

Harappa Excavations 1986-1990

A Multidisciplinary Approach to
Third Millennium Urbanism

Edited by Richard H. Meadow

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Cover art: Bowl on Stand H88-1002/192-17 associated with Burial 194a
in Harappan Phase Cemetery (see Figure 13.18).

Some Specialized Ceramic Studies at Harappa

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The craftsmen of the Harappan civilization produced a range of ceramic items that are often technologically and aesthetically outstanding. Among them are pottery vessels, clay figurines, stoneware bangles, and faience artifacts. New data on these categories of ceramic production, which epitomize the advanced state and refinement of pyrotechnological production during the Harappan period, have been collected during five seasons of excavations at the site of Harappa. While involving typologies, chemical characterizations, and chronological sequences, study of these materials at Harappa goes well beyond to include consideration of distribution patterns, contexts, and associations with other categories of artifacts. Thus do we try to obtain a more accurate and sensitive understanding of the technological and artistic achievements of the Harappans and how they influenced, and were influenced by, different aspects of the socio-economic and cultural systems.

Five seasons of excavations at Harappa (1986–1990) have yielded a formidable quantity and variety of new data. These finds are providing an opportunity for the introduction and testing of new descriptive and analytical procedures, for a program of experimental archaeology, and for developing new hypotheses concerning the still enigmatic Indus Civilization.

We are learning new and redefining old ways of describing and interpreting manufactured items from a pre-modern-machine society. Note I do not say “pre-industrial” society. The Harappans are the quintessential example of a society obsessed with production, indeed mass production. That they did not have electricity and Stanley lathes and drill presses is beside the point. In addition to their often prodigious technological competence, they could be excellent artisans and craftsmen. For example, they produced a range of ceramic items that technologically and aesthetically are on a par with, and often surpass, products of other cultures in the ancient South Asian and Near Eastern worlds.

Here I wish to describe four categories of artifacts that are among the most significant products of the

ceramic industry at Harappa. Pottery is the largest and most complex category of products. Second, there is a large and important new collection of clay figurines of both animal and anthropoid representations. Third, there are the remarkable stoneware bangles—the world’s earliest examples of this sophisticated technology. And fourth, there are the various ornaments and vessels made of faience. I have selected these four categories of ceramic products because they epitomize the advanced state and refinement of pyrotechnological production during the Harappan periods.

The Pottery

To date, we have registered 614 complete or restorable vessels from our excavations at Harappa, and our sherd collection far exceeds one million items.

In my introductory remarks to this volume (Chapter 1), I mentioned the unique significance of Harappa as a site and the superb opportunities it offers for studying the evolution and interactions of a major urban settlement. The pottery is one of the foremost components in these studies. Because of the huge quantities of data available, we must constantly maintain a balance

between becoming stifled by the enormity of the task and taking advantage of the opportunities for using the pottery to address specific intra- and inter-site problems.

Also, we are firm in our conviction that pottery should not be used as the sole or even primary indicator to define “phases” or “periods.” Categories of artifacts other than pottery are often more sensitive to social, economic, political, and cultural change. Synergistic analyses of the various assemblages of artifacts, within a carefully documented contextual framework, is leading to significant new interpretations both of the site and of Harappan society.

To use the pottery data in this way, it is essential that we maintain strict control over it. This means, first of all, establishing the reliability of the excavation units; second, understanding the site formation processes that effected the contents of the excavation units; and third, having an accurate and efficient classification system for complete vessels and sherds alike.

The most detailed system available for classifying Indus pottery was devised by myself and J. Mark Kenoyer (1986) for pottery from Mohenjo-daro. The basic approach that was developed is quite practical and efficient, but it has a major shortcoming: it was not built on a solid statistical framework. It is basically an empirical system. We did things differently in South Asia back in 1964 when I excavated the pottery that formed the basis for our Mohenjo-daro system.

When we began the Harappa project, we used the Mohenjo-daro classification system knowing full well that it would need to be modified to accommodate regional, functional, temporal and preferential variants. And so it has. For example, most of the complete or restorable vessels we have excavated to date at Harappa have come from the cemetery, so we have a significant contextual difference from that of the Mohenjo-daro pottery. In addition, the Harappa Museum has in its storeroom an unparalleled collection of complete vessels from the earlier excavations at the site. Although the original field registers are not available, the inked (sometimes painted) letters and numbers on most of the vessels identify the areas of the site where the vessels were excavated. Many of the vessels in the storage collection have provided additional information as to the variations inherent in each of our newly established vessel categories.

