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Excavations at Harappa 1994-1995: New Perspectives on the Indus Script, Craft Activities, and City Organization

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Introduction

Until quite recently, the common view of the Indus Civilization has been as a phenomenon largely undifferentiated in space and time over more than 500,000 sq km and the 500 to 700 years of its existence (2600/2500–2000/1900 B.C.). With continuing archaeological work throughout northwestern South Asia, however, the received wisdom particularly of spatial uniformity has been increasingly and successfully challenged (a notable early example being Fentress, 1976). The “typical Harappan” complex of material traits — including script on intaglio seals and other durable media, a system of standardized weights, measures, and proportions, bleached carnelian and other characteristic kinds of beads and ornaments of various materials, particular forms of and decorations on pottery, water works of varying degrees of sophistication, and a measure of architectural uniformity — can now be seen as something of a veneer of varying thickness overlying diverse local and regional cultural expressions of agricultural and pastoral life that had developed throughout the region in previous millennia. Such a view makes the Harappan phenomenon that much more interesting as it leads us to look for the social correlates of the veneer and of its expression, to examine the processes, mechanisms, and timing of its development and spread, and to focus on the nature of society as it existed at the various settlements in the vast and archaeologically increasingly better known region of the Greater Indus Valley.

Yet, to pull ourselves out of the typological mode within which we have operated requires us to have a detailed chronology within the half millennium block of the “Mature” Harappan phase itself as well as within the similarly long Early Harappan and Late Harappan phases lying on either side. And in spite of increasing numbers of excavations and of radiocarbon dates, we have not developed the ability to deal adequately with the processes of change within these lengthy chronological units. There is little published on how ceramic styles developed at various sites, how configurations of settlements varied, when (and in what context) in the history of the various urban centres the episodic construction of monumental architectural units took place, and how the script may have developed or changed through time. With reference to the last, this situation has led to statements such as the following: “In the available evidence, the Indus script emerges almost fully standardized . . . Except for stylistic variation determined by the different materials of artefacts bearing inscriptions, the Indus script did not change much during the Mature Harappan period” (Parpola, 1994, p.54). Whether this is true or not, we just do not know.

In fact, until recently we did not have any information on developments within the Harappan phase (with the possible exception of Amri: Casal, 1964). But now, excavations at Nausharo (District Dadhar, Baluchistan) and Harappa (District Sahiwal, Punjab) have begun explicitly to address this issue, as have also the work of Jansen and his team at Mohenjo-daro (District Dadhu, Sindh) and of Bisht at Dholavira (District Kutch, Gujarat) (for example, see C. Jarrige, 1994 and this volume; J.-F. Jarrige, 1993; 1994; and this volume; Quivron, 1994 and this volume for Nausharo; Meadow and Kenoyer, 1994; Jenkins, 1994a, 1994b for Harappa; Ardeleanu-Jansen, 1992; Franke-Vogt, 1991; Jansen, 1994 for Mohenjo-daro; Bisht, 1989-90; 1994a, 1994b for Dholavira). Harappa is particularly important in this regard, because it is the only site currently being excavated that has provided evidence for artefactual *and* structural continuity *as well as* change between the Early Harappan and Harappan, has a complete sequence through the Early Harappan and Harappan phases, and provides the opportunity to obtain a large corpus of inscribed materials in well-defined archaeological contexts in association with ceramics and other small finds.

In the following pages we provide information on the 1994 and 1995 field seasons at Harappa that resulted in important discoveries relating to the growth and structure of the ancient settlement and that produced the largest collection of inscribed materials recovered to date by the Harappan Archaeological Research Project Excavations focussed on the Early Harappan/Harappan Transitional (Period 2) and Harappan (Period 3A, B, C) phase occupations of Mound E and ET, and the Harappan (Period 3C) and Harappan/Late Harappan Transitional (Period 4) occupations of Mound AB (Fig. 1). The periodization is based on work carried out at Harappa between 1987 and 1990 on the northwest corner of Mound E (Kenoyer, 1991; Dales and Kenoyer, 1991) and has been confirmed by excavations on the south side of Mound E in 1990 (*ibid.*) as well as by the work on Mounds E and ET begun in 1993 (Meadow and Kenoyer, 1994) and on Mound AB initiated in 1994. Based on radiocarbon determinations, we believe that Period 3A lasted from ca. 2600/2550 to ca. 2450 B.C., 3B from ca. 2450 to ca. 2250 B.C., and 3C from ca. 2250 to ca. 2000/1900 B.C. Thirty-five of these dates were published in Kenoyer (1991); another 30 are presented here as Table 1.

Excavations

Background

During the 1990 season, a massive mud brick city wall pierced by a gateway was located on the southern edge of the central section of Mound E (Meadow, 1991; Kenoyer, 1993). This perimeter wall, more than 5.5 m wide in some places, appears to have been built at the very beginning of the Harappan phase in Period 3A along the southern edge of a Period 2 settlement now estimated to have covered the whole of Mound E. During the 1993 season, the line of the wall was traced in strategically located trenches both to the east and to the west of the southern gateway. At the southeastern corner of Mound E a massive mud brick bastion was uncovered just below the modern ground surface, at which point the city wall was found to turn north where it was incorporated into the eastern edge of Mound E (Meadow and Kenoyer, 1994). Also in 1993, architectural remains of both Period 2 and Period 3 were found to lie to the east (outside) of the Mound E perimeter wall. Careful clearing over and along the wall in selected trenches showed that it had been rebuilt at least once and repaired a number of times, the major rebuilding perhaps taking place at the beginning of Period 3B, and a major episode of repair at the beginning of Period 3C. Finally,

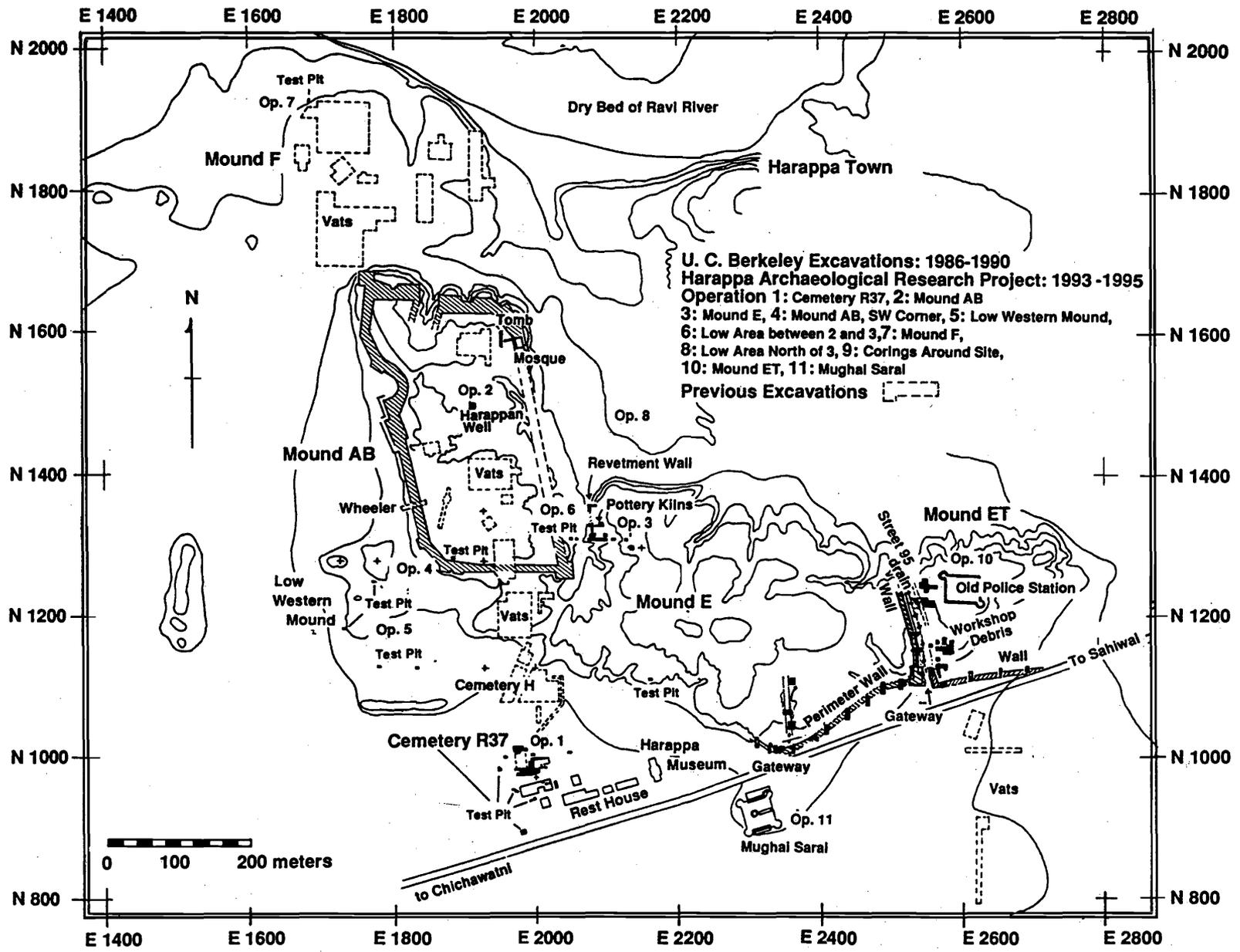


Figure 1. Harappa site plan.

Table 1. Harappa 1993-1994; dates arranged by Period.

*These dates seem somewhat aberrant.

** These dates are considered too aberrant to be accepted.

PROVENIENCE	bp (5568 half-life)	Calibrated BC +1-sigma (intercept[s])–1-sigma
Period 2 (east side of Mound E, west side of Mound ET)		
A-7527	3960+/-95	2575 (2464) 2320
H93/4311 [230]: Trench 10W, Hearth 235A		
**A-7530	3545+155/-150	2120 (1883) 1680
H93/4337[263]: Trench 10W, Hearth 265, from the lowest levels of the site just above natural soil and over 2 m lower than the hearth sample A-7527		
A-8045	4130+225/-215	2920 (2853, 2822, 2660, 2638, 2625) 2403
H94/3974 [28]: Trench 21, Hearth 27		
**A-8044	3765+260/-255	2560 (2184, 2163, 2144) 1778
H94/3973 [26]: Trench 21, Hearth 27, = A-8044, also stratigraphically the earliest hearth just above natural soil		
PERIOD 3B (East side of Mound E, West side of Mound ET)		
A-7522	3875+/-55	2457 (2390, 2389, 2333) 2207
H93/4054 [13]: Trench 10W, Rm 92, Hearth 25, lower levels		
QL-4732	3890+/-20	2453 (2397, 2379, 2348) 2323
H93/4055[26]: Trench 10W, Rm 92, Hearth 25, lower levels		
A-7523	3835+/-50	2395 (2283) 2149
H93/4061[32]: Trench 10W, Rm 92, Hearth 25, middle levels		
QL-4733	3840+/-20	2320 (2285) 2206
H93/4061[32]: Trench 10W, Rm 92, Hearth 25, middle levels		
**A-7524	4385+155/150	3336 (3018, 2990, 2927) 2879
H93/4124[128]: Trench 10W, Rm 92, Hearth 16, (probably some old charcoal here)		
A-7525	3790+/-85	2391 (2197) 2043
H93/4208[7]: Trench 9, Hearth 7		
QL-4731	3880+/-40	2455 (2393,2386, 2338) 2284
H93/4209 [20]: Trench 9, Hearth 7		
A-8050	3895+140/-135	2565 (2399, 2376, 2355) 2141
H94/5442 [259]: Trench 9, Hearth 259		
QL-4778	3820+/-60	2393 (2277, 2225, 2207) 2142
H94/4553 [169]: Trench 9, Hearth 144		
*A-8046	4130+170/-165	2906 (2853, 2822, 2660, 2638, 2625) 2464
H94/4553 [169]: Trench 9, Hearth 144 (same samples as QL-4778)		
A-7526	3750+150/-145	2450 (2140) 1935
H93/4284 [90]: Trench 9, Hearth 91		
**A-8051	4065+/-55	2850 (2579) 2493
H94/5467 [274]: Trench 9, Hearth 274		
QL-4777	3860+/-40	2451 (2315) 2206
H94/5467 [274]: Trench 9, Hearth 274		
QL-4776	3780+/-60	2285 (2193, 2155, 2148) 2048
H94/5472 [273]: Trench 9, Hearth 273		
*A-8052	4075+/-70	2858 (2584) 2491
H94/5472 [273]: Trench 9, Hearth 273; (may be charcoal mixed from earlier levels, same sample as QL-4776)		

(contd.)

(Table 1 contd.)

