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Chotuna and Chornancap

Excavating an Ancient Peruvian Legend

Christopher B. Donnan

CHOTUNA
and
CHORNANCAP

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CHOTUNA and CHORNANCAP

EXCAVATING AN ANCIENT PERUVIAN LEGEND

Christopher B. Donnan

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TO HERBERT L. LUCAS

FOR HIS INTEREST IN ART AND ARCHAEOLOGY
AND HIS UNWAVERING SUPPORT OF INDIVIDUALS AND INSTITUTIONS
DEVOTED TO THEIR STUDY

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PREFACE

This project had its genesis in a dinner conversation with Herbert "Bill" Lucas in my home in 1979. Among many topics of conversation, we began talking about the dynasties of ancient Peru. Bill became fascinated with the legend of Naymlap and the possibility that it might be related to Chotuna and Chornancap, archaeological sites in the Lambayeque Valley of northern Peru. He quizzed me at great length about the possibility of testing, through archaeological excavation, the validity of the legend. I had never really thought about an excavation at Chotuna and Chornancap, but the more we talked, the more intriguing the possibility became. By the end of the evening, we had hammered out a plan for three field seasons of excavations, and Bill thought he could obtain partial funding through Gloria SA in Lima. The following year, the project began with the first field season of excavation. In retrospect, it is uncanny how closely the project followed the plan that Bill and I developed during that fateful evening in my home.

After our last field season ended in 1982, I began writing a book-length account of what had been found. Although I published several articles about various aspects of the research (Donnan 1984, 1989, 1990a, 1990b), because of my involvement in other field excavations and publications, my rough draft of the book about Chotuna and Chornancap was put on a shelf. It was not until 2008 that I was finally able to return to the task of completing it.

There were both advantages and disadvantages of returning to a manuscript after so many years. The primary disadvantage, of course, was having to familiarize myself once again with information that had once been so fresh in my mind—going back through all of the plans, profiles, photographs, and field notes to reconstruct a coherent picture of what we had excavated. But there was a certain exhilaration in revisiting the project, remembering the many wonderful people who had participated and relishing the richness of the archaeological information recovered. Moreover, there were very significant benefits to completing this publication more than a quarter of a century after it was begun. Over the intervening years I had learned a great deal more about the archaeology of northern Peru, in part from my own archaeological excavations and in part from the work of colleagues who have greatly advanced our understanding of the ceramic styles, architectural forms, and cultural history of the area. Another benefit of the delay came from advances in technology, particularly in digital imaging. We recorded our excavations

with color and black-and-white print film as well as 35 millimeter color slides.[1] With the digital technology available today, these images can be scanned and enhanced for publication. Moreover, today's printing technology has made it affordable to publish this report in full color, something that was unthinkable years ago.

When our third and final field season ended in 1982, I was pleased with all we had learned about Chotuna and Chornancap. At the same time I felt that there was much more that could be learned by additional excavation, and I hoped that someday archaeologists would return to continue the work that we had begun. This hope was realized in 2006 when a major project was begun under the direction of Carlos Wester, director of the Brüning Museum in Lambayeque. With an excellent team of Peruvian archaeologists, this project has continued without interruption for the past four years, revealing much more about the ancient occupation of both Chotuna and Chornancap (Wester 2010). Moreover, a wonderful site museum and research facility has recently been constructed at Chotuna, where visitors to the site can see objects from the excavations and learn about the legend of Naymlap.

I look back with great fondness on our excavations at Chotuna and Chornancap so many years ago. We were able to excavate these unique and wonderful archaeological sites and to explore the possibility that they were, indeed, related to an ancient Peruvian legend.

Chapter 1
INTRODUCTION

Although the ancient Peruvians had no writing system, they kept oral histories that were passed down from generation to generation. Many of these stories were still being told at the time the Spanish first came to Peru around 1530. Some of the accounts survived into the early part of the Colonial Period and were recorded in written form by the Spanish. One of the most intriguing of the oral histories is the legend of a ruler named Naymlap, who founded a dynasty that ruled the Lambayeque Valley of northern Peru centuries before European contact (Fig. 1).