To help in operationalizing our pottery studies at Harappa, Paul Chrisy Jenkins has been applying his considerable computer skills to the task of constructing a multi-variant classification system based on the full range of complete vessels and sherds, encompassing morphological, stylistic, and contextual

analyses while being tolerant of a degree of empirical, intuitive observation.

These aspects of the pottery studies are complemented by the technological studies of Rita Wright (Chapter 6 in this volume) who is analyzing the raw materials used, the manufacturing techniques, the firing temperatures, and the social implications of these technological patterns in the context of different activity areas within the site.

Because of the sharp focus of our excavations in the cemetery with its well-defined contexts, and because such a high percentage of the pottery vessels from the burials are either complete or restorable, our initial study of the Harappa pottery has concentrated mainly on the vessels from that area of the site. Many of the modifications in the Mohenjo-daro classification system have resulted from the study and analysis of the burial vessels. In addition to refining the typological system, we are studying the range and quantities of vessel types in each burial in relation to factors such as sex and age of the individuals and the presence of other classes of grave goods.

The analyses of the cemetery pottery is far from complete, but there are a few observations that are of particular interest even at this early stage. First, an overwhelming percentage of the pottery is undecorated, not even having surface slips. The examples of slipped and painted vessels that we have excavated—and there are many examples in virtually mint condition (Figure 5.1)—were found in the lower levels of the cemetery. This suggests a significant change in the burial customs through time. But such a hypothesis is subject to several conditions. There is, for example, no way to determine anything more precise than a relative chronology for the burials. The relative richness of each burial in terms of the type of interment (with or without wooden coffin), the kinds of ornaments associated with each body, and the types and quantities of pottery included in each burial are still under study.

There is another possible factor involved in this seeming shift from decorated to plain pottery in graves. We have documented numerous examples of differential preservation of vessels, even within the same burial. There may be chemical explanations for this phenomenon, perhaps having to do with the contents in the vessels when they were buried, or possibly there are factors relating to manufacturing and firing that made some vessels virtually indestructible while others have disintegrated to flakes and dust. We have, in fact, examples of vessels that, immediately upon exposure in the excavations, showed traces of red slip. But the traces were little more than powder on the surface of the vessels and could not be