PROVENIENCE	bp (5568 half-life)	Calibrated BC +1-sigma (intercept[2])-1-sigma
**A-7528 H93/4315 [236]: Trench 10W, Rm 93, Hearth 233; very near to surface but in a sealed context, however it may have been contaminated, is stratigraphically contemporaneous with A-7522, A-7523, QL 4732, QL- 4733)	3165+190/-185	1629 (1422) 1168
QL-4734 H93/4194 [215]: Trench 10W, Hearth 210, upper levels	3820+/-60	2393 (2277, 2225, 2207) 2142
A-7529 H93/4331 [256]: Trench 10W, Rm 93, Hearth 210, lower levels	3905+/-75	2468 (2451, 2429, 2403) 2280
QL-4730 H93/4331 [256]: Trench 10W, Rm 93, Hearth 210, lower levels	3900+/-30	2457 (2450, 2446, 2401, 2372, 2365) 2325
A-8047 H94/5383 [64]: Trench 22, Hearth 64, below wall 15; AMS date: (AA 16461)	3965+/-55	2558 (2465) 2404
A-8048 H94/5384 [66]: Trench 22, Hearth 64, below wall 15	3975+110/-105	2589 (2467) 2320
*A-8049 H94/5385 [67]: Trench 22, Hearth 68, below wall 15, same stratigraphic context as A-8047, A-8048	3785+145/-140	2457 (2195, 2152, 2149) 1976
PERIOD 3B/C (South side of Mound E)		
QL-4729 H93/3541 [11]: Trench 2, Pit 11 outside Wall 17A	3720+/-40	2180 (2132, 2076, 2048) 2034
**A-7521 H93/3541 [11]: Trench 2, Pit 11 outside Wall 17A (may be charcoal mixed from earlier levels, same sample as QL-4729)	3895+/-70	2465 (2399, 2376, 2355) 2208
PERIOD 3C/4 (Mound AB)		
A-8053 H94/697 [3]: Trench 31, hearth behind Mosque	3705+/-55	2180 (2124, 2082, 2043) 1980
QL-4775 H94/647 [5]: Trench 31, hearth behind Mosque	3740+/-90	2281 (2137) 1980

there were some suggestions that just to the east of the corner bastion another gateway was to be found possibly relating to a perimeter wall enclosing the Mound ET area to the east of Mound E. Subsequent excavations, reported here, have shown this supposition to be correct.

Gateway Area (Trench #7/8)

A massive baked brick gateway and drain complex located at the southeastern corner of Mound E has been found to cover a span of more than 20 m east-west and 15 m north-south. It is set between the southeastern corner of the mud brick city wall of Mound E and a similar mud brick city wall running along the southern edge of Mound ET (Figs. 2 and 3). This complex includes an original gateway, side rooms, and sewage drains together with a large corbelled culvert drain that was built in the middle of the gate itself during the last of three major phases of building and rebuilding as defined by discontinuities in construction as well as by changes in brick bonding (Figs. 3 and 4).

The first gateway appears to have been constructed early in the occupation of Mound ET, when the already existing Mound E perimeter wall was extended to enclose Mound ET. Radiocarbon dates from a hearth directly beneath this new extension indicate that it was built sometime after ca. 2470 B.C. (Table 1: dates A-8047 and A-8048 although A-8049

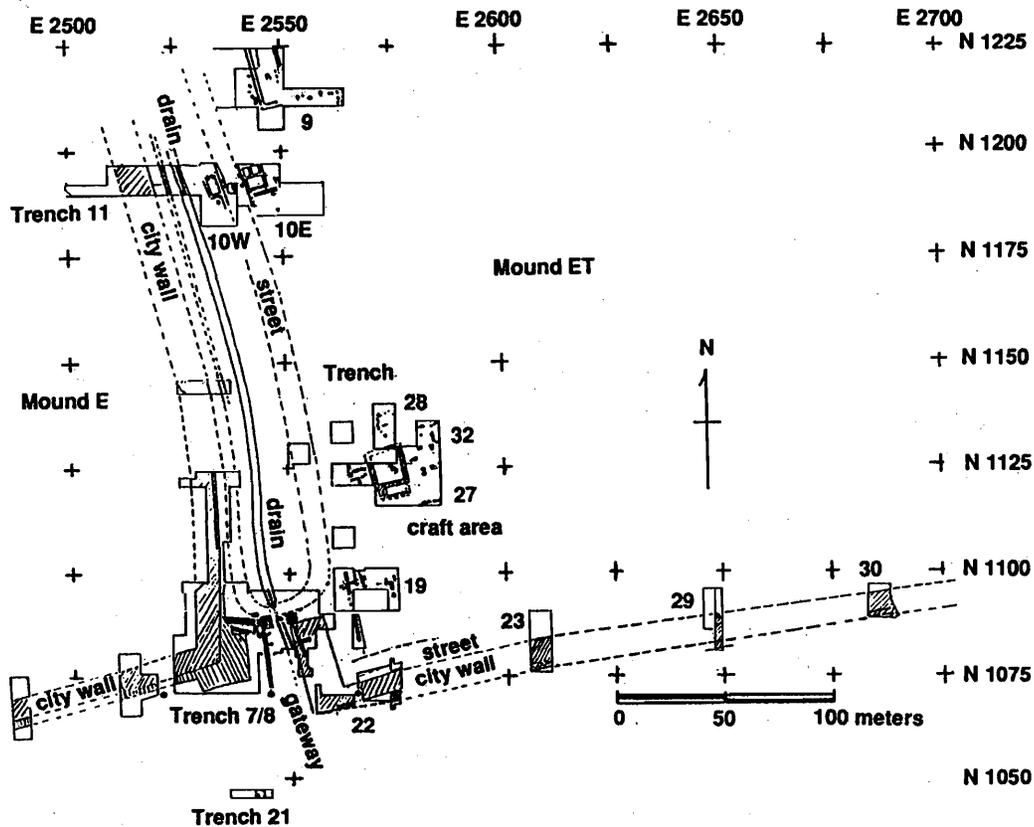


Figure 2. Harappa 1995. Excavation areas.

is later). Ceramics from early deposits inside the wall relate to the Harappan phase occupation of Periods 3A and 3B. Also judging from the ceramics, the second major phase of gateway construction took place during the initial phase of Period 3C (ca. 2250 B.C.), and the third phase during the final phase of Period 3C (ca. 2000 B.C.).

With the second phase of construction, the gate was located between large baked-brick pillars or towers (Figs. 3 and 4: brick pylons [53] and [82]) connected to the massive mud brick city walls. The entrance street through this gate was approximately 2.6 m wide and appears to have continued north along the eastern edge of the Mound E perimeter wall. Later in Period 3C the gate was at least partly blocked by the battered southern face of a baked brick corbelled culvert (drain [51]). This 6.5 m long covered portion of an otherwise apparently open channel permitted a street to run east-west over the drain just inside the old gateway. This street served to connect the southern ends of two parallel streets that ran north along either side of the drain channel, which had been dug deeply into deposits along the line of the old north-south access road. What may have been part of this channel was identified in Trench 11 far to the north where, as in the gateway area, it had been dug deep into underlying archaeological deposits.

The culvert portion of the late Period 3C drain has internal measurements on its northern end of 162 cm high by 60 cm wide and in the southern end of 166 cm by 60 cm. Floored with baked brick it slopes from north to south with a drop of 17 cm in 6.5 m. Outside the southern edge of the culvert the drain emptied into a large pit that was cut into natural sediment to a depth of 1.2 metres. A channel filled with silt was found below and to the west

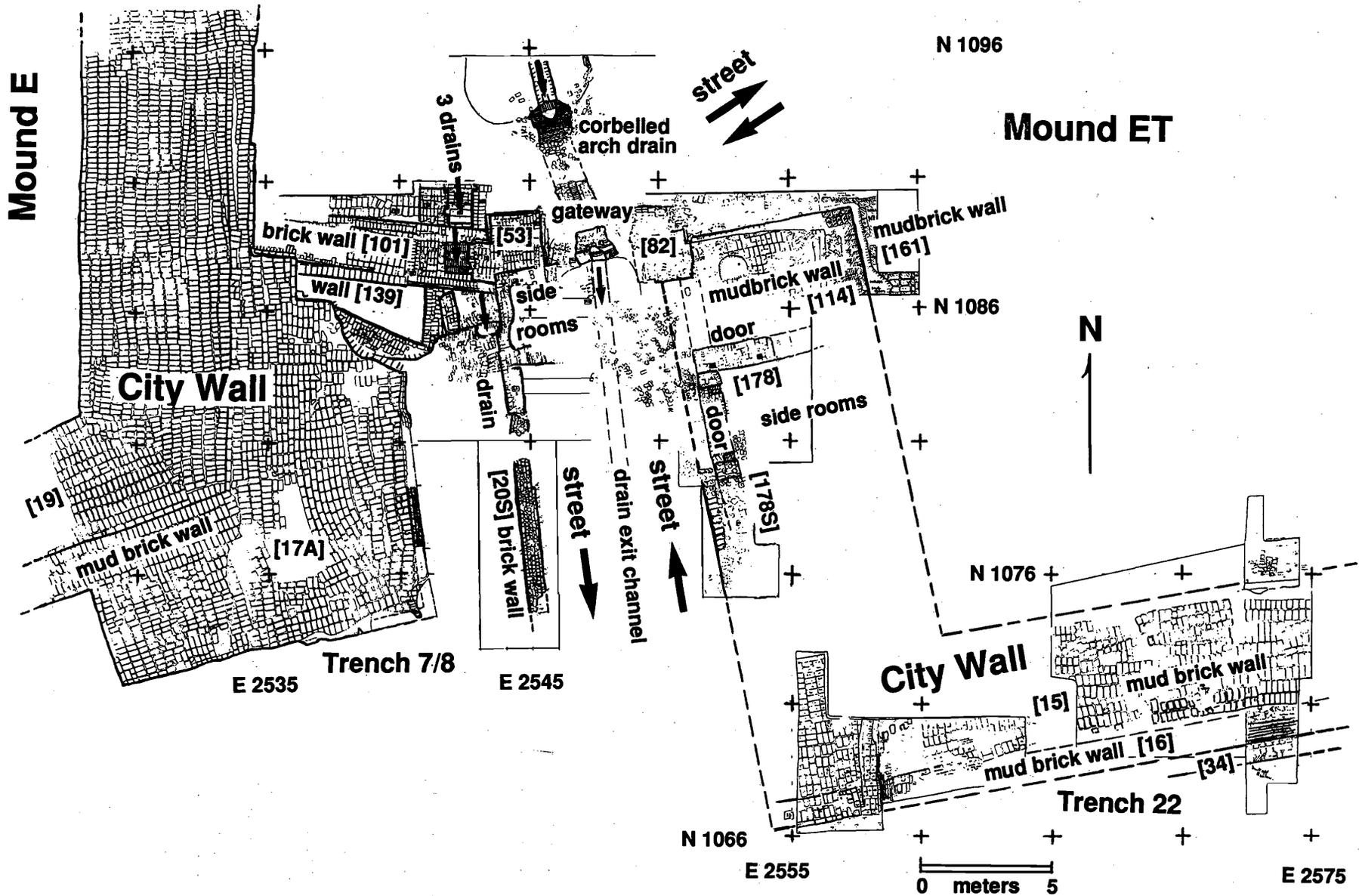


Figure 3. Harappa 1995, Mound ET, Gateway area plan view.

of the drain exit indicating that an earlier drain or water channel had flowed through the gateway before the construction of the baked brick culvert drain.

In addition to the corbelled drain in the middle of the gate, a series of three successive earlier drains (from earliest to latest: [116], [144], and [50]) were discovered built through the western structure of the gateway complex. Each of these drains has a floor of baked bricks set on edge and the earlier two have sockets for holding wooden beams that uniformly measured 20×20 cm in section but were of unknown length. The third and last drain, dating to Period 3C was corbelled, and it had become totally clogged with silty garbage. These drains are all aligned north-south along the east (exterior) face of the Mound E city wall, and after the last of them had ceased to function, the corbelled culvert drain described above was dug farther east through the middle of the former gateway.

The latest phase of construction also included a large doorway leading through the eastern edge of the gateway from east to west (Fig. 3). This doorway was constructed with a wooden frame and threshold that were embedded into the baked brick structure. The sizes of the beams can be calculated from sockets in the brickwork. Sockets for the upright side posts measure 33×44 cm in section, while sockets for the ends of the threshold beam measure 25×17 cm. The depth of these latter sockets indicates that this beam, which may have supported a considerably wider threshold, was sunk securely into the wall at either end. Measuring from the inside of the door posts, the opening would have been 2.35 m wide, and based on traditional proportions for large doors (1:1.5–1.7) provided by a local carpenter from modern Harappa City, its height would have been 3.5–4 metres.

Evidence for another inner doorway, but this time opening north-south, was found on a portion of the brick structure dating originally to the second phase of gateway construction but probably reused during the third. The sockets for the side posts measure 16×16 and 20×20 cm in section, and the inside measurement for the door is 1.6 metres wide. Using the traditional proportions for smaller doors (1:1.5) the height of the door would have been *c.* 2.5 m. The function of these doors is not immediately evident, but they may have been side entrances to the Mound ET portion of the city built when the main gate was blocked. It is also possible that they functioned as doorways to rooms for officials or guards assigned to the gateway.

Bone points and a copper arrowhead were found in the street deposits that had eroded into the late Period 3C drain on the inside of the gateway. Other street levels just inside the gate revealed concentrations of craft workshop debris, including chert drills, agate flakes, shell manufacturing waste and numerous finished beads and inlay. A considerable quantity of charred wheat and burned shell in one street level point to a fire that may have burned down one of the shell workshops along with some stored grain. The locus of this fire has not yet been determined.

Several inscribed pieces were found in the gateway area. These include a broken fired square steatite seal (Fig. 7.3), a complete unfired rectangular steatite seal, two moulded terracotta tablets (Fig. 7.10, 8.4), three moulded faience tablets (e.g., Fig. 11.5), three incised fired steatite tablets, and a stamped pointed base goblet fragment. One of the terracotta specimens (Fig. 8.4) was made from the same set of moulds as examples from Trench 11 (Fig. 8.3) and Trench 28 (Fig. 8.5). Outside the gateway in the lowest deposits at the end of the drain were found two tablets—one moulded terracotta and the other incised steatite.

Mound ET: Perimeter Wall (Trenches 22, 23, 29, 30)

Four trenches were opened along the southern edge of Mound ET east of the gateway to determine the extent of the city wall and the nature of the sediments under the wall (Fig. 2). In Trench 22, directly southeast of the gateway, excavations revealed that there were considerable deposits of cultural material at plane level prior to the construction of the Mound ET city wall. In some of these deposits there is debris from agate and steatite working that may indicate the presence of workshops on Mound ET prior to the construction of the city wall. As noted, the initial construction of the wall was sometime after ca. 2470 B.C., but there were two or more phases of rebuilding which may correspond to phases of reconstruction of the gateway.

