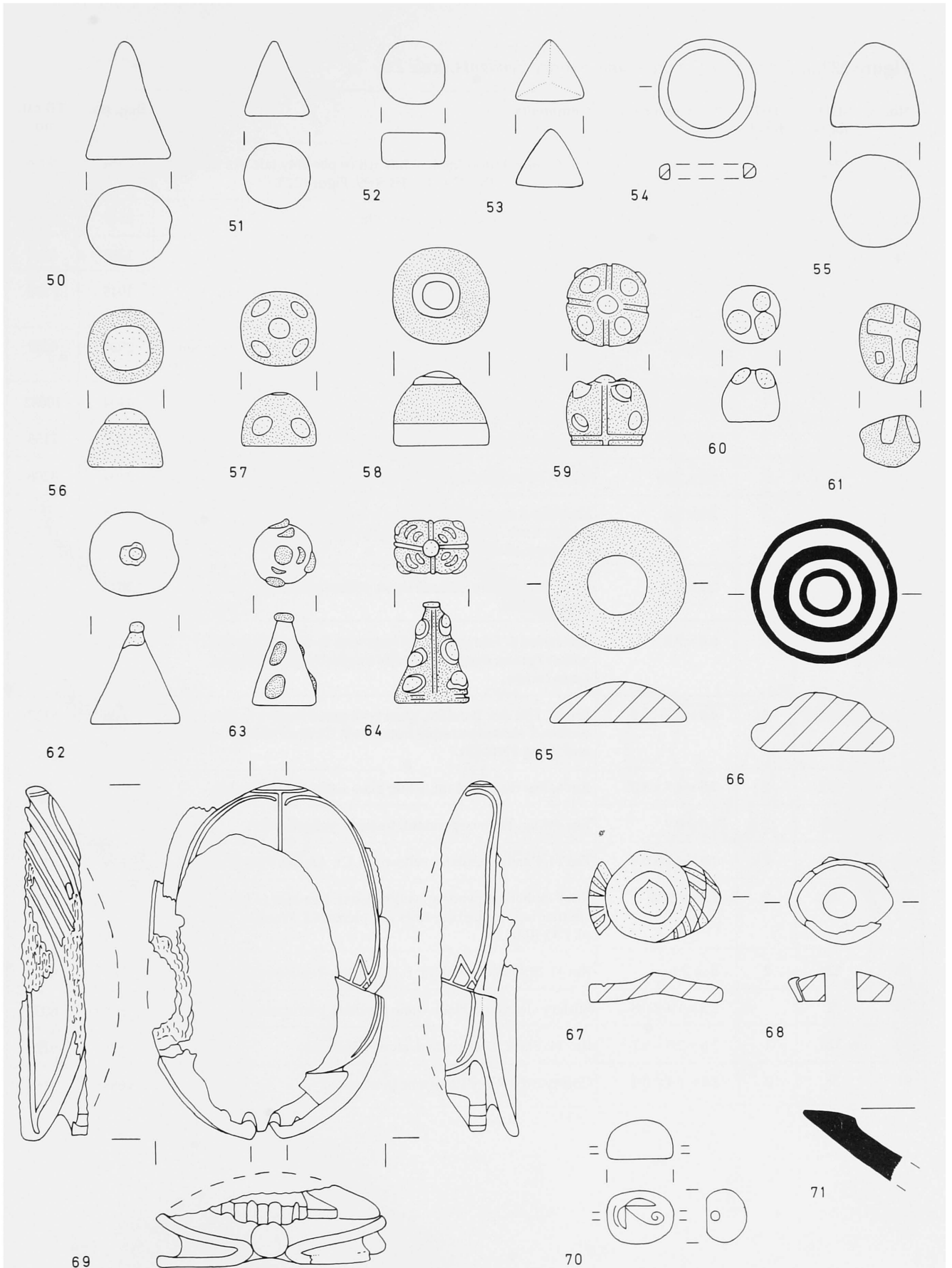


Artefact Drawings

Figure 221. *Glass and faience objects, scale 1:1.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
50	77	2	2.2 × 1.4	Rm 7. Blue faience gaming piece. Figure 125.	1876	7110
51	241	2	1.4 × 1.2	Rm 21. White frit gaming piece.	2527	8217
52	80	1	0.45 × 1.3	White frit disc/gaming piece.	1946	7132
53	21	1	side = 1.3	Rm 5. Blue faience tetrahedron counter/gaming piece.	1575	7131
54	3	EM	1.8 × 0.3	Faience ring, yellow glaze; ?part of eye inlay. Fill associated with external Palace columns.	1474	6167
55	207	2	d. = 1.7 ; ht = 1.6	Rm 12. Greenish-yellow (?originally blue) glass gaming piece.	2344	8222
56	41	2	1.1 × 1.4	Rm 5. Orange & blue glass gaming piece (slightly concave base). Figure 125.	1569	7111
57	207	2	d. = 1.4 ; ht = 1.0	Rm 12. Blue glass gaming piece, yellow insets. Figure 133.	2346	8192
58	207	2	d. = 1.8 ; ht = 1.4	Rm 12. Blue glass gaming piece, white thread. Figure 133.	2345	8192
59	106	2	1.25 × 1.3	Rm 9. Pale green glass gaming piece, yellow appliqué. 3 identical pieces from Rm 12, TB 8193. Figure 125.	1950	7106
60	548	2	1.0 × 1.0	Corridor 6, destruction debris. Glass gaming piece. Blue base, decayed white, orange-yellow appliqué.	4190	
61	80	1	1.6 × 1.2	1 of 5 fragments of gaming pieces from MA oven; blue glass with yellow appliqué.	1947	
62	91	2	1.9 × 1.6	Rm 7. Pale green glass gaming piece, yellow tip. Figure 125.	1942	7108
63	85	2	1.6 × 1.2	Rm 1. Pale green glass gaming piece; darker turquoise appliqué. Figure 125.	1885	7109
64	91	2	1.9 × 1.4	Rm 7. Pale green glass gaming piece, yellow appliqué. Figure 125.	1943	7107
65	224	2	d. = 2.4 ; th. = 0.8	Rm 11. Glass bullseye. Blue glass, white pupil.	2503	8189
66	338	2	d. = 2.7 ; th. = 1.2	Rm 14. Glass bullseye.	2967	
67	241	2	2.4 × 1.6 × 0.3	Rm 21. Whitish-cream glass eye, with eyelashes.	2588	8190
68	241	2	1.8 × 1.2 × 0.7	Rm 21. Blue glass eye with remains of c/b setting.	2432	8221
69	338	2	6.6 × 4.2 × 1.5	Rm 14. Talc scarab, green glaze. Base broken away and much of upper surface lost.	2966	9153
70	224	2	1.2 × 0.9 × 0.7	Rm 11. Egyptianizing bead, blue frit. Eye of Horus (or possibly, if turned 90°, a crown of lower Egypt on a basket). Figure 127.	2586	8209
71	432	4	2.4 × 2.1 × 1.25	Egyptian-type faience bowl fragment, turquoise blue glaze. Level 4 or earlier.	3094	

Artefact Drawings

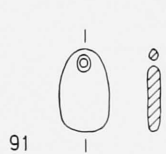
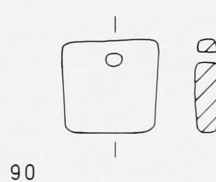
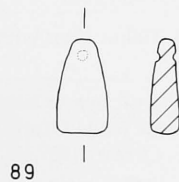
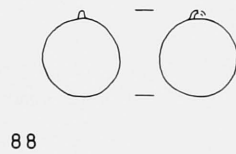
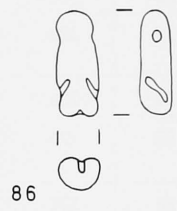
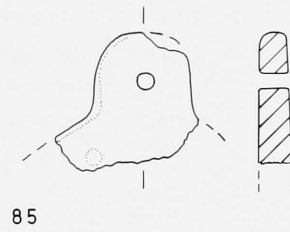
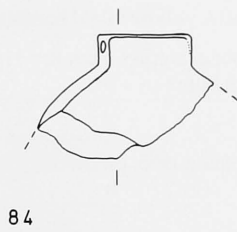
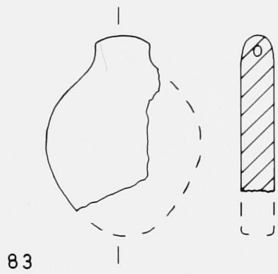
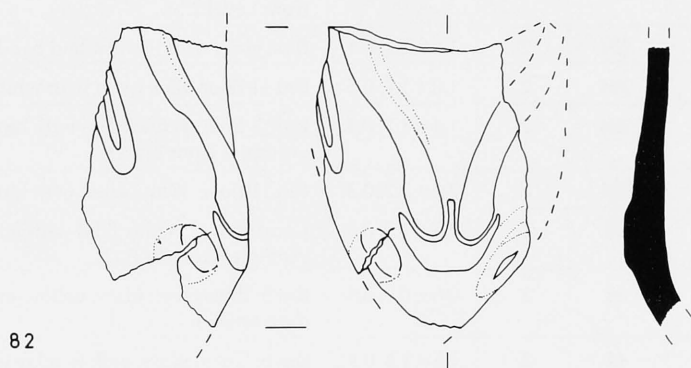
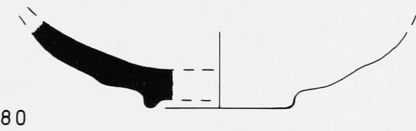
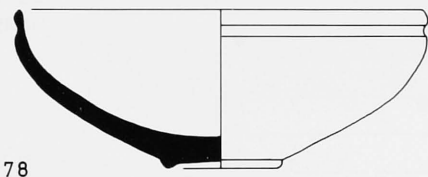
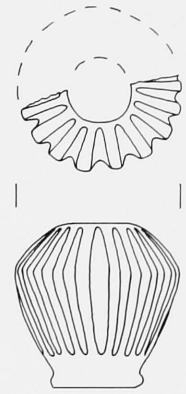
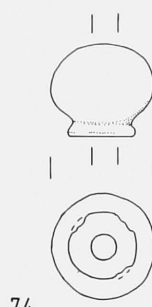
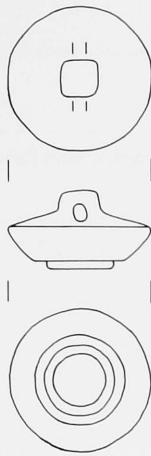
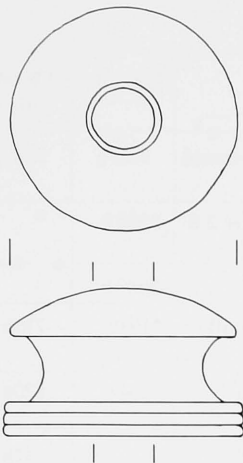


Artefact Drawings

Figure 222. *Frit and faience objects, and assorted pendants, scale 1:2.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
72	218	1	3.8 × 6.0; dp. = 1.9	Rm 15. Finial/doorknob, white frit or possibly talc. An identical example from Rm 22 floor, TB 8099. Figure 128.	2564	8098
73	243	2	2.0 × 3.9; dp. = 0.4	Rm 22. White frit finial. Figure 128.	2541	8100
74	8	2	2.5 × 2.7; dp. = 0.7	Rm 3. White frit macehead.	1383	6163
75	72	2	2.8 × 2.5	Rm 7 drain. White frit finial. Base depression filled with possibly adhesive substance.	1945	7112
76	224	2	4.2 × 4.4	Rm 11 floor. Faience macehead. Course buff fabric with green glaze. Figure 129.	2539	8207
77			4.4 × 1.6; dp. = 0.4	Tr. A. White frit finial.	4104	10082
78	58	2	4.4 × 11.0	Courtyard floor. Yellow frit bowl.	1990	7155
79	224	2	8.8 × 20.0	Rm 11 floor. Blue frit bowl. Heavily burnt before breakage.	2404	8206
80	581	2	2.4 × 3.5	Corridor 6, destruction debris on lower stairs. Ring base of faience bowl. Interior glaze yellow, exterior yellow with patches of (?original) dark blue.	4315	
81	91	2	2.3 × 4.8	Rm 7. Ring base of faience bowl, yellow glaze, now with a very silvery sheen.	2023	
82	271	2	8.0 × 7.0	Courtyard 8. Faience rhyton fragment. Exterior glaze now yellow/green; interior probably originally blue, faded to green/white.	2803	
83	204/248	2	4.6 × 2.7 × 0.9	Rm 20. Flat disc pendant, glass with green surface & blue section. 1 further example from Rm 5. Cf. Starr 1937, pl. 120WW and Barag 1970, 191.	2628	8127
84	572	2	3.5 × 4.7 × 1.3	Rm 6. Flat disc pendant, white glass with tinges of green.	4365	11005
85	24	2	4.0 × 0.9	Rm 4 floor. Faience pendant, traces of yellow glaze.	1572	
86	209	2	2.8 × 1.1 × 0.9	Rm 11. Phallic pendant, yellow frit. Cf. Andrae 1935, 91, Tf. 36.	2609	8210
87	46	2	1.15 × 0.95	Rm 7. Spherical pendant, yellow glass. Remains of loop on top, circular hole in the base does not pierce. Cf. Woolley 1955, pl. LXVIII b9.	1700	7126
88	224	2	d. = 2.1	Rm 11. Spherical pendant, rock crystal. Remains of loop on top.	2563	8155
89	2		2.5 × 1.4 × 0.8	Surface clearance. Black stone pendant, perforation incomplete.	1288	6033
90	326	1	2.6 × 2.5 × 0.7	Rm 14. Black, fine-grained, stone pendant.	2828	9120
91	58	2	2.2 × 1.4 × 0.4	Courtyard 8. Grey limestone pendant.	1683	7165

Artefact Drawings

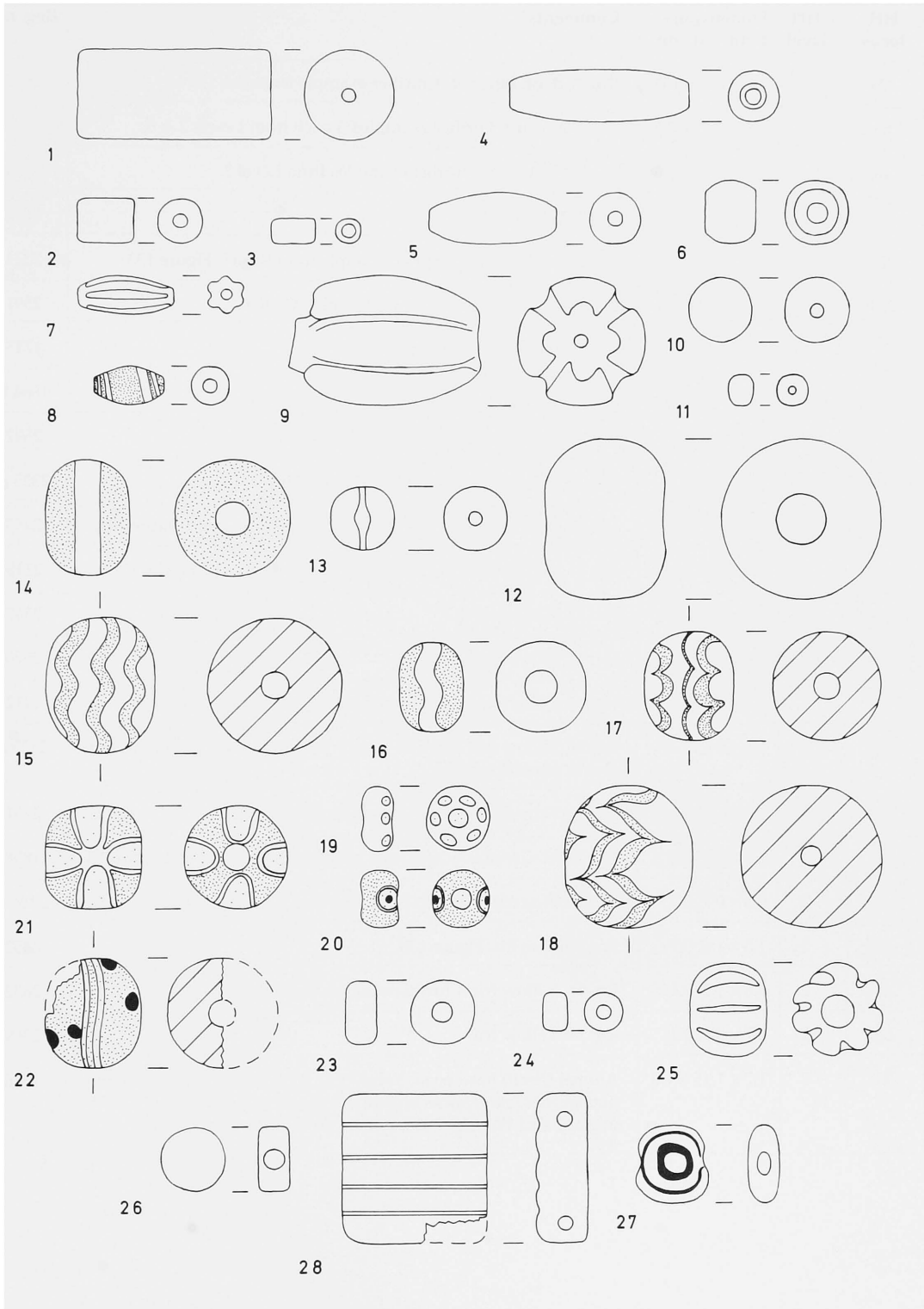


Artefact Drawings

Figure 223. *Glass beads, scale 1:1.*

No.	HH locus	HH level	Dimensions L./th. × d.; dp	Comments	Reg. no.	TB cat. no.
1	224	2	3.0 × 1.4; 0.2	Rm 11 floor. Blue glass. 8 further examples from Level 2. Also found in white.	2543	8200
2	224	2	0.9 × 0.7; 0.2	Rm 11 floor. White glass. 4 further examples from Level 2. (Nos. 2 & 3 usually white but also found in green, yellow & blue.)	2580 b	
3	224	2	0.7 × 0.4; 0.2	Rm 11 floor. White glass. 1 further example from Level 6.	2580 h	
4	80	1	2.8 × 0.8; 0.25	MA. Blue glass. 2 further examples from Level 2. (Nos. 4–6 usually white, but also blue & green.)	1988	7156
5	224	2	2.0 × 0.8; 0.2	Rm 11 floor. White glass. 3 further examples from Level 2; 1 each from Levels 5 & 6.	2542	8204
6	342	3	0.8 × 1.0; 0.3	White glass.	2893	9178
7	3		1.5 × 0.6; 0.15	Red <i>libn</i> , overlying columned façade. Green glass.	1467	6165
8	224	2	1.1 × 0.6; 0.2	Rm 11 floor. Blue glass with white inlaid bands. 3 further examples from Rm 11.	2639	8205
9	224	2	2.8 × 2.0; 0.2	Rm 11 floor. Blue glass, burnt. 1 further example from Rm 11.	2540	8194
10	494	6	1.0 × 1.0; 0.2	Tr. D. Yellow glass. A further 45 spherical glass beads from Level 2; 1 from Level 5/6. (Nos. 10–12 usually white, but also blue, yellow & green.)	4084	10084b
11	224	2	0.4 × 0.5; 0.1	Rm 11 floor. White glass.	2517 a	
12	66	2	1.9 × 2.5; 0.8	Rm 7. Yellow glass.	1843	7123
13	485	6	1.0 × 1.0; 0.2	Tr. D. Glass, now grey with a white inlaid band.	4083	10084a
14	224	2	1.3 × 1.8; 0.5	Rm 11 floor. Blue glass with white inlaid band. 2 further examples from Level 2.	2444	8201
15	224	2	1.0 × 2.1; 0.4	Blue glass with white inlaid bands.	2618 b	8201
16	224	2	1.0 × 1.4; 0.5	Rm 11 floor. Blue glass with white inlaid band.	2629 i	8202
17	224	2	1.4 × 1.7; 0.4	Rm 11 floor. White glass with blue inlaid festoons. 2 further examples from Rm 11.	2618 c	8201
18	224	2	2.0 × 2.2; 0.3	Rm 11 floor. White glass with blue inlaid festoons.	2618 a	8201
19	58	2	0.5 × 1.0; 0.3	Courtyard 8. White glass with inlaid yellow circles. 3 further examples from Level 2.	1718	7161
20	44	2	0.6 × 0.9; 0.3	Rm 5. Blue-green glass, yellow inlaid circles ringed in white with dark centres.	1669	7121
21	44	2	1.5 × 1.6; 0.4	Rm 5. Green glass, yellow inlay edged in white. 1 further example from Level 2. Figure 134.	1658	7122
22	41	2	1.5 × 1.7; 0.4	Rm 5. Green glass with blue & yellow inlaid bands and dark circles.	1849	
23	228	2	0.5 × 1.0; 0.3	Rm 11. White glass. 6 further examples from Rm 11; 1 each from Levels 5 & 6. (Also found in blue.)	2367	8202
24	224	2	0.4 × 0.6; 0.2	Rm 11 floor. White glass.	2580 g	
25	476	6	1.2 × 1.4; 0.6	Tr. C5. White glass. Cf. Woolley 1955, pl. LXVIII a3 and Starr 1937, pl. 130 I.	3869	10083a
26	224	2	0.5 × 1.0; 0.3	Rm 11 floor. White glass.	2640	8205
27	58	2	0.5 × 1.2; 0.3	Courtyard 8. Yellow glass with inlaid black rings. Cf. Starr 1937, pl. 119L.	1854	7125
28	489	5b/6	l. = 2.3; w. = 2.25; th. = 0.8; dp. = 0.2	Tr. D <i>libn</i> collapse. Spacer bead, green glass. Usually green, but also occurs in blue & white. 2 further examples from Level 2; 1 each from Levels 4 & 5. Cf. Starr 1937, pl. 130:E–F.	3867	10087