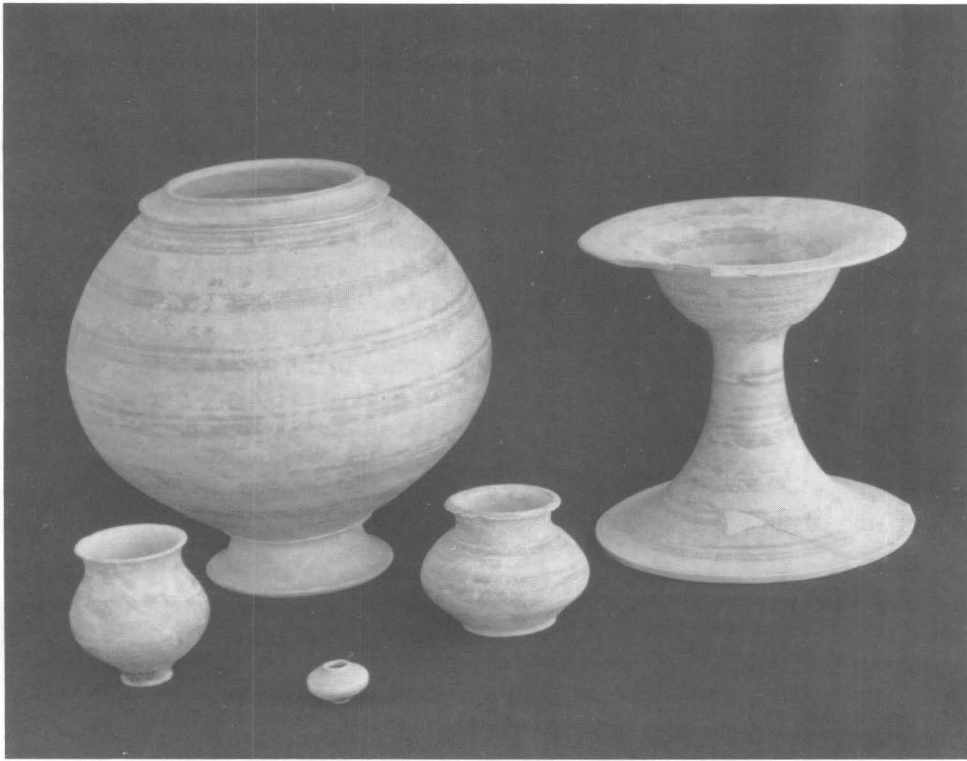


Figure 5.1: Harappan phase cemetery: selection of burial pottery. Large pot on left: maximum body diameter, 29.7 cm; total height, 29.5 cm. Bowl-on-stand on right: diameter of bowl, 23.2 cm; total height, 22.6 cm.

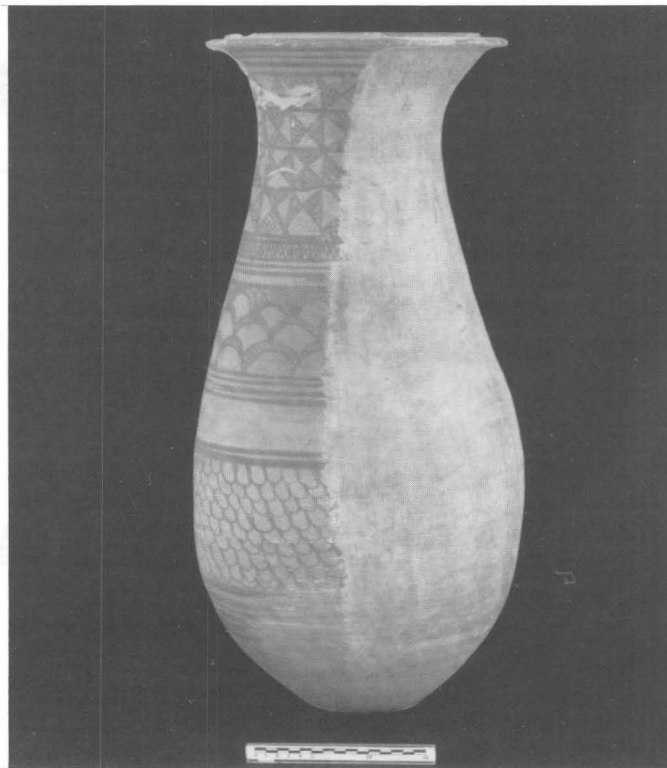


Figure 5.2: Harappan phase cemetery: jar with intentional coating(s) of clay (half removed) that covered decoration; H87-655/145-156.

consolidated or preserved. This suggests that there originally may have been a higher proportion of decorated vessels than our current record indicates.

And there is yet another aspect of the cemetery pottery that is unique, as far as we know from published records of other Harappan period burials. There is a strong indication that the Harappans themselves may have been conscious of the problems of preservation of buried materials. We have found various instances where the Harappans applied coatings to the surfaces of vessels, possibly to protect the surfaces from direct contact with the earth. An example from a grave excavated in the 1987 season is illustrated here as Figure 5.2 (see also Chapter 13 in this volume). This vessel is a tall, sinuous jar that has a solid red slip upon which were painted elaborate designs in black paint that were subsequently

obscured by an outer coating or coatings of a clay-like material that is reddish on the exterior and greyish below.

During the 1988 season (Chapter 13 in this volume), groups of jars were uncovered in the cemetery that were encrusted with thick whitish deposits. At first we thought they were simply unusually heavy salt deposits, but based on what was noted in the laboratory during the cleaning of these vessels, our conservator Donna Strahan (1991) has suggested that the coatings are gypsum that was intentionally applied to the vessels before interment.

