SOUTH ASIAN ARCHAEOLOGY
1997

Proceedings of the
Fourteenth International Conference of the European
Association of South Asian Archaeologists,
held in the Istituto Italiano per l’Africa e l’Oriente,
Palazzo Brancaccio, Rome, 7-14 July 1997

edited by
† MAURIZIO TADDEI
and
GIUSEPPE DE MARCO

Volume I

ROME
ISTITUTO ITALIANO PER L’AFRICA E L’ORIENTE
2000
The Ravi Phase: A New Cultural Manifestation at Harappa

Introduction

Since 1986, each season of excavations at the site of Harappa has provided new perspectives on the nature of the settlement and on its growth and development (Dales & Kenoyer 1991; Kenoyer 1991; Meadow 1991; Meadow & Kenoyer 1993, 1997). Study of the excavated material combined with radiocarbon dates has made it possible to present a detailed chronology for the site (Table 1) and a more precise breakdown of the types of artifacts and architectural traditions associated with each major occupational period. In 1988 five major prehistoric periods were identified, with Periods 1 and 2 representing the pre-urban, ‘Early Harappan’ occupation. Since that time a major focus of excavations has been to determine the extent of the Period 2 deposits and to better understand the nature of the urban growth during Period 3, the Harappan Phase (2600-1900 BC). Additional Period 1 deposits were not discovered until 1996 when they were located below Period 2 levels on the northern side of Mound AB (Trench 39S, Figs. 1-3). Because nearly four metres of Period 1 occupation levels were excavated during the 1996 season, it is now possible to divide that period into two sub-periods, 1A and 1B. Furthermore, a larger assemblage of artifacts from Period 2 has allowed for a more comprehen-

Table 1 – Provisional Prehistoric Chronology for Harappa.

<table>
<thead>
<tr>
<th>Period</th>
<th>Description</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A and 1B</td>
<td>Early Harappan/Ravi Phase</td>
<td>c. 3300 – 2800 BC</td>
</tr>
<tr>
<td>2</td>
<td>Early Harappan/Kot Diji Phase</td>
<td>c. 2800 – 2600 BC</td>
</tr>
<tr>
<td>3A</td>
<td>Harappan Phase A</td>
<td>c. 2600 – 2450 BC</td>
</tr>
<tr>
<td>3B</td>
<td>Harappan Phase B</td>
<td>c. 2450 – 2200 BC</td>
</tr>
<tr>
<td>3C</td>
<td>Harappan Phase C</td>
<td>c. 2200 – ?1900 BC</td>
</tr>
<tr>
<td>4</td>
<td>Harappan/Late Harappan Transitional</td>
<td>no dates</td>
</tr>
<tr>
<td>5</td>
<td>Late Harappan Phase (Cemetery H)</td>
<td>? – &lt;1700 BC</td>
</tr>
</tbody>
</table>
sive discussion of the characteristics of this period, including the development of what appears to be Early Indus script. The following presentation focuses primarily on the Period IA and 1B occupations with a brief discussion of new features of the Period 2 occupations.

The Early Harappan Phase Periodization

In earlier reports we stated that the earliest occupation levels at Harappa, which we attributed to Period 1, are found only in the northwest corner of Mound E (e.g., Kenoyer 1991). We now know this to be incorrect. On the basis of excavations carried out on Mound AB in 1996, it is necessary to revise the extent of the Period 1 occupation to include the northern area of Mound AB (Fig. 1). Excavations between mounds AB and E undertaken in 1989 (Figure 1, 'Op. 6') did not reveal the presence of any early occupation levels in this intervening area (Dales & Kenoyer 1989), and it is possible that from the very beginning two distinct areas of occupation were established, one on the northwestern corner of Mound E and another more substantial occupation on the northern part of Mound AB. It must be borne in mind, however, that this intervening area may have been scoured out by people digging clay for mud bricks during later periods. Thus, including the intervening area, the total extent of the Period 1 occupation is now thought to be approximately 7 to 10 ha. In both areas, the Period 1 levels are followed by Period 2 deposits, but only on Mound AB, because of the well-preserved nature of the deposits, has it been possible to divide Period 1 into two sub-periods, namely Periods 1A and 1B.