Four inscribed pieces were recovered from Trench 22. These include two faience tablets with similar inscriptions on both sides that came from street deposits inside the perimeter wall (Figs. 11.4, 11.6). In addition, there are a flat rectangular moulded terracotta tablet from wash outside the wall and an impressed pointed base goblet fragment (Fig. 12.6).

Farther to the east, in Trenches 23, 29 and 30, the eroded upper surface of the city wall was exposed. The colour of mud bricks used to construct the original wall is yellow-brown and the colour of bricks used to repair the wall is generally red-brown. Given these colour differences it was possible to identify repairs to the interior and exterior faces of the city wall in these trenches. In addition, in some parts of the wall final repairs were made with mud bricks formed of clay mixed with garbage; these bricks are mottled grey-brown with specks of green stained lumps, ash and charcoal, tiny sherds, bone, and even beads. These different colours of mud bricks can be correlated to repairs on the exterior of the city wall in Trench 22 and indicate that the repairs were not isolated events but extended over large reaches of the wall and involved considerable amounts of labour and materials. The width of the wall, including the repairs is about 6.5 m in Trenches 22, 23 and 29 and 5.5 m in Trench 30. A pointed base goblet sherd with seal impression was recovered from the trash above the wall in Trench 23 (Fig. 12.5).

The trajectory of the Mound ET city wall leads east under the modern road that curves around the mound and it is possible that a portion of the road was built on top of the historical wall and follows its curve (Fig. 2).

Mound ET: Southwestern Slope (Trenches 19, 27, 28, 32)

Beginning in 1994, a series of trenches was opened to define the nature of the habitation areas and streets in an area on the southwest side of Mound ET that yielded extremely high concentrations of craft manufacturing debris on the surface. In Trench 19, the layout of houses uncovered in 1994 suggested the presence of a north-south street that aligned with street [95] in Trench 10, some 100 m to the north-northwest (Fig. 2). Deeper digging in 1995 revealed some street-like deposits along the western edge of the trench, but there is no evidence of street levels in the remainder of the trench. Although this area may have been used as a street during the final phase of Period 3C, the earlier levels are exclusively domestic in nature.

Five oval hearths with the typical central column were found at different levels in Trench 19. One appeared to be in an open courtyard area along with some irregular shaped fire pits, while the rest were located in small rooms. There is no indication of roofing so it is not clear if the hearths were in the open or in a closed room. The houses were constructed with mud brick foundations on top of which baked brick walls once stood. The bricks have long since been looted, either by the Harappans themselves or by later groups. In other areas

of the site such mud brick foundations have turned out to be walls of earlier houses made of mud brick that were then rebuilt along the same alignment, but with baked brick.

Five inscribed pieces were found in this trench: a large unicorn seal fragment, two faience moulded tablets, one fired steatite tablet, and a piece of a pointed base goblet with an impression (Fig. 12.7). Only the incised steatite tablet came from what appears to be undisturbed deposits above the floor of a room. Considerable amounts of manufacturing debris from agate, shell, steatite and faience working were also found in secondary context fill. Careful recovery of microfractions, employing both dry and wet sieving, revealed no traces of craft manufacturing debris in the primary floor deposits or hearths. The abundant craft debris in the upper levels appears to have been deposited by erosion from the craft activity area up slope to the north.

Farther northeast, excavations in the craft activity area include a series of adjacent trenches, Trenches 27, 28 and 32, which total ca. 330 sq m (Fig. 5). Situated at the crest of the southwestern slope of Mound ET, this area overlooks the gateway, some 35 m to the southwest. Excavations in 1994 revealed the presence of a large building with mud brick walls faced with baked brick on both the exterior and interior. Deposits that had accumulated in and around the walls included debris from various crafts such as agate, shell, faience, and gold working, steatite bead making, and chert weight and stone tool manufacture.

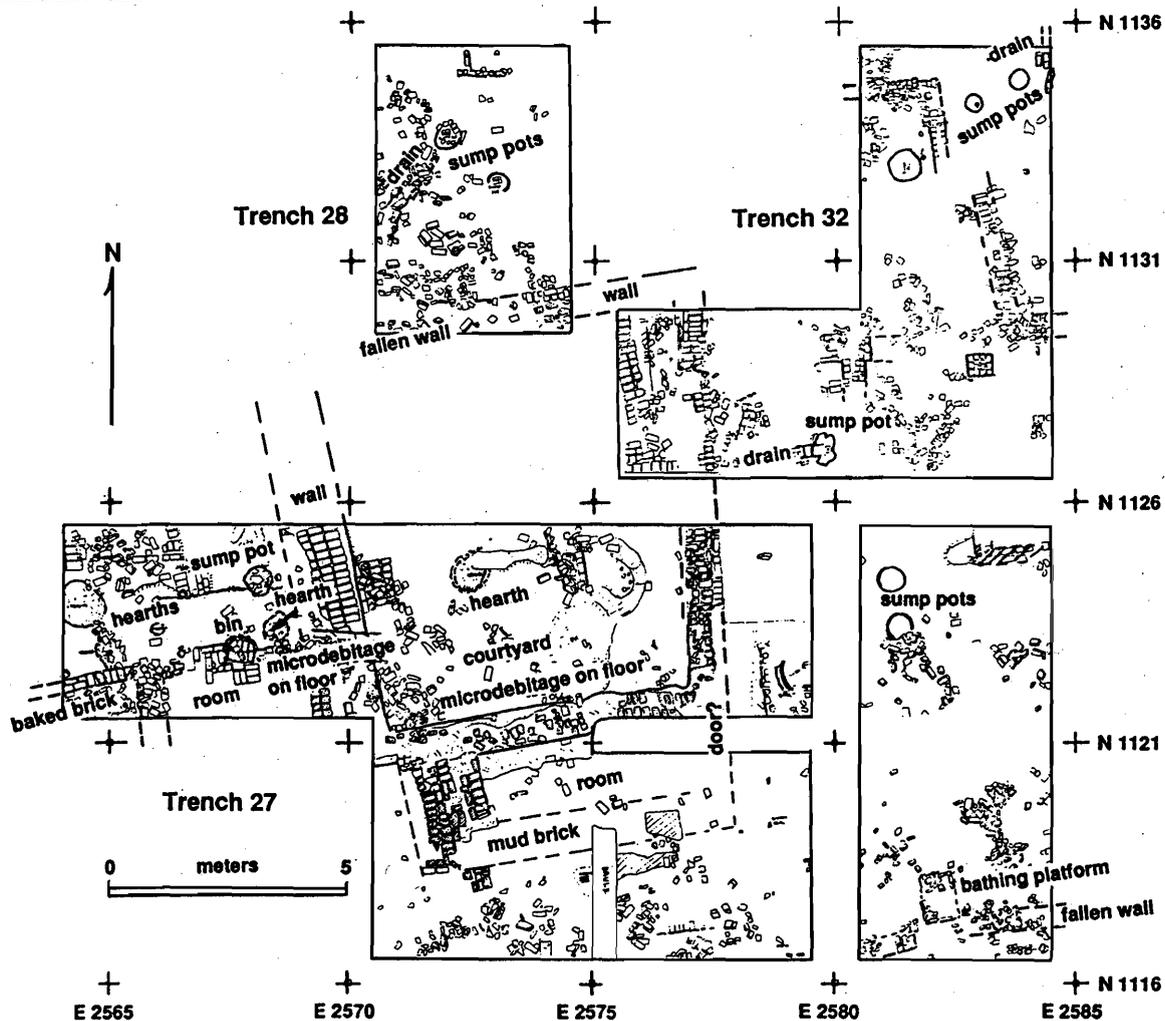


Figure 5. Harappa 1995, Mound ET, Trenches 27, 28, 32 plan view.

Excavations in 1995 revealed that the walls found in 1994 form a large irregular courtyard, measuring 8 m north-south and 6.5 m east-west. A small dividing wall was found in the eastern quarter and several burned patches were located in the centre. At the south-eastern corner is a void which may have been a doorway, and a small room (2 m north-south and 5 m east-west) runs along the south edge. An additional room or courtyard was discovered on the west. It contained a circular hearth, a storage pot set into the floor and a semicircular brick bin. Similar circular bins were also found in Trenches 9 and 10E. One function for these bins may have been for setting a grinding stone in a contained area. A cloth draped over the bricks could have been used to collect flour or other food stuffs that may have been processed with such a grinding stone. Pollen and soil samples have been collected from inside and outside the bin as well as from in between the bricks and from the soil beneath the bin. Excavations beneath the bin in the western room revealed a large brick wall running east-west that had a niche, the function of which is not yet clear. Sediment from the floor of this room and from the courtyard area has revealed the presence of microdebitage from agate and steatite working, but not in large quantities.

Both the large room and the western room were filled with a thick layer of nodules and charcoal that did not contain any craft manufacturing debris. However, the layer of fill above the nodules, up to 2 m thick in some areas, contained large quantities of craft manufacturing waste that represent dumping of debris from craft workshops located somewhere in the vicinity. The crafts include shell, faience, and gold working and agate bead, steatite bead and chert weight manufacture. Of particular note are many chert and ernestite drills. The latter were probably used to drill hard stone beads such as agate, carnelian, and jasper, while the former may have been used on softer materials such as steatite, wood, shell and pottery. Considerable numbers of chert blades, flakes and microdebitage were also recovered through dry and wet sieving. Many of the blades appear to be related to chert drill manufacture, but there are other types of blade and flake tools as well as flaking debris from chert weight manufacture.

In the areas to the north, south and east of the courtyard were found fragments of brick walls and corners along with deposits disturbed by brick robbing containing large amounts of craft manufacturing debris up to a depth of almost 2 m. Current understanding suggests that this architectural complex was not itself the locus of a craft workshop. The fact that the fill above the structure and the disturbed fill in the brick robber trenches contained such large quantities of craft manufacturing debris indicates that there were workshops in the vicinity and that they probably date to the final phase of the Harappan occupation (Period 3C).

//Overall the present data suggest that a large bazaar-like area with numerous workshops was located on Mound ET inside the city wall but near the gateway. What is more significant is the close association in a limited area of many different crafts that produced items for elite consumption; shell working, agate bead making, steatite bead making, faience manufacture, gold working, bone and ivory working, wood working (e.g., inlay in wooden furniture), and chert weight manufacture.//

Other significant finds from Trenches 27, 28 and 32 include 24 inscribed pieces, unfortunately most from fill or disturbed contexts. These comprise three broken steatite seals with unicorn motifs and script, three incised fired steatite tablets (one round), four moulded faience tablets (e.g., Figs. 8.2, 11.12), 13 moulded terracotta tablets (e.g., Figs. 9.2 and 11.1 [from the same context in Trench 27], 8.1 and 9.6 [also Trench 27], 8.5 and 11.3 [both from Trench 28], 7.7, 7.9, 9.11, 11.2 [all from Trench 32]) and the fragment of an impressed

pointed base goblet. One square terracotta tablet has the impression of a unicorn seal on one face and a standing 'deity' with a plumed headdress and arms covered with bangles on the reverse (Fig. 7.9). Two other terracotta tablets (Figs. 8.5 and 9.2) were made with the same moulds as tablets found in Trench 11 on the northeastern corner of Mound E (Figs. 8.3 and 9.1, 9.3, 9.4, 9.5, respectively).

Some of the painted ceramics in these trenches can be correlated to pottery found in Trench 9 to the north, and probably date to Period 3B. The pottery in the fill above the courtyard building includes pointed base goblets which date the later levels to Period 3C.

Mound ET: Northwestern Slope (Trenches 10E and 9)

Trench 10E

Some 50 m north along the western slope of Mound ET are the excavations of Trench 10E, an area that was first opened up in 1993 and expanded to over 200 sq m in 1995 (Fig. 2). Excavations in this area, located on the east side of street [95] south of Trench 9 and opposite Trenches 11 and 10W, have revealed a large mud brick house with several rooms and a large courtyard. The courtyard has a row of three or four square mud brick blocks that appear to be column bases or small square platforms. This may form part of a verandah to the rooms located in the north. The courtyard has several hearths and a semicircular brick bin similar to the one in Trench 27. A complete steatite seal with unicorn motif was recovered from the floor of the courtyard area (Fig. 7.6). In the fill and living surfaces above the courtyard floor that were excavated in 1993 were found a broken terracotta tablet with the drummer motif, a complete example of which had previously been found in Mound F (Fig. 9.7 and Meadow and Kenoyer, 1994: fig. 40.8h), and incised steatite tablets (Meadow and Kenoyer, 1994: Fig. 40.8f, g).

The house to the north of the courtyard had at least two rooms, one of which contained a small hearth with central column along with a rectangular corner bin made of mud brick that had a broken grindstone inside. A second unicorn seal was found in this room (Fig. 7.4).

A large extension was made to the east of this house to determine the chronology of the mound and it revealed a massive deposit of nodules. A complete, but heavily worn unicorn seal found in the upper layers (Fig. 7.5) as well as an important terracotta tablet (Fig. 9.8) described in greater detail below. Also recovered from this area were an incised steatite tablet (Fig. 10.8) and two moulded faience tablets, both broken.