THE LEGEND OF NAYMLAP

The legend of Naymlap was first recorded by Miguel Cabello de Balboa in 1586. It was translated by Philip Means (1931:51–53) as follows:

The people of Lambayeque say—and with them agree all the folk living in the vicinity of this valley—that in times so very ancient that they do not know how to express them, there came from the northerly part of this Piru, with a great fleet of Balsas, a father of Families, a man of much valor and quality named Naymlap; and with him he brought many concubines, but the chief wife is said to have been named Ceterni. He brought in his company many people who followed him as their Captain and leader. But those among them who were of the greatest bravery were their officials, who were forty in number, including such men as Pita Zofi, who was the trumpeter or player upon certain great shells that are much esteemed among the Indians. Another was Ninacola, who was in charge of the litter and Throne; another was Ninagintue, in whose care was the drink of that Lord, after the fashion of a Butler; another was called Fonga Sigde, whose duty it was to scatter the dust of sea-shells upon the ground where his Lord was to Tread; another, Occhocalo, was his cook; another had charge of the ointments and color with which the Lord was wont to adorn his countenance, this official being Xam Muchec. Ollopcopoc supervised the bathing of the Lord. Another very important official, much esteemed by his Prince, was called Llapchillulli, and he wrought shirts and clothing of feathers. With this retinue, and with an infinite number of other officials and men of importance, he [Naymlap] brought his person and house, already adorned and established.

Figure 1 Map of the north coast of Peru.

With all his possessions this Lord, Naymlap, made port and landed at the mouth of a River which is today called Faquisllanga, and having there abandoned their balsas, *they went inland, desirous of making a settlement, and having advanced half a league, they built certain Palaces after their fashion to which they gave the name of Chot. And in this house and palace they invoked with barbarous devotion an Idol which they had brought with them made in the likeness of their chief himself and wrought from a green stone. They called it Yampallec, which is to say, "image and statue of Naymlap."*

This people having lived for many years in peace and quiet, their Lord and Chief, having had many children, [knew that] the time of his death had arrived. In order that his vassals should not learn that death had jurisdiction over him, his [immediate] attendants buried him secretly and in the same room where he had lived, and they published it throughout the land that he, of his own virtue, had taken wings and had flown away. So great was the grief caused by his absence among those who had followed him at the time of his coming, that, although they now had a great number of descendants and were much attached to their new and fertile land, they abandoned everything, dispersing without clue or guide, set forth to search for him in every direction. Therefore, there did not remain in the land more people than those who had been born there, which was no small number, for all the rest scattered themselves without rule or order in search of him who, so they believed, had disappeared.

The Empire and power of the dead Naymlap was left to his oldest son, Cium, who married a maiden named Zolzdoñi. By her and by other concubines he had twelve sons, each of whom was father of a large family; and having lived and ruled many years, this Cium placed himself in a subterranean vault and there he allowed himself die, all to the end that posterity might regard him as immortal and divine. After the end and death of this man Escuñain governed; and from him Mascuy inherited the kingdom; and to him succeeded Cuntipallec; and after him governed Allascunti; and to him succeeded Nofan Nech; and to him succeeded Mulumuslan; and after him the power was held by Llamecoll; to whom succeeded Lanipatcum; and after him Acunta ruled.

His successor in the Lordship was Fempellec, who was the last and most unfortunate member of this dynasty, for he took it into his mind to move to another place the Idol which we have said had been placed by Naymlap in the palace called Chot. And he made several attempts to carry out his purpose, but without success. At this juncture the Devil appeared to him in the form of a beautiful woman, and so great was the deceitfulness of the Devil and so small was the continence of Fempellec that he slept with her, so they relate, and no sooner had a union so nefarious been consummated than rain began to fall, a thing which had never before been seen upon these plains, and this flood lasted for thirty days; after which followed a year of much sterility and famine. For, inasmuch as it was notorious among the Priests of their Idols and other important men that their Lord had committed this grave crime, they understood that it was the punishment for his fault that his People was suffering, with hunger, rain, and want. And in order to take vengeance upon him, forgetful of the fidelity which is owed by vassals, they took him prisoner and,

tying his feet and hands, threw him into the deep sea. With his death was ended the lineage of the native Lords of the Valley of Lambayeque, thus called because of that Idol which Naymlap had brought with him and which was called Yampallec.

During the life of Cium, son and heir of Naymlap and second Lord of these Valleys, his sons set forth, as has been said, to be the beginnings of other families and peoples, and they took with them many followers. One of them, who was called Nor, went to the Valley of Cinto; and Cala went to Tucume; and another to Collique; and others went to other parts. A certain Llapchillulli, a very important man, of whom, as we have said, the Lord Naymlap had made much on account of his valor and because of his skill in making apparel of feather-work, set forth with a great following of those who wished to go with him, and, finding a place to his liking in the valley called Jayanca, settled there. In that locality his progeny and descendants have remained.