The distinction between Periods 1 and 2 on Mound E was first defined by changes in the ceramic assemblage that coincided with the construction of a massive mud brick revetment wall along the northwestern edge of Mound E. Due to the limited area excavated at the northern edge of Mound AB in 1996 (Trench 398), no traces of a Period 2 revetment wall were discovered in that part of the site. In 1997, however, in the area of Wheeler's Trench HP XXX along the western edge of Mound AB, a massive mud-brick wall of Period 2 was discovered. On the basis of this admittedly limited evidence it appears that the areas of both Mound AB and Mound E saw the construction of mud brick revetment or 'city' walls sometime during Period 2. Future excavations will be necessary to deter-
mine if these walls surrounded separate mounds as was clearly the case during the following Period 3.

The transition from Period 1A to 1B is currently documented only on the northern side of Mound AB. In the small trench that we dug in this area (3 × 4 m) the major means for differentiating the two sub-periods is the pottery assemblage. In Period 1A all of the pottery is hand-built and consists of a limited number of vessel shapes. Both vessels with polychrome painted motifs and plain wares are attested. In Period 1B there are some wheel-turned vessels, with their number increasing over time. By Period 2, most of the pottery is wheel-turned and includes a variety of shapes with black-painted designs on red slip, as well as globular vessels with brown paint and grooved surfaces identical to the types associated with the Kot Dijian culture as defined by Mughal (1970, 1990).

In the upper levels of Period 2 there is a gradual transition in ceramic styles leading into the characteristic black-on-red pottery of Period 3 (the Harappan Phase). Again, due to the fact that there is no distinct hiatus or break, Period 3 deposits are defined by the presence of baked-brick architecture and the entire range of artifacts uniquely associated with the Harappan Phase. As noted in Table 1, Period 3 can be divided into three sub-periods on the basis of ceramics and architectural phases (Dales & Kenoyer 1991; Kenoyer 1991; Meadow & Kenoyer 1993, 1994, 1997).

Periods 1A and 1B: the Ravi Phase Occupations

The earliest cultural deposits discovered so far at Harappa are about 4.5 m of occupational debris at the base of the northern portion of Mound AB. These we have designated the Ravi Phase occupations. In the past material like that found in Period 1 deposits has been assigned to the Hakra Wares culture (Mughal 1974, 1990, 1997) or to the Hakra Phase (Shaffer 1992). In earlier reports, our Period 1 was defined on the basis of ceramics and architectural phases (Dales & Kenoyer 1991; Kenoyer 1991; Meadow & Kenoyer 1993, 1994, 1997).

Jalilpur I (Mughal 1974) which Mughal associates with a more general and widespread phenomenon called the Hakra Wares culture (Mughal 1997: 63-68). Detailed studies of the ceramics and other artifacts found in Period 1A contexts at Harappa, however, suggest that the material from Harappa, and probably also from Jalilpur I, is sufficiently distinct from that found in other geographical subregions within the region covered by Shaffer's Hakra Phase to deserve a separate name. Indeed as we learn more about the period between about 3500 and 2800 BC, we expect that a number of sub-regional 'phases' will be defined. As Shaffer (1992: 442) notes: 'Phases thus may be applicable to the area of a major cultural tradition as a whole, or more commonly to separate sequences within its geographical subareas. This is the smallest analytical unit and its major feature is a diagnostic ceramic style located at one or more sites during a particular time'. Another possibility would be to call the cultural phenomenon of Jalilpur I and Harappa Period 1 the 'Ravi aspect of the Hakra Phase'. This is cumbersome and thus we choose to use the term 'Ravi Phase' with the understanding that once excavations are carried out in other areas, particularly in Bahawalpur, we may again have to change the way we refer to the various subregional manifestations.