We have also made important discoveries of pottery in areas outside the cemetery. Notable are the ceramics from the so-called “Early Indus” or “Early Harappan” phase (Figure 5.3), which are like those from such sites as Kot Diji (Khan 1965), Jalilpur (Mughal 1972, 1974),

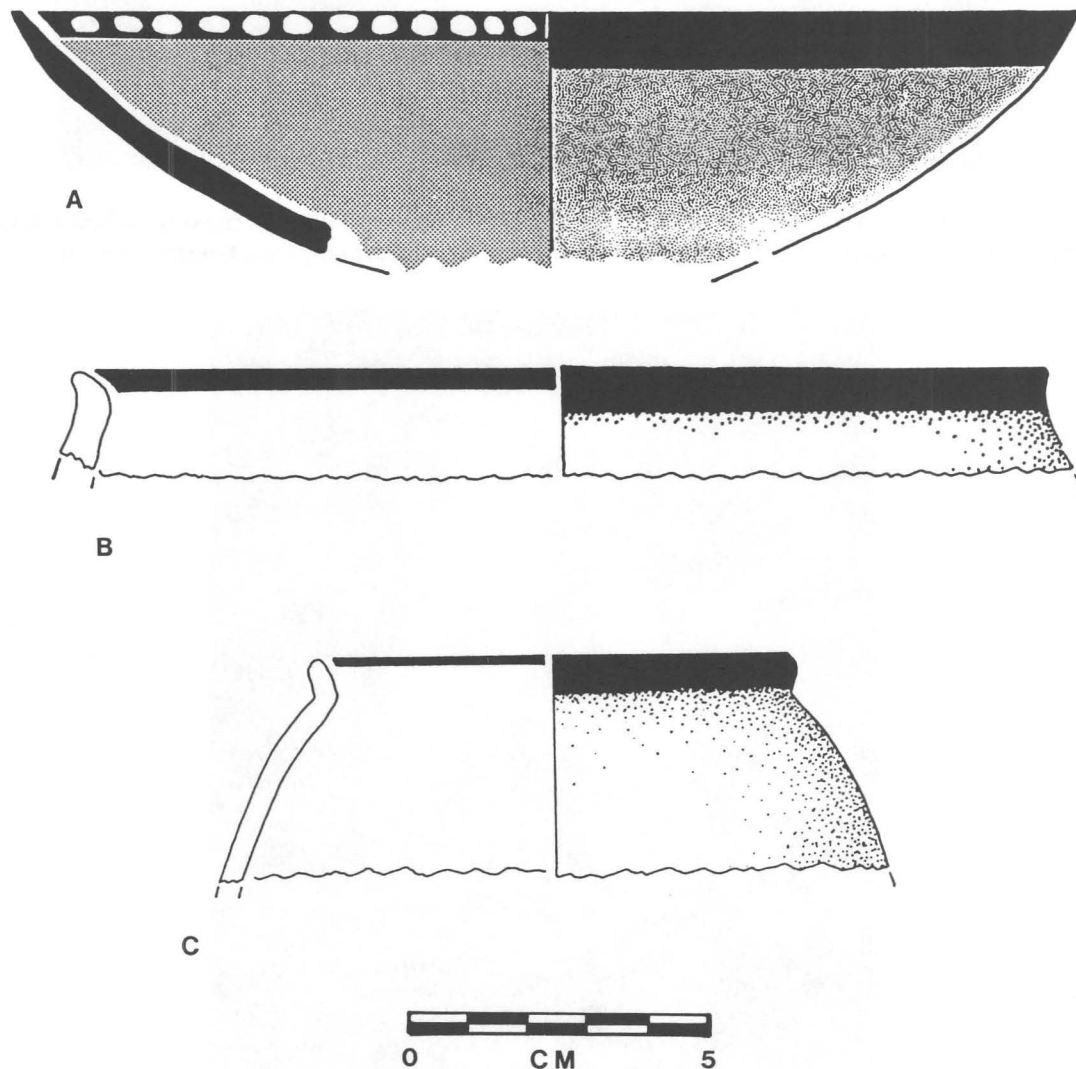


Figure 5.3: Early Harappan (Period 1/2) ceramics from Harappa, Mound E, northwestern corner.

and Rehman Dheri (Durrani 1988). The presence of such remains at Harappa was first noted by Wheeler (1947) in 1946 when he discovered characteristically "Early" sherds beneath the massive walls along the western edge of Mound AB. After several unsuccessful attempts during our first two seasons, we located remains of the early settlement resting on the natural ground surface at the northwestern corner of Mound E, beneath massive remains of our Period 3 Harappan phase (see Chapters 4 and 13 in this volume).