Artefact Drawings

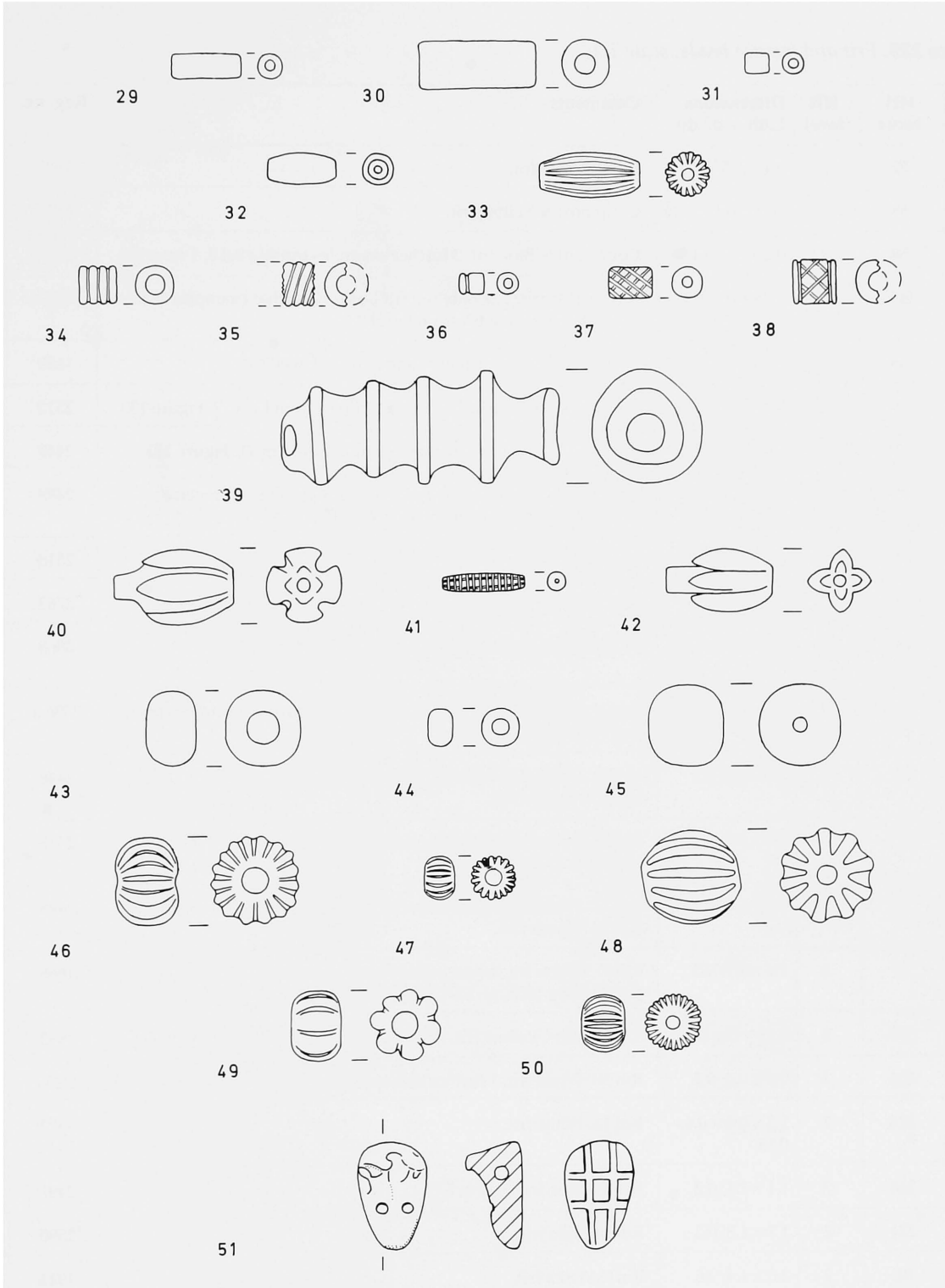


Artefact Drawings

Figure 224. *Frit and faience beads, scale 1:1.*

No.	HH locus	HH level	Dimensions L./th. × d.; dp	Comments	Reg. no.	TB cat. no.
29	224	2	1.1 × 0.4; 0.15	Rm 11 floor. Blue frit. 1 further example from Rm 11.	2627	8219
30	85	2	1.85 × 0.75; 0.3	Rm 1. Blue frit. Further examples; 1 each from Levels 2 & 5.	1886	7159
31	46	2	0.4 × 0.35; 0.15	Rm 7. White frit. 3 further examples from Level 2.	1864	
32	14	2	1.1 × 0.5; 0.1	Rm 3. Yellow frit.	1462	
33	224	2	1.6 × 0.7; 0.2	Rm 11. Yellow frit. 1 further example from Rm 11. Figure 133.	2521	8226
34	224	2	0.6 × 0.6; 0.3	Rm 11. Blue frit. Cf. Woolley 1955, pl. LXVIII a22.	2591	8299
35	44	2	0.5 × 0.7; 0.3	Rm 5. White frit.	1715	
36	46	2	0.4 × 0.35; 0.3	Rm 7. White frit.	1864 b	
37	224	2	0.7 × 0.5; 0.15	Rm 11. Faience, yellow body with blue glaze.	2592	8299
38	204	2	0.7 × 0.7; 0.3	Rm 20. Yellow frit. Cf. Gates 1976, fig. 42b.	2325 d	8225
39	224	2	4.4 × 1.8; 0.6	Rm 11. Blue faience, white frit with a lapis blue glaze. Figure 133.	2453	8212
40	224	2	1.9 × 1.2; 0.2	Rm 11. Yellow frit. Cf. Woolley 1955, pl. LXVIII a21. Figure 133.	2519	8215
41	224	2	1.3 × 0.3; 0.05	Rm 11. Yellow frit.	2547	8226
42	224	2	1.7 × 1.0; 0.2	Rm 11. Blue frit. Figure 133.	2520	8215
43	3		0.8 × 1.2; 0.4	Red <i>libn</i> , overlying columned façade. Yellow frit.	1412	6171
44	204	2	0.4 × 0.6; 0.25	Rm 20. Yellow frit. (Nos. 43–5 occur predominantly in yellow, but also in green & white.)	2325 a	8225
45	297	7	1.2 × 1.3; 0.2	Tr. A. White frit. 6 further examples from Level 2.	2731	9176
46	80	1	1.0 × 1.4; 0.5	MA oven. Green frit. 10 further examples from Level 2. Figure 134.	1858	7114
47	204	2	0.5 × 0.7; 0.25	Rm 20. Blue frit. 4 further examples from Level 2.	2324 c	8224
48	224	2	1.5 × 1.6; 0.3	Rm 11. Blue frit. Figure 133.	2452	8213
49	224	2	0.8 × 1.2; 0.4	Rm 11. Yellow frit. 1 further example from Level 2.	2632	
50	228	2	0.7 × 0.9; 0.2	Rm 11. Yellow frit.	2369	
51	21	2	1.7 × 1.15 × 1.0	Animal (?bull) head bead. Yellow frit. Eyes indicated by circular depressions, ears/horns broken. Cf. Starr 1937, pl. 120 BBB–DDD in glass, and Woolley 1955, 270–71, pl. LXVIIIb nos. 7 & 8.	1576	7130

Artefact Drawings

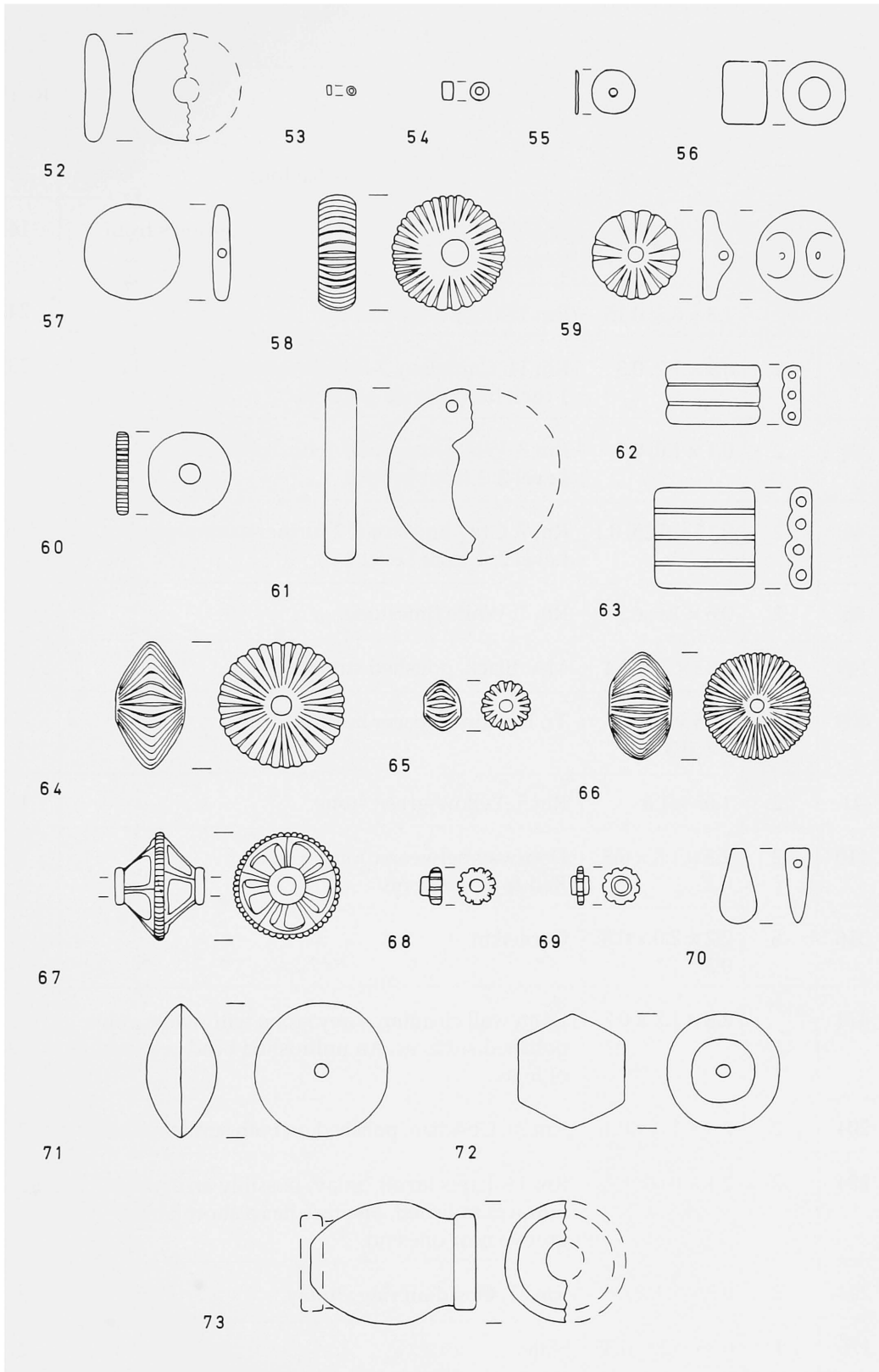


Artefact Drawings

Figure 225. *Frit and faience beads, scale 1:1.*

No.	HH locus	HH level	Dimensions L./th. × d.; dp	Comments	Reg. no.	TB cat. no.
52	52	2	0.4 × 1.7; 0.4	Rm 7. White frit.	1685	
53	58	2	0.05 × 0.15; 0.05	Courtyard 8. Yellow frit.	1851	
54	58	2	0.2 × 0.3; 0.1	Courtyard 8. Blue frit. 3 further examples from Level 2; 1 from 5a.	2022	
55	207	2	0.05 × 0.7; 0.1	Rm 12. Red frit. The only red frit bead. 12 further examples of the same shape in blue frit from Level 2.	2286 a	8226
56	55	1	0.7 × 1.0; 0.5	MA. Yellow frit. 1 further example from Level 2.	1699	
57	224	2	0.3 × 1.5; 0.1	Rm 11 floor. Blue frit. 2 further examples from Level 2. Figure 133.	2512	
58	224	2	0.6 × 1.8; 0.4	Rm 11. Blue faience. 1 further example from Rm 11. Figure 133.	2449	8216
59	224	2	0.5 × 1.4; 0.15	Rm 11. Yellow frit, perforated only through ridge on reverse. Cf. Tucker 1992, 164, Fig. 5 nos. 6 & 8. Figure 133.	2498	8219
60	224	2	0.2 × 1.3; 0.3	Rm 11. White frit.	2518	
61	301	2	0.5 × 2.7; 0.1	Courtyard 8. White frit.	2763	
62	485	6	1.5 × 0.95 × 0.3; 0.1	Tr. D. Spacer bead, white frit. Figure 133.	3868	10086
63	224	2	1.6 × 1.6 × 0.4; 0.2	Rm 11. Faience, yellow body, blue glaze. 3 further examples from Rm 11. Figure 133.	2536 a	8214
64	224	2	1.1 × 2.0; 0.3	Rm 11. White frit. 6 further examples from Level 2 & 1 from Level 1. Figure 133.	2446	8223
65	204	2	0.6 × 0.8; 0.2	Rm 20. Yellow frit. 2 further examples from Rm 20. Cf. Starr 1937, pl. 130M; 1939, 454.	2318	8225
66	224	2	1.0 × 1.7; 0.2	Rm 11. Faience, yellow body, blue glaze. 1 further example from Rm 20. Figure 133.	2448	8223
67	41	2	1.4 × 1.7; 0.3	Rm 5. Yellow frit, wheel bead. 4 further examples from Level 2. Cf. Woolley 1955, pl. LXVIII a28. Figure 134.	1668	7120
68	339	3	0.35 × 0.6; 0.2	Tr. <i>C tannur</i> . Yellow frit, occurs at Rimah in MA & Mitanni levels.	2892	9175
69	204	2	0.3 × 0.6; 0.2	Rm 20. White frit. 1 further example from Rm 11.	2325 c	8225
70	224	2	1.2 × 0.6 × 0.4; 0.15	Rm 11. White frit.	2513	
71	224	2	1.1 × 2.1; 0.2	Rm 11. Blue frit. Figure 133.	2497	8219
72	224	2	1.7 × 1.8; 0.2	Rm 11. Blue frit.	2590	8195
73	84	2	2.6 × 1.4; 0.6	Rm 7. White frit.	1944	7113

Artefact Drawings



Artefact Drawings

Figure 226. *Stone beads and small stone objects, scale 1:1.*

No.	HH locus	HH level	Dimensions L./th. × d./w.; dp	Comments	Reg. no.	TB cat. no.
74	44	2	1.65 × 0.8; 0.2	Rm 5. Banded agate/chalcedony.	1547	7143
75	10	2	1.6 × 0.6; 0.2	Corridor 2. Carnelian. 4 further examples from Level 2; 1 from Level 3.	1472	
76	224	2	1.3 × 0.3; 0.15	Rm 11 floor. Lapis lazuli.	2421	8153
77	228	2	0.9 × 1.2; 0.3	Rm 11. Carnelian. 7 further examples from Level 2; 1 each from Levels 4, 5 & 6.	2356	8284
78	14	2	0.1 × 1.0; 0.3	Rm 3. White limestone. 3 further examples from Level 2; 1 from Level 4.	1411	6068
79	46	2	0.15 × 0.25; 0.1	Rm 7. Grey limestone. 2 further examples from Level 2; 1 from Level 1.	1864 a	
80	85	2	0.6 × 1.6; 0.5	Rm 1. White limestone.	1868	7203
81	149	1	0.35 × 2.5; 0.4	MA. Black, polished stone.	2135	8278
82	403	8	1.75 × 0.6 × 0.4; 0.3	Tr. D shrine. Spacer bead, steatite.	3016	9162
83	41	2	1.65 × 1.8	Rm 5. Yellow-green stone.	1684	
84	110	2	2.3 × 1.8 × 0.8; 0.2	Doorway between rooms 9 & 10. Red & white stone.	1979	7152
85	316	6	2.2 × 2.0 × 0.8; 0.3	Carnelian.	2722	9161
86	474		2.8 × 1.7 × 0.7	From wall cleaning. Grey stone with white veins, polished surfaces. An unfinished bead or piece of inlay.	3252	10059
87	204	2	2.9 × 1.8 × 0.4	Rm 20. Obsidian, polished on both surfaces, ?inlay.	2597	
88	224	2	2.1 × 0.6	Rm 11. Lapis lazuli ?inlay, possibly an eyebrow. Surfaces polished, one face has a short lateral groove near one end.	2420	8152
89	224	2	0.2 × 1.4	Rm 11. Obsidian ring, ?inlay.	2511	8154
90	176	1	0.35 × 2.8; 0.35	Slate.	2120	
91	452	2-5	1.2 × 0.6 × 0.5	Grey-brown stone, highly polished surfaces, incomplete. ?Gaming piece.	3174	10051