The deposits containing Period 1 materials on the north side of Mound AB consist of numerous superimposed living floors that have been heavily perforated by rodent holes (Figs. 2-3). In excavating these levels it was necessary to carefully remove the mixed fill from these rodent holes before excavating the undisturbed floor areas. Even so, some mixing of materials is inevitable and this may be reflected in some younger than expected radiocarbon dates. The initial Period 1A occupation on natural soil is characterized by an oval hearth [190] that was dug into the natural soil along with a circular pit [193] that appears to have been plastered with a chaff tempered clay (Fig. 2c). The pit contained some charred grain and ash that have been dated to between 3254 and 2706 BC (WG [NEC] 2515 + 1 sigma, 2516 - 1 sigma). We believe that the earlier end of this range fits better with other dates from later hearths in the same trench and with another date from Period 1 levels on Mound E (Beta-33873, see Appendix 1).

All pottery associated with these earliest features was hand-built, and most of the forms are finely made shallow bowls, deep bowls, large carinated vessels, or thick-walled cooking pots covered with a slurry of coarse sandy clay mixed with calcium carbonate nodules and some pebbles.
Fig. 2 – Harappa 1996, Mound AB, Trench 39S:
a: Plan of Period 2 levels; b: Plan of Period 1A house floor (numbers next to vessels refer to Fig. 4); c: Plan of Period 1A lowest levels
Due to the fragmentary nature of the sherds in the earliest levels it has not been possible to reconstruct complete shapes. The partial shapes, however, indicate no difference from those defined on the basis of complete vessels found on a floor about a metre higher in the sequence. The intervening superimposed floor levels also yielded many sherds as well as several hearths, one of which (hearth [177]) has been dated to between 2924 and 2887 BC (Beta-93760).

Our best information about the cultural assemblage from Period 1A comes from a floor level containing many complete vessels and a hearth [128] that has been dated to between 2886 and 2696 BC (Beta-93759). A complete cooking pot was found next to the hearth and additional complete vessels were found in different groups on the floor (Fig. 2b) Other fragmentary vessels could be partially reconstructed to provide what appears to be a reasonably complete picture of the types of vessels being used during this period. The larger carinated vessels have rounded bases with tapered upper bodies and simple rims (Fig. 4.1-5). These vessels are painted with geometric and floral motifs using an often fugitive white paint and some red-brown or purple-brown paint. Both deep and shallow bowls (not illustrated) were found painted with similar pigments and a range of geometric and floral motifs. Small pots with constricted necks and simple rims were also recovered (Fig. 4.6-9). Some of these vessels are painted with a dark brown slip while other are decorated with brownish-black paint on a buff surface. Cooking pots (Fig. 4.10-11) are generally unpainted except for the rims, which are sometimes coloured with a deep brown slip. Below their rims, the exteriors of these vessels are covered with a slurry of coarse sandy clay mixed with calcium carbonate nodules and some pebbles. This treatment is generally similar to that reported for some of the Hakra wares reported by Mughal from Cholistan, but there are major differences in the shapes of the rims and the inclusions in the slurry (personal observations). Further morphometric and petrographic studies are needed to fully document the distinctive styles of this kind of slurry-coated cooking pot that are found in the different regions.

Noteworthy among the painted motifs on the pottery from Period 1A at Harappa are bird and net motifs that are comparable to decorative elements found at Sheri Khan Tarakai (Farid Khan, pers. comm., and Khan et al. 1990; Khan 1991), but here again the shapes are distinctive to the Ravi region (Fig. 4.1-2). Other geometric and floral motifs are comparable to those seen at Rehman Dheri, Periods 1 and 2 (F.A. Durrani, pers. comm., and Durrani 1988). Among the most significant motifs discovered at Harappa are the intersecting circle design painted in polychrome (Fig. 4.3-4) and the fish-scale motif painted in light red-brown on buff (Fig. 4.5). Whereas the other motifs mentioned here all disappear by Period 2, the intersecting circle and fish-scale motifs continue to be used, but they come to be executed in black paint on a red slip. Intersecting circle and fish-scale motifs on pottery have been reported from other early sites such as Amri, Kot Diji, Mehrgarh, Nausharo, Jalilpur and Rehman Dheri. At those sites they are said to occur on wheel-made vessels, whereas at Harappa they occur first on hand-built pottery. In any case, these motifs appear to have been used at many different sites throughout the Indus valley at approximately the same time period, i.e., c. 3300-2800 BC.