During these excavations on Mound E, between the identified remains of the Early Harappan and Harappan phases (Periods 1 and 3), we find pottery that is stratigraphically and stylistically intermediate (Figure 5.4). Together with this pottery are grey-ware bangles and figurines of humans and animals that again are not "typically" Early Harappan or Harappan.

As there is no evidence for catastrophic discontinuity in the occupational deposits—at least in the areas of Mound E that we have investigated—we hypothesize that there was a continuous, smooth transitional phase between these two periods. Such an hypothesis is of crucial importance to discussions of the origins and early development of the urban Indus culture and requires testing in other parts of the site.

Figurines

Clay figurines of animals and human forms are abundant at Harappa. None have been found directly in burials, but they are numerous in the thick layer of Harappan debris that covers parts of the cemetery. No figurines have yet been excavated in contexts that can be identified with ritual or other specialized practices,

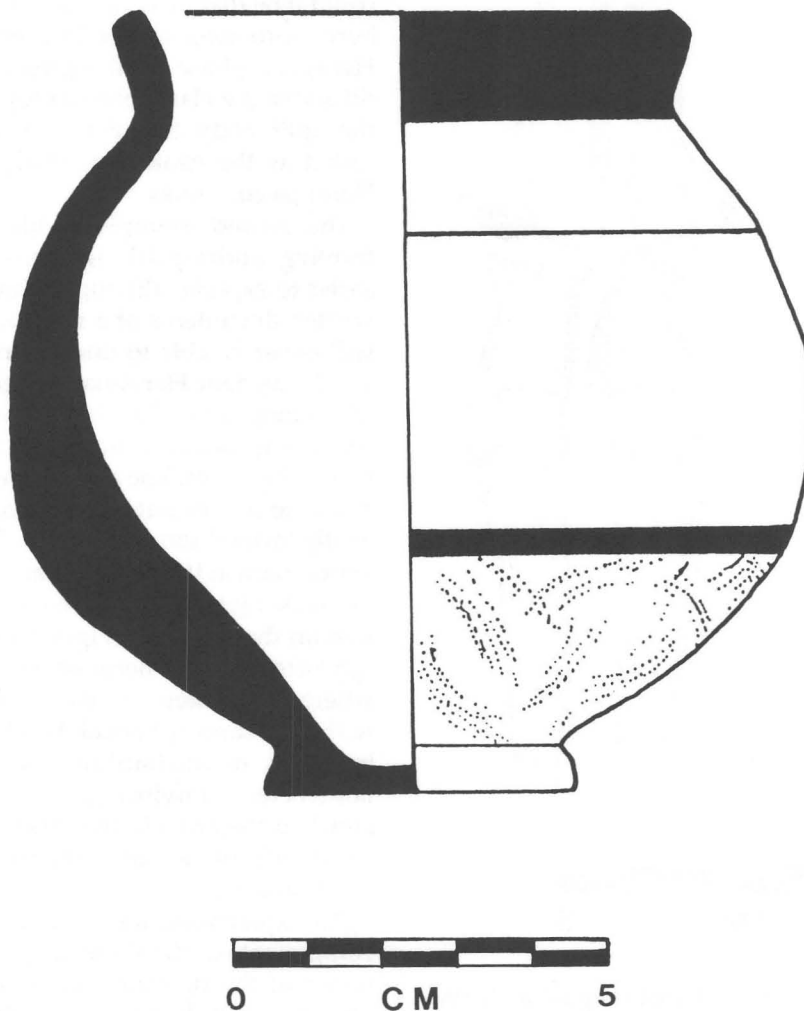


Figure 5.4: Transitional (Period 2) pot from Harappa, Mound E, northwestern corner.

although the figurines themselves, especially the anthropoid examples, display features suggesting that ritual of some sort was inherent in their manufacture.