Artefact Drawings



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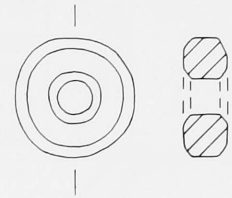
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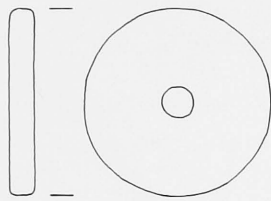
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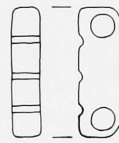
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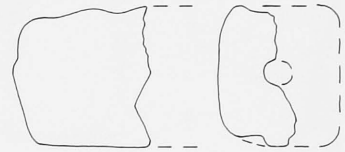
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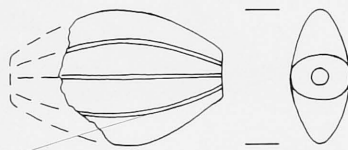
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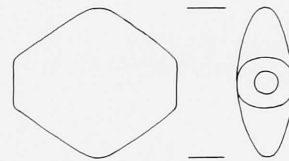
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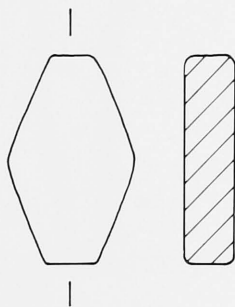
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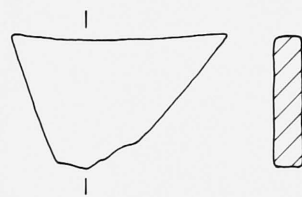
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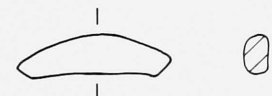
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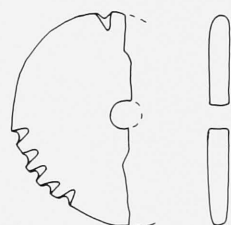
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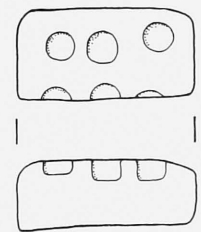
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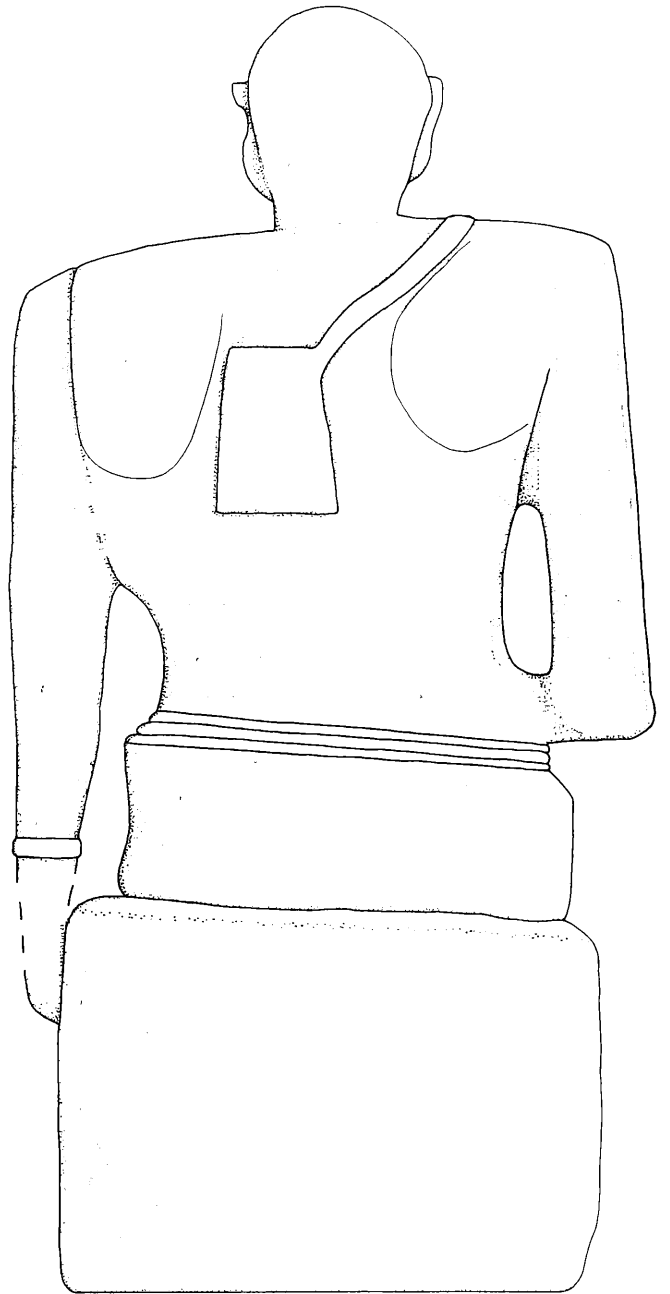
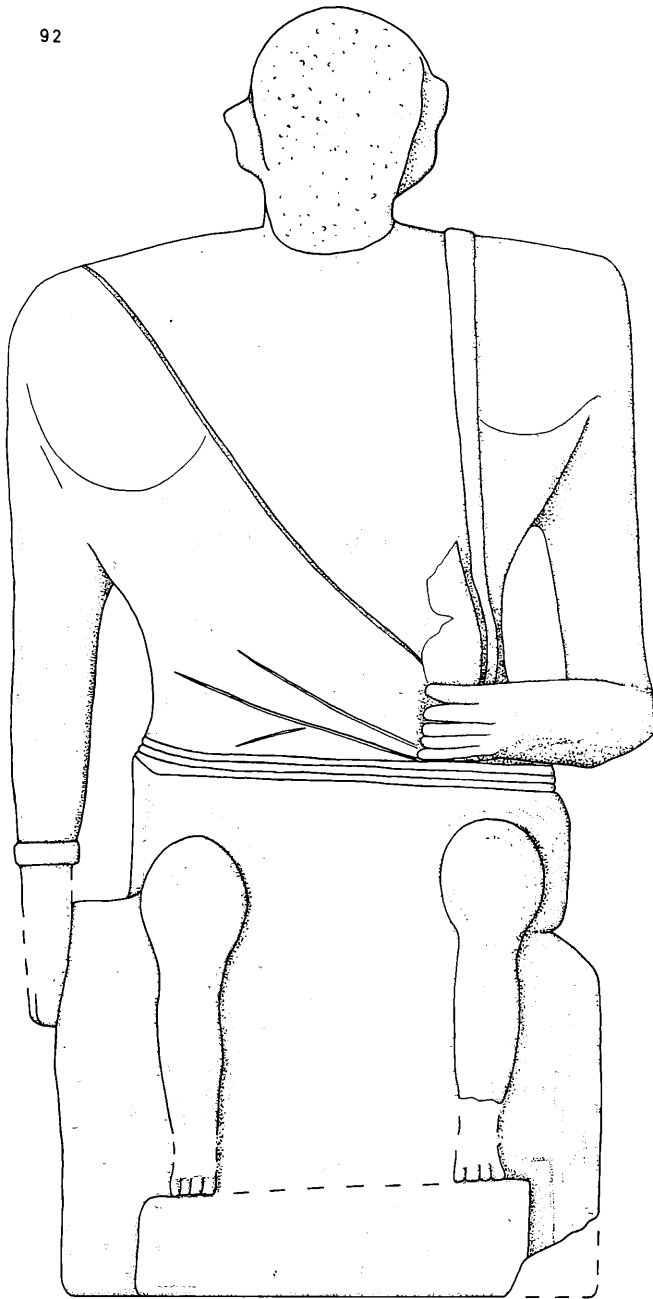
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Artefact Drawings

Figure 227. *Mitanni limestone statue.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
92	224	2	ht = 41.7; max. w. = 20.5; base w. = 17.2; ht of seat = 11.8; l. = 6.4	Rm 11, floor in doorway. Limestone statue. Burnt & broken, face lost. Figure seated on a square block with feet resting on a support. Figure 41. See colour photo, Rouault & Masetti-Rouault, 295.	2651	8232

92

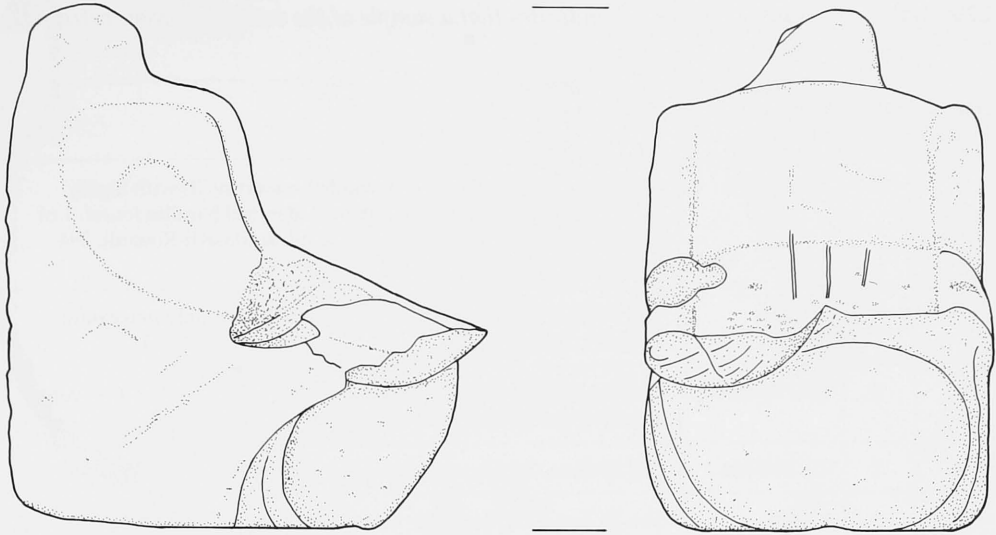


Artefact Drawings

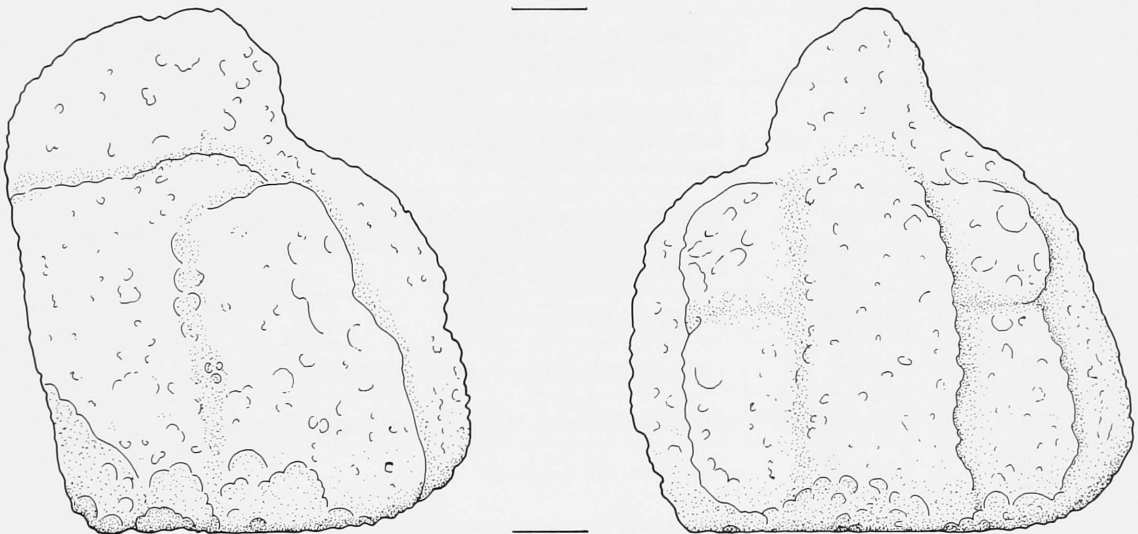
Figure 228. *Stone statuettes, scale 1:2.*

No.	HH locus	HH level	Dimensions ht; w.; l.	Comments	Reg. no.	TB cat. no.
93	471	5	13.9; 9.4; 12.8	Limestone statuette. Seated figure, probably male, incomplete. Legs broken. Figure 136.	3242	10045
94	471	5	14.0; 13.6; 12.5	Vesicular basalt statuette. Seated female.	3243	10046
95	525	8	11.8; 11.8; 7.7	Fill of vaulted shrine Tr. D. Limestone statuette, badly worn. Figure seated cross-legged with arms folded. Long hair, a necklace & beard are indicated. (Cf. <i>Iraq</i> 30, 1968, pl. 35d.)	4027	10047

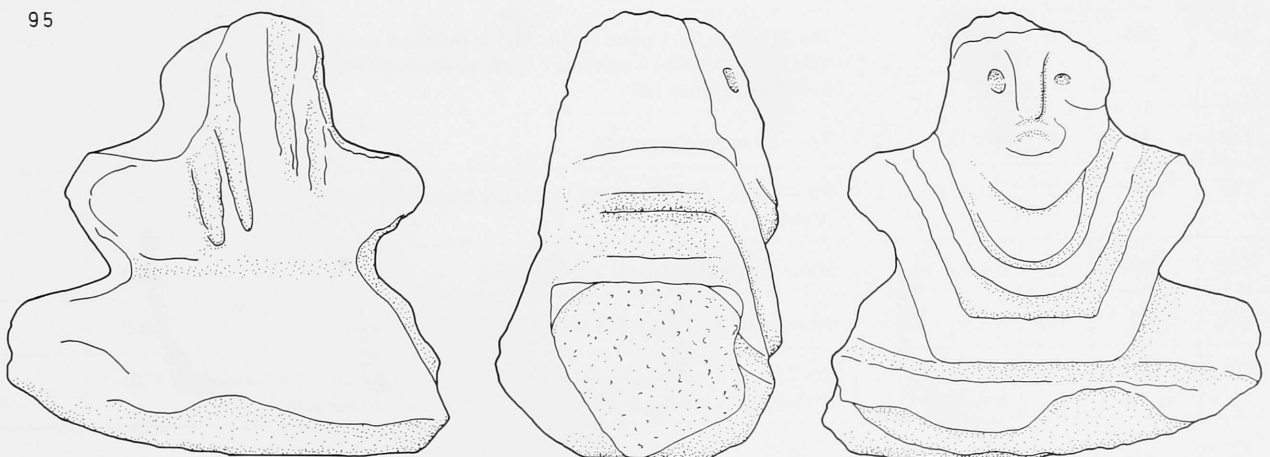
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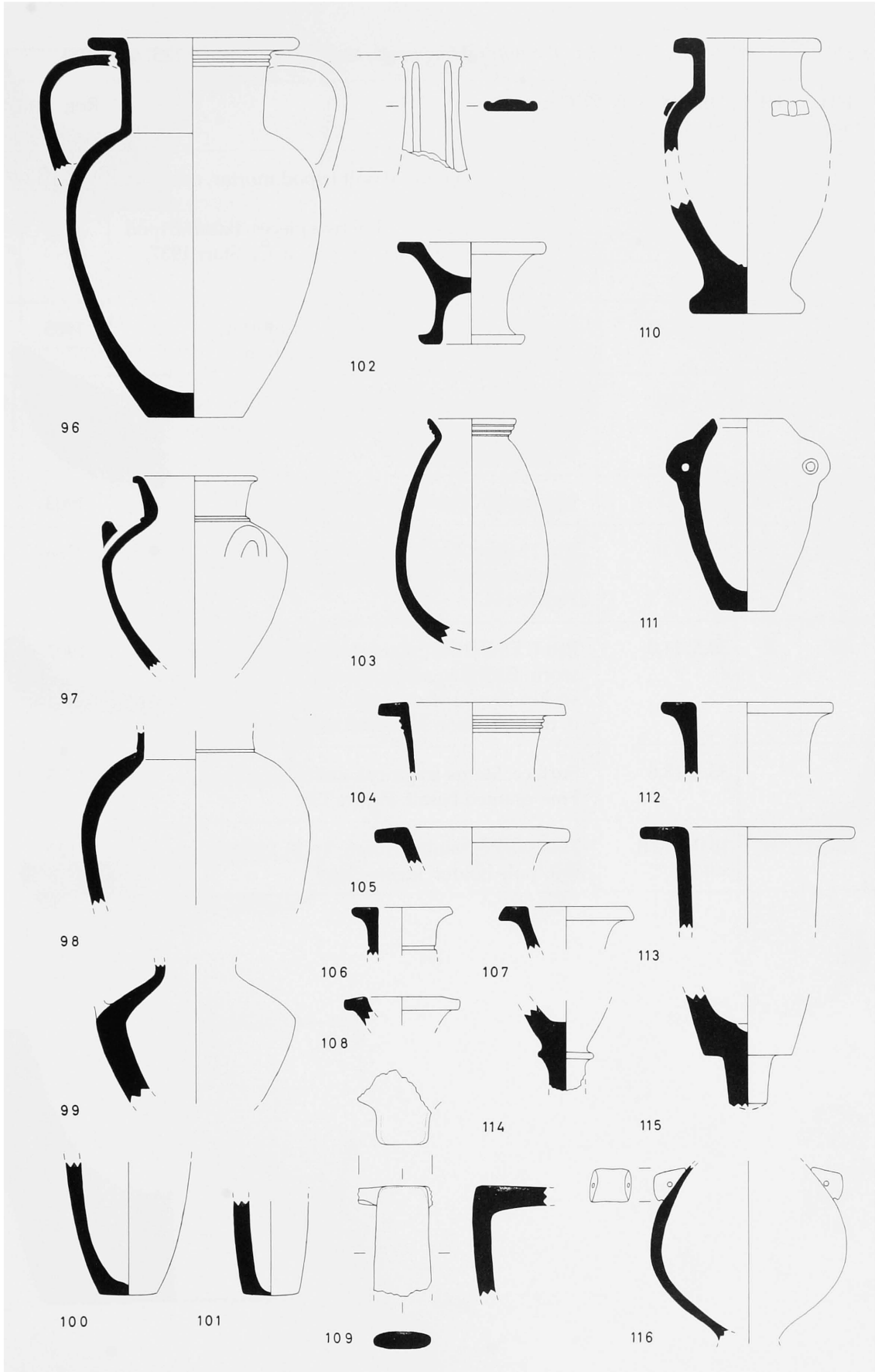


Artefact Drawings

Figure 229. *Alabaster vessels, scale 1:4. (t) indicates that a sample of the vessel has been tested with hydrochloric acid.*

No.	HH locus	HH level	Dimensions ht; d.	Comments	Reg. no.	TB cat. no.
96	58	2	26.1; 14.6	Courtyard 8 floor. Fine cream banded travertine (t) with highly polished exterior. Half of jar extant, 2 identical handles found, 1 of which joins directly. Figure 138. Rouault & Masetti-Rouault, 294 (restored vessel in colour).	1893	7046
97	243	2	13.0; 8.6	Rm 22 floor. Cream-white, 3 lugs originally, but only two extant. Probably travertine.	2647	
98	58	2	18.6; 15.8 (est.)	Courtyard 8 floor. Cream colour, polished surface. 2 handles were found in association with this vessel. Travertine (t).	1811	
99	204	2	9.0; 14.0 (est.)	Rm 20 floor. Cream-white. Remains of 1 lug. Probably alabaster.	2649	
100	248	2	9.3; 4.0	Rm 20, lower fill. Base, fine cream-white. Highly polished exterior. Probably travertine.	2538	
101	58	2	6.3; 3.9	Courtyard 8 floor. Base, surface corroded & worn, ?alabaster.	1803	
102	58	2	7.1; 7.4	Courtyard 8 floor. Potstand, half of vessel extant, polished surface. Identical example TB 7048, HH 85, Rm 1, Figure 137. Travertine.	1812	7047
103	476	6	15.7; 6.1	Tr. C5. Light brown & cream banded travertine (t), grooved decoration on outer rim. Four further fragments of same vessel reg. nos. 3260–63. Figure 139.	3336	
104	210	2	4.8; 13.0	Rm 9. 2 rim fragments of the same vessel, 1 has a break where a handle would have joined. Wear on rim ?from lid. Travertine (t). Cf. Lilyquist 1995, fig. 108.	2390	
105	41	2	2.5; 13.5	Rm 5 lower fill. Rim fragment.	1603	
106	92	2	3.5; 7.0	Courtyard 8 floor. Rim fragment, slightly coarse alabaster.	2027	
107	91	2	2.9; 9.4	Rm 7. Rim fragment, highly polished surface. Travertine.	2028	
108	556	2	2.0; 8.0	Rm 6 floor. Rim fragment.	4171	
109	345	2	7.6; w. = 3.9	Rm 14 floor. Handle fragment. Alabaster (t).	2909	
110	204/205	2	19.0 (est.); 11.0	Rm 20, lower fill. Rim & base, no exact join. 2 perforated lugs that are incomplete; originally 3-lugged. Alabaster.	2612	
111	204	2	13.4; 4.8	Rm 20, lower fill. Cream-white, highly polished surface, incomplete, (one of the handles is restored), ?base unfinished. Probably travertine. Figure 140.	2391	8148
112	14	2	5.0; 12.0	Rm 3 floor. Rim fragment.	1502	
113	345	2	7.0; 15.0	Rm 14 floor. A further 6 rim & 2 body fragments from HH 345. Alabaster (t).	2909	
114	427	2	6.4; 5.8	Street between Palace & Temple. Base.	3062	
115	431	4/5	7.7; w. = 8.5	Street between Palace & Temple. Base. Travertine (t).	3063	
116	10	2	12.0; 13.5 (est. body d.)	Rm 2 floor. Body fragment with 1 perforated lug extant. Also found with 3 rim, 1 handle & 2 body fragments which do not join.	1505	

Artefact Drawings

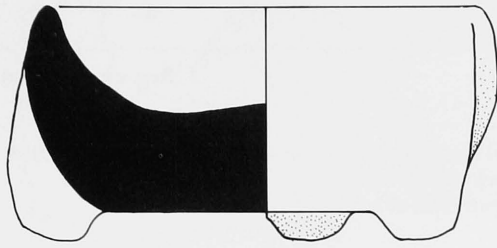


Artefact Drawings

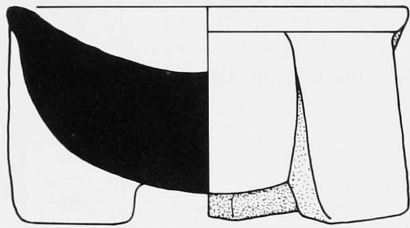
Figure 230. Stone vessels, architectural and sculptural fragments, scale 1:10 (except for 125, scale 1:4).