Period 1A Craft Traditions

In addition to the pottery, the intact Period 1A floor level contained a wide range of artifacts that shed new light on the craft activities practised during Period 1A and on the antiquity of these traditions at the site of Harappa itself. Some of these crafts involve the use of locally available materials and relatively simple technologies, such as terracotta bead, bangle and figurine manufacture, bone working and textile production (Kenoyer 1992; Bhan et al. 1994). Others crafts used exotic raw materials and more complex technologies, for example, glazed steatite-bead making, stone-bead manufacture, shell-bangle making, and possibly copper working.

Terracotta beads from Period 1A include a wide variety of shapes, many of which are unique to this early period (Fig. 5). Two groups of terracotta beads were discovered which appear to have come from entire necklaces left lying on the intact Period 1A floor (Fig. 2b). Although only one terracotta bangle with a pinched exterior ridge was discovered from Period 1A, more bangles were found in Period 1B strata, and by Period 2 there are a number of different styles of bangles, including painted bangles with dark brown bands and gray fired bangles with incised designs (Fig. 6). Terracotta bead figurines have been found along with the limb of a painted animal figurine having a reddish slip and white spots. Seated female figurines with large hips, pinched head, appliqué eyes and traces of red-painted bands have also been recovered from Period 1 levels.
Bone working in Period 1A is represented by long tapered points that may have been used as projectiles, an awl made from a caprid long bone, and spatulas made from ribs. The awl may have been used in basketry or leather working, while the spatulas are highly polished and may have been used in weaving. A single terracotta bead with fabric impressions on both faces indicates the production of simple weaves, and several spindle whorls found on the floor suggest the spinning of thread. The fabric impression does not allow identification of the type of thread being produced, but it could have been either wool or cotton.

Steatite beads were also being made at the site, with the manufacturing waste including sawn steatite blanks and unfinished beads. The saw marks on the steatite indicates the use of a toothed copper saw (Kenoyer 1997), and the drill marks on the beads appear to have been made by a copper drill with a bevelled tip rather than by a stone drill. Many fired and glazed steatite beads were discovered on the intact Period 1A floor along with the unfinished beads, and in one area a fragmentary necklace of white-glazed steatite beads was discovered (Fig. 2b). Most of the white-glazed beads had short cylindrical shapes, but a distinctive green-coloured glaze was identified on long cylindrical beads (Kenoyer 1997). Pieces of vitrified, chaff-tempered clay were recovered in the debris on the floor, and their presence suggests that the firing and glazing of the beads may have taken place in nearby areas.

Stone beads recovered from the Period 1A floor and overlying strata

4. Polychrome pot, body sherd, intersecting circle motif, H96/7501-506; white outlining, gray-brown paint (5YR 4/1), red-brown surface (2.5YR 4/2); hand built with slab construction.
5. Pot with fish scale design, H96/7515-503; red brown paint; hand-built with slab construction.
7. Small pot, H96/7516; chocolate brown paint (5YR 3/2), hand-built.
8. Narrow-mouthed pot or bottle, H96-3155/7512-505; burnished black-brown paint, base scraped and smoothed.
9. Small pot, H96-3156/7512-501; flaring rim, horizontal bands and geometric design; reddish brown to purplish black paint (2.5YR 4/2), hand-built.
10. Pinched rim, H96/7533-500; hand built with sandy coating on body.
11. Cooking pot, H96-3178/7505-513; grog slip on exterior below rim, smoke-blackened on parts of body and rim; reddish-yellow to reddish, medium sandy with grog and pebble temper, some vegetable temper, hand built with slab construction.
include short cylindrical beads of lapis and carnelian. The lapis beads appear to have been perforated with stone (chert or jasper) drills while the carnelian beads were perforated by pecking. One amazonite bead fragment was recovered and this was drilled with a tapered cylindrical stone drill (Kenoyer & Vidale 1992). The presence of several different cutting, drilling, and finishing techniques in the same area of the site indicates the diversity of bead technology during the Ravi Phase occupation. The differences between these technologies, from raw-material acquisition to final distribution of finished beads, are critical to understanding the relative 'value' of beads and for defining the different ways in which production could have been controlled by elite groups (Vidale 1992, 2000).