The pottery from the upper layers of Trench 10E contained pointed base goblets and date these deposits to Period 3C, but the fill inside the house and courtyard contains no pointed base goblets. Based on the ceramic assemblage, it can be assigned to Period 3B. A large storage jar, with black slip on the exterior and incised signs on the shoulder was discovered set into the street against the west wall of the house. Numerous sherds with graffiti were also recovered from the fill inside the rooms and from the disturbed deposits to the east. Finished agate beads were found in the floor of the courtyard area, but no craft manufacturing debris was recovered from primary context deposits associated with the architecture. Only a few fragments of manufacturing debris were found in the upper disturbed layers.

Trench 9

Excavations in Trench 9 were begun in 1993 and continued in 1994 and 1995. Approximately 250 sq m have been opened to date (Fig. 2), providing a horizontal exposure of

domestic structures dating to Period 3B with multiple episodes of rebuilding and reuse. In addition, deep digging has been conducted along the western slope to begin the process of connecting the stratigraphy of Trench 9 to that of Trench 10W and 11 across street [95]. Ten radiocarbon determinations place the occupation of this area within the period from the mid-twenty-fifth to the twenty-third century B.C. (calibrated; Table 1: A-7525 and QL-4731, A-8050, A-8046 and QL-4778, A-7526, A-8051 and QL-4777, A-8052 and QL-4776).

Characteristic of this domestic zone are numerous hearths (more than two dozen to date), some rebuilt two or three times and many with a central column. Also characteristic are large jars, usually at least a metre high, reused to collect waste water, or as latrines. Most of these were complete when set into or below the living surfaces but have subsequently cracked or broken because of the pressure of the surrounding sediment or because they were disturbed by the setting of another jar at a slightly later period. Among these vessels, a Black-slipped jar, reused as a sump pot, was found complete and unbroken. This vessel had four different inscriptions, two made prior to firing and two made after firing (Fig. 12.2).

East of the rows of vessels that parallel street [95] was found a semicircular brick bin, like those in Trenches 19 and 27, set into the floor of what appears to be a long courtyard in association with six hearths and three large jars. Also in this courtyard was uncovered an enclosed structure that may have been a storage or dust bin while farther east the nearly complete shed antler of a large stag had been abandoned after having been cut up into five pieces. Only the end of the brow tine and one of the crown tines are missing. A bit west of the antler and ca. 2 m south of a contemporary keyhole shaped hearth about three dozen unbaked terracotta cakes were found arrayed in stacks on the floor of the courtyard. Clearly this area was being used for a type of manufacturing different from that which produced the debris of bead fabrication farther south on Mound ET. In Trench 9 bead manufacturing debris has been found only in the uppermost disturbed layers with the exception of a partly drilled and broken bead from a sealed floor deposit near one of the hearths.

Also in contrast to nearby areas of Mounds E and ET, only a single inscribed small find has been recovered in Trench 9 — a broken faience tablet (Fig. 7.8) from the slope wash. This specimen bears an impression similar to that on a terracotta tablet found in Trench 32 (Fig. 7.7). But, as exemplified by the Black-slipped jars noted earlier, several examples of inscribed pottery have been found (e.g., Fig. 12.1). In addition, finished and worn beads of agate and carnelian, two gold beads, and numerous terracotta beads have been recovered from the fill of the rooms and courtyards as well as from the sump pots.

Mound E: Northeastern Slope (Trenches 10W and 11)

Trench 10W

Across street [95] from Trench 9 is a house with several rooms first excavated in 1993. Two of the more completely cleared rooms (Fig. 6: Room 92 and Room 93 to the south) each had three hearths of different shapes as well as bins and pots used for storage and/or as dust receptacles. Nine radiocarbon determinations from the hearths cluster in the second half of the twenty-fifth and first half of the twenty-fourth centuries B.C. (calibrated; Table 1: A-7522 and QL-4732, A-7523 and QL-4733, A-7524 (? older charcoal), A-7528 (too young,? contaminated), A-7529 and QL-4730, and QL-4734), and the ceramics recovered confirm a Period 3B occupation of this particular complex. A deep sounding, sunk into the street just to the east of these rooms, revealed the presence of Period 2 deposits some 3 m below the modern surface of the street. A sequence of six hearths and the corner of a room

in these earlier deposits, different from the street levels above, show that the nature of settlement in this area changed at the beginning of the Harappan phase in Period 3 probably with the building of the perimeter wall around Mound E. Pottery from these early levels has permitted assignment of the deposits to Period 2 (Jenkins, 1994a: fig. 26.3a, c, e, f, g, j). One of the two radiocarbon determinations from these hearths is problematical, being later than those from most of the Period 3 hearths in Rooms 92 and 93 (Table 1: A-7530). The other (Table 1: A-7527), toward the higher end of the one-sigma range, is appropriately early.

In 1995, the excavations of Trench 10W were expanded to the north and west, joining those of Trench 11 excavated in 1993 and 1994. The Room 92 complex was found to extend to the west and to cover a strip about 10 m wide (east-west) between two major streets. The street to the west runs along the outside (east) of the Mound E city-wall, while the street to the east (street [95]) separates the structures of Trench 10W from those of Trench 10E (Figs. 2 and 6). A late Period 3C drain, possibly the same as that emptying through the gateway (see above), was dug from above through the western side of this block of rooms largely destroying the mud brick architecture. In previous seasons this drain had been only partly exposed and was thought to be the remains of a robbed wall. Instead it has become clear that the baked brick rubble had fallen in from above, perhaps from a lining on the sides of the channel. Complete and fragmentary pointed base goblets were found in the relatively clean sediment that filled the bottom of this drain, which appears to have been dug down at least 2 and possibly 3 m from where the surface was at that time.

At one point, perhaps near the beginning of Period 3B, the area to the east of the Mound E perimeter wall (mud brick wall [250] in Fig. 6) was levelled and a relatively clean compacted surface prepared. Shortly thereafter a curtain wall (mud brick wall [296]) was built parallel to the city wall. The area between the two walls and then over them both was filled with trash tipped over the edge of the then much higher city wall. This trash and the street deposits immediately below, containing no pointed base goblets and masses of Period 3B ceramics, have yielded one of the highest concentrations of inscribed material from Harappa. From Trenches 11 and 10W have come a total of 64 tablets (8 terracotta, 18 faience, 38 steatite), three seals (e.g., Meadow and Kenoyer, 1994: fig. 40.8b, c), and two impressed sherds. A few of these are from deposits mixed with Period 3C material (e.g., the two impressed sherds including Fig. 12.8; the terracotta tablet, Fig. 8.3; the steatite tablet, Fig. 10.10; and the faience tablet, Fig. 11.7). A few others come from poorly defined or surface deposits (e.g., terracotta tablets, Figs. 9.5 and 9.10; the steatite tablet, Fig. 10.1; and faience tablets, Figs. 11.8 and 11.11). Most, however, were recovered from sealed dumps or street deposits (e.g., moulded terracotta tablets, Figs. 9.1, 9.3, 9.4, 9.9; incised steatite tablets, Figs. 10.2, 10.4–10.7, 10.9, 10.11–10.21; and faience tablet, Fig. 11.10). The high proportion of incised steatite tablets is particularly noteworthy, bringing to mind that found in Stratum V of the so called “early levels” in the “The Deep Digging” in Trench I of Mound F (Vats, 1940, pp. 92–98).

Trench 11

This long trench stretches from the eastern crest of Mound E to the western slope of Mound ET, through Trenches 10W and 10E (Fig. 6). It is being excavated to define the stratigraphic and chronological relationships between the two mounds and to obtain a stratified sequence through Period 2 and 3. This trench was begun in 1993 outside the Mound E city wall and was extended in 1994 to join Trench 10W. In addition, Trench 11 was

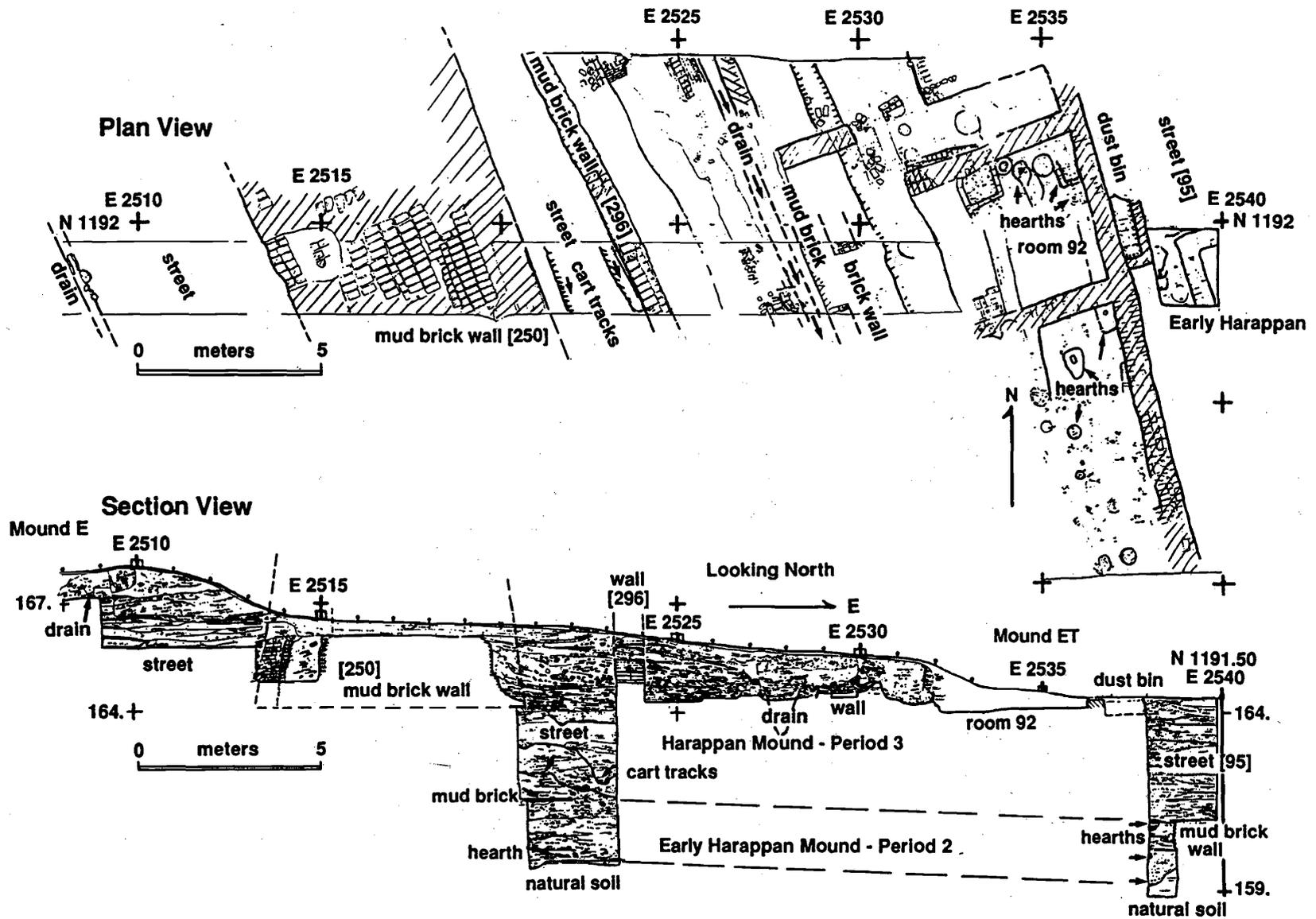


Figure 6. Harappa 1995, Mound E and ET, Trench 11 and 10, plan view and section view.

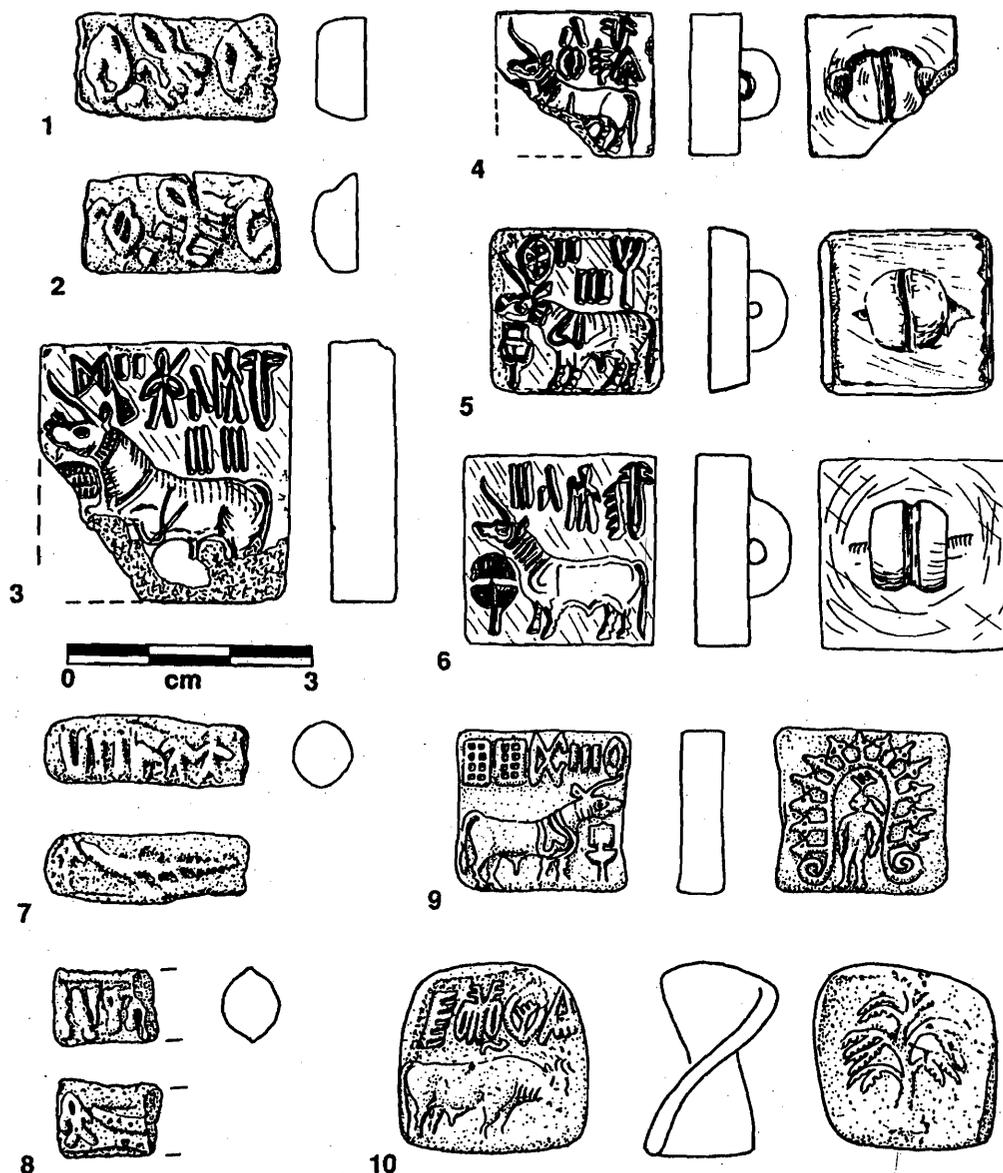


Figure 7. Harappa 1994-1995, inscribed objects.