No.	HH locus	HH level	Dimensions ht; d.	Comments	Reg. no.	TB cat. no.
117	241	2	15.5; 29.0	Rm 21, fill on floor. Basalt tripod mortar, complete.	2621	8146
118	65/207	2	14.5; 26.6	Rm 7 & Rm 12. Found in two pieces. Basalt tripod mortar, feet triangular in section. Cf. Starr 1937, pl. 122 C,D.	1906	
119	58	2	9.9; 27.4	Courtyard 8 floor. Basalt tripod mortar, incomplete, feet triangular in section.	1905	
120	581	2	1.7; 10.5	Rm 6, debris on bottom of stairs. Palette with ring base. ?Diorite, incomplete, signs of wear on working surface.	4262	11154
121	76	1	9.5; 13.1	MA <i>tannur</i> . Basalt mortar, incomplete.	1903	
122	224	2	5.2; 41.0	Rm 11 floor. Large plate with low ring base, fine basalt, surfaces polished; not quite complete. Figure 141.	2376	8145
123	85	2	35.5; 11.0	Rm 1. Fine basalt pivot stone, rounded end very worn. Found in association with limestone door socket, Figure 15, reg. no. 2035; l. 45; w. 32; th. 11.5; d. of depression 10; depth of depression 2.5.	1907	
124			33.2; 18.6	Surface. Statue fragment, animal leg, ?bull. Fine-grained basalt. Figure 135.	4755	
125	528	8	15.0 × 12.8 × 9.2	Doorway of vaulted room, Tr. D. Limestone rail/pole holder, incomplete.	4123	

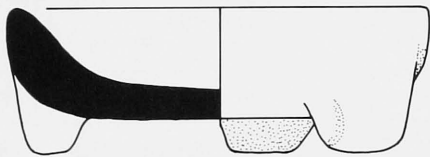
Artefact Drawings



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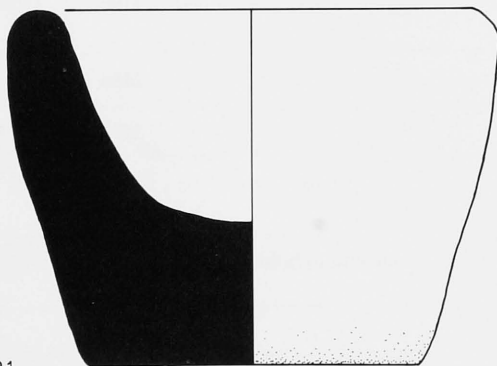
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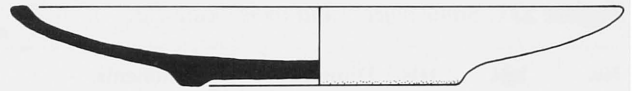
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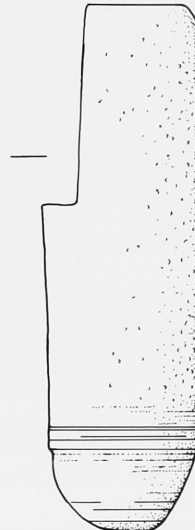
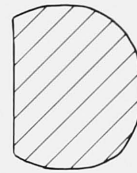
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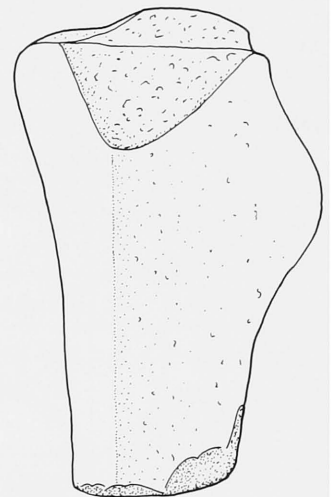
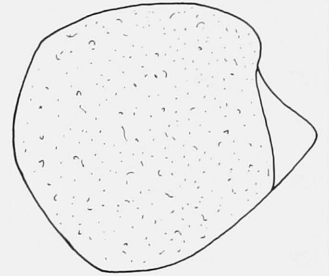
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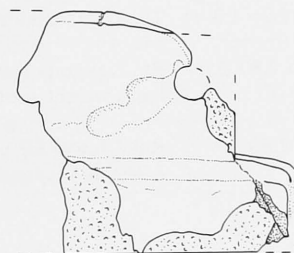
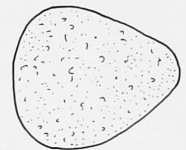
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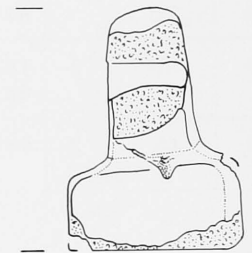
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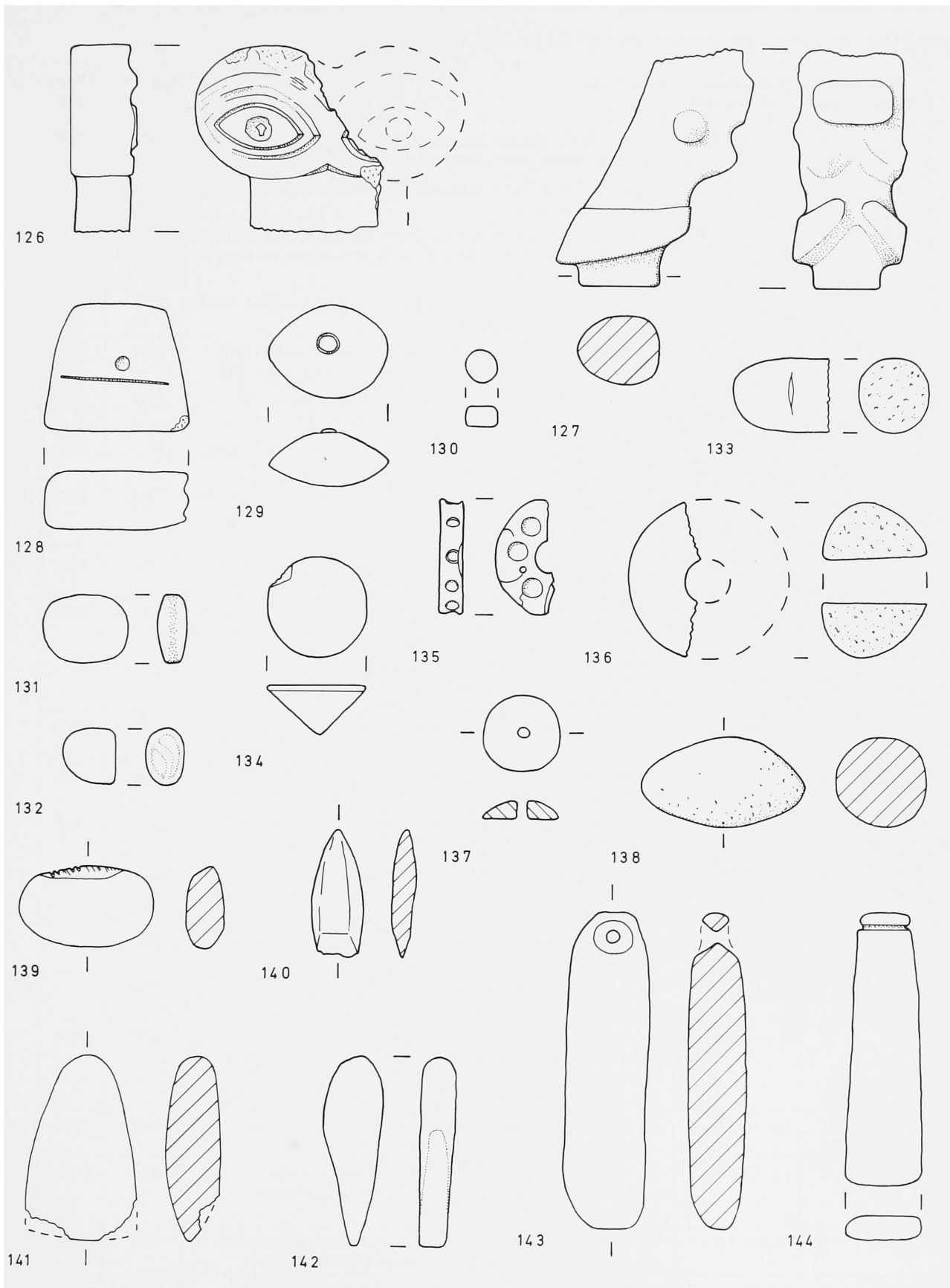


Artefact Drawings

Figure 231. *Stone objects and tools, scale 1:2.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
126	251		6.7 × 6.8 × 2.5; Dowel 1.0 × 3.0 × 2.5	Surface clearance, Tr. A & B. Animal ?bull hoof, yellowish stone covered with encrustation. Dowel below hoof for mounting on base. Possibly from a piece of composite furniture or sculpture. (Cf. du Mesnil du Buisson 1927, pl. LXI, 2).	2767	9109
127	258	4	8.6 × 4.3 × 4.3	Tr. A. Eye idol, fine-grained grey stone, incomplete. A piece of ivory/bone inlay found intact in the pupil of the right eye. The largest eye idol found at Brak.	2770	9114
128	228	2	4.5 × 4.8 × 2.0	Rm 11. Haematite ?weight. One surface marked with a circle above a horizontal line.	2373	8150
129	39	2	4.3 × 3.4 × 2.1	Rm 7, upper fill. Haematite ?weight. Decorated with an incised circle on the upper surface.	1819	7061
130	52	2	0.8 × 1.2	Rm 7, lower fill. Magnetite disc, ?weight. Wt = 4.13 g.	1619	
131	323	2	3.1 × 2.5 × 1.1	Courtyard 8 floor. Black, oval pebble ?burnisher, signs of wear on edges.	2825	
132	463	4	1.95 × 2.05 × 1.4	Ovoid stone with flat base. ?Gaming piece or weight. Black fine-grained stone, highly polished surfaces.	3212	10058
133	464		3.5 × 2.7 × 2.6	Surface clearance, Tr. C5. Black, fine-grained stone fragment. Surfaces highly polished & an incised lateral line. Part of a weight or possibly a burnisher.	3213	
134	572	2	1.8 × 3.6	Rm 6. Conical jar stopper, white marble, complete except for one chip.	4221	11053
135	287	2	4.2 × 0.9; dp. = 1.1	Courtyard 8 pavement. Limestone disc. Incomplete & burnt. Pierced laterally by two perforations, one centrally placed, the other to the left of it & much smaller. Circular, excised depressions on the flat face & also on the edge.	2768	9110
136	500	8b	3.9 × 5.6	Tr. C5. Talc macehead, incomplete.	3999	
137	44	2	2.8 × 0.7	Rm 5 floor. Spindle whorl, black stone.	1582	7164
138	328	8	5.9 × 3.3	Tr. A, beaten surface. Biconical piece of basalt. ?Sling bullet.	2820	
139	581	2	4.9 × 3.0 × 1.7	Rm 6, debris on bottom of stairs. Oval pebble with notches along one edge. Whetstone.	4264	
140			4.6 × 1.9 × 0.9	HH surface. Chisel, one end pointed, the other a blade. Fine-grained brown/black stone.	4196	11055
141	199	2	6.6 × 4.0 × 2.0	Rm 13 fill. Celt, incomplete. Fine-grained dark grey stone.	2488	
142	353		6.8 × 2.2 × 1.3	Tr. A2. Haematite polisher.	2861	9122
143	103	2	11.3 × 2.8 × 2.1; dp. = 0.3	Rm 7, from pot set into pavement. Limestone ?whetstone/loom weight, perforation at one end.	2003	
144	65	2	9.8 × 2.8 × 0.9	Rm 7, lower fill. Slate whetstone. Groove at one end to hold a cord & enable suspension.	1805	7053

Artefact Drawings

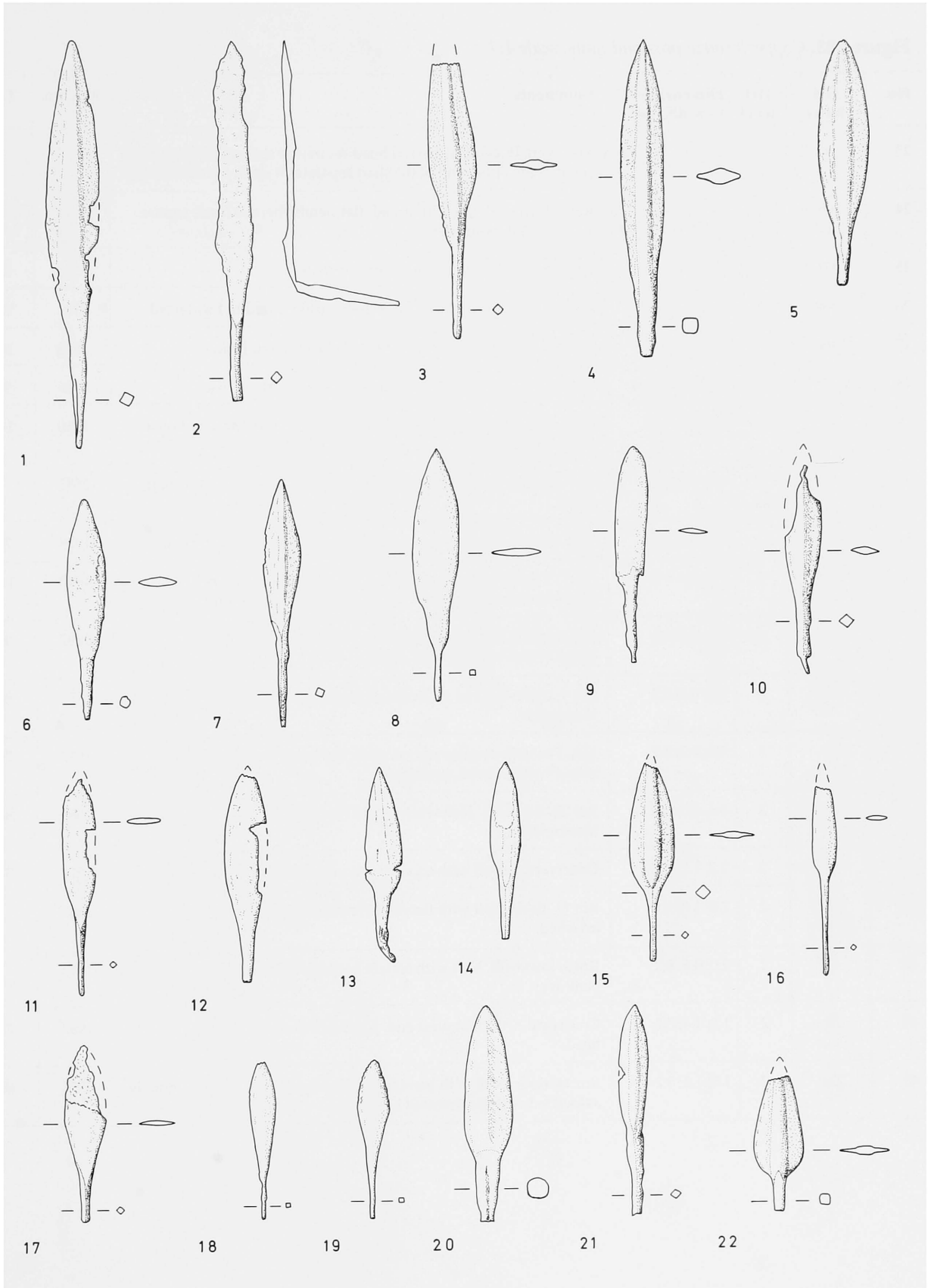


Artefact Drawings

Figure 232. *Copper/bronze projectile points, scale 1:2 (see Fig. 143).*

No.	HH locus	HH level	Dimensions l.; bl.; bw.; bth.	Comments	Reg. no.	TB cat. no.
1	65	2	14.2; 9.9; 1.8; 0.4	Rm 7, lower fill. Spear or lance-head? Elliptic blade with flat midrib, stem with tapering cut & rhomboidal-section tang. Figure 143.	1844	7016
2	241	2	12.8; 7.5; 1.2; 0.3	Rm 21, fill on floor. Badly corroded, slight stem, tang now bent, original form unclear.	2472	8049
3	209	2	9.6; 7.0 (est.); 1.7; 0.4	Rm 11, fill. Lanceolate blade, broken at point, with rounded midrib, stem with tapering cut, rhomboidal-section tang separated from the blade by a short stem.	2379	8048
4	204	2	11.0; 7.8; 1.6; 0.5	Rm 20, lower fill. Elliptic blade with rounded midrib, well-defined stem, much corroded, tang lost.	2378	8047
5	326	1	8.7; 6.8; 1.8; 0.3	Found above Rm 14. Elliptic blade with flat midrib, rudimentary stem with tapering cut and rhomboidal-section tang. Figure 143.	2905	9019
6	25	2	7.7; 5.5; 1.3; 0.4	Rm 4, fill. Elliptic blade, lens-shaped section, slight stem with tapering cut & rhomboidal-section tang. Figure 143.	1539	7001
7	65	2	8.8; 5.1; 1.4; 0.1	Rm 7, lower fill. Elliptic blade with flat midrib, stem with tapering cut & rhomboidal-section tang. Figure 143.	1845	7017
8	241	2	8.9; 6.2; 1.6; 0.2	Rm 21, fill on floor. Elliptic blade with lens-shaped section, possible stem with tapering cut (details obscured by corrosion), poorly preserved tang.	2460	8050
9	8	2	7.6; 5.0; 1.2; 0.3	Rm 3, upper fill. Blade edges badly damaged, flat-rhomboidal in section, stem/tang area poorly preserved.	1421	6086
10	14	2	7.4; 5.0 (est.); 1.2; 0.3	Rm 3, floor. Elliptic blade of flat lozenge-shaped section with slight midrib, point damaged, stem with abrupt cut & rhomboidal-section tang. Part of tang missing.	1420	6098
11	241	2	7.6; 5.0 (est.); 1.4; 0.2	Rm 21, fill on floor. Elliptic blade with lens-shaped section, point lost, stem undeveloped, square section tang.	2560	
12	432	4	7.5; 5.0 (est.); 1.5; 0.35	Tr. D. Shape as no. 11 above. Poorly preserved.	3100	10146
13	299	2	6.9; 4.1; 1.3; 0.1	Courtyard 8. Lanceolate blade with flat midrib, in two pieces, stem & rhomboidal-section tang. Figure 143.	2759	9018
14	345	2	6.3; 4.2; 1.1; 0.2	Rm 14, floor. Elliptic blade with slight midrib, stem undeveloped, square-section tang. Figure 143.	2938	9017
15	198	2	6.9; 3.8 (est.); 1.6; 0.2	Rm 22, fill. Pointed ovate blade with slightly raised, flat midrib, point broken, rudimentary stem with tapered cut & rhomboidal-section tang.	2461	8051
16	241	2	6.7; 4.0 (est.); 0.9; 0.2	Rm 21, fill on floor. Lanceolate blade, lens-shaped section, point lost, stem undeveloped, rhomboidal-section tang.	2561	
17	241	2	6.0; 4.0; 1.3; 0.2	Rm 21, fill on floor. Elliptic blade, badly corroded, rudimentary stem, rhomboidal-section tang.	2470	
18	41	2	5.5; 3.9; 1.0	Rm 5, lower fill. Small arrowhead, oblanceolate blade, stem undeveloped, square-section tang (now slightly twisted), point lost. So little metal left that the blade is paper thin. 1 further example from HH 241. Figure 143.	1627	7003
19	21	2	5.6; 3.9; 1.7	Rm 5, upper fill. Lozenge-shaped blade, stem undeveloped, square-section tang. Figure 143.	1652	7002
20	562	2	7.6; 5.2; 1.7; 0.45	Rm 6, upper fill in stair clearance. Lanceolate blade with well-defined stem (showing a longitudinal crack owing to corrosion), tang lost.	4614	11126b
21	548	2	7.4; 4.3; 1.0; 0.2	Rm 6. Elliptic blade with slight midrib, rudimentary stem which runs into square-section tang, the end of which is missing.	4672	11126a
22	213	2	4.6; 4.2 (est.); 1.7; 0.35	Rm 15, floor. Squat, lanceolate blade with low-rounded midrib, point lost, developed stem, tang lost.	2381	8054