We have already seen how, by the merited death which his followers gave to Fempellec, the Lordship of Lambayeque and the country surrounding it remained without patron or native Lord. In that condition remained that populous republic during many days, until a ceretain powerful Tyrant called Chimo Capac came with an invincible army and possessed himself of these valleys, placing garrisons in them. And in that of Lambayeque he placed a Lord and Chief of his own choice who was called Pongmassa, a native of Chimo. He died a peace-loving Lord, and left as his successor his son named Pallesmassa. To him succeeded his son, Oxa, and it was in his time that the Yngas were passing in their power through the Provinces of Caxamarca, and thus it was that this Oxa was the first one of his lineage to have news of the Ynga Lords; and from this time forward the coast people began to live in constant dread of being despoiled of their Lordships by the arms of the people from Cuzco.

This Oxa was followed in the Chieftainship by a son of his named Llempisan; and when he was dead the Lordship went to Chullumpisan; and to him succeeded a brother of his named Cipromarca; and after him a younger brother was Lord whose name was Fallenpisan. After him the command was held by Efquempisan; and on his death he was succeeded by Pecfunpisan, in whose time our Spaniards entered into this Piru.

In 1781, nearly 200 years after the Naymlap legend was recorded by Cabello de Balboa, it was recorded a second time by Father Justo Rubiños y Andrade, the cura of the parish of Morrope (Fig. 2). He apparently was unaware of the Cabello de Balboa manuscript, and thus his account can be viewed as an independent recording of the legend.

The Rubiños y Andrade version is incomplete—it does not go beyond the reign of Naymlap's son Cium (spelled Suim by Rubiños y Andrade). Although there are details that occur in one version and not in the other, the essential elements of the story, including events, places, and individuals, are almost identical. The spelling of personal names frequently differs, but in nearly every case they are cognates.