	Accession #	Excavation Unit#	Artefact Type	Material	Locus
7.01	H94-2198	4999-230	Tablet (cast)	copper alloy	no provenience surface
7.02	H94-2197	4999-229	Tablet (cast)	copper alloy	no provenience surface
7.03	H95-2410	5145-55	Seal (intaglio)	fired steatite	Trench 7/8, fill/wash
7.04	H95-2598	4666-19	Seal (intaglio)	fired steatite	Trench 10E, floor deposits
7.05	H95-2419	4609-01	Seal (intaglio)	fired steatite	Trench 10E, fill
7.06	H95-2491	4690-01	Seal (intaglio)	fired steatite	Trench 10E, floor/fill
7.07	H95-2664	5729-112	Tablet (moulded), 2-sides	terracotta	Trench 32, fill
7.08	H94-2218	4529-04	Tablet (moulded), 2-sides	faience	Trench 9, surface
7.09	H95-2485	5719-02	Tablet (moulded), 2-sides	terracotta	Trench 32, fill
7.10	H94-2406	5101-26	Tablet (moulded), 2-sides	terracotta	Trench 7/8 fill

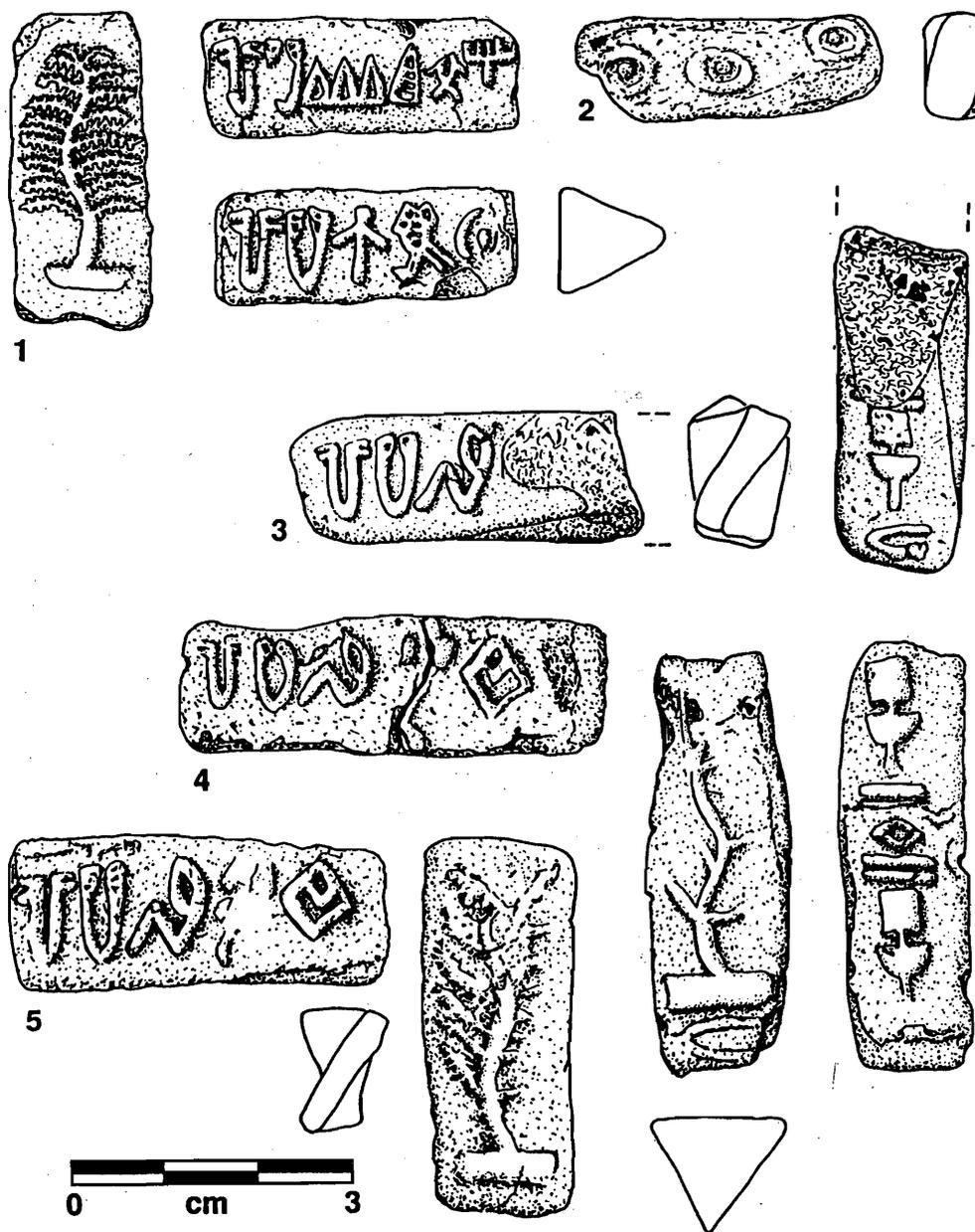


Figure 8. Harappa 1994-1995, inscribed objects.

Accession #	Excavation Unit#	Artefact	Type	Material	Locus
8.01	H95-2523	4990-01	Tablet (moulded), 3-sides	terracotta	Trench 27, fill
8.02	H95-2492	4911-53	Tablet (moulded), 2-sides	faience	Trench 27, fill
8.03	H94-2271	4358-53	Tablet (moulded), 2-sides	terracotta	Trench 11, dump/fill
8.04	H95-2433	5145-60	Tablet (moulded), 3-sides	terracotta	Trench 7/8, fill
8.05	H95-2522	4963-37	Tablet (moulded), 2-sides	terracotta	Trench 27, fill

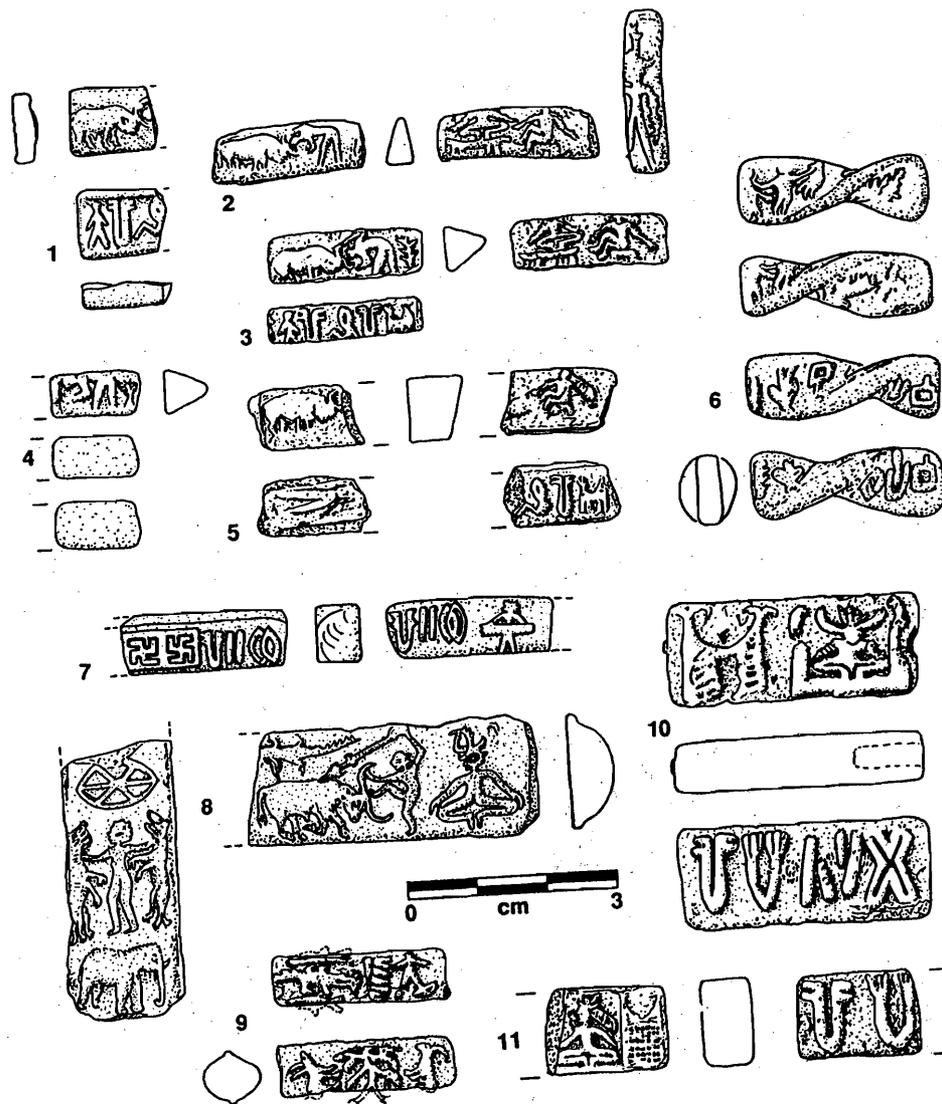


Figure 9. Harappa 1993-1995, Inscribed Objects.

	Accession #	Excavation Unit#	Artefact Type	Material	Locus
9.01	H94-2173	4353-01	Tablet (moulded), 2-sides	terracotta	Trench 11, dump
9.02	H94-2263	4890-44	Tablet (moulded), 3-sides	terracotta	Trench 27, fill
9.03	H95-2519	4419-07	Tablet (moulded), 3-sides	terracotta	Trench 11, dump
9.04	H95-2517	4462-03	Tablet (moulded), 3-sides	terracotta	Trench 11, floor/fill
9.05	H95-2520	4427-16	Tablet (moulded), 4-sides	terracotta	Trench 11, dump/fill
9.06	H95-2484	4981-01	Tablet (moulded), 2-sides	terracotta	Trench 27, fill
9.07	H93-2167	4074-08	Tablet (moulded), 2-sides	terracotta	Trench 10E, fill
9.08	H95-2486	4651-01	Tablet (moulded), 2-sides	terracotta	Trench 10E, fill
9.09	H95-2430	4429-02	Tablet (moulded), 2-sides	terracotta	Trench 11, dump
9.10	H95-2487	4466-01	Tablet (moulded), 2-sides	terracotta	Trench 11, dump
9.11	H95-2524	5785-01	Tablet (moulded), 2-sides	terracotta	Trench 32, fill

extended to the west where horizontal street deposits show that the city wall was originally more than 3 m high and that it served as a revetment for houses at the top of the mound. The city wall itself was over 6 m wide but in the later phases of the Period 3B occupation the exterior was badly eroded and covered with debris thrown from the top of the mound. It is these layers that have yielded the high quantity of inscribed pieces noted above.

In 1995, deep digging was continued in a small portion of Trench 11 through the street deposits that run along the exterior (eastern) face of the Mound E city wall. Approximately 2.3 m of these deposits were found to underlie the latest preserved rebuilding of the city wall (possibly dating to the beginning of Period 3B), but the presence of some mud brick wash layers suggest that there is an earlier city wall (possibly dating to Period 3A) offset to the west. Below the Period 3 street deposits is debris dating to Period 2 (Early Harappan/Harappan Transitional). This occupation is characterized by a small mud brick house with walls oriented north-south and east-west. Several cooking areas or hearths were discovered along with pottery, beads and terracotta figurines.

One important find from the lowest levels is an inscribed chuck base mould for making large jars (Fig. 12.9). The inscription is not simply graffiti, but was carefully and deeply incised. Other moulds dating to Period 2 but with different inscriptions have been found in previous excavations in other areas of the site. This new discovery adds one more inscription to the slowly increasing body of material that may demonstrate the emergence of writing at the site. Additional important finds in these lowest levels are microbeads of fired paste, possibly faience, and a bead made from steatite having a red slip and white design. These beads together with such items as copper chisels, terracotta cart wheels, and Black-on-red painted pottery confirm that many of the characteristic features of the Harappan Phase (Period 3) were already being produced during the Transitional Phase (Period 2).

The mound of Period 2 is approximately 2 m high in the area beneath the Period 3 city wall as well as in the deep trench excavated in street [95], 15 m to the east. These two deep trenches show that the Period 2 mound rests on a natural surface that slopes gently to the east and suggests that deposits of this phase extend for a considerable distance under Mound ET.