First, most of the female figurines are in a stiff, erect position which in itself is not unusual for Old World figurines. But the Harappa examples show absolute evidence of having been made in vertical halves, each half including the entire body from head to foot (Figure 5.5). This manufacturing feature was noted first as we were tabulating the many fragment of human legs and bodies. Then, closer examination of complete figurines showed vertical seams from the top of the head to the bottom of the torso of standing females but not of males. The seams are most visible on the backsides of the figurines where they are not

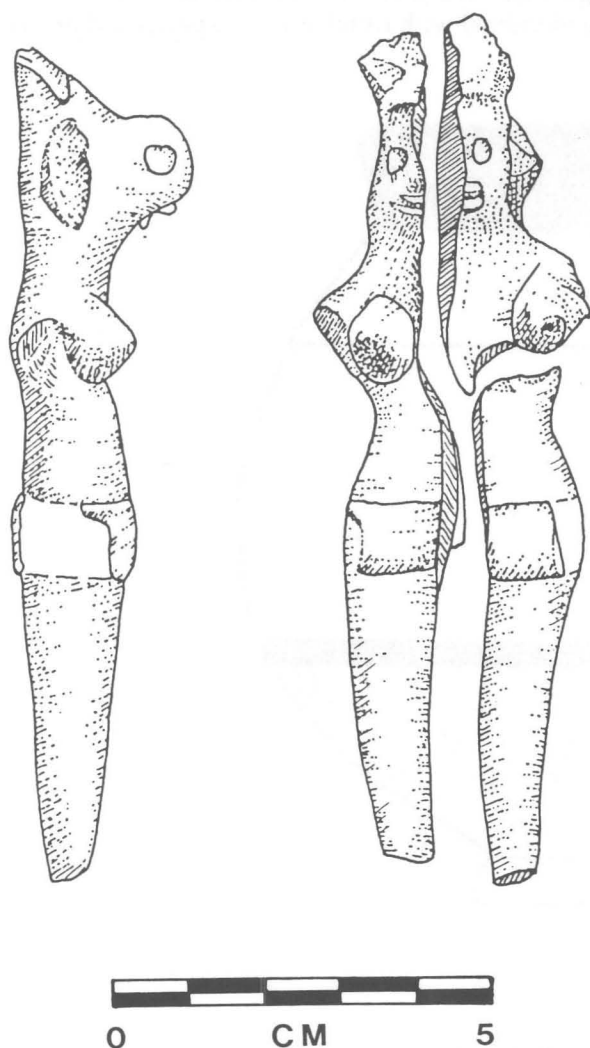


Figure 5.5: Harappan phase female figurine from Harappa showing that the body of the figurine was made in two halves that were later joined; H87-253/11-50 from debris covering Harappan phase cemetery (R37).

obsured by applied clothing and ornamentation. To obtain further verification for this unusual manufacturing practice, we X-rayed several complete examples of both female and male figurines that had no surface indications of seams. The seams show clearly in the X-ray pictures of the females.

Is this practice peculiar to Harappa? One certainly might expect to see similar figurines at Mohenjo-daro. But none of the female figurines I excavated there in 1964-1965 show this manufacturing technique, nor is any mention of such a manufacturing practice found in the reports by Marshall or Mackay of their excavations at the site. There is, however, one fragmentary but clear example of a split body figurine illustrated by Mackay (1938: Pl. LXXII, 5 and 6), although in his discussion (1938: 271), he makes no comment on the fact that the torso is split in half vertically. This figurine comes from the upper levels of Area DK-G. Instead of (or in addition to) differences between sites, could it be that there is a chronological factor involved here, with female figurines of the later part of the Harappan phase (well represented at Harappa in the fill above the Harappan graveyard) being made using the split body technique? This hypothesis will be tested as the contextual study of the artifacts from Harappa continues.

The second example of idiosyncratic practices in forming anthropoid figurines at Harappa may be easier to explain, although without contemporaneous written documents of a religious or ritual nature, we will never be able to understand its true significance for the ancient Harappans. Again, it was during the tabulating of the figurine fragments that we noticed something peculiar about the upper torsos of the female figurines. The arms do not break off irregularly from the bodies but rather become detached, leaving neatly formed shoulder joints. The concave half of the joint is seen at the top of detached arms and the ball of the socket joint is preserved as a small conical projection on the shoulder (Figure 5.6). Even though this is opposite to the humerus-scapula joints in real humans where the glenoid cavity on the scapula articulates with the semi-spherical head of the humerus, the imitation of anatomical detail in the figurines is nonetheless convincing. After the figurine makers attached the arms to the torso, they applied a rectangular strip of clay over the top of the joints to cover them, like skin.