Artefact Drawings

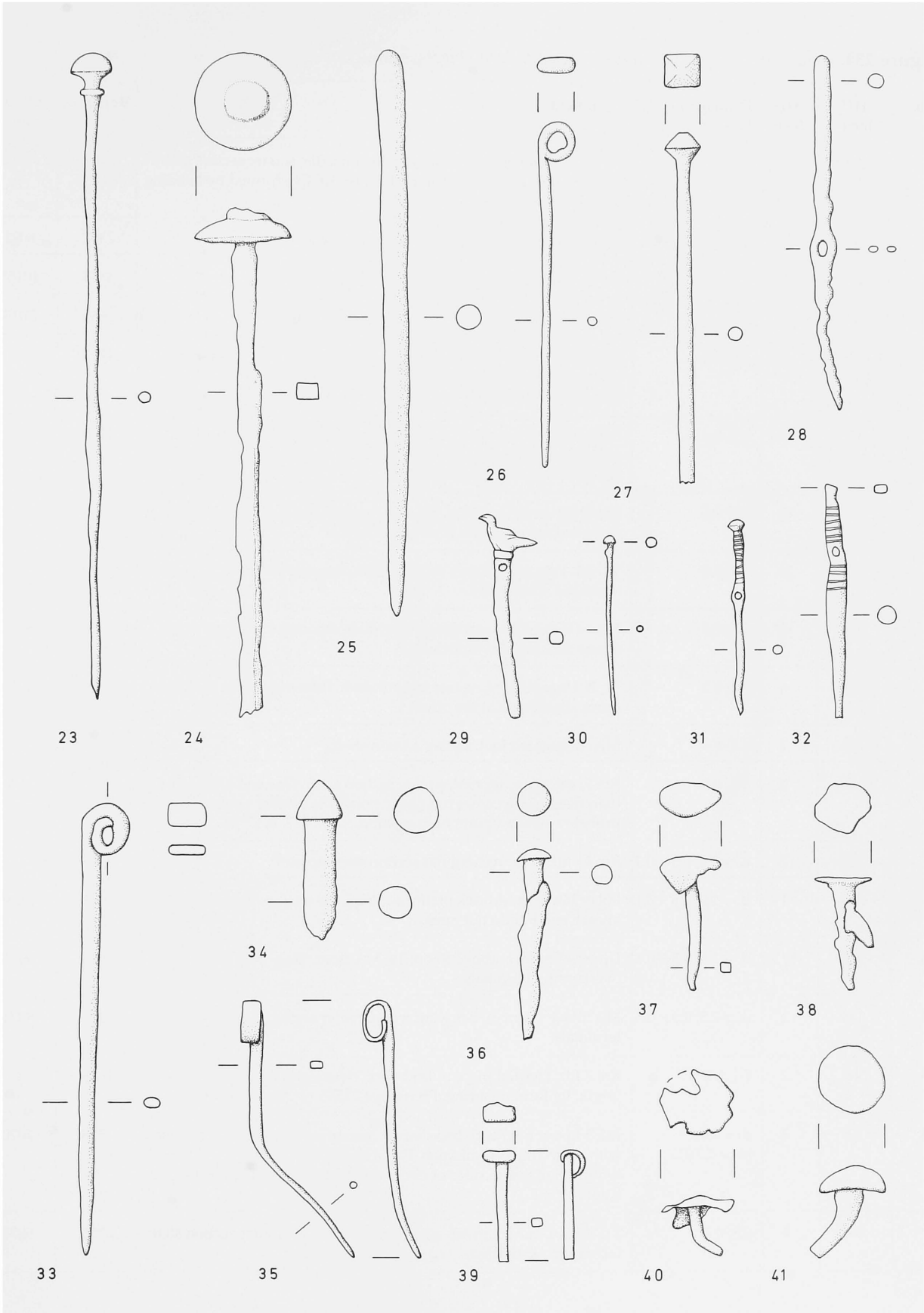


Artefact Drawings

Figure 233. *Copper/bronze pins and nails, scale 1:1.*

No.	HH locus	HH level	Dimensions l.; w/dh.; ds.	Comments	Reg. no.	TB cat. no.
23	80	1	11.3; 0.75; 0.25	MA oven. Pin with spherical head & circular section shaft. A slight collar at the upper end of the shaft separates it clearly from the head.	1913	7176
24	65	2	8.0; 1.7; 0.4	Rm 7, lower fill. Pin with broad, flat-hemispherical head, square section shaft, point lost.	1914	7175
25	476	6	9.9; ds. = 0.4	Tr. C. Plain pin with circular section shaft.	3319	10130
26	468	5	6.1; 0.6; 0.2	Tr. C. Pin with circular section shaft curled round to form head.	3321	10131
27	466	5	6.2; 0.6; 0.3	Tr. C. Pin with four-sided pyramidal head, point lost.	3320	10133
28	278	2-4	6.4; 0.5; 0.3	Tr. C. Toggle-pin, plain circular section shaft, point lost.	2746	9042
29	548	2	3.6; 1.0; 0.3	Rm 6. Perforated pin, head in the shape of a bird, mounted on a small disc, point lost.	4460	11135
30	116	1	3.2; 0.3; 0.2	MA. Slender pin with hemispherical head, circular section shaft, short.	2555	
31	90	1	3.5; 0.3; 0.2	MA. Toggle-pin with disc head, shaft ribbed above perforation.	1928	7177
32	548	2	4.2; ds. = 0.3	Rm 6. Toggle-pin, circular section shaft, horizontally incised decoration above & below perforation, head & point missing.	4690	11136
33	301	2	7.9; 0.8; 0.4	Courtyard 8. Pin, circular section shaft, flattened at one end & coiled round to form head. Figure 144.	2797	9023
34	174	2	2.6; 0.8; 0.5	Rm 9, upper fill. Pin with conical head, circular section shaft, incomplete.	2377	8045
35	79	1	5.3; 0.3; 0.2	MA. Pin with circular section shaft, flattened at one end & curled round to form head, shaft bent.	1847	7014
36	204/248	2	3.4; 0.6; 0.4	Rm 20, lower fill. Nail with conical head, circular section shaft, incomplete.	2589	8081
37	48	2	2.3; 1.2; 0.2	Courtyard 8. Nail with square section shaft, head flat & bent over.	1919	7186
38	224	2	2.0; 1.0; 0.4	Rm 11, floor. Nail with flat head, remains of copper/bronze sheet attached.	2557	
39	41	2	2.0; 0.6; 0.2	Rm 5, lower fill. Nail with square section shaft, head flattened & bent over.	1915	
40	58	2	1.1; 1.4; 0.2	Courtyard 8, floor at west end. Nail with flattened, hemispherical head.	1967	7185
41	224	2	1.9; 1.2; 0.2	Rm 11, floor. Nail with hemispherical head, incomplete. Originally associated with fragment of sheet gold.	2558	8082

Artefact Drawings

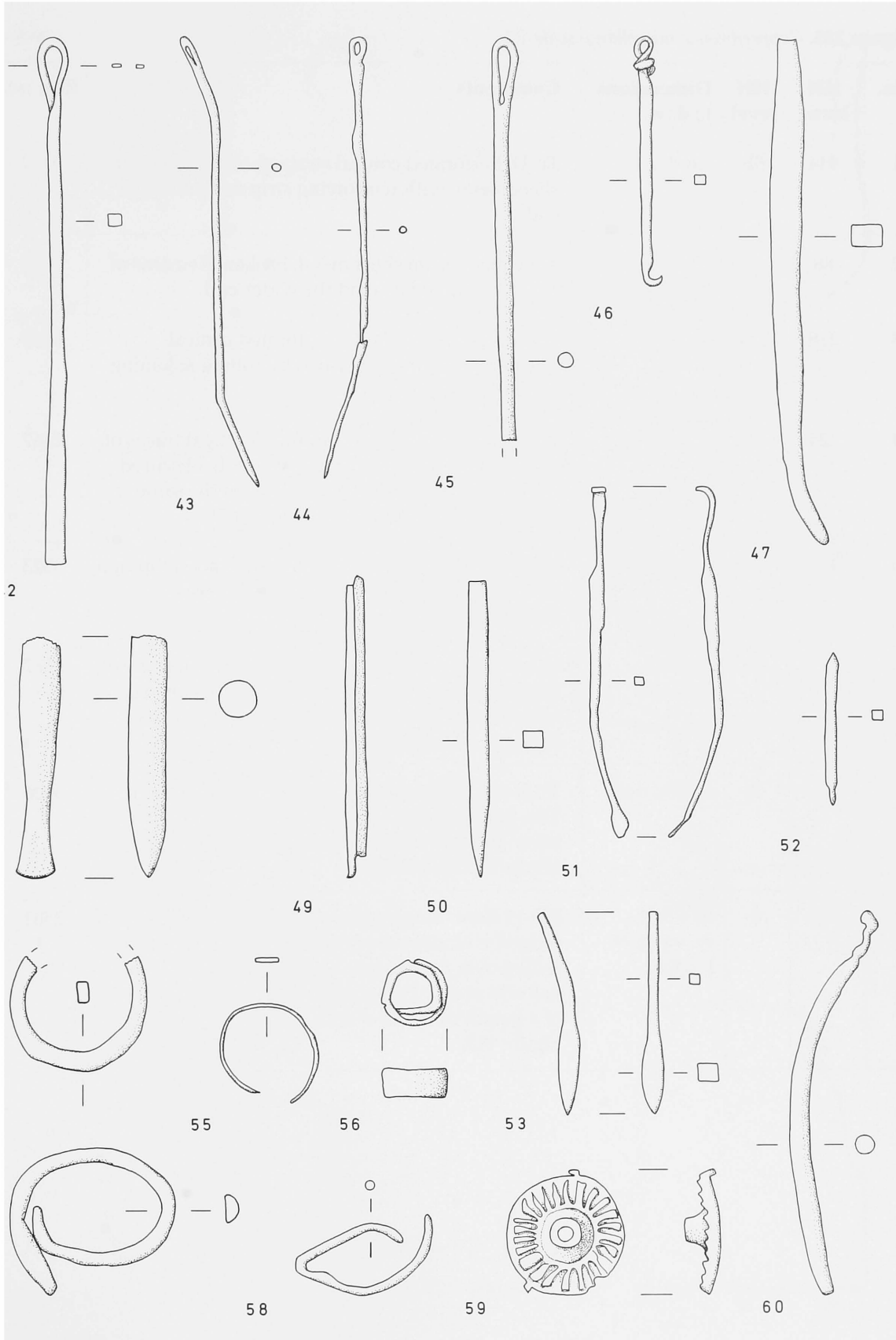


Artefact Drawings

Figure 234. *Copper/bronze needles, tools, rings and lead objects, scale 1:1.*

No.	HH locus	HH level	Dimensions l; w/ds.	Comments	Reg. no.	TB cat. no.
42	278	2-4	8.9; 0.4	Surface clearance, Tr. C. Large, robust needle, square section shaft which thickens towards point which is lost. Eye formed by bending round the upper terminal.	2907	9036
43	162	2	7.9; 0.1	Fill of stairwell. Needle, shaft bent, complete.	2382	8071
44	484	5b/6	7.4; 0.15	Tr. D, floor. Needle, point lost.	3843	10153
45	44	2	7.2; 0.25	Rm 5 floor. Large needle, point lost.	1653	7013
46	530	8	4.2; 0.3	Tr. D, floor of vaulted room. Needle, square section shaft tapers towards butt end, which is then twisted round to form the eye, point bent round to form a slight hook.	4111	
47	425	3/4	8.5; 0.4	Surface clearance, Tr. C1 & D. Tool with square section shaft, tapering at both ends, one end presumably inserted into handle, the other end broken, possible awl?.	4109	
48	41	2	4.1; 0.6	Rm 5, fill on floor. Chisel-like tool, incomplete. Circular section shaft, hollow inside for insertion of haft.	1635	
49	370	6	5.3; 0.4	Tr. A3. Tool with square section shaft, tapering at one end, possibly damaged at the other.	2940	
50	224	2	4.8; 0.3	Rm 11 floor. ?Awl, square section shaft, tapering to a sharp point at one end, blunted at the other.	2559	8067
51	371	6	5.8; 0.2	Tr. B. Unusual tool, square section shaft, flattened at one end, bent into a slight hook at the other.	2939	9037
52	90	1	2.7; 0.3	MA. Bi-pointed tool, square section shaft.	1926	7187
53	77	2	3.5; 0.3	Rm 7, ash layer. Bipoint, square section shaft. One end is larger than the other & comes to a sharp point, the smaller end is tapered, probably a hafted point of some kind.	1929	7180
54	209	2	d. = 2.2; 0.5 × 0.2	Rm 11 fill. Ring, rectangular section, incomplete.	2556	
55	78	1	d. = 1.7; 0.5 × 0.1	Fill of lower mud-brick platform. Ring, flat section, terminals taper at each end but do not meet.	1931	7189
56	326	1/2	d. = 1.1; 0.5 × 0.3	Upper clearance, above Room 14, MA floor. Ring with plain, overlapping terminals.	2936	9045
57	149	1	d. = 2.8; 0.5 × 0.3	MA above Courtyard 8. Ring with circular section & overlapping terminals.	2116	8074
58	46	2	7.1; 0.2	Rm 7 fill. Twisted piece of lead wire, tapering at each end, perhaps originally forming a ring, Pb isotope 2155.	1615	
59	21	2	d. = 2.0; th. = 0.7-0.2	Rm 5 upper fill. Lead disc-shaped ?stamp or ?appliqué ornament with projecting central knob. Pattern of 24 radiating ridges, 2 small lumps on opposite sides of circumference are probably flashing from casting.	1538	7020
60	280	4	6.5; 0.4	Tr. A fill. Lead ?pin with small globular head, circular section shaft, incomplete & twisted.	2756	9038

Artefact Drawings

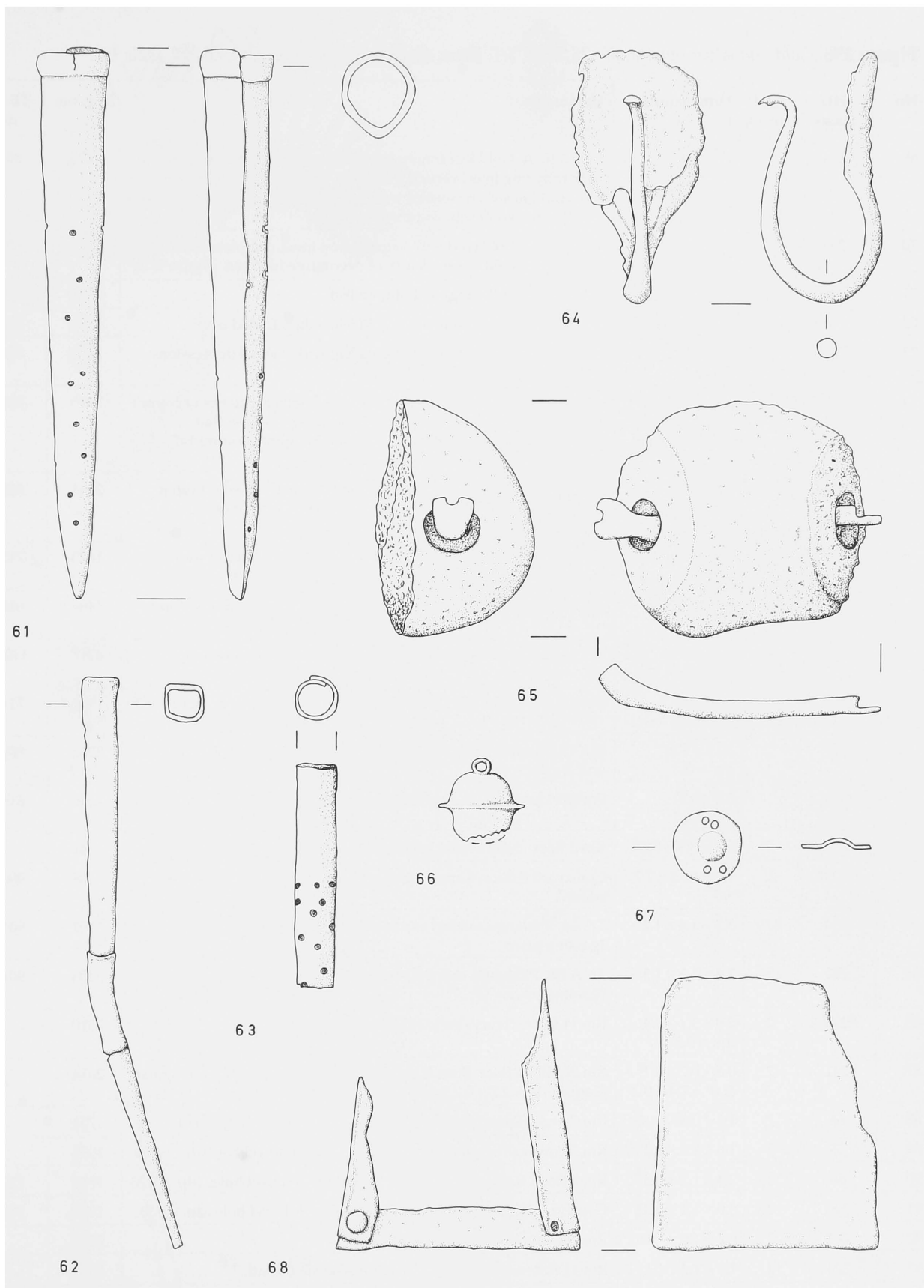


Artefact Drawings

Figure 235. Copper/bronze miscellany, scale 1:1.