Seals and Inscribed Objects

In the 1993, 1994, and 1995 seasons, about 130 inscribed small finds (not including inscribed pottery) were recovered from the excavations on Mounds E and ET. Many of these come from well documented trash and sometimes floor deposits with associated pottery and small finds. Some of the moulded faience and terracotta tablets were made from the same moulds as pieces found in the earlier excavations on Mound AB and F (Vats, 1940). In addition, some of the incised steatite tablets have nearly identical inscriptions — only “nearly identical” because each has to be incised individually. Such a widespread distribution across the site serves to suggest contemporaneity of occupation as well as socioeconomic and perhaps ritual interaction between inhabitants of distinct sectors of the city (Kenoyer, 1995). A number of these duplicate or nearly identical inscriptions are included in this report (Figs. 7–11 and Table 2). In addition a selection of new unique specimens is presented. Of special note among these is the first inscribed piece of hard stone from Harappa — a fragment of a vessel recovered from the surface of Mound AB (Fig. 12.3).

Many of the people from modern Harappa City and nearby villages have begun to appreciate the meaning of the artefacts that they have collected from the surface of Harappa over the years. As a result they have started to turn over their collections, including many

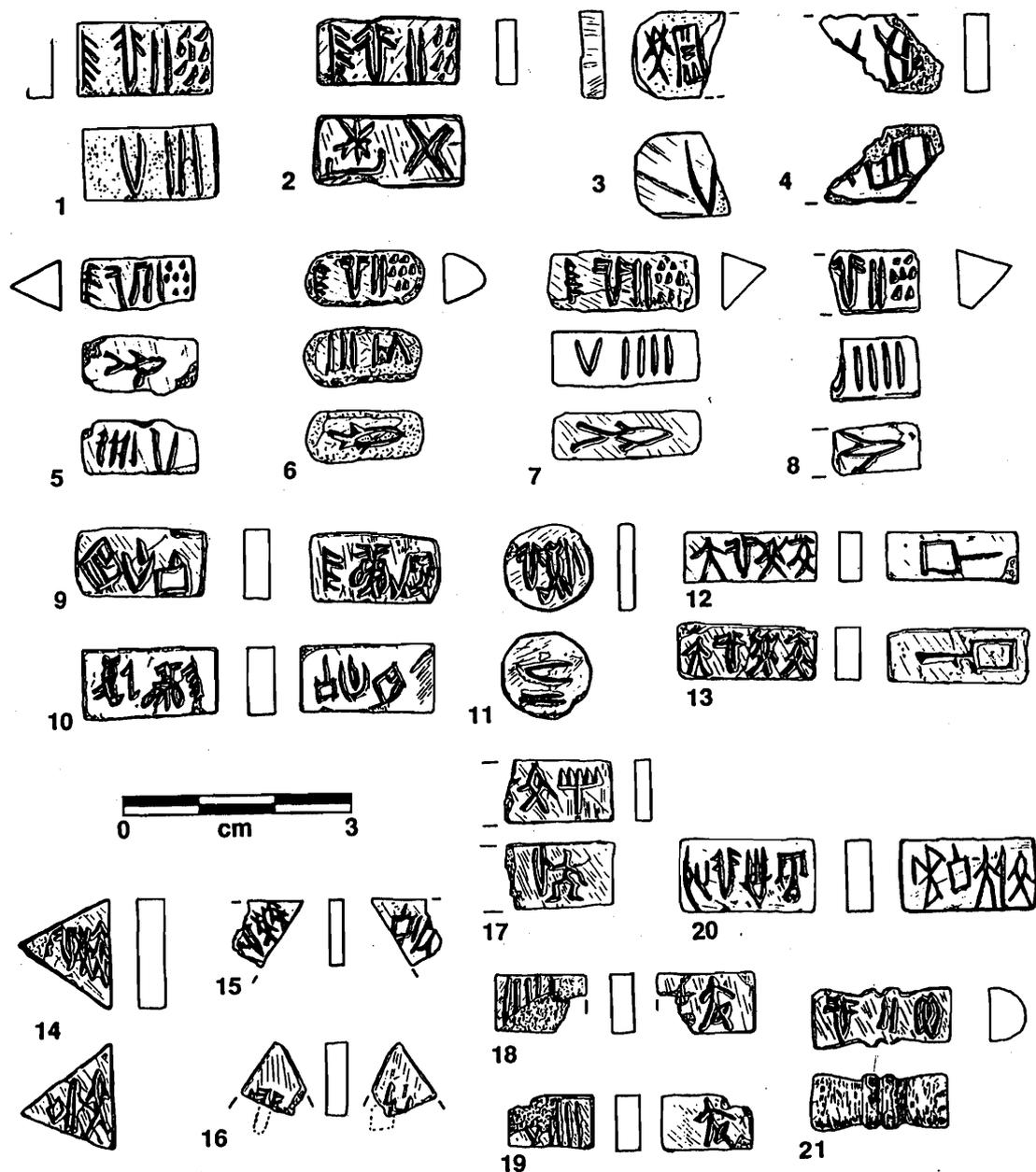


Figure 10. Harappa 1994-1995, inscribed objects.

	Accession #	Excavation Unit#	Artefact Type	Material	Locus
10.01	H94-2172	4346-01	Tablet (incised), 2-sides	fired steatite	Trench 11, surface debris
10.02	H95-2426	4429-01	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.03	H94-2175	4999-02	Tablet (incised), 2-sides	fired steatite	no provenience surface
10.04	H94-2216	4357-02	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.05	H94-2179	4357-01	Tablet (incised), 3-sides	fired steatite	Trench 11, dump
10.06	H95-2415	4426-01	Tablet (incised), 3-sides	fired steatite	Trench 11, surface debris
10.07	H95-2482	4419-05	Tablet (incised), 3-sides	fired steatite	Trench 11, dump
10.08	H95-2427	4614-24	Tablet (incised), 3-sides	fired steatite	Trench 10E, fill

inscribed objects, to the Harappa Museum. In a collection that was donated in 1994 and 1995 there were 20 inscribed pieces, 2 of which are copper/alloy tablets. Six of this kind of tablet from Harappa, some at least with the same inscription, have been published by Joshi and Parpola (1987: H-220 to H-225). Unlike the incised copper tablets from Mohenjo-daro, these tablets have raised script, i.e., they are moulded in a fashion similar to tablets of faience and terracotta. So far, no incised copper tablets have been discovered from Harappa and it appears that the two sites had very different traditions relating to the use of tablets in general. At Harappa there are many more of the small moulded or incised tablets of faience, terracotta, and steatite than there are at Mohenjo-daro. On the basis of our excavations, we can begin to suggest that these tablets come from Periods 3B and 3C, with the larger and more elaborate examples concentrated in 3C.

During the last two seasons, numerous terracotta tablets have been recovered that have greatly enhanced our understanding of the ways in which tablets were being produced and distributed. Perhaps the most important set is one that depicts several different scenes. In 1994 a three-sided terracotta tablet was discovered from the craft area on Mound ET that was stamped from the same three moulds as one found by Vats in Area F, Trench 6 (Fig. 9.2 and Vats, 1940, p. 129 and plate XCIII: 310). Also in 1994, a broken flat rectangular tablet was discovered in Trench 11 which has an identical scene on one side and script on the other (Fig. 9.1). In 1995, three additional tablets were found in Trench 11 that allow a complete reconstruction of the sequence of motifs and combinations of scenes (Figs. 9.3, 9.4, and 9.5, the first two being three sided and the last being four sided).

The scene common to all of the tablets depicts a figure grappling with a short-horned male bovine. Behind the individual is a plant with at least six branches. The second scene depicts a figure with bangles seated in a feet-together (yogic) position on a charpoy or

Figure 10 (contd.)

10.09	H95-2436	4430-10	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.10	H95-2497	4417-31	Tablet (incised), 2-sides	fired steatite	Trench 11, dump/fill
10.11	H95-2429	4429-27	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.12	H94-2260	4387-01	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.13	H95-2489	4470-01	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.14	H95-2417	4416-16	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.15	H94-2320	4406-01	Tablet (incised), 2-sides	fired steatite	Trench 11, street deposits
10.16	H95-2490	4470-02	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.17	H95-2514	4461-04	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.18	H95-2437	4435-01	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.19	H95-2428	4429-05	Tablet (incised), 2-sides	fired steatite	Trench 11, dump
10.20	H94-2323	4402-01	Tablet (incised), 2-sides	fired steatite	Trench 11, street deposits
10.21	H95-2614	6560-02	Tablet (incised), 1-side	fired steatite	Trench 11, street deposits/dump

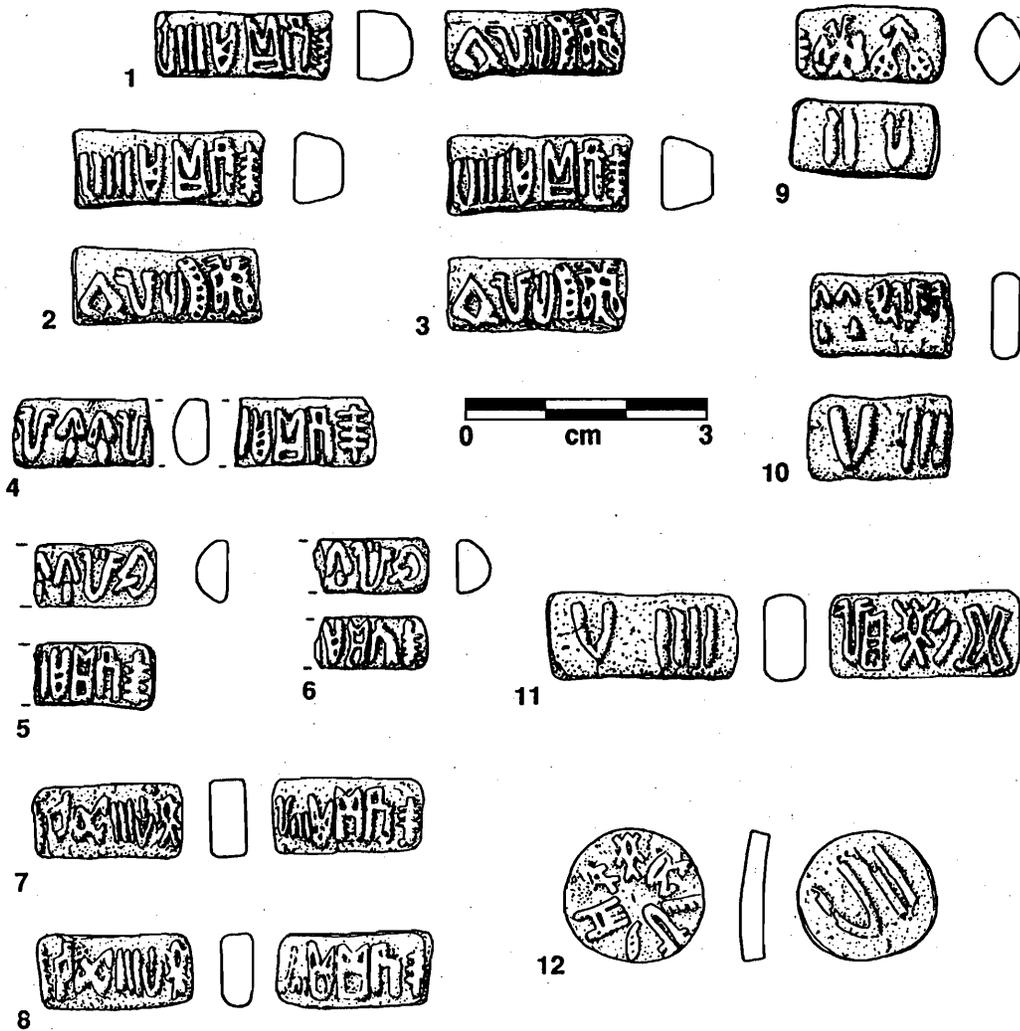


Figure 11. Harappa 1994-1995, inscribed objects.