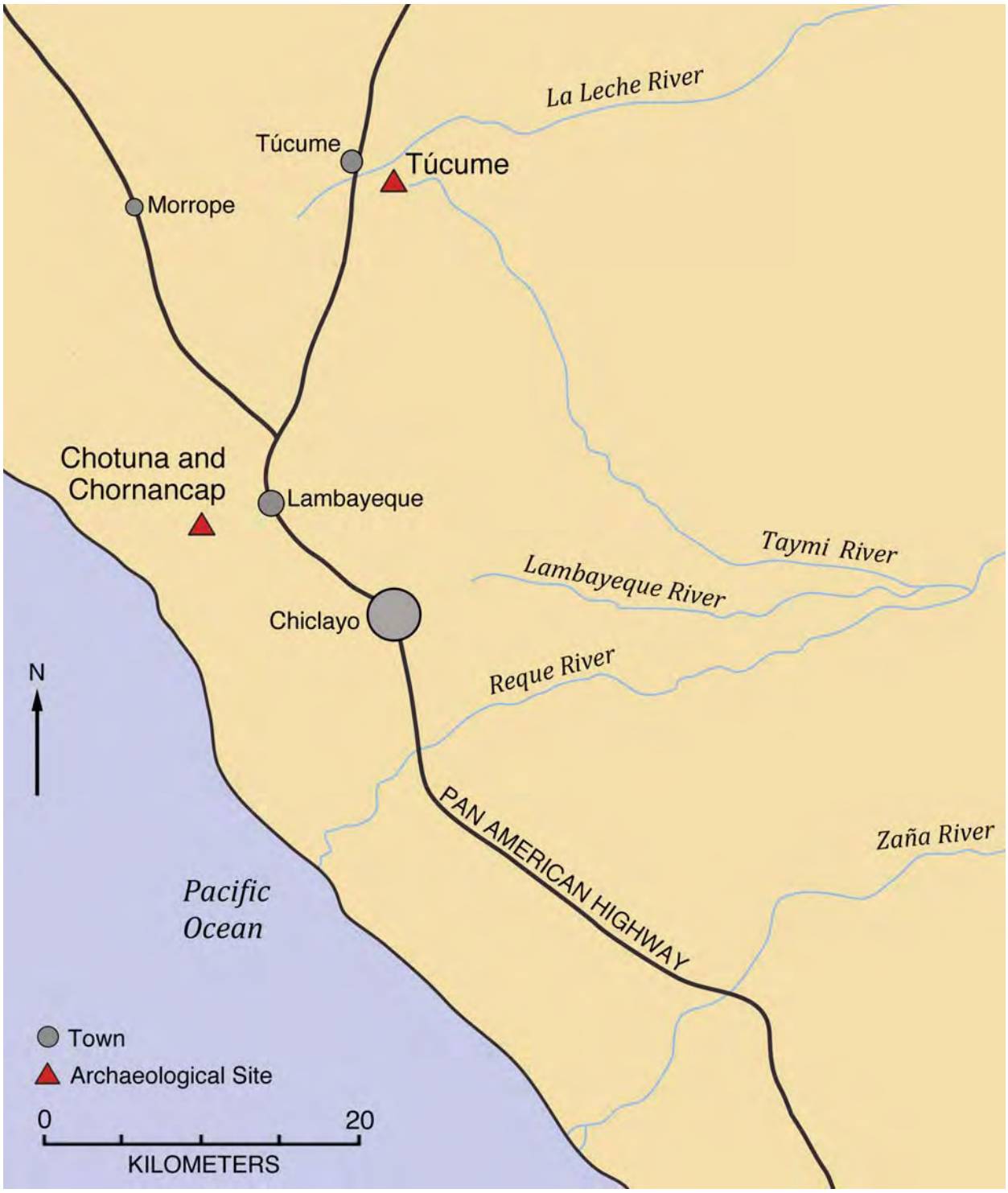


Figure 2 Map of the Lambayeque Valley area.

CHOTUNA AND CHORNANCAP

Chotuna is a major archaeological site located in the lower part of the Lambayeque Valley (Figs.1, 2). It has often been considered to be Chot, where Naymlap is said to have built his palace. Approximately one kilometer west of Chotuna is the site of Chornancap, which may have been part of the Chotuna complex and probably played a significant role in its development.

In an effort to test the validity of the Naymlap legend, we organized a project in 1980 to conduct archaeological excavations at Chotuna and Chornancap. Neither site had been systematically excavated or even mapped prior to our work there, which took place in three-month field seasons in 1980, 1981, and 1982. During these field seasons, plans of the monumental architecture were completed, most of the major structures were at least partially excavated, and we were able to develop a good chronology for the sites from their earliest occupation through their final abandonment.

This report has two primary objectives: to present the results of our excavations at Chotuna and Chornancap, and to determine the extent to which the archaeological evidence correlates with the sequence of events described in the Naymlap legend.

CHRONOLOGY

Our excavations at Chotuna and Chornancap produced a chronology based on radiocarbon dates, stratigraphy, ceramic seriation, and the seriation of adobe types. The chronology is divided into three successive phases (Fig. 3), which are summarized here. Appendix 1 provides a full description of the ceramics from each phase.

EARLY PHASE

The Early Phase dates from approximately AD 700 to 1100. It is the earliest occupation for which there is good evidence and was found just above sterile soil, often close to the present water table. These were the lowest levels excavated at Chotuna, and the material they contained is presumed to represent the earliest occupation of the site. Although no Early Phase material was excavated at Chornancap, it may have had an Early Phase occupation.

Early Phase adobes had a flat rectangular form (Fig. 3). Early Phase ceramics reflected Huari influence, particularly in the use of three color (red, white, and black) slip decoration (Fig. 4a, b). Red on white slip painted decoration was also characteristic of Early Phase ceramics, particularly on ring base plates (Fig. 4c-e).

Ring base plates with press molded decoration on their exterior surface only occurred in Early Phase ceramics (Fig. 5a, b), as did plates with tripod