The presence of both finished and unfinished shell bangles made from
the large gastropod *Turbinella pyrum* has also been documented from the Ravi Phase occupation levels. The unfinished pieces indicate the manufacture of shell bangles at the site, while the presence of both wide and narrow bangles demonstrates the antiquity of these contrasting bangle styles almost 1000 years before the Harappan Phase. The unfinished shell bangles also show that there was long-distance trade of raw materials from either the Makran or the Kutch coastal regions and confirms a trend already noted for Mehrgarh Period III for the increasing movement of raw materials as opposed to finished products during the 4th millennium (Kenoyer 1995b).

Other artifacts that indicate long-distance trade are copper objects such as pins and arrow heads. So far no evidence for the melting or casting of copper has been discovered, but the evident ability to produce glazed steatite (attested also at Mehrgarh in Period III: Barthélémy de Saizieu & Bouquillon 1994) would indicate that the early Ravi Phase inhabitants were technologically capable of melting copper and otherwise processing the metal.

Period 1B and the Transition from the Ravi to the Kot Diji Phase

The Period 1B occupation sees the introduction of wheel-thrown pottery and the increasing use of decorative motifs and vessel forms that later come to characterize Period 2 (Kot Dijian Phase) ceramics. Examples are wheel-thrown bowls with bilaterally projecting rims and moulded bases and wheel-thrown globular jars with multiple grooves and short everted rims painted with a dark reddish-brown pigment. Painted pottery with red slip and black designs such as the fish-scale, pipal leaf, and intersecting circle also begins to be produced during this period. However, some vessels continue to be painted with multiple pigments (red, brown, black, white). The tradition of inscribing marks onto vessels either before or after firing becomes increasingly common (Fig. 7) and by the end of Period 2, there is evidence that some of these signs may in fact represent an early form of the Indus script.

In Period 1B levels a few sherds of non-locally made ceramics were recovered although not so many as for Period 2 when the variety of such ceramics increases and includes what are commonly referred to as Quetta Wet ware, Damb Sadaat black-on-buff, and a finely painted bowl that is similar to one found at Lal Shah, near Mehrgarh (Jarrige *et al.* 1995: 527, Fig. 11.2b, Mehrgarh Period VIIC). All of these non-local pottery vessels

Jonathan Mark Kenoyer and Richard H. Meadow

seem to have come from the western margins of the Indus Valley and eastern Baluchistan, highlighting the importance of ties between Harappa and these regions. A leaf-shaped chert arrowhead similar to ones found at sites to the west such as Rehman Dheri and Mundigak has also been recovered from Period 2 context, providing further evidence of such interactions.

Several different periods of mud-brick wall construction were discovered from the two trenches excavated in 1996 (39N and 39S), all of which are oriented along the cardinal directions. In Wall [100] of Trench 39S dating to Period 1B the bricks are 11 × 23 × 40 cm – an approximate 1:2:4 ratio. This large-size mud brick is comparable to those used in Early Harappan and Harappan Phase city walls and house platforms. During Period 2 the first evidence for smaller sizes of mud bricks (measuring 7 × 14 × 26 cm again in an approximate 1:2:4 ratio) has been documented in Trench 39N (wall [30] and other walls). These smaller-size bricks correspond to the size of mud bricks and fired bricks used in domestic structures during the Early Harappan and Harappan Phases in other parts of the site.