No.	HH locus	HH level	Dimensions l.; d./w.	Comments	Reg. no.	TB cat. no.
61	444	5b	9.6; 1.5	Tr. D. Perforated conical strainer, made by folding sheet metal, with reinforcing strip around wider end.	3192	10126
62	88	1	10.2; 0.6	Tube made from sheet metal, broken. Remains of a band wrapped around the wider end.	1963	7184
63	278	2-4 mix	3.9; 0.8	Surface clearance, Tr. C. Perforated conical strainer, incomplete. Formed by rolling & joining sheet metal. Figure 144.	2945	9024
64	224	2	4.6; 2.5	Rm 11 floor. Hook on mounting, vestigial traces of incised design on bracket, now largely obscured by corrosion. 1 further example from the same context, but incomplete (reg. no. 2463).	2462	8056
65	473	6	5.6; 0.4-0.6	Tr. A. Ceramic lug with circular perforation through which a length of copper/bronze is passed. Presumably for suspension of vessel.	3323	10132
66	191	1	ht = 1.5; d. = 1.5	MA, fill above Rm 22. Bell, made from sheet metal, designed to be suspended from a loop. Formed from two bell-shaped halves which would have enclosed a free-moving ball.	2587	8046
67	348	4	1.3; th. = 0.2	Tr. C. Sheet metal disc with raised area in centre. Two pairs of perforations placed opposite each other. Probably designed to be sewn onto a fabric/leather backing.	3006	9051
68	224	2	ht = 9.5; w. = 8.5; l. = 8.0	Rm 11 floor. Single piece of sheet metal, folded around a wooden core (now lost). 3 edges are folded over & secured by nails at the corners, one nail still <i>in situ</i> . Designed to cover the exposed end of a length of wood of rectangular section. Figure 145.	2581	8083

Artefact Drawings

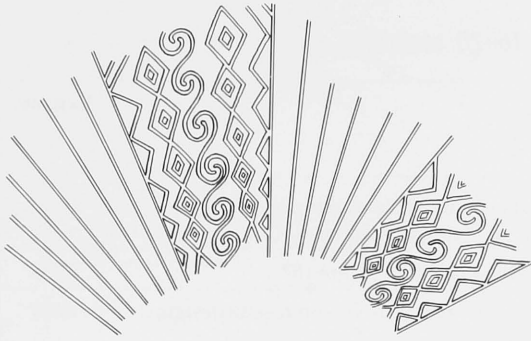


Artefact Drawings

Figure 236. Gold and silver objects, 69–75, scale 1:1. Bone, shell and wooden objects, 76–94, scale 1:2.

No.	HH locus	HH level	Dimensions l. × d./w. × th.	Comments	Reg. no.	TB cat. no.
69	224	2	Largest fragment. 3.1 × 2.1	Rm 11 floor. Gold leaf fragments. Remains of a plaster cup, incised with radiating lines, vertical guilloche, lozenge & zigzag motifs. The vessel has been covered with gold leaf which has been pressed into the incised design. Figure 146.	2422	8043
70	224	2	0.2 × 0.5	Rm 11 floor. Gold stud with hemispherical head, complete. Head made of very thin gold sheet, clearly of decorative function. Figure 47.	2386	8039
71	205	2	1.6 × 0.9	Rm 20, lower fill. Fragment of gold leaf.	2282	8040
72	205	2	0.8 × 0.5	Rm 20, lower fill. Fragment of gold leaf, edges folded over.	2281	8040
73	205	2	0.8 × 0.6	Rm 20, lower fill. Fragment of gold leaf with 3 small depressions on surface.	2283	8040
74	152	1	3.7; max. w. across horns 2.5; ht = 3.3	MA. Horned animal figurine (?stag). Body silver, patches of copper corrosion product visible on horns, tail & legs suggest that contrasting metals were used. Uncleaned in photo, Figure 147. For HH 152, cf. Figure 26 (section).	2455	8044
75	338	2	d. = 1.0; th. = 0.3; dp. = 0.2	Floor of doorway between Rm 14 & Courtyard 8. Plaster button covered with gold leaf. Circular with central perforation, hemispherical in section.	2841	9015
76	46	2	3.0 × 0.3; dp. = 0.4	Rm 7 fill. Bone inlay with incised rosette & central perforation, incomplete. Figure 153.	1623	7138
77	8	2	2.3 × 0.4; dp. = 0.2	Rm 3 upper fill. Bone disc with incised pattern & central perforation.	1466	6161
78	559	2–4	3.2 × 0.75; dp. = 0.4	Rm 6 fill. Bone button with central perforation (?spindle whorl).	4217	11045
79	92	2	5.2 × 0.3; dp. = 0.6	Courtyard 8 floor. Bone rosette with central perforation. Figure 153.	1952	7137
80	207	2	32.5 × 1.1; dp. = 0.4	Rm 12, floor fill. Bone (?ivory) needle/pin, perforated towards one end. Burnt.	2265	8089
81	2		3.9 × 0.6; dp. = 0.2	Surface clearance. Decorated bone pin, perforated, incomplete.	1256	6160
82	44	2	6.5 × 0.3 × 0.25	Rm 5 floor. Bone needle, incomplete.	1541	
83	271	2	12.4 × 2.5 × 1.7	Courtyard 8 floor. Caprid tarsal, ventral end worked, ?used as a stamp.	2708	9009
84	404	8/9	3.3 × 1.4 × 1.2	Tr. A4. Phalange, ventral end worked to enable it to stand, ?gaming piece.	3002	9012
85	291	5	2.6 × 1.5 × 1.5	Tr. A fill. Phalange, stained black, ventral end worked, ?gaming piece.	3003	9011
86	224	2	3.9 × 3.1 × 0.4; dp. = 0.3	Rm 11 floor. ?Ivory/bone comb, incomplete, perforated.	2510	
87	241	2	0.8 × 0.7 × 0.1; & d. = 1.4 × 0.2	Rm 21, fill on floor. Bone inlay. Found with 2 incomplete rectangular plaques (11 × 2.7 × 0.2 and 5.4 × 3.0 × 0.2), both with dowel holes.	2614	
88	66	2	1.5 × 0.8 × 0.15	Rm 7 floor. Triangular bone inlay with dowel hole (dp. = 0.2).	1721	
89	65	2	1.8 × 1.5 × 0.2	Rm 7, lower fill. Rectangular bone inlay with dowel hole (dp. = 0.3).	1938	
90	66	2	2.4 × 1.3 × 0.3	Rm 7 floor. Rectangular bone inlay with two dowel holes (dp. = 0.3).	1848	7139
91	58	2	3.0 × 1.4 × 0.35	Courtyard 8 floor. Rectangular bone inlay, 1 dowel hole (dp. = 0.3).	1953	7139
92	241	2	6.4 × 1.0	Rm 21, fill on floor. Bone point.	2617	
93	224	2	1.6 × 1.2	Rm 11 floor. <i>Arcularia gibbosula</i> or basket shell bead.	2417	
94	224	2	d. = 3.5; ht = 3.2	Rm 11, floor. Wooden furniture fragment.	2644	8230

Artefact Drawings



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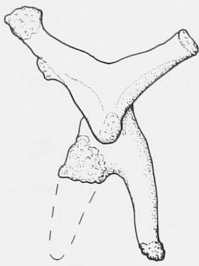
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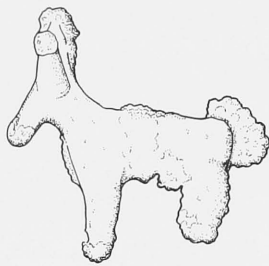
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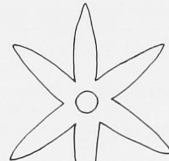
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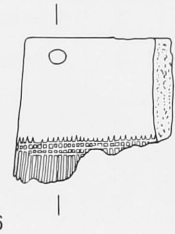
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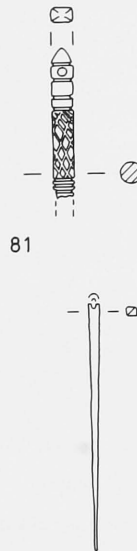
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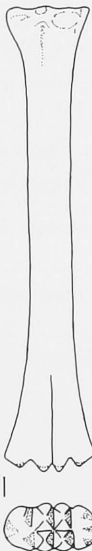
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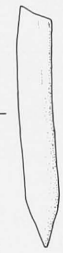
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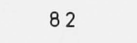
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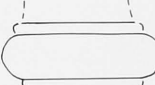
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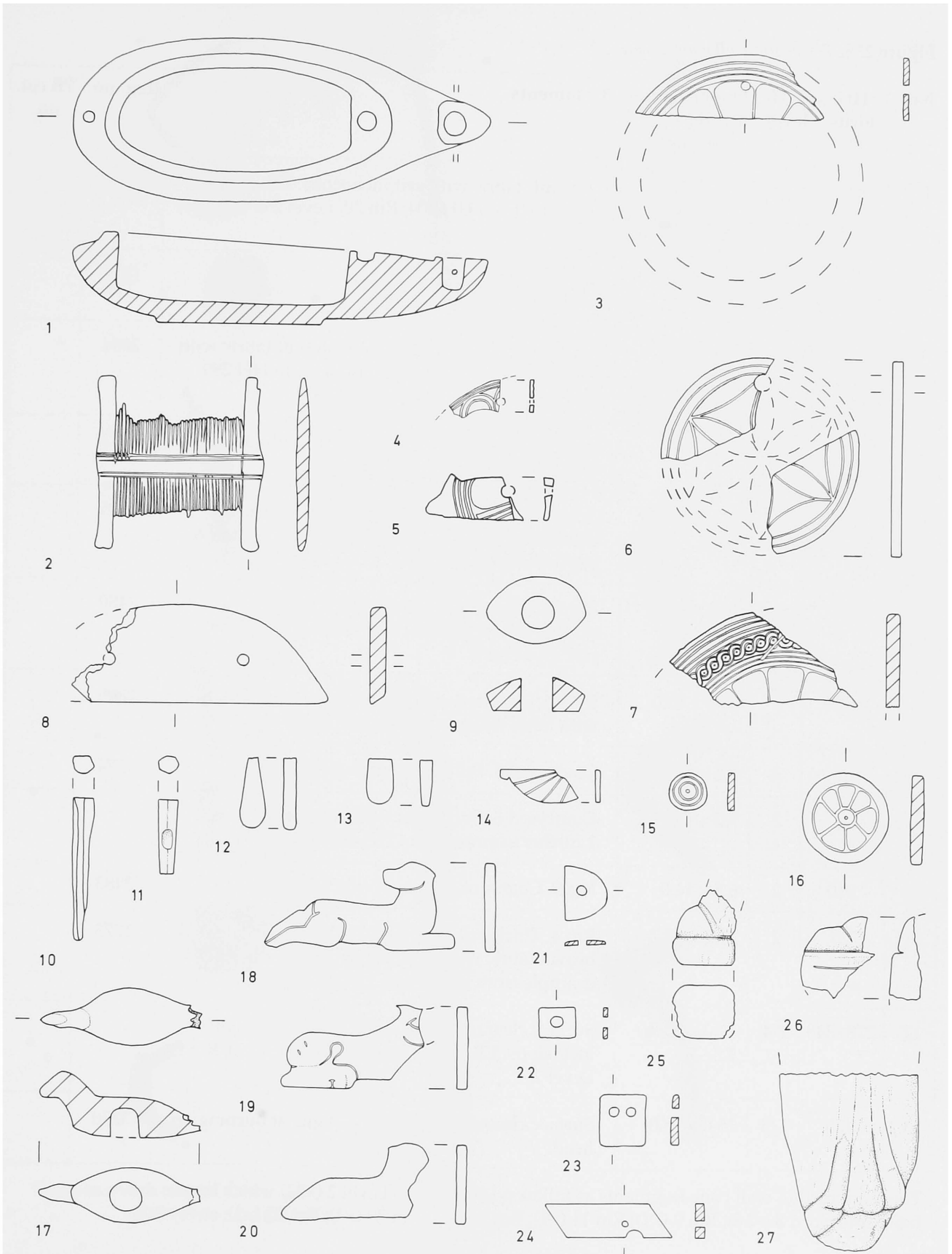
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Artefact Drawings

Figure 237. *Ivory objects, scale 1:2 (except for 6, 9, 10–11, 16–20, scale 1:1).*

No.	HH locus	HH level	Dimensions l. × w. × th.; dp. in cm	Comments	Reg. no.	TB cat. no.
1	224	2	15.2 × 6.0 × 3.3	Rm 11, floor. Cosmetics box, unfinished interior, lacks lid. Exterior surface polished. Figures 43, 149. Cf. Alalakh, pl. 125.	2500	8087
2	241	2	6.0 × 6.2 × 0.5	Rm 21, fill on floor. Comb, teeth worn. Figure 152.	2535	8088
3	204	2	est. d. = 9.0 × 0.3; 0.3	Rm 20, lower fill. Box lid fragment, incised with rosette design, perforated. Figure 150.	2608	8090
4	263/271	2	est. d.= 8–9 × 0.2	Rm 11/Courtyard 8, floor in doorway. Lid fragment with incised pattern, surface of reverse damaged, perforated.	2715	
5	548	2	3.6 × 1.6 × 0.5; 0.5	Rm 6. Fragment with incised design, burnt, perforated.	4215	
6	224	2	3.5 × 0.2; 0.3	Rm 11 floor. Roundel with incised rosette pattern, incomplete. Figure 151.	2467	8092
7	384		est.d.= 14 × 0.5	Tr. A3 baulk. Lid fragment with incised pattern of rosette & guilloche. Figure 150.	3026	9102
8	42	2	8.7 × 3.6 × 0.6; 0.4	Rm 5 floor. Semi-circular bone plaque/inlay, incomplete, 2 dowel holes.	1614	
9	241	2	1.8 × 1.2 × 0.7; 0.5	Rm 21, fill on floor. Ivory eye.	2432	8221
10	224	2	2.5 × 0.4	Rm 11 floor. 12 nails/pegs. Figure 151.	2468 n	8093
11	263/ 271	2	1.4 × 0.4	Rm 11/Courtyard 8, floor in doorway. 10 nails/pegs, 6 of which have oval areas scooped out on the shaft. Figure 151.	2713	9103
12	224	2	2.6 × 1.0 × 0.5	Rm 11 floor. Inlay. Figure 151.	2468 j	8093
13	224	2	1.7 × 1.0 × 0.5	Rm 11 floor. Inlay.	2468	8093
14	224	2	2.9 × 1.2 × 0.2	Rm 11 floor. Inlay fragment, decorated with incised lines, ?wing.	2468 m	8093
15	224	2	1.4 × 0.2	Rm 11 floor. Disc with incised concentric circles.	2431	8096
16	224	2	1.6 × 0.25	Rm 11 floor. Incised rosette on rectangular inlay, cf. Figure 151.	2468 h	8093
17	271	2	2.9 × 1.1 × 1.1	Rm 11/Courtyard 8, floor in doorway. Bird, circular depression in base, ?head of pin.	2712	9148
18	224	2	3.5 × 1.6 × 0.2	Rm 11 floor. Inlay in the shape of a dog. Figure 151.	2466	8091
19	224	2	2.4 × 1.5 × 0.2	Rm 11 floor. Animal inlay ?dog. Head incomplete & front legs lost, tail & back legs incised. Figure 151.	2465	8091
20	224	2	2.6 × 1.4 × 0.2	Rm 11 floor. Animal inlay ?dog. Figure 151.	2464	8091
21	58	2	2.0 × 1.6 × 0.15	Courtyard 8 floor. Semi-circle of inlay, 1 dowel hole.	1954	7140
22	263/271	2	1.4 × 1.2 × 0.2; 0.4	Rm 11/Courtyard 8, floor in doorway. 5 squares of inlay, each with one dowel hole.	2714	9104
23	91	2	1.9 × 1.7 × 0.3; 0.3	Rm 7, fill on floor. Rectangular inlay with 2 dowel holes.	1936	7139
24	204	2	3.7 × 1.2 × 0.3; 0.25	Rm 20, lower fill. Trapezoidal inlay, 1 dowel hole & a semi-circular excision.	2348	8094
25	204	2	2.8 × 2.3 × 2.0	Rm 20, lower fill. Animal ?bull hoof on a squarish base, incomplete.	2440	
26	241	2	2.9 × 2.6 × 0.8	Rm 21, fill on floor. Animal ?bull hoof on a base, incomplete.	2616	
27	204	2	6.3 × 6.1 × ext. th. = 2.6	Rm 20, lower fill. Fragment of a bull's hoof, view of the back of the heel, cf. stone 126.	2441	

Artefact Drawings



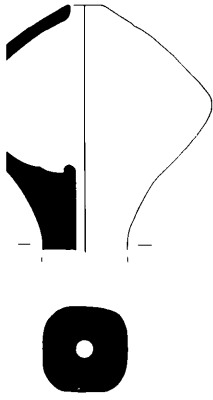
Artefact Drawings

Figure 238. *Terracotta wall cones, scale 1:4.*

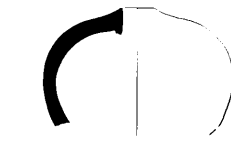
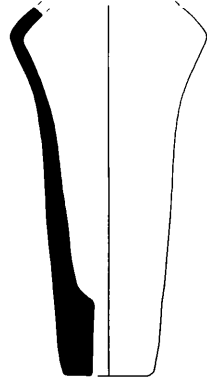
No.	HH locus	HH level	Dimensions ht × d.; dp in cm	Comments	Reg. no.	TB cat. no.
1	12	1	13.0 × 13.5; 0.9–1.5	MA. Buff fabric with grit inclusions. 2 further examples from HH 204, Rm 20, Level 2 & HH 348, Level 4.	1506	
2	83	2	14.2 × 8.4; 0.5–1.5	Courtyard 8.	1822	
3	279	1	15.6 × 7.5; 1.1–1.4; base w. 5.6	Fill above Courtyard 8. Yellowish buff fabric with grit inclusions. 1 further example from HH 299, Courtyard 8, Level 2.	2804	
4	38	2	7.6 × 14.7	Courtyard 8. Yellowish buff fabric with grit & chaff inclusions.	1772	
5	53	1	19.5 × 10.5; 1.5	Courtyard 8. Wheel-marked interior. Exterior shaved down near base. Buff fabric with chaff & grit inclusions.	1775	
6	204	2	19.0 × 11.5; 2.0	Rm 20. Coarse orange-buff fabric with grey core, chaff & grit inclusions. 1 further example from HH 38, Level 2.	2480	
7	185	2	34.0 × 13.0	Rm 20. Exterior surface shaved down. Buff fabric with large white grits & a little chaff.	2805	
8	58	2	6.4 × 10.0; 1.6	Courtyard 8. Buff fabric with grit inclusions.	1774	
9	323	2	7.0 × 10.8	Courtyard 8. Buff fabric with chaff inclusions. 1 further example from HH 425, Level 3/4.		
10	210	2	6.5 × 14.0	Rm 9. Coarse orange-buff with chaff inclusions.	2483	
11	20	2	11.5 × 13.7	Rm 4. Thick pale blue glaze on exterior. Pale brown fabric with grit inclusions. 1 further example from HH 37/66, Level 1/2.	1773	
12	278/348	2-4	11.0 × 13.8; 1.8	Surface clearance Tr. C. Buff fabric with chaff inclusions. 1 further example from HH 210, Rm 9, Level 2.		
13	425	3/4	15.0 × 18.0	Surface clearance Tr. C1 & D. Signs of burning on head.	3270	

There are further wall cone fragments as follows: Level 1 (×4); Level 2 (×32) which breaks down as Rm 7 (×6); Courtyard 8 (×16); Rm 9 (×2); Rm 11 (×1); Rm 14 (×1); Rm 20 (×3); Rm 22 (×1); street (×2).