An explanation for the reversal of the anatomical components of the shoulder joints may be seen in the torsos of the figurines when the arms are detached. The unembellished torso is nothing more nor less than a stylized trunk of a body used for millennia by figurine makers going back through time and space across Central Asia and the Near East to the

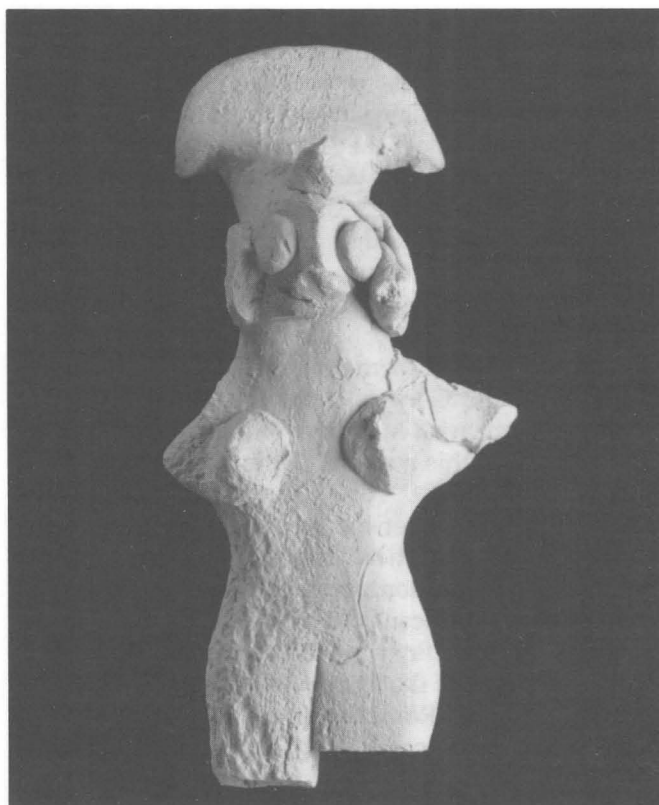


Figure 5.6: Harappan phase female figurine from Harappa showing how the limbs were joined to the body; H90-1602/3028-35.

Mediterranean and eastern Europe (Figure 5.7). These minimal representations, often headless and legless, expressed femaleness; if breasts were portrayed, they were formed as part of the torso and not applied.

The Harappans, on the other hand, adopted this most basic of human torsos and "created" a more naturalistic human female form by the applications of separately made parts. We can only speculate, but it is conceivable that ritualistic "creation" or birth was the *raison d'être* for making the female figurines at Harappa. Further excavations might yield more information on such practices, and closer examination of female figurines from other Indus sites may find evidence for similar figurines that heretofore have gone unnoticed.

Stoneware Bangles

The Harappans manufactured some of the world's first stoneware in the sense of a very dense, impermeable, homogeneous, siliceous ceramic (Vidale 1990). The ceramicist Bernard Leach states that the word stoneware "is appropriate enough, for it suggests the quality of melted stone" (Leach 1976: 36). The most

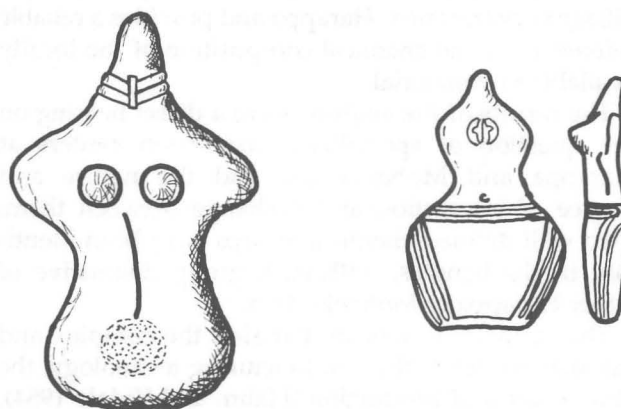


Figure 5.7: Figurines from western Asia: left—Tal-i Bakun, southern Iran; right—Tepe Gawra, Iraq, Halaf Period.

similar ancient product, according to David Kingery (personal communication) who has examined some of the Harappa samples, is probably the dense black stoneware made in China during the Han dynasty some two millennia after the Harappan period. Leach (1976:28) also attributes the invention of stoneware to early China, between the second and sixth centuries BC.