On the basis of the artifacts mentioned above, there is now evidence for the establishment of trade and exchange networks during Period 1A and B that connected Harappa with the coastal regions to the south, the agate and amazonite sources in Gujarat and Rajasthan, the lapis lazuli sources to the west in Baluchistan and Afghanistan, and copper resource areas in Baluchistan and/or Rajasthan (Kenoyer & Miller 1999). This pattern of long-distance trade and local production beginning in Period 1A/B (Ravi Phase) and continuing through Period 2 (Kot Dijian Phase) sets the foundation for later economic organization during Period 3 (Harappan Phase; Kenoyer 1997).

Period 2: The Kot Dijian Phase

Period 2 deposits were identified in the upper two metres of Trench 39S (Fig. 4a) and in Trench 39N (Fig. 8). Excavations in the latter focused on two small kilns that were eroding from the slope below an overlying Harappan Phase baked-brick drain. The Harappan drain was filled with Period 3A (Harappan Phase) sherd, but directly below it were found Period 2 mud-brick structures and floors stratigraphically associated with the kilns, one of which (Kiln 47) has been dated to c. 2600 BC (Beta-97758).

Numerous artifacts were found in levels associated with the kilns including steatite and agate beads, elaborately painted pottery, and terracotta
figurines. There is also a dramatic increase in the numbers of fragments of terracotta bangles of various styles, including both red-fired and gray-fired kinds, some of which have been decorated with delicate incised lines (Fig. 6). The making of animal and anthropomorphic figurines becomes more elaborated and copper and bone tools and weapons begin to occur with regularity.

Numerous sherds from vessels that had been inscribed with both pre-firing (potter’s marks) and post firing inscriptions or ‘graffiti’ were recovered in good Period 2 stratigraphic contexts or on the eroded slope (Fig. 7). Although the painted pottery and the forms themselves are comparable to those found at other Early Harappan sites, e.g., Kot Diji and Nausharo, and many of the incised marks are similar as well, other marks appear reminiscent of signs that later became characteristic of the Indus script (Fig. 7.4, 5).

In addition to inscribed pottery, Period 2 sees the first appearance of glazed steatite button seals. Two examples were recovered from Period 2 deposits in Trench 398 (Fig. 5.25, 26). A third example was found in the gully to the south of one of the kilns (Figure 5.27). This last is a square geometric steatite seal made from unfired gray steatite and appears to have eroded from Period 2 deposits; however, it should be noted that geometric button seals with similar designs reemerge during the post-urban occupation, e.g., at Jhukar, Mohenjo-daro, and Chanhu-daro (Parpola 1994).

**Conclusion**

Investigation of the Period 1 (Ravi Phase) occupation and the subsequent Period 2 (Kot Dijian Phase) settlement is still in progress. Excavations in 1998 are focusing on opening up a larger horizontal exposure to recover architectural features and a larger sample of artifacts. It is becoming increasing clear, however, that from the earliest phase of occupation c. 3300 BC people living at Harappa were involved in the local production of status items from exotic raw materials. Agate and amazonite beads, steatite beads, and glazed steatite beads may have been made for both local use and regional trade. The production of shell bangles and copper tools such as saws and arrow points can also be traced to this early period. Each one of these crafts was to become highly specialized during the later Harappan Phase and was to become controlled either directly or indirectly by non-producers (Kenoyer 1995a).

Along with these developments we are finding new clues to the origins of the Indus script. The recent discoveries of inscribed sherds from the Period 2 occupation levels at Harappa as well as at other early sites such as Mehrgarh and Nausharo (Quivron 1997) indicate that a well developed system of graphic symbols was established during the period immediately preceding the Harappan Phase. Some of these systems of graffiti may have been used as a form of script, and it is not unlikely that there were several regional styles. At Harappa, we find increasing evidence for the use of multiple abstract symbols that were inscribed on pottery both before and after firing (Fig. 7.4, 6, 8, 10). Some of these symbols are identical to characters used in the later Indus script (Fig. 7.11) and even occur in the same sequence (Fig. 7.10). A better understanding of these developments must await more excavation of both Period 2 and Period 3A deposits at Harappa and at other sites throughout northwestern South Asia.
APPENDIX 1

Radiocarbon Dates from Harappa 1996 (results quoted using 5568 half-life before AD 1950; results normalized to C13/C12 ratio of -25 per mil; calibrations use the University of Washington Calibration Program rev. 3.0.3c; the Beta AMS dates were run at the Lawrence Livermore Laboratory and the WG (NEC) AMS dates were run at the University of Wisconsin, Madison).