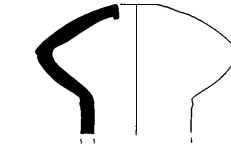
Artefact Drawings



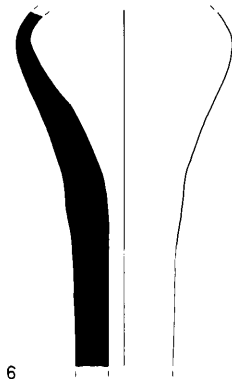
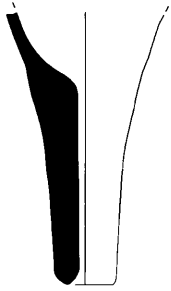
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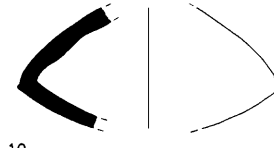
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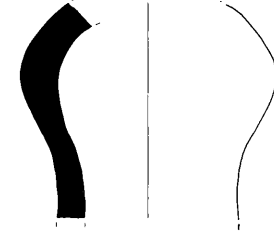
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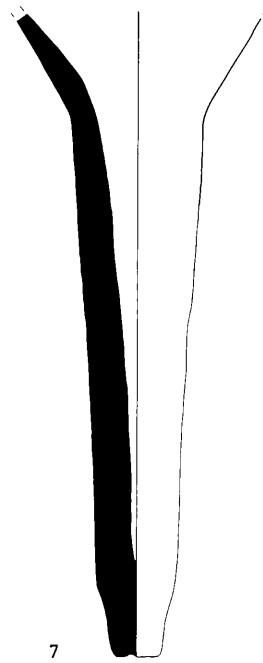
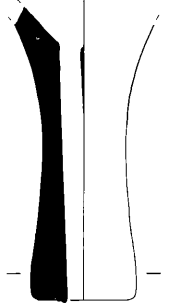
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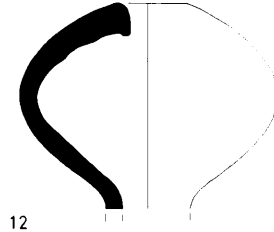
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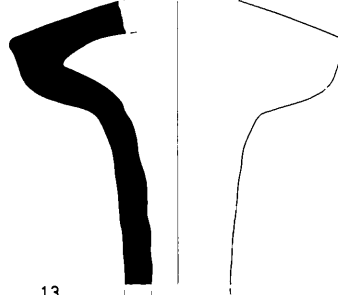
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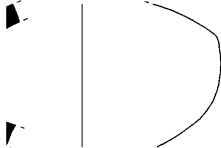
7



12



13

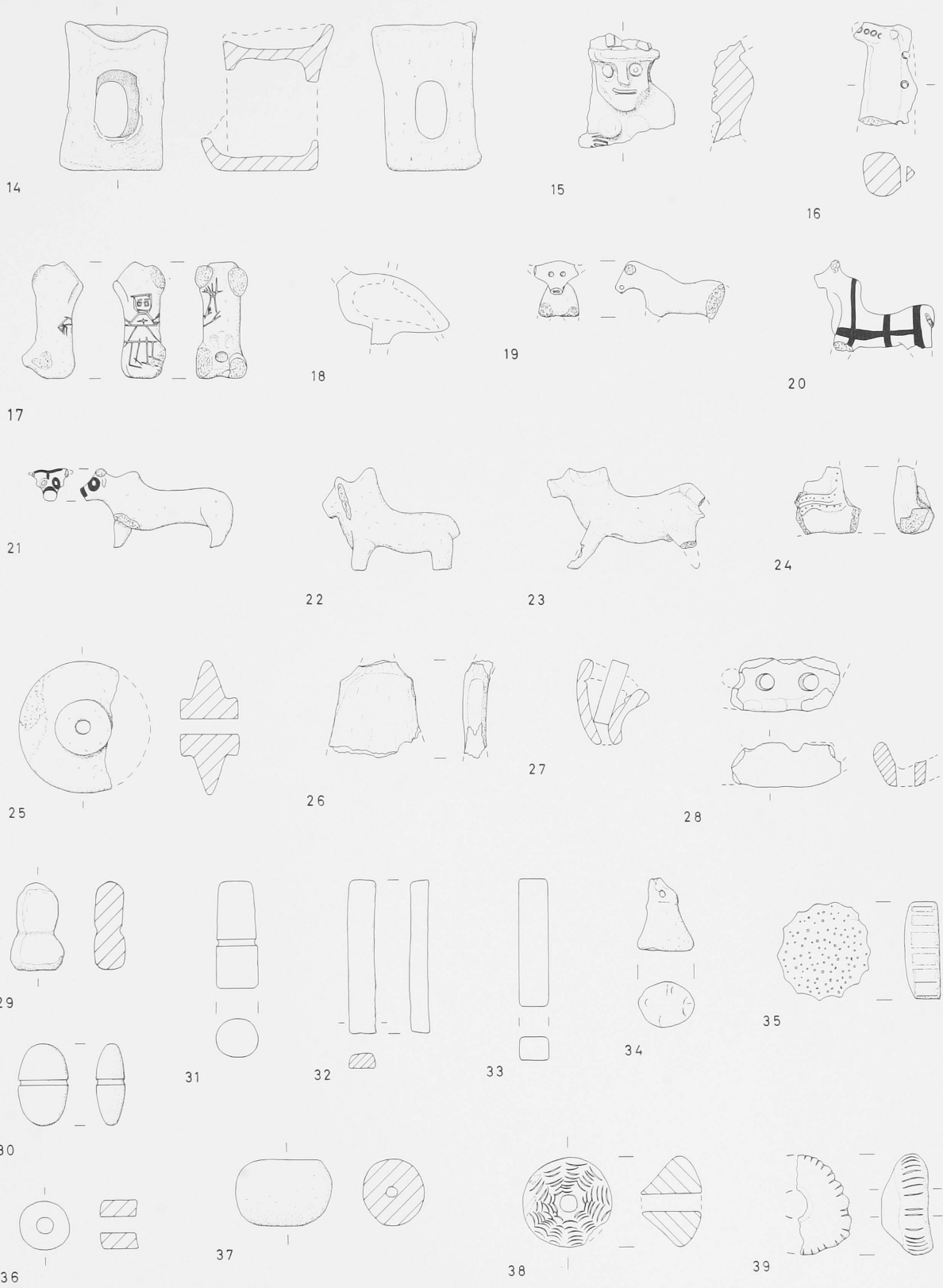


Artefact Drawings

Figure 239. *Baked clay objects, scale 1:2, except 14, 15, 17–21, 24, 26–30, 1:4, and 25, 32 1:8.*

No.	HH locus	HH level	Dimensions cm	Comments	Reg. no.	TB cat. no.
14	403	8	10.0 × 7.8 × 7.3	Tr. D, fill of vaulted shrine. Model house, 2 openings, the larger of which has a lip beneath. Figure 155. Cf. Starr 1937, pl. 113, A; Hachmann 1986, 108, Abb. 11; Zettler 1993, pl. 64b; Machule 1990, 18, Abb. 6.	2978	9180
15			7.3 × 7.2 × 2.7	Surface below HH. Female figurine fragment. Figure 156.	4594	11069
16	459	6b	3.4 × 2.0 × 1.4	Tr. D, wall. Head of horse figurine, incomplete. Mane perforated, appliqué ears, cheek decorated with impressed circles ?bridle.	4160	
17	475	4	7.8 × 3.5 × 3.4	Tr. C5, pit. Torso of animal figurine on which a figure has been incised after firing. Figure 154.	3892	
18	468	4/5	7.5 × 3.5 × 4.9	Tr. C fill. Bird figurine, incomplete. Body hollow & perforated twice. When placed in water the cavity fills, once removed the water exits through the hole below the tail. Orange-buff fabric, chaff inclusions.	3238	
19	442	5b	7.4 × 3.0 × 3.9	Tr. D floor. Bovid figurine, incomplete. Circular impressions for eyes & nostrils, muzzle perforated. Buff fabric, chaff inclusions.	3099	
20	438	6	8.0 × 6.1 × 3.4	Tr. D. Zebu figurine, incomplete. Overfired with traces of paint. Cf. Speiser 1935, pl. 77 no. 5.	3098	
21	473	6	10.3 × 5.3 × 4.5	Tr. A. Zebu figurine, incomplete. Appliqué eyes & black paint on face.	3303	10074
22	403	8	4.6 × 3.5 × 1.8	Tr. D, fill of vaulted room. Zebu figurine, complete except for horns/ears. Orange-buff fabric, white grit inclusions. Cf. Akkermans 1993, 49, fig. 23:85.	3022	9046
23	525	8	6.2 × 3.9 × 2.3	Tr. D, fill of vaulted room. Zebu figurine, incomplete. Orange-buff fabric, grit inclusions. Cf. Machule 1986, Abb. 11 no. 2 & 1990, 17, Abb. 5; Beyer 1982, 104, fig. 6.	4041	
24	490	7	4.5 × 4.3 × 2.6	Tr. D fill. Chariot fragment, front decorated with impressed dots. Orange fabric. Possibly 3rd millennium.	4126	
25	291		18 × 8.0; dp. = 1.8	Wheel, incomplete. Orange fabric. The largest wheel from the HH excavations.	2786	9182
26	490	7	6.6 × 5.9 × 1.7	Tr. D. ?Object fragment. Grey burnished with chaff inclusions.	3878	
27	437	8	funnel 5.8 × d. = 2.1–5.1	Tr. C1. Funnel, incomplete, pale worn surface, gritty brick-coloured clay with mica inclusions. Found with the Uruk wall cone fragment inside it. Cone 4.3 × d. 1.0–1.2; Figure 158.	3973 88.8	
28	484	5b/6	7.3 × 3.9 × 1.5	Tr. D. Fragment of ceramic object. Remains of 3 perforations in body & 3 grooves along one edge. ?Once rectangular. Buff gritty fabric, chaff inclusions.	3891	
29	112	1	5.5 × 3.1 × 2.2	MA. Bobbin/toggle. Greenish fabric, chaff inclusions.	2091	
30	430	3	5.6 × 3.4 × 1.9	Tr. D. Toggle/bobbin. Buff fabric.	3086	
31	468	4/5	3.6 × 1.4	Tr. C fill. Toggle/bobbin. Buff fabric, chaff & grit inclusions.	3249	10101
32	112	1	20.4 × 3.7 × 2.5	Rectangular object. Base has an impressed pattern ?cloth. Orange-buff gritty fabric. 4 further examples from Level 1 & 1 from Level 4.	2043	8121
33	426		4.3 × 1.0 × 0.8	Model brick. Buff fabric.	3074	10100
34	493	8	2.4 × 1.9	Tr. C5. Gaming piece, perforated near the top.	4034	
35	472	4	3.2 × 1.2	Tr. C/D. ?gaming piece. Indented edges, small circular impressions on upper surface.	3882	10096
36	372	6	1.7 × 1.3; dp. = 0.5	Tr. C4. Perforated cylinder. Bead or toggle.	2919	9176a
37	507	7	3.2 × 2.3; dp. = 0.3	Tr. D, white plaster floor. Perforated cylinder. Bead or toggle.	4000	10104
38	272	2	3.0 × 2.0; dp. = 0.6	Courtyard 8. Spindle whorl, upper surface decorated with fingernail impressions. Pale brown fabric.	2706	9085
39	494	6	3.3 × 1.7	Tr. D. Spindle whorl, incomplete, notches around the edge.	3911	

Artefact Drawings



Appendices

Appendices

Appendix 1. Context information for published sherds and beads.

Fig.	No.	Locus	Level	Line Drawing	Fig.	No.	Locus	Level	Line Drawing	
54	1-3	478	5	445, 446	89	1	476	6	422	
	4, 5	472	4/5	492, 495		2	476	6	228	
	6, 7	433	6	460, 415		3	476	6		
	8	477	5			4	476	6	442	
	9, 10	433	6			5	476	6		
	11	482	5b			6	476	6	278	
	12	484	5b/6			7	476	6		
	13	484	5b/6		90	1	278	mix		
	14	488	5b			2	298	6		
	15	433	6			3	278	mix		
	16	482	5b			4	342	3	274	
	17	484	5b			5	312	6		
	18	484	5b	432	6	312	6			
	19	433	6	409	7	334	6/8			
	20	494	6		8	312	8	306		
	21	494	6	224	9	273	6			
	22	490	7	490	10	267	4 wall			
84	1, 2, 4-6	surface 429	6		11	258	4			
	3				12	291	5	263		
85	1	529	7		91	1	296	box in ctyd.	393	
	2	567/8	10			2	66	2 (Rm 7)		
86	1	surface		472		3	500	8	453	
	2, 3, 4	surface		276	4, 5	452	mix			
	(NB. 3 is upside down)					93	1, 4	section scraping in Mallowan West surface	EM	410
	5	surface		478	2		441	5b		
	7	490	7	490	3		452	mix	420	
9	493	8		94	1	204	2 (Rm 20)			
87	1	503	8		275	2	466	5	419	
	2	500	8			3	468	5		
	3	342	3		274	4	482	5b		
88	1	525	8			5	488	5b		
	2	500	8			6	432	4		
	3	surface				7	484	5b	432	
	4	291	5	263	95	1	surface	EM	443	
	5	surface				2	section scraping in Mallowan West			
	6	468	5	485						
	7	surface								

Appendices

Fig.	No.	Locus	Level	Line Drawing	Fig.	No.	Locus	Level	Line Drawing	TB cat. no.
96	1	468	5	406	133	1	224 (Rm 11)	2	frit 43	8217
	2	468	5			2	224 (Rm 11)	2	bead 71	8219
	3	surface				3	224 (Rm 11)	2	bead 39	8212
	4	468	5	4		224 (Rm 11)	2	bead 48	8213	
	5	471	5	5		224 (Rm 11)	2	bead 57		
	6	433	6	409		6	224 (Rm 11)	2		(reg. no. 2514)
	7	494	6			7	224 (Rm 11)	2	bead 59	8219
	8	278	mix			8				
98	1	surface	4	395	9					
	2	348			10	224 (Rm 11)	2	bead 40	8215	
	3	251			11	224 (Rm 11)	2	bead 42	8215	
	4	204	2 (Rm 20)		12	224 (Rm 11)	2	bead 33	8226	
	5	185	2 (Rm 20)		13	224 (Rm 11)	2	bead 63	8214	
	6	surface			14	224 (Rm 11)	2		8214	
	7	surface			15	224 (Rm 11)	2	bead 66	8223	
	8	348	4		16	224 (Rm 11)	2		8223	
	9	391	7		17	224 (Rm 11)	2	bead 64	8223	
	10	surface			18	204 (Rm 20)	2		8223	
	11	476	6		19	224 (Rm 11)	2	bead 58	8216	
	12	433	6		20	224 (Rm 11)	2		8216	
	13	Mallowan excs.			21	207 (Rm 12)	2	glass 57	8192	
99	1	294	4	22	207 (Rm 12)	2	glass 58	8192		
	2	368	5	23	224 (Rm 11)	2		8224		
	3	348	4	24	224 (Rm 11)	2		8224		
	4	348	4	25	136	1		8224		
	5	348	4	26	224 (Rm 11)	2		8224		
	134	1	41 (Rm 5)	2	bead 67	7120				
		2	Akkadian FS			7127				
		3	44 (Rm 5)	2	bead 21	7122				
4		77 (Rm 7)	2		7116					
5		80 (MA oven)	1	bead 46	7114					
6		72 (Rm 7)	2		7117					
7		92 (Courtyard 8)	2	frit 44	7128					
8		92	2		7129					

Appendices

Appendix 2. List of Area HH loci.

Locus Level Rm Description

AL

1			Surface pit outside excavated area.
2			Surface scraping.
15			Mud-brick collapse, adjacent to pit 21.
21			Large OB pit, sq. C.
32			Surface of pit 21.
34			East side of mud-brick wall, sq. D.

TW

3			Unsealed surface pit, sq. A.
10			OB kiln.
18			Pit in sq. B.
28			Layer of sherds at bottom of OB foundations.
152			Cleaning of OB excavations, beginning of 1991 season.

SS

18			Surface soil.
262			Mitanni pit.
267			Surface soil.
1097			Latest preserved floor at west end of site, early 2nd millennium (Isin-Larsa).

HH

Mallowan west			Material from 1993 cleaning of Mallowan's westernmost HH trench (early Mitanni).
1			Surface soil
2			General cleaning
3			Upper red <i>libn</i> /grey mortar (2nd phase Mitanni Palace), overlying and adjacent to columned east façade.
8	2	3	Upper fill (ablution room).
10	2	2	Floor in Corridor 2.
12	1		Material from NE corner of excavations.
13			Upper fill in SE corner, just below surface (?= HH 3)
14	2	3	Floor in ablution room.
	<i>1985 season</i>		
20	1		Upper fill above Rm 4 (including MA)
21	1		Upper fill above Rm 5 (including MA), joins 41 & 44.
24	2	4	Corridor floor, sb 20.
25	2	4	Fill = 20.
35	2	4	Floor: pot set in floor of corridor & its contents
37	1		Upper fill above Rm 7, s 46
38	2	8	Upper fill in courtyard, W of Corridor 6.
39	2	7	Upper fill in workroom, s 65.
41	2	5	Lower fill, s 42, sb 21.
42	2	5	Floor.
44	2	5	Floor, some mix with 41; large pots on floor.
45	2	8	= 38.
46	2	7	Fill.
48	2	8	Courtyard floor.
51	2	5	<i>Tannur</i> (oven).
52	2	7	Lower fill; sb 46, s 66.

Appendices

Locus	Level	Rm	Description
53	1		Upper fill just below 55 (MA?), s 91; N end of Rm 7.
55	1		MA level NW end of Rm 7; s. 53; assoc. with <i>tannur</i> 61.
58	2	8	Courtyard floor, E side; joins 66, 68, 72.
61	2	7	<i>Tannur</i> cut into upper part of W wall of Rm 7; s 53.
63	2	1	Clearance of material over S door of Courtyard 8.
65	2	7	Lower fill; s 77; sb 39.
66	2	7	Floor; sb 46, 52; s 67, 68, 77; joins 72.
68	2	7	Clay-lined pit/ <i>tannur</i> ; set in construction pit 73, Figure 21.
70	2	7	Floor, S end of room.
72	2	7	Drain.
74	2	7	Pit/oven, Figure 21.
76	1		<i>Tannur</i> in upper fill; s 78.
77	2	7	Ash layer in Rm 7; sb 65, 66.
78	1		Fill of <i>libn</i> platform & grey earth below, above E wall of Courtyard 8.
79	1		Above E wall of Courtyard 8.
80	1		Oven above Rm 7, contained a pot & frit beads.
83	2	8	SW corner of Courtyard 8, upper fill.
84	2	7	Oven in workroom.
85	2	1	Door socket.
88	1		Surface clearance W side of Courtyard 8, above Rms 9 & 10.
90	1		Surface clearance W side of palace.
91	2	7	N end of room; sb 53; mix with/seals 99.
92	2	8	Fill on floor 58, SW corner of courtyard.
99	2	7	10 cm of compacted brown earth and ash floor deposits, above pavement N end of room.
103	2	7	Pot set into pavement 100 (N end of Rm 7).
106	2	9	Fill.
108	2	10	Fill above floor.
110	2	9	Doorway between Rms 9 & 10 (pottery comes from fill above floor).
1986 season			
112	1		Cleaning of courtyard surface (unstratified MA).
116	1		Soil below 161 = 220 (Fig. 31).
132	1		Fill above Courtyard 8, assoc. with wall 131; MA.
136	1		Surface N of workroom and upper fill in room 12; s 207.
140			Cleaning around S edge of temple excavations.
143	1		Mitanni Palace collapse, above courtyard.
144	1		Uneven burnt <i>libn</i> surface, part of 143 = Palace collapse.
146	1		MA fill, above courtyard.
148	1		= 146, 147, N of wall 145.
149	1		Collapsed brick and ash above Palace courtyard.
150	1		Collapsed brick and ash as 149; s 160.
151	1		Upper fill above street between Palace & Temple; s 152; sandy red earth.
152	1		MA plastered floor surface; s 225; above street between Palace & Temple (Fig. 26).
156	1		Ash overlying collapsed red brick of Level 2.
157	1		Surface clearance, west of Rm 7, MA
159	1		Topsoil, W of Rm 7.
160	1a		Large MA wall, N side of Courtyard 8 (see section 25).
161	1		<i>Libn</i> platform above E stairs.
162	1		Clean red sandy fill of upper stairwell, E stair.
164	1		Above courtyard, MA surface, W of wall 160.
172	1		At wadi edge NW of courtyard, = 150.
174	1		Upper fill above Rm 9, clean red sandy earth.