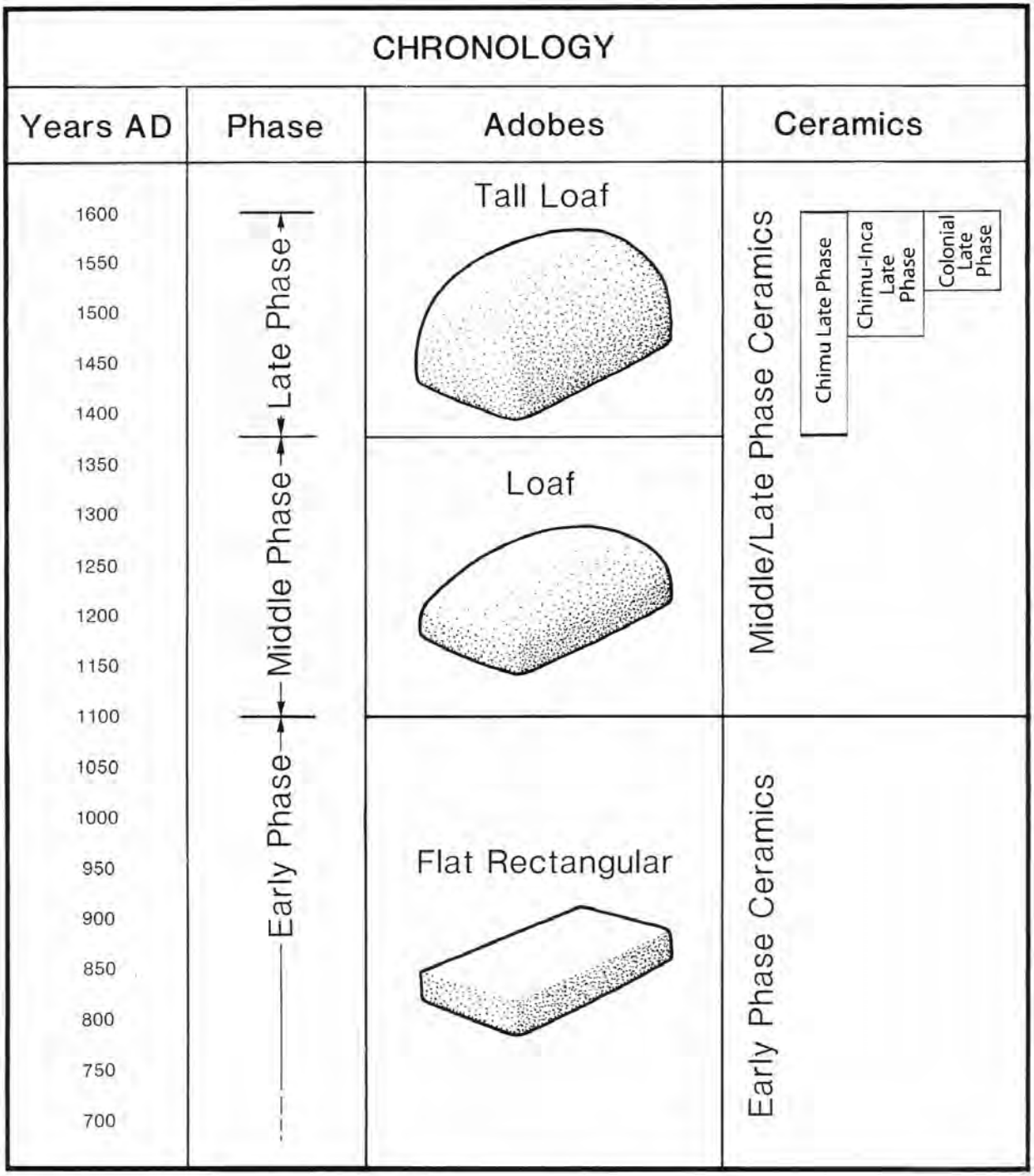


Figure 3 The chronology of Chotuna and Chornancap.