<table>
<thead>
<tr>
<th>Year/Lot [Feature]</th>
<th>Context</th>
<th>Period</th>
<th>Lab No.</th>
<th>Result</th>
<th>Calibrated BC +1s (date) -1s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mound AB</strong></td>
<td>Trench 39 N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7435</td>
<td>Lower Kiln</td>
<td>Early Harappan</td>
<td>Beta 93758</td>
<td>4090±50 bp</td>
<td>2857 (2611) 2504</td>
</tr>
<tr>
<td>[152]</td>
<td>(lower levels)</td>
<td>(Period 2)</td>
<td>AMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mound AB</td>
<td>Trench 39 S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7499</td>
<td>Heath 115</td>
<td>Early Harappan</td>
<td>WG-2518</td>
<td>4980±60 bp</td>
<td>3899 (3772) 3698</td>
</tr>
<tr>
<td>[115]</td>
<td>(lower levels)</td>
<td>(Period 1B)</td>
<td>NEC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7507</td>
<td>Heath 128</td>
<td>Early Harappan</td>
<td>Beta-93759</td>
<td>4210±50 bp</td>
<td>2886 (2875) 2794 (2784) 2696</td>
</tr>
<tr>
<td>[127]</td>
<td>(Period 1A)</td>
<td>AMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7525</td>
<td>Heath 177</td>
<td>Early Harappan</td>
<td>Beta-93760</td>
<td>4320±50 bp</td>
<td>2924 (2913) 2887</td>
</tr>
<tr>
<td>[177]</td>
<td>(Period 1A)</td>
<td>AMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7539</td>
<td>Pit 193</td>
<td>Early Harappan</td>
<td>WG-2515</td>
<td>4400±70 bp</td>
<td>3254 (3028) 2975 (2930) 2915</td>
</tr>
<tr>
<td>[195]</td>
<td>(Period 1A)</td>
<td>NEC</td>
<td>AMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H96/7537</td>
<td>Pit 193</td>
<td>Early Harappan</td>
<td>WG-2516</td>
<td>4260±70 bp</td>
<td>2915 (2886) 2706</td>
</tr>
<tr>
<td>[192]</td>
<td>(Period 1A)</td>
<td>NEC</td>
<td>AMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mound E:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H88/799</td>
<td>Heath 53</td>
<td>Early Harappan</td>
<td>Beta-33873</td>
<td>4540±85 bp</td>
<td>3366 (3336) 3048</td>
</tr>
<tr>
<td>[53]</td>
<td>Period 1/2</td>
<td>AMS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACKNOWLEDGMENTS

Excavations by the Harappa Archaeological Research Project are conducted in collaboration with the Department of Archaeology and Museum, Government of Pakistan. We wish particularly to thank Dr M. Rafique Mughal (Director-General 1996), Mr Niaz Rasool (Director-General 1997), Mr Bahadur Khan (Curator, Harappa Museum, and Field Representative 1996), and Mr Habib ullah Nasir (Assistant Curator, Harappa Museum, and Field Representative 1997) for their assistance during the 1996 and 1997 field season.

Support for these field seasons was provided by the National Endowment for the Humanities (1996 season only), the National Geographic Society, the American School of Prehistoric Research, the Peabody Museum of Archaeology and Ethnology, Harvard University, the University of Wisconsin, New York University, the Smithsonian Institution, the Kress Foundation, and private donors.

In addition to the efforts of our Pakistani workmen, we wish to acknowledge the contributions made by Mr Aasim Dogar as excavation supervisor in Trench 39N.

REFERENCES