Appendices

Locus	Level	Rm	Description
176	1		Continuation of fill 172, but to W, mix MA & Mitanni.
182	1		MA fill (<i>libn</i> and ash).
183	1		Fill over /?west of 'street' containing red & grey i.e. MA <i>libn</i> .
184	1		Top 30–60 cm below surface, above Temple; s 185.
185	2	20	Red earth fill in temple.
188	2		Fill adjacent to W wall of Temple.
190	2	13	Fill.
191	1		Red fill above Rm 22; s 242; ?also above Rm 9 stairs (mix of Levels 2 & 1).
195	2	9	= 174; c. 1 m above floor; s 210.
198	2	22	Continues 191, red earth room fill; s 241 (some MA mix).
199	2	13	Occupation level; sb 190, s 200.
200	2	13	Floor, sb 199.
204	2	20	Fill of temple below level of top of dais, sb 185.
205	2	20	= 204.
207	2	12	Ashy floor fill sb 136, s 208 (lowest 20 cm. above burnt level).
209	2	11	Red earth fill, s 224 (floor).
210	2	9	Last 50 cm down to floor, sb 195; NB. 2 floors in Rm 9.
212	1		Fill s. 213; assoc. with a MA upper floor, unfortunately pottery mixed with 213.
213	2	15	Floor deposit sb 212.
218	1		Red-brown earth fill in N side of doorway (Rm 9 to 15); upper floor level within building = 212 (MA mix).
220	1a		Beaten earth floor surface = 116 (Fig. 31).
224	2	11	Floor, sb 209; v. dense burning in 40 cm. above floor (see plan and section Figure 40).
225	2		Between Palace & Temple, fill above road surface 226; incl. MA.
226			Street surface, see Figure 26.
227			Fill in street between Palace & Temple (Fig. 26).
241	2	21	Fill overlying floor, sb 198.
242	2	22	Red earth fill.
243	2	22	Floor, sb 242.
244	2		Fill S of Temple façade, s 246.
246			Fallen <i>libn</i> fill S of S wall of Temple, s 249.
247			Mitanni road surface between Temple and Palace (Fig. 26).
248	2	20	Floor of Temple gateway.
249			Roadway @ S façade of Temple, sb 246.
1987 season			
250	1		Above doorway from Courtyard 8 to Rm 11, uppermost silt layer.
251			Surface clearance Tr. A & B; some mix with Mallowan dump.
253	1		N courtyard doorway, Palace collapse, below 250.
255	1		Fill on E side of MA wall 160, pottery = 279.
258	4		Fill over much of Tr. A; s 269, probably mix with 268; = 280; sb 289.
263	2	11	Pavement level in doorway courtyard 8 to Rm 11.
264	3		Tr. A, hard red <i>libn</i> surface, -70 cm, stones @ N end, see section (Fig. 35), s 268.
268	4		Tr. A, ash layer, assoc. with Level 4 wall, assoc. with & underlain by fill 258; sb 264.
269	4		Tr. A, floor assoc. with wall 265, s 291.
271	2	8	Courtyard floor, N side; sb 272.
272	2	8	Courtyard below MA walls, above 271.
278	2		Tr. C surface clearance; down to -1.80 m in C1 test trench; mix of Levels 2–4.
279	1		Upper fill, Courtyard 8; E side of wall 160.
280	4		Tr. A, fill = 258; some mixing with Level 5 (joins 291). Heavy ash level.
287	2	8	Pavement, Courtyard 8.
289	3		Tr. A, hard grey layer; s 258.

Appendices

Locus	Level	Rm	Description
291	5		Tr. A, earth fill ; merges into 292 to N; join = 280.
292	5		Tr. A, earth layer sb Level 4 wall (267).
294	4		Tr. B, floor assoc. with wall 306; Nuzi ware; sb 251, s 311. Probably Level 4 (?3/4).
295			Tr. B, pit cuts 294/303; sb 251. Contains MA nipple base.
296	2	8	Courtyard 8, box let into pavement 271. (Earlier than Level 2?)
297	7		Tr. A, Level 7 wall.
298	6		Tr. A, floor level; sb 316; = level of Palace first occupation.
299	2	8	Fill Level 2/1, Courtyard 8, NW; = 272, 287.
301	2	8	Floor, Courtyard 8; sb 299.
308	5		Destruction debris.
311	5		Tr. B, soft layer; sb 294, s 371.
312	8		Tr. A, very hard ash layer, sb 291, s 328, 325.
313	7		Tr. A, layer with many stones; ?foundation of wall 297; under-runs wall; s 386, (?top of Level 8).
315	4		Tr. B pit, cuts 311.
316	6		Tr. A, hard layer, uppermost Level 6; s 298.
317	6		Tr. A, large pit dug from palace construction level, sb 316.
318	1		Floor of MA house, above Palace (assoc. with wall 160).
319	8		Tr. A wall.
322	2	8	Courtyard 8, below MA floor 318, s 323 (N side of courtyard).
323	2	8	Courtyard 8 floor; sb 322; no pavement here = ?disturbed.
325	8		Tr. A wall assoc. 'lower ash level'
326	1		Upper clearance, above Rm 14. Includes MA, mix of Levels 1 & 2.
328	8		Tr. A, beaten surface, assoc. with wall 329 + ? 422; s 347, sb 312; lower ash layer.
335	8		Tr. A, between wall 329 & section; extension of 312; s 347.
337	1		Doorway between Courtyard 8 & Rm 14, upper fill; s 338 (possible MA, Level 2 mix).
338	2	14	Mitanni floor.
339	3		Tr. C, <i>tannur</i> sb 278, approximately Level 3, though conceivably earlier.
342	3		C3, uppermost fill, s 363.
345	2	14	Floor.
347	9		Tr. A, sb 328, 335; lowest deposit in Tr. A.
348	4		Tr. C, eastern area, level below surface clearance 278; Nuzi ware; dug to Level 4 in 1987.
353			Tr. A2 test trench, sb 251, below MELM spoil.
357	5		Tr. C4, assoc. with so-called <i>pisé</i> platform 362 (surface contamination).
359	6		Tr. C4, red <i>libn</i> wall.
362	5b		Tr. C4 = Tr. D 'pisé platform' (probably <i>libn</i> packing of wall).
363	3/5		Tr. C3, below wall 355; ?Level 3 or earlier (4/5); sb 342.
368	5		Tr. C4, earth below floor 367, s 401 = 373; mix of Levels 5 & 6.
370	6		Tr. A3, Level 6 building level; sb wall 376.
371	6		Tr. B, sb 311, = top of Level 6.
372	6		Tr. C4, earth level, s 381.
373	5		Tr. C4, earth level, mix of Levels 5 & 6; sb Level 4 wall, s wall 400 & floor 402.
374	2	14	?Hearth, pit cut into floor 345.
381	6/7		Tr. C4, earth level on wall 379 = 393; ?Level 7.
384			Tr. A3, 1986 baulk, S of shrine.
385	2		Surface clearance in front of temple. Mixed.
386	8		Tr. A, sb 313, also sb wall 297.
391	7/8		Surface mix, extension of Tr. C4, s wall 393 (see Fig. 57).
396	8		Tr. A4, silt level below shrine Level 6/7.
397	8		Tr. A4, c. 70 cm of ash & <i>libn</i> deposit below 396, s 404, 411; <i>libn</i> collapse.
402	6		Tr. C4, floor, assoc. wall 400 (Fig. 57).

Appendices

Locus	Level	Rm	Description
403	8		Tr. C4, upper fill of vaulted shrine room; s 410, 419. (May include some Level 7 material, below floor of Level 6).
404	9		Tr. A4, closely striated ash & <i>libn</i> deposit; sb 397, s 405, 408; ?includes lower ash Level 8 & fill below. See section Figure 35.
408	10		Tr. A4, collapse of kiln.
409	8		A cross wall in Late Old Babylonian shrine.
410	8		Tr. C4, lower fill of vaulted shrine room, assoc. with wall 409, collapsed vault, sb & continuation of 403; s 412 = floor.
<i>1988 season</i>			
425	3		Tr. D to C1, surface clearance including baulk, mix of Levels 3 & 4.
426			Clearance of old trenches.
427	6		Street between Temple & Palace; clearance for section (Fig. 26).
428			Tr. C1, clearance in bottom of 1987 trench.
429	6		Tr. C1, just below 1987 346; NB palace construction level lies just below bottom of 1987 excavation; s 434, 435.
430	3-5		Tr. D1 sounding, mix with 425 & 432, mix of Levels 3, 4 & 5; s 433.
431	?4/5		Fill down to brick revetments; section (Fig. 26).
432	4		Tr. D1, a 'surface' assoc. with wall 470; some mix with Level 5.
433	5b/6		Tr. D, sb 430, mix, s 438.
434	6		Tr. C1 East, lower east side of 429.
435	6-8		Tr. C1 to west, sb 429, s 437; somewhere between Levels 6 & 8.
437	8		Tr. C1, dark layer in bottom of trench, includes lower ash layer and therefore Level 8 material (no adequate visibility), sb 435. Contains a Nuzi sherd & a red-rimmed bowl frag.; obviously disturbed but not within large pit.
438	6		Tr. D1 sounding, sb 433, down to white floor 448, mix down to Level 7/8.
440	5b		Tr. D1 sounding, line in section below level of 444 but probably = 444 (differences in level owing to terracing).
441	5b		Tr. D, floor assoc. with wall 458 (curved).
442	5b		Tr. D, floor assoc. with wall 443.
444	5b		Tr. D, floor with Nuzi goblet & pilgrim flask, assoc. with wall 443 (440 & 444 join).
445	5b/6		Tr. D, NW corner, ?outdoor surface.
446	6		Tr. D, sb 440, ?s 527; may include much earlier material.
448	7		Tr. D, west sounding in Tr. D1, white plaster floor; = 507; sb 438; possibly a late terraced phase of Level 8 (Fig. 55).
449	6		Street between Palace & Temple; drain at building level, cuts 511 (Fig. 26).
451	5		Tr. D, S of S wall, ?outdoor surface; close to surface of tell.
452	2-5		Tr. C & C/B baulk, mix with & sb 464.
453	4		Tr. C, v. fragmentary upper walls.
455	5b		Tr. D, N of apsidal wall, below & mixed with 441.
457	3-5		Clearance operation to connect Tr. A with large wall 376 to N; down to -1.10; s 469.
459	6b		Tr. D, wall; cf. 359.
461	4		Enlarged Tr. D, ?outdoor surface, assoc. with 470, 463 etc.
462	4		Tr. D, floor assoc. with wall 470.
463	4		Tr. D, floor assoc. with wall 470; s 471; C/D baulk.
464	2		Tr. C5 (C/B), uppermost material; s 452.
466	4/5		Tr. C, fill below 452; = 468; largely Level 5, some mix with Level 4.
467	4		Partially mixed with 468.
468	5		Tr. C, joins 468, 476; = 466; largely Level 5, possible mix with 4.
469	5		Tr. A, sb 457, but almost certainly mixed, ??pit beneath 457, s 473.
470	4		Tr. D, wall, probably = 1987 366; assoc. with floors 432, 461, 462, 463.
471	5		Tr. D, fill; sb 461, 462, 462, 463.

Appendices

Locus	Level	Rm	Description
472	4		Tr. C/D baulk, floor rel. to 467.
473	6		Tr. A baulk, sb 469 to N.
474	pre 5b		Sherds from Level 5b walls.
475	4		Tr. C5, large pit, dug from Level 4.
476	6		Tr. C5 (C/B baulk), below 468 'under ash/ <i>libn</i> collapse' (joins 473); s 493.
477	5		Tr. D, phase 5; sb 471, area N of wall 459; s 485, 489.
478	5		Tr. D, area S of wall 459.
481	5b		= 482.
482	5b		Tr. D, surface assoc. with 'pise' 362/487 (probably <i>libn</i> packing of wall).
484	5b		Tr. D, floor underlying walls 488; i.e. Level 6 ?destruction/Level 5 construction, below 'pise' & floor 481.
485	6		Tr. D, sb 477.
489	5b		Tr. D, <i>libn</i> collapse, sb 477; level uncertain either 5b or 6.
490	7		Tr. D, ?Level 7; sb 494; assoc. with 520; s 526.
491	5b/6		Tr. D, ash concentration below 489.
493	7		Tr. C5, new ash layer below 476; s 500, 503; note wide distribution of Level 8 ash.
494	6		Tr. D, sb 484; collapsed debris? & floor; equivalent to 501?.
497	6		Tr. D, <i>libn</i> collapse, sb 485.
500	8		Tr. C5, beneath ash layer 493, s 515, 521.
501	6		Tr. D, Level 6 floor; sb 498, 520.
503	8a		Tr. C, house above wall 517; sb 493; s 514, 515.
507	7		Tr. D, 'white plaster floor' (courtyard); = 448. (level 368.81); ?upper terrace of Level 8.
509	7		Tr. D, = 507.
513	6		Tr. D, very NE corner of trench, level uncertain (?6/7).
514	8b		Tr. C5, N of wall 517; sb 503; cf. 515; Level 8 fill.
515	8b		Tr. C5, S of wall 517; sb 500.
518			Tr. A4, clearance.
520	8/7		Tr. D, fill of vaulted shrine; probably = 403 but overlies wall 532; therefore includes some Level 7 material; assoc. with 490; s 525.
521	8		Tr. C5, S end; ?sb 500; s 523.
525	8		Tr. D, phase 8; fill of vaulted shrine W; sb 519, 520, s 530.
526	8		Tr. D, door to vaulted shrine; sb 490.
527	7		Tr. D, S of vaulted building; sb 490?; s 529; some later mix likely (close to surface).
528	8		Tr. D, vault collapse in doorway 526.
529	7		Tr. D, S of vaulted building; sb 527.
530	8		Tr. D, floor in vaulted shrine W; sb 525.
<i>1990 season</i>			
534	1b	6	East end of Palace corridor. Fill between MA floors 220 & 539 (see Fig. 31).
536	1b	6	East end of Palace corridor, soft earth above floor 539; = 534; s 220.
539	1b	6	East end of Palace corridor, MA lower floor; = 544 at W end and into courtyard 8; sb 534, 536; s 546 (see Fig. 31).
542	1b	6	SW corner of Palace corridor, hearth in floor 539.
546	2	6	East end of Palace corridor, earth fill under floor 539; = 545; s 548 (Fig. 31).
548	2	6	Earth & broken <i>libn</i> ; sb 546, 547; s 554 (Fig. 31).
554	2	6	Ash layer = Shalmaneser I destruction; sb 548; s 556.
556	2	6	Floor above sherd pavement 558; sb 548; s 558, 571 (Fig. 31).
557	9		Tr. A4, earth and ash west of kiln, s fill 567, 568.
558	2	6	Pavement of sherds with some baked bricks, stones & pieces of <i>tannur</i> , probably foundation/drainage for 556 (Fig. 31).
559	2	6	Earth and ash = Adad-nerari I destruction; sb 558; s 560.
560	2	6	Floor surface on S side of drain, sb 559; = 575, not dug on S (Fig. 31).

Appendices

Locus	Level	Rm	Description
562	2	6	Upper fill in stair clearance (?MA) (cf. Fig. 31).
567	10		Tr. A4, fill between wall 566 and kiln 407; probably contemporary packing.
568	10		Tr. A4, broken <i>libn</i> fill between walls 566 & 593; sb 557, 578; s 585 (see Fig. 39).
570	10		Tr. A4, broken <i>libn</i> , debris of wall 569; sb 551 <i>libn</i> platform; s floor 591.
572	2	6	Upper fill of drain 561; sherds, glass & some charcoal; s 576.
573	2	6	Ash above <i>libn</i> pavement 575, N of drain; sb 574, s 575; = 577.
574	2	6	Ash & broken <i>libn</i> ; sb 554, s 573, 577; = floor 556.
575		6	Top course of red <i>libn</i> pavement N of drain, sb 573, s 582; cb 577. Pavement constructed in Level 5 or part of original Level 6 floor. Bricks 32–5 × 9–10 cm.
576	2	6	Ash layer 2–3 cm thick in bottom of drain 561; sb 572.
577	2	6	Ash deposit, thicker extension of 573, cutting eroded <i>libn</i> pavement 575 and N wall of corridor; sb 574.
579	2	6	Broken <i>libn</i> over lower flight of stairs; sb 562, s 581.
581	2	6	Ash & earth, destruction debris on bottom of stairs; sb 579.
584	10		Tr. A4, ash in kiln, W end.
585	10		Tr. A4, soft grey earth, sb 568 (Fig. 39).
588	6	6	Floor/construction level, original building (10 cm above Level 6 in Tr. A4) (Fig. 31).
592	10		Tr. A4, <i>tammur</i> set in floor 591; sb 570, depth 50 cm (Fig. 39).

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Abbreviations

AAAS	<i>Annales archéologiques arabes syriennes</i>
AEM	<i>Archives Épistolaires de Mari</i>
AfO	<i>Archiv für Orientforschung</i>
AJA	<i>American Journal of Archaeology</i>
AOAT	Alte Orient und Altes Testament
ARM	Archives Royales de Mari
ASOR	American Schools of Oriental Research
BAR	British Archaeological Reports
BIAA	British Institute of Archaeology in Ankara
BMP	British Museum Publications
BSAI	British School of Archaeology in Iraq
CAD	<i>Chicago Assyrian Dictionary</i>
EA	Amarna letter (cf. Moran 1992)
ERC	Éditions Recherche sur les Civilisations
HANE/S	History of the Ancient Near East, Studies
JCS	<i>Journal of Cuneiform Studies</i>
JNES	<i>Journal of Near Eastern Studies</i>
MARI	<i>Mari Annales de Recherches Interdisciplinaires</i>
MDOG	<i>Mitteilungen der Deutschen Orient Gesellschaft</i>
NABU	<i>Nouvelles Brèves Assyriologique et Utilitaire</i>
OBO	Orbis Biblicus et Orientalis
OBTR	Dalley, S., C.B.F. Walker & J.D. Hawkins 1976.
OIP	Oriental Institute Publications, Chicago
<i>Rimah</i> I	Postgate, C., D. & J. Oates, in press.
RA	<i>Revue d'Assyriologie</i>
RLA	<i>Reallexikon der Assyriologie</i>
SIMA	Studies in Mediterranean Archaeology
UVB	<i>vorläufer Bericht über die von dem Deutschen Orient-Gesellschaft Ausgrabungen in Uruk-Warka</i>
WVDOG	Wissenschaftliche Veröffentlichung der Deutschen Orient-Gesellschaft
ZA	<i>Zeitschrift für Assyriologie</i>

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Excavations at Tell Brak

Vol. 1: The Mitanni and Old Babylonian periods

This is the first of three volumes on the 1976–93 excavations at Tell Brak in northeast Syria. Identified as ancient Nagar/Nawar, it is one of the largest urban sites in northern Mesopotamia. In volume 1 the second-millennium BC material is published in full, including a detailed account of the monumental Palace and Temple of Mitanni date (Late Bronze Age) and a sequence of second-millennium domestic occupation dating from c. 1700–1200 BC. This is the most extensive and best-dated Mitanni material yet known. Of especial interest is unique evidence from Palace workrooms for craft activities involving materials such as glass, iron, copper, bronze and ivory. Official cuneiform records add to our historical knowledge of this important but archaeologically little-known kingdom.

The third-millennium BC material will be published in Volume 2, and Volume 3 will cover the Uruk and 'Ubaid periods.

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Cover photo:

Legal document sworn in the presence of Tušratta, king of Mitanni, sealed with the state seal of his forebear, Saustatar (see p. 41).

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