	Accession #	Excavation Unit#	Artefact Type	Material	Locus
11.01	H94-2273	4890-85	Tablet (moulded), 2-sides	terracotta	Trench 27, fill
11.02	H95-2600	5750-54	Tablet (moulded), 2-sides	terracotta	Trench 32, fill
11.03	H95-2597	4922-96	Tablet (moulded), 2-sides	terracotta	Trench 27, fill
11.04	H94-2274	5332-01	Tablet (moulded), 2-sides	faience	Trench 7/8, wash
11.05	H95-2446	5153-01	Tablet (moulded), 2-sides	faience	Trench 7/8, wash
11.06	H94-2283	5332-02	Tablet (moulded), 2-sides	faience	Trench 7/8, wash
11.07	H95-2420	4418-04	Tablet (moulded), 2-sides	faience	Trench 11, dump/fill
11.08	H95-2443	4433-07	Tablet (moulded), 2-sides	faience	Trench 11, surface debris
11.09	H94-2188	4999-220	Tablet (moulded), 2-sides	faience	no provenience
11.10	H94-2181	4354-09	Tablet (moulded), 2-sides	faience	Trench 11, dump
11.11	H95-2672	6562-01	Tablet (moulded), 2-sides	faience	Trench 11, surface debris
11.12	H94-2247	4880-01	Tablet (moulded), 2-sides	faience	Trench 27, fill/surface debris

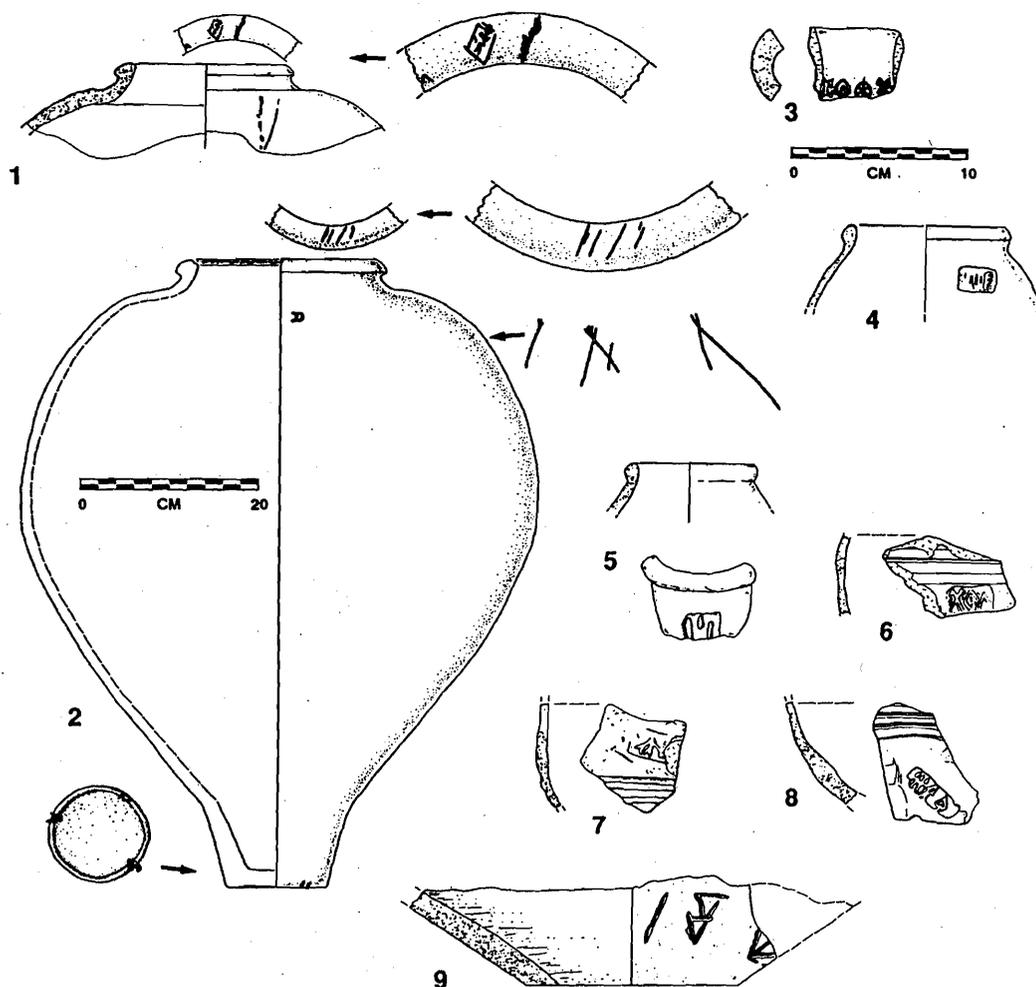


Figure 12. Harappa 1994-1995, inscribed ceramic vessels.

	Accession #	Excavation Unit#	Artefact Type	Material	Locus
12.01	H95	5684-01	Black-slipped jar sherd with incised signs	terracotta	Trench 9, room fill
12.02	H95-2661	6640-501	Black-slipped jar with incised signs	terracotta	Trench 9, sunk into floor
12.03	H95-2476	6072-01	vessel fragment	hard stone	no provenience surface
12.04	H95-2407	5080-500	Pointed Base Goblet with seal impression	terracotta	Mughal sarai, fill of Period 3C sump pit
12.05	H94	5356-82	Pointed Base Goblet sherd with seal impression	terracotta	Trench 23, dump/fill
12.06	H94	5307-15	Pointed Base Goblet sherd with seal impression	terracotta	Trench 22, dump/fill
12.07	H95	4724-51	Pointed Base Goblet sherd with seal impression	terracotta	Trench 19, dump/fill
12.08	H95-2526	4450-31	Pointed Base Goblet sherd with seal impression	terracotta	Trench 10W, fill
12.09	H95	6571-01	Chuck mould fragment with incised signs	terracotta	Trench 11, Period 2 occupation debris

“throne” and a second individual, with long hair and also wearing bangles, seated on a short stool to the proper left of the individual, on the “throne”. The third scene depicts an individual wearing a horned headress that has a triple projection in the centre. This human figure, perhaps a deity, also has bangles on the visible left arm. A fourth “scene” or motif-group comprises six characters of script. Each of the six tablets thus depicts (or in the case of Fig. 9.4, depicted) two, three, or four parts of a story of text that appears to have been complete in four parts. Unknown, however, is whether the different combinations imply the same whole or whether they have different meanings or significations.

All of these tablets appear to have been made from the same set of moulds. (The same has already been noted for the three larger tablets illustrated as Figs. 8.3 to 8.5.) It seems likely that such pieces had a single locus of manufacture and point of distribution and then were carried to different parts of the site where they were subsequently incorporated into trash deposits. This pattern of distribution is also seen in other terracotta and faience tablets that were found in 1993 (Meadow and Kenoyer, 1994). A small tablet depicting a drummer (Fig. 9.7) is identical to one found on Mound AB (Vats, 1940, p. 146 and plate XCIII: 306) and a rhinoceros tablet from Harappa (not illustrated here) appears identical to ones found at Mohenjo-daro (DK 5770 and VS 3513: Marshall, 1931).

Another important tablet from the 1995 season that has parallels both at Harappa and Mohenjo-daro is depicted here as Fig. 9.8. This mostly complete terracotta tablet is rectangular in shape and has a plano-convex section. The flat side has a motif of a person spearing a male water buffalo. Above the hunting scene is a gharial and behind the hunter is a figure wearing bangles and a horned and plumed headress and seated in the feet-together (yogic) position. On the opposite, convex, face is a figure grasping two felines (tiger and/or lion) and standing above an elephant. There is what appears to be a well-formed female breast depicted on this figure and a single Harappan sign is located above its head.

The motif of a figure grasping two felines (usually tigers) by the neck is found on another tablet from Harappa (the twisted terracotta example illustrated in Fig. 9.6) and on tablets and seals from Mohenjo-daro. One of those from Mohenjo-daro appears to depict a male with genitalia (Parpola, 1994, p. 247 and Franke-Vogt, 1991: Taffel XXXV: 248). Other examples are not so clear, but they have usually been assumed to represent males. As a likely female, the figure from Harappa conforms in sex with the depiction of a composite female-bovine figure grasping a horned tiger on a seal from Mohenjo-daro (Franke-Vogt, 1991: Taffel XXXVI: 263). As Parpola (1994, p. 246) points out, the ‘contest’ motif is one of the most convincing and widely accepted parallels between Harappan and Near Eastern glyptic art.” In the Harappan case, however, bulls and lions are replaced by tigers, and females as well as males are depicted as “hero(ine)”. Another interesting feature of the tablets is that whereas the bovine especially are depicted as clearly male, the sex of the human figures is often not so evident.

Part of the same contest motif as that in Fig. 9.8, apparently made from the same mould, is depicted on a broken terracotta tablet found by Vats east of the “working platforms” in the northeast corner of Trench IV, Mound F, some 4 to 7 feet below the surface. Conforming with the more complete example from our excavations, the convex side of the Vats tablet shows the lower half of the motif of a figure holding two felines and standing above an elephant (Vats, 1940, p. 59 plate XCIII: 308; Joshi and Parpola, 1987, p. 209: H-181). However, on the flat obverse of this broken tablet is a different scene, depicting a tiger looking back over its shoulder at an individual in a tree. This makes one more example of correlations between tablets from the upper levels of Mound ET and those in Mound F.

Unlike the motif discussed above, no identical impressions have been found for the motif of a person spearing a water buffalo. However, a similar scene is present on two terracotta tablets and a seal from Mohenjo-daro (Parpola, 1994, p. 252; Mackay, 1938: plate LXXXVIII, 279 and plate XCII, 11b and 12a). Parpola interprets this motif as representing the sacrifice of a water buffalo and relates it to later Hindu iconography of the goddess Durga killing the water buffalo demon (Parpola, 1994, pp. 248, 254).

Another outstanding tablet comes from Trench 32 and is a flat, square terracotta tablet with clear impressions on both faces (Fig. 7.9). On the obverse is the impression of a unicorn seal with script. On the reverse is a figure with a plumed headdress and with arms covered with bangles standing in an arch made of 13 banyan or pipal leaves. Only four other examples of this motif, none identical, have been found, all from Harappa (Vats, 1940: plate XCIII: 307, 316–318). One of these was found in Area G to the south of Mound ET (*ibid.*, p. 316; Joshi and Parpola, 1987: H-179, Parpola, 1994, p. 244). The other examples were found from excavations in Mound F (Vats, 1940, p. 344).

Particularly characteristic of Harappa are incised steatite tablets, very few of which have been found at any other site. (An interesting question is whether such tablets will be found in significant numbers at sites in the vicinity of Harappa once some are excavated). Like the intaglio seals, each of these was incised individually, but unlike the seals there are numbers of “duplicate” inscriptions. This has been known at least since the publication of Vats (1940, p. 325), who also pointed out that these pieces were clearly not intended to make impressions. The individuality of each “duplicate” piece permits examination of variability in the expression of each sign as well as in the placement of each sign-group in relation to the others on the same piece. Some examples are illustrated in Fig. 10, with reference to previously published “duplicate” pieces to be found in Table 2.

The difference in orientation of some sign-groups with respect to others is obvious in Figs. 10.5–10.8. Note the location of the fish on the second side of 10.5 versus the third side on the other three and with respect to the “VIII” sign-group which is inverted on 10.6. Also of interest are the mirror images 10.9 and 10.10. Presumably, 10.9 represents the “correct” orientation, which is “duplicated” in three specimens from Vats (see Table 2). In another specimen from Vats (1940, plate XCVI, 478), the four-character side is like 10.10 and the 3-character side like 10.9, and in yet another piece (*ibid.*, p. 471) the three-character side is like 10.10 and the other side has a different inscription.

Although it seems established that the Indus script was read from right to left (summarized in Mahadevan, 1977, pp. 10–14; Parpola, 1994, pp. 64–67), seal cutters must have engraved it from left to right. This can be shown in some cases by inverting the logic used to establish directionality of reading. (Microscopic examination, currently in progress, of individual pieces to examine cutting technique should give us additional information on this matter). Mahadevan (1977, p. 14) has noted that over 6% of the written items he documented have the script running from left to right. We have suggested elsewhere (Meadow and Kenoyer, 1995) that such reversals might be due to copying by inexperienced or illiterate craftsmen. Even so, it appears that such specimens were, in fact, used — whether for commercial, social, or ritual purposes. Directionality, in at least some instances, perhaps did not matter much, leading one to suspect that it may have been what the piece represented and not what it literally said that was important. Using modern archaeological techniques of excavation combined with technical and contextual analyses should enable us to gain a better understanding of the cultural domain of the inscribed items, as opposed to knowledge of the actual language, decipherment of which still seems a distant dream.

Table 2. Harappa 1993–1995: Objects with inscriptions/iconography from same mould and objects with “duplicate” incised inscriptions

Figure #	Accession #	Vats (1940)	Plate	Object#	Mound	Locus	Stratum	Square	Depth below surface		Joshi/Parpola, 1987 Shah/Parpola, 1991 comparisons	HARP comparisons	Notes
									Feet	Inches			
7.01	H94-2198	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.H-220 to 225H94-2197		
7.02	H94-2197	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.H-220 to 225H94-2198		
7.07	H95-2664	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H94-2218	
7.08	H94-2218	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H95-2664
8.01	H95-2523	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H-183 to 193, 718 to 732, 845: tree only	n.a.	
8.03	H94-2271	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H-183 to 193, 718 to 732, 845: tree only	H95-2433, H95-2522	
8.04	H95-2433	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H-183 to 193, 718 to 732, 845: tree only	H94-2271, H95-2522	
8.05	H95-2522	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H-183 to 193, 718 to 732, 845: tree only	H94-2271, H95-2433	
9.01	H94-2173	p.129: 32	XCIII, 310	11306	F	Trench VI	III	Sq. O 10/19	6	6	H-858	H94-2263, H95-2517, 2519, 2520	
9.02	H94-2263	p.129: 32	XCIII, 310	11306	F	Trench VI	III	Sq. O 10/19	6	6	H-858	H94-2173, H95-2517, 2519, 2520	
9.03	H95-2519	p.129: 32	XCIII, 310	11306	F	Trench VI	III	Sq. O 10/19	6	6	H-858	H94-2173, 2263, H95- 2517, 2520	
9.04	H95-2517	p.129: 32	XCIII, 310	11306	F	Trench VI	III	Sq. O 10/19	6	6	H-858	H94-2173, 2263, H95- 2519, 2520	
9.05	H94-2520	p.129: 32	XCIII, 310	11306	F	Trench VI	III	Sq. O 10/19	6	6	H-858	H94-2173, 2263, H95- 2517, 2519	

9.07	H93-2167	p.146: 5	XCIII, 306	201	AB	Pit I/II extension	I	SqQ 24/22	1	6	H-182	n.a.	
9.08	H95-2486	p.59:7	XCIII, 308	8650g	F	Trench IV	IV	Sq.H 12/21 or Sq. I 12/1	4to7		H-181	n.a.	
10.01	H94-2172	p. 102: 5	XCVI, 456	12516	F	Trench I, middle	V	Sq. M 12/21	14	2	H-916	H95-2426, H94-2179, H95-2415, H95-2482, H95-2427, 1 side n.a.	also Mahadevan, (1977), 4563, 4581: 1 side
		p. 125: 17	XCVI, 444	11291	F	Trench VI	II	Sq. O 9/21	4	3	H-303	n.a.	
10.02	H95-2426	p. 128: 19	XCVI, 472	12216	F	Trench VI	III	Sq. P 11/5	5	9	H-917	H94-2172, H94-2179, H95-2415, H95-2482, H95-2427: 1 side n.a.	also Mahadevan (1977), 5401, 5485, 5486
		p.68:4	XCVI, 481	11798	F	Trench IV	VI	Sq. I 13/17	13	9	H-918	n.a.	
10.03	H94-2175	p. 107: 3	XCVII, 562	3397	F	Trench I, north of deep digging	IV	Sq. M 11/10	10	5	H-965 (also H-966)	n.a.	
10.05	H94-2179	p.78:4	XCVIII, 591	8480	F	Trench V	IV	Sq. I 13/21	7	9	H-977	H95-2415, 2482, 2427: 3 sides; H94-2172, H95-2526: 1 side	

(contd.)