These exceptionally high quality bangles have been reported from both Harappa and Mohenjo-daro by the earlier excavators. Marshall (1931:530, 686) had tests run on samples from Mohenjo-daro, but until recently no one had studied them systematically. Such studies began with the German-Italian Research Project at Mohenjo-daro, with Massimo Vidale taking a particular interest in this material (Halim and Vidale 1984; Vidale 1987, 1990). Now, thanks to cooperative research programs between the Harappa project, the Conservation Analytical Laboratory (CAL) of the Smithsonian Institution, and members of the Mohenjo-daro project, significant progress is being made in the analyses of specific products such as stoneware. Massimo Vidale of the Istituto Italiano per il Medio ed Estremo Oriente (Rome) and M.J. Blackman of CAL have collaborated on making comparative chemical characterization studies of stoneware bangles from Harappa and Mohenjo-daro (Blackman and Vidale 1992).

The chemical analysis of the bangles was carried out by instrumental neutron activation analysis (INAA). Twenty-nine elements were sought, twenty-two of which were used in the comparative studies. In addition to the ancient bangle samples, a single modern bangle replica made at Harappa by J.M. Kenoyer, using clay from the Ravi river beds near the site, was also analyzed. This same clay is nowadays used by a village of potters near Harappa and provides a reliable reference for the chemical composition of the locally available raw material.

The results of the analysis have a direct bearing on the question of specialized production centers at Harappa and Mohenjo-daro and the nature and degree of interaction and exchange between them. Two well defined chemical groups have been identified in the bangles, with each group distinctive of either Harappa or Mohenjo-daro.

The rarity of stoneware bangles, the complex and singular nature of the manufacturing technology, the strict control of production (Halim and Vidale 1984), the presence of inscriptions on some of the bangles, and the fact that the production (and use?) of stoneware bangles is known at only the major sites of Harappa and Mohenjo-Daro, suggest to Blackman and Vidale (1992) that the bangles had a unique social function. Also, the fact that bangles identified as having been manufactured at Mohenjo-daro are found

at Harappa, but bangles produced at Harappa have not been identified at Mohenjo-daro, suggests some type of special exchange system and even a special relationship for Mohenjo-daro *vis-à-vis* Harappa.

Specialized studies such as these are providing unexpected new information concerning various important aspects of Harappan society.

Faience

Faience is the name most commonly applied to ceramics made of ground quartz sintered with alkali-lime glassy bonding material and colored by the use of alkali-lime glazes (McCarthy and Vandiver 1990). The earliest known production of faience has been identified in Badari, Egypt, about 4,000 BC and shortly afterwards in northern Mesopotamia at the sites of Tell Arpachiyah and Tell Brak. Faience objects at these sites—mostly beads and small amulets—seem to have served as prestige items for the social elite.

Faience was also a major production item in the Indus civilization some 1,500 years later. Bangles, beads, rings, amulets, inscribed tokens, tiny figurines of animals, stamp seals, and small vessels have been excavated at Indus sites. The technology for making faience may or may not have been transferred from the Near East to South Asia over the intervening centuries, but the significant fact is that comparative studies of samples from both regions show clearly that the Indus faience is different in terms of its dense microstructure, its strength, and overall uniformity of color (McCarthy and Vandiver 1990).

These conclusions are based on laboratory analyses of 21 faience samples excavated at Harappa during the 1986-1988 field season plus three samples from the Indus site of Chanhu-daro in the collections of the Museum of Fine Arts, Boston. A detailed report on the analyses was presented at the 1990 Annual Meeting of the Materials Research Society (McCarthy and Vandiver 1990).

The Indus faience technology is also an important research interest of J.M. Kenoyer as part of his broader interest in Harappan craft activities. He has conducted studies at CAL that complement those of McCarthy and Vandiver (Kenoyer 1990) and is continuing laboratory studies at the University of Wisconsin, Madison, on a larger group of samples.

Concluding Remarks

Even these brief descriptions of four of the most important categories of ceramic production at Harappa show the high level of sophistication of Harappan pyrotechnology and craftsmanship. We have already made significant advances in technological studies, but

ceramic studies at Harappa are going well beyond typologies, chemical characterizations, and chronological sequences. Distribution patterns, contexts, and associations with other categories of artifacts are subjects of major importance in our search for a more

accurate and sensitive understanding of the technological and artistic achievements of the Harappans and how they influenced, and were influenced by, different aspects of the socioeconomic and cultural systems.

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