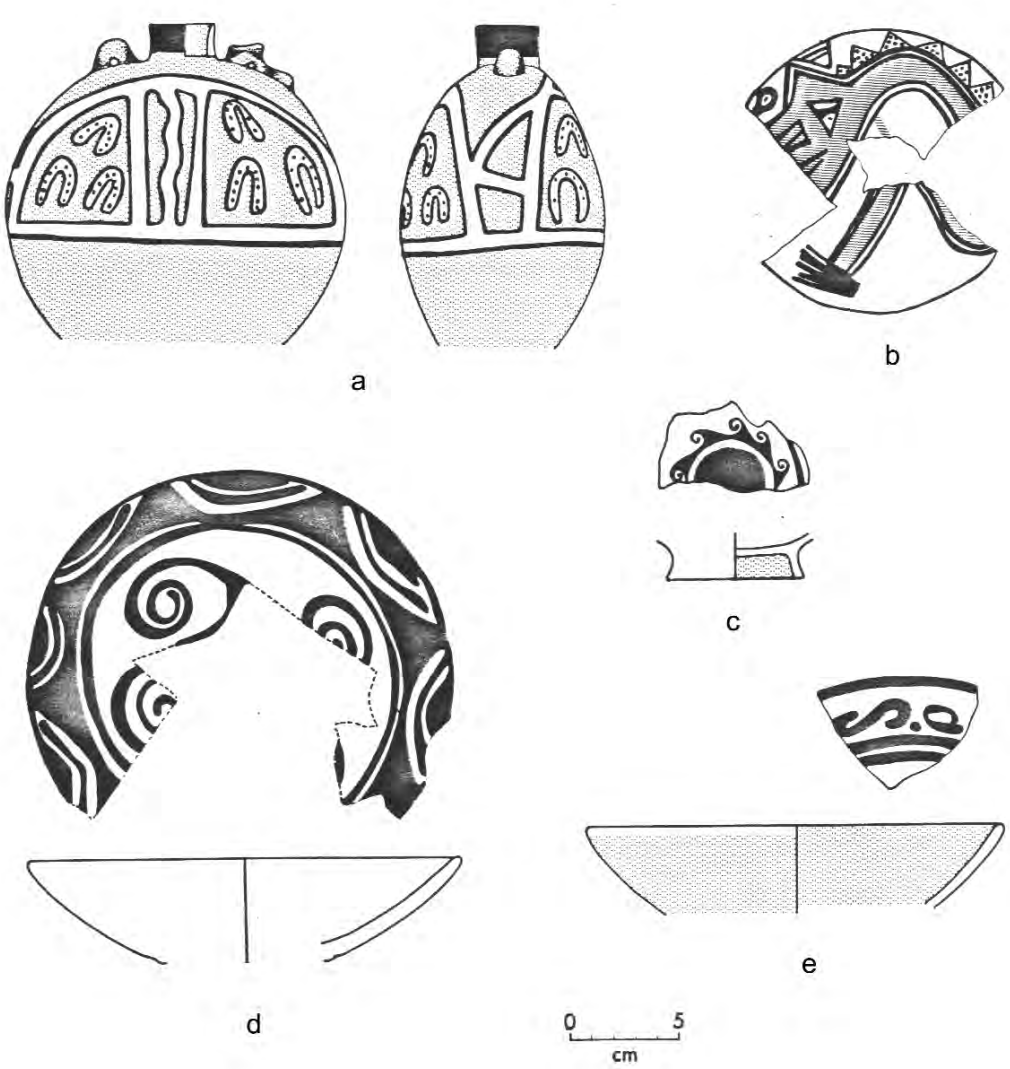


Figure 4 Early Phase ceramics.

bases (Fig. 5c). Another vessel form found only in the Early Phase was a spout and handle bottle with an oblate chamber (Fig. 5d).

Two jar forms were exclusively Early Phase. One had a characteristic neck that rose vertically from the chamber and flared abruptly at the rim (Fig. 5e, f). The vertical section of the neck generally had a slight bulge and often had a distinctive decoration that resulted from having been pinched with either two or three fingers on the outside of the neck while the clay was still moist (Fig. 5f). The other exclusively Early Phase jar form had a bulge in the upper part of the chamber, just below the neck (Fig. 5g).

One of the most distinctive features of Early Phase ceramics was the complete absence of paddle marking, which was very common in Middle and Late Phase ceramics.

MIDDLE PHASE

The Middle Phase dates from approximately AD 1100 to 1370. The majority of the monumental construction at Chotuna and Chornancap was built during the Middle Phase, and this may have been the time of peak population density in the lower Lambayeque Valley. Middle Phase adobes were characteristically loaf shaped (Fig. 3). During the later part of the Middle Phase, they were somewhat taller than during the earlier part.

A new ceramic assemblage appeared suddenly at the beginning of the Middle Phase and seems to have replaced Early Phase ceramics. Middle Phase ceramics were no longer painted with red, white, and black slip, and there were fewer painted wares. Double spout and bridge bottles were characteristic of the Middle Phase. They generally had high pedestal bases and long tapering spouts (Fig. 6a, b).

Paddle marked ceramics (Fig. 6c, d) began during the Middle Phase and maintained their popularity through the end of the Late Phase. Ring base plates continued to be common, although they were no longer decorated with either press molding or polychrome slip paint. Instead, they were unpainted or given an overall application of white or red slip.

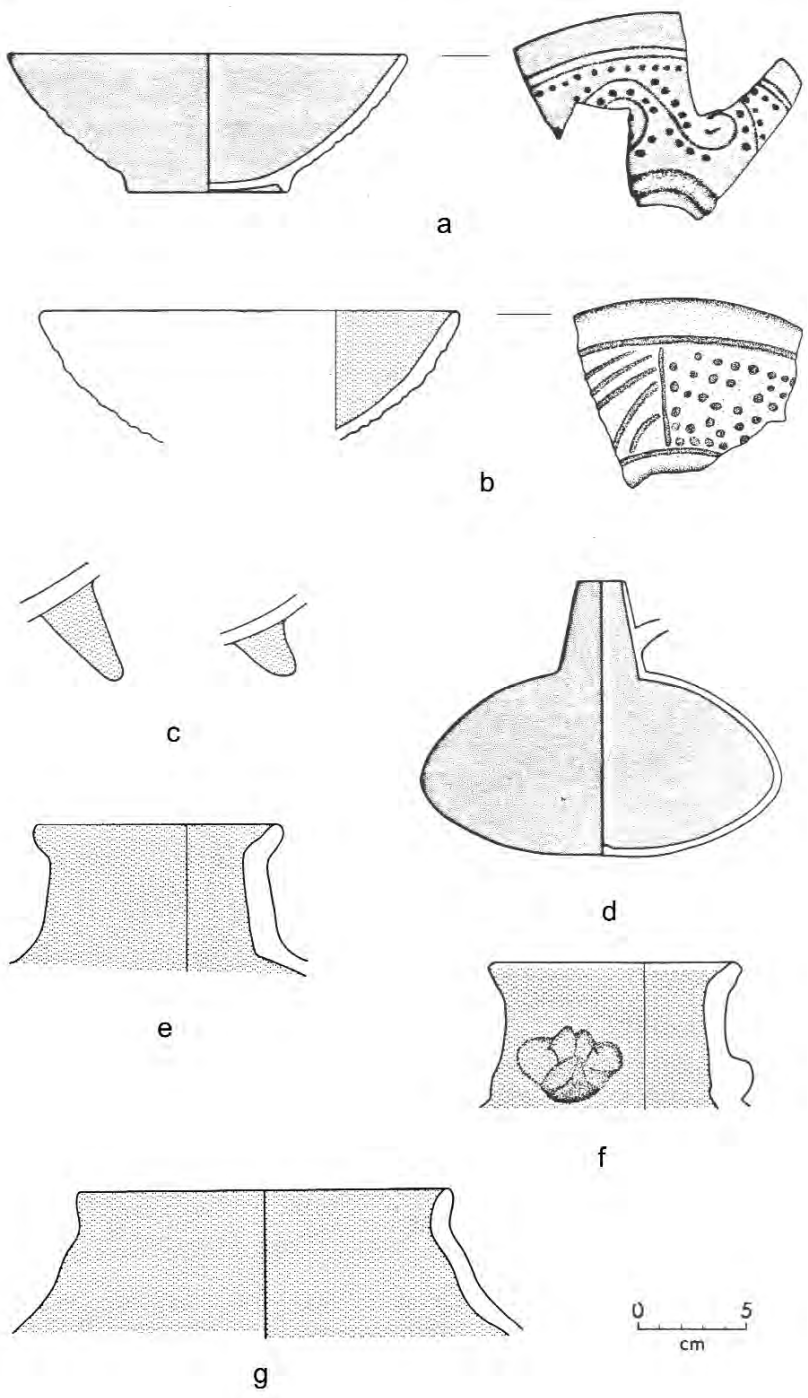


Figure 5 Early Phase ceramics.

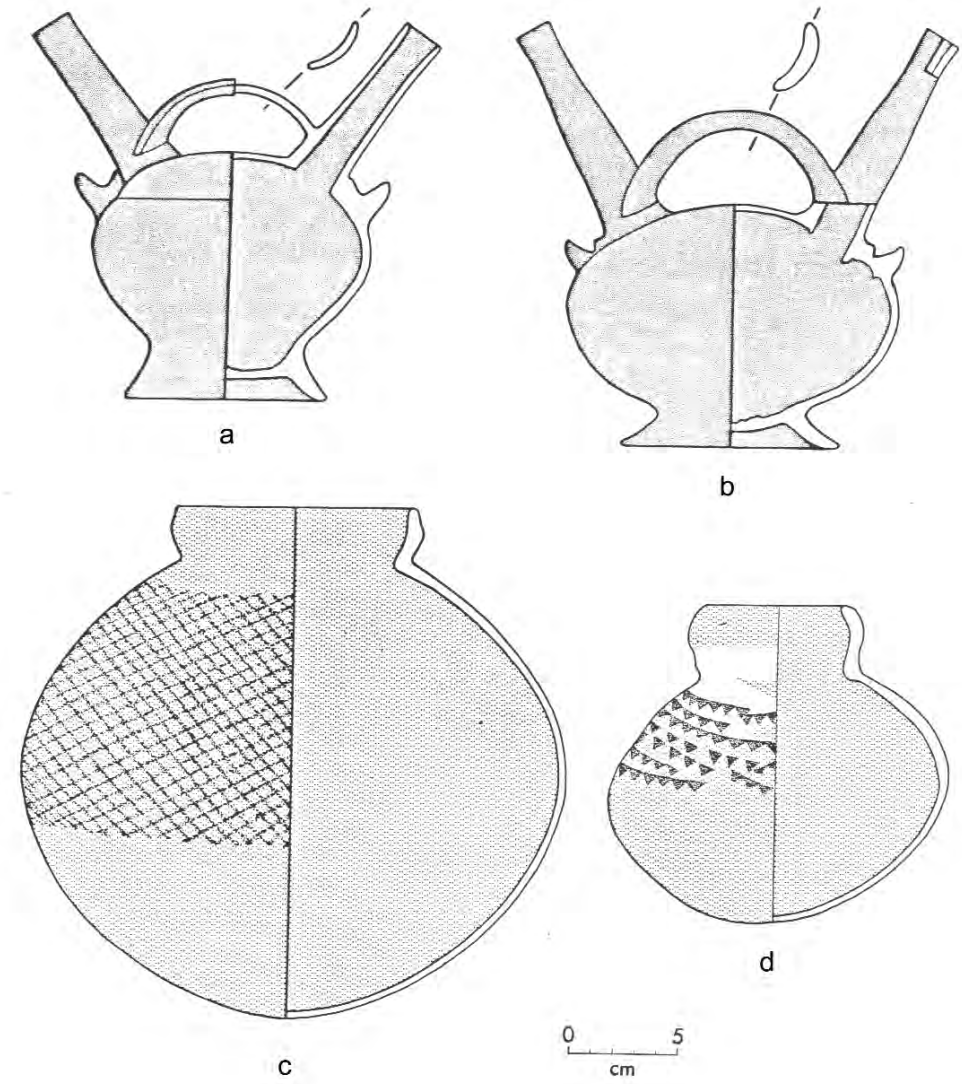


Figure 6 Middle Phase ceramics.

LATE PHASE

The Late Phase dates from approximately AD 1370 to 1600. The loaf-shaped adobes used during the Middle Phase gradually evolved into a tall loaf shape (Fig. 3). Both Chotuna and Chornancap structures contain tall loaf-shaped adobes, but there was less new construction during the Late Phase than during the Middle Phase. Nonetheless, some existing architecture was remodeled at this time.

During the Late Phase, the Lambayeque Valley underwent three successive waves of foreign influence. The first resulted from the expansion of the Kingdom of Chimor. This kingdom, with its capitol at Chan Chan in the

Moche Valley (Fig. 1), is thought to have conquered Lambayeque approximately AD 1370.

The second wave of foreign influence occurred about AD 1470, when the Lambayeque Valley was conquered by the Inca Empire. The Inca maintained their domination of the area until the Spanish arrived around 1530 and European influence began to affect the culture of the local people.

Late Phase ceramics are largely a continuation of Middle Phase ceramics, but the three successive waves of foreign influence can be seen in a few features that were added to the ceramic inventory. One feature of Chimu Late Phase ceramics that appears to have been introduced from the Kingdom of Chimor is the stirrup spout bottle with a monkey modeled on the spout (Fig. 7a, b).

Inca influence is discernible in certain Chimu-Inca Late Phase vessel forms, including arybaloid bottles (Fig. 8a), keros (Fig. 8b), human and bird heads (Fig. 8c, d), and bowls with looped handles (Fig. 8e). Chimu-Inca Late Phase ceramics also include plate forms with lyre-shaped cross sections (Fig. 9a), flattened rims (Fig. 9b), and hook rims (Fig. 9c).

European influence is apparent in several ceramic sherds with green glaze and one vessel that had distinctive European traits (Fig. 9d). It is also indicated by European glass beads and one piece of iron.

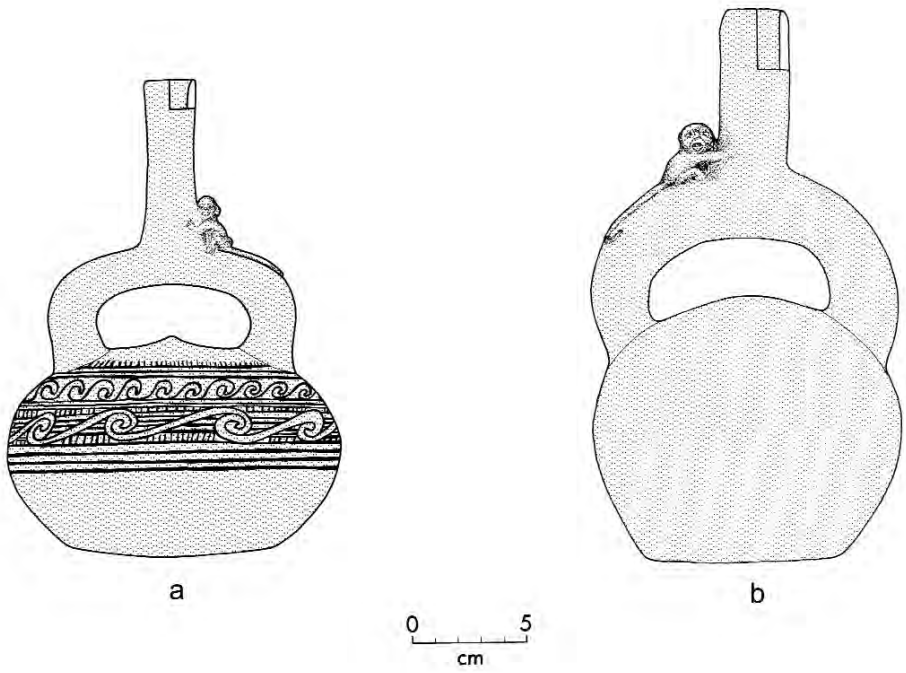


Figure 7 Chimu Late Phase ceramics.