Table 2 (contd.)

Figure #	Accession #	Vats (1940)	Plate	Object#	Mound	Locus	Stratum	Square	Depth below surface		Joshi/Parpola, 1987 Shah/Parpola, 1991 comparisons	HARP comparisons	Notes
									Feet	Inches			
10.06	H95-2415	p.78:4	XCVIII, 591	8480	F	Trench V	IV	Sq.I 13/21	7	9	H-977	H94-2179, H95-2415, 2427: 3 sides; H94-2172, H95-2426: 1 side	
10.07	H95-2482	p.78:4	XCVIII, 591	8480	F	Trench V	IV	Sq.I 13/21	7	9	H-977	H94-2179, H95-2415, 2427: 3 sides; H94-2172, H95-2426: 1 side	
10.08	H95-2427	p.78:4	XCVIII, 591	8480	F	Trench V	IV	Sq.I 13/21	7	9	H-977	H94-2179, H95-2415, 2482: 3 sides; H94-2172, H95-2426: 1 side	
10.09	H95-2436	p. 349	XCVI 480	1497	F	?			14	4		reverse of H95-2497	
		p. 106: 4	XCVII, 506	737	F	Trench I, south of deep digging	VI	Sq. M 12/13	18		H-898	n.a.	
		p. 128: 18	XCVI, 447	10830	F	Trench VI	III	Sq. P 10/5	5	6	H-897	n.a.	
10.10	H95-2497	p. 188: II.2	XCVI, 471	J274	J	Trench II	II	Sq.S 30/4	4	5	H-899	reverse of H95-2436	one side only: also Mahadevan, (1977), 4577, 4579
		p.68:5	XCVI, 478	11756	F	Trench IV	VI	Sq. I 13/11	14		H-299 (299 A is an impression)	n.a.	one side like H95-2436, one side like H95- 2497

10.12	H94-2260	p.348	XCVI, 442	10928a	F	?	?	?	5	7	H-294	n.a.	catalogue different in Vats, 1940 and Joshi and Parpola, 1987
10.13	H95-2489	p.348	XCVI, 442	10928a	F	?	?	?	5	7	H-294	n.a.	catalogue different in 1940, Vats, 1940 and Joshi and Parpola, 1987
10.17	H95-2514	p.32	XCVI, 453	3484	F	Western Extension	V	Sq.I 9/24	10	6	H-940	n.a.	
		p.66:7	XCV, 412	9014	F	Trench IV	IV	Sq.I 12/7	7	7	n.a.	n.a.	round tablet sthis entry may be an error in Vats, 1940
		p.68:3 p. 347	XCV, 412	11796	F	Trench IV	VI	Sq. I 13/22	13	8	H-346 (246B is an impression)	n.a.	round tablet
10.18	H95-2437	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H95-2428	
10.21	H95-2614	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		same sequence of signs as on H93-2167
11.01	H94-2273	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		H95-2600, H95-2597+one side of the other five
11.02	H95-2600	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		H94-2273, H95-2597+one side of the other five

(contd.)

Table 2. (contd.)

Figure #	Accession #	Vats (1940)	Plate	Object#	Mound	Locus	Stratum	Square	Depth below surface		Joshi/Parpola, 1987 Shah/Parpola, 1991 comparisons	HARP comparisons	Notes
									Feet	Inches			
11.03	H95-2597	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H94-2273, H95-2600+one side of the other five	
11.04	H95-2274	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H95-2446, H94-2283+one side of the other five	
11.05	H95-2446	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H94-2274, H94-2283+one side of the other five	
11.06	H94-2283	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	H95-2446, H95-2274+one side of the other five	
11.07	H95-2420	p. 355	C,672	Ab473	F	?	?	?	4	0	H-774	H95-2443+one side of the other six	
11.08	H95-2443	p. 355	C,672	Ab473	F	?	?	?	4	0	H-774	H95-2420+one side of the other six	
		p. 33:5	XCIV, 344	3581	F	Western Extension	VI	Sq. I 9/24	15	6	H-205B (3581(1))	one side only of the above eight H94/H95 tablets	probably error in Vats 1940, p. 344: listed as # 59
		p. 57:5	XCIV, 351	12377	F	Trench IV	III	Sq. I 14/22	6	8	H-773B	One side only of the above eight H94/H95 tablets	

		p. 189: II.1	XCVI, 446	J630	J	Trench II	II	Sq. S 30/1	3	6	H-890B	one side only of the above eight H94/H95 tablets	note that this is an incised tablet
11.09	H94-2188	p. 108: 3	XCIV, 357	3890	F	Trench I, section north of deep digging	V	Sq. M 11/6	11	4	H-212	n.a.	
11.10	H94-2181	p. 229: II.2	XCV, 368	H550	H	Eastern Section	II	Sq. S 34/9	5	3	H-232A	n.a.	Vats, 1940 reverse has 'VII' not 'VIII'
11.11	H95-2672	p. 345	XCIV, 346	none	?	?	?	?	?	?		n.a.	presented by Mr. Price; also # 7537 (=Mahadevan (1977) 5261) is said to be similar
11.12	H94-2247	p.100: 3	XCV, 371	12538	F	Trench I, section south of deep digging	IV	Sq. M 12/18	10	3	H-248	n.a.	specimen in Vats (1940) has 'VIII' instead of 'VII' on the reverse

Conclusion

Harappa is a challenging site to excavate. Not only is it very large — more than 80 ha of mounded area alone — and saturated with soluble salts in its upper layers, but it has been badly robbed. The traditional blame for brick-robbing is laid to the Brunton brothers who contracted for rubble to lay the roadbed of the Lahore-Multan railway. Surely this is a factor, particularly for Period 3C and later deposits. However, even in levels undisturbed by modern activity, it is now clear that the ancient Harappans themselves modified the architecture of their predecessors and in many cases robbed walls of their baked bricks for reuse in new structures. In addition, they made extensive use of mud bricks, not only for platforms and city walls, but for less impressive structural remains often in combination with baked bricks that were employed for foundations and facings. This latter characteristic of Harappa was noted already by Sir Leonard Woolley in 1939 in his critical review of the Archaeological Survey of India (paragraph 55): “Thus at Harappa the whole character of the buildings has been misunderstood and the scantiness of burnt-brick construction found has been attributed entirely to the plundering of the site whereas there is plenty of evidence to show that burnt brick was employed for foundations only and that superstructures were in crude brick; . . .”

To unravel the complicated stratigraphy resulting from these activities and to relate associated artefactual and ecofactual materials with different phases of construction and destruction has required that small scale excavation be balanced with large scale clearing. Thus have we been able to document the cycles of urban growth, decay, and renewal in one part of Harappa. In addition we have constantly kept in mind that the ancient Harappans were technologists of the small and miniature. As one of the primary goals of our project is to study the nature of this technology and determine its place in Harappan society, this too has dictated attention to detail. The work of the last three seasons reported here and in Meadow and Kenoyer (1994), represent a beginning toward understanding development and change in one, previously unexplored, part of Harappa during the whole of the third millennium B.C. Future work will build on this foundation with the particular goal of uncovering larger areas of Periods 2 and 3A in order to better define the nature of the beginning of the Harappan phenomenon.

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BIBLIOGRAPHY

- Ardeleanu-Jansen, A. 1992. New evidence for the distribution of artefacts: an approach towards a qualitative-quantitative assessment of the terracotta figurines of Mohenjo-daro, pp. 5–14 in: *South Asian Archaeology 1989*, C. Jarrige, ed., Prehistory Press, Madison (WI).
- Bisht, R.S. 1989/90. Dholavira: new horizons of the Indus Civilization. *Puratattva* 20: 71–87.
- Bisht, R.S. 1994a. Secrets of the water fort. *Down to Earth*, 15 May 1994: 25–31.
- Bisht, R.S. 1994b. Excavation at Dholavira, District Kutch. *Indian Archaeology 1989-1990: A Review*: 15–20.
- Casal, J.-M. 1964. *Fouilles d'Amri*, 2 volumes, Librairie C. Klincksieck, Paris.
- Dales, G.F. and J.M. Kenoyer. 1991. Summaries of five seasons of research at Harappa (District Sahiwal, Punjab, Pakistan) 1986–1990, pp. 185–262 in: *Harappa Excavations 1986-1990*, R.H. Meadow, ed., Prehistory Press, Madison (WI).
- Fentress, M.A. 1976. *Resource Access, Exchange Systems, and Regional Interaction in the Indus Valley: an Investigation of Archaeological Variability at Harappa and Moenjodaro*. Ph.D. Dissertation, University of Pennsylvania, Philadelphia (PA).
- Franke-Vogt, U. 1991. *Die Glyptik aus Mohenjo-daro*, 2 volumes. Verlag Philipp von Zabern, Mainz am Rhein.
- Franke-Vogt, U. 1992. Inscribed objects from Mohenjo-daro: some remarks on stylistic variability and distribution patterns, pp. 103–112 in: *South Asian Archaeology 1989*, C. Jarrige, ed., Prehistory Press, Madison (WI).
- Jansen, M. 1994. Mohenjo-daro, type site of the earliest urbanization process in South Asia: ten years of research at Mohenjo-daro, Pakistan and an attempt at a synopsis, pp. 263–280 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Jarrige, C. 1994. The mature Indus phase at Nausharo as seen from a block of Period III, pp. 281–294 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Jarrige, J.-F. 1993. The question of the beginning of the Mature Harappan Civilization as seen from Nausharo excavations, pp. 149–164 in: *South Asian Archaeology 1991*, A. Gail, ed., Franz Steiner Verlag, Stuttgart.
- Jarrige, J.-F. 1994. The final phase of the Indus occupation at Nausharo and its connection with the following cultural complex of Mehrgarh VIII, pp. 295–313 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Jenkins, P.C. 1994a. Continuity and change in the ceramic sequence at Harappa, pp. 315–328 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Jenkins, P.C. 1994b. Cemetery R37: new perspectives on style and chronology, pp. 105–112 in: *From Sumer to Meluhha: Contributions to the Archaeology of South and West Asia in Memory of George F. Dales, Jr.*, J.M. Kenoyer, ed., (Wisconsin Archaeological Reports 3), Department of Anthropology, University of Wisconsin, Madison (WI).
- Joshi, J.P. and A. Parpola. 1987. *Corpus of Indus Seals and Inscriptions. 1. Collections in India*. Suomalainen Tiedeakatemia, Helsinki.
- Kenoyer, J.M. 1991. Urban process in the Indus tradition: a preliminary model from Harappa, pp. 29–60 in: *Harappa Excavations 1986-1990*, R.H. Meadow, ed., Prehistory Press, Madison (WI).
- Kenoyer, J.M. 1993. Excavations on Mound E, Harappa: a systematic approach to the study of Indus urbanism, pp. 165–194 in: *South Asian Archaeology 1991*, A. Gail, ed., Franz Steiner Verlag, Stuttgart.
- Kenoyer, J.M. 1995. Ideology and legitimation in the Indus state as revealed through symbolic objects. *The Archaeological Review* 4: 87–131.
- Kenoyer, J.M. and R.H. Meadow. 1995. New inscribed objects from Harappa. *Lahore Museum Bulletin*, in press.
- Mackay, E.J.H. 1938. *Further Excavations at Mohenjo-daro*, 2 volumes. Government of India, New Delhi.
- Mahadevan, I. 1977. *The Indus Script: Texts, Concordance and Tables*, (Memoirs of the Archaeological Survey of India 77), Archaeological Survey of India, New Delhi.
- Marshall, Sir J. 1931. *Mohenjo-daro and the Indus Civilization*, 3 volumes. A. Probsthain, London.
- Meadow, R.H., ed. 1991. *Harappa Excavations 1986-1990: A Multidisciplinary Approach to Third Millennium Urbanism*. Prehistory Press, Madison (WI).
- Meadow, R. and J.M. Kenoyer. 1994. Harappa excavations 1993: the city wall and inscribed materials, pp. 451–470 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Parpola, A. 1994. *Deciphering the Indus Script*. Cambridge University Press, Cambridge.

- Quivron, G. 1994. The pottery sequence from 2700 to 2400 BC at Nausharo, Baluchistan, pp. 629–644 in: *South Asian Archaeology 1993*, A. Parpola and P. Koskikallio, eds., Suomalainen Tiedeakatemia, Helsinki.
- Shah, S.G.M. and Parpola, A. 1991. *Corpus of Indus Seals and Inscriptions. 2. Collections in Pakistan*. Suomalainen Tiedeakatemia, Helsinki.
- Vats, M.S. 1940. *Excavation at Harappa*, 2 volumes. Government of India Press, Delhi.
- Woolley, Sir L. 1939. A report on the work of the Archaeological Survey of India, republished in: *Harappan Studies* 1: 17–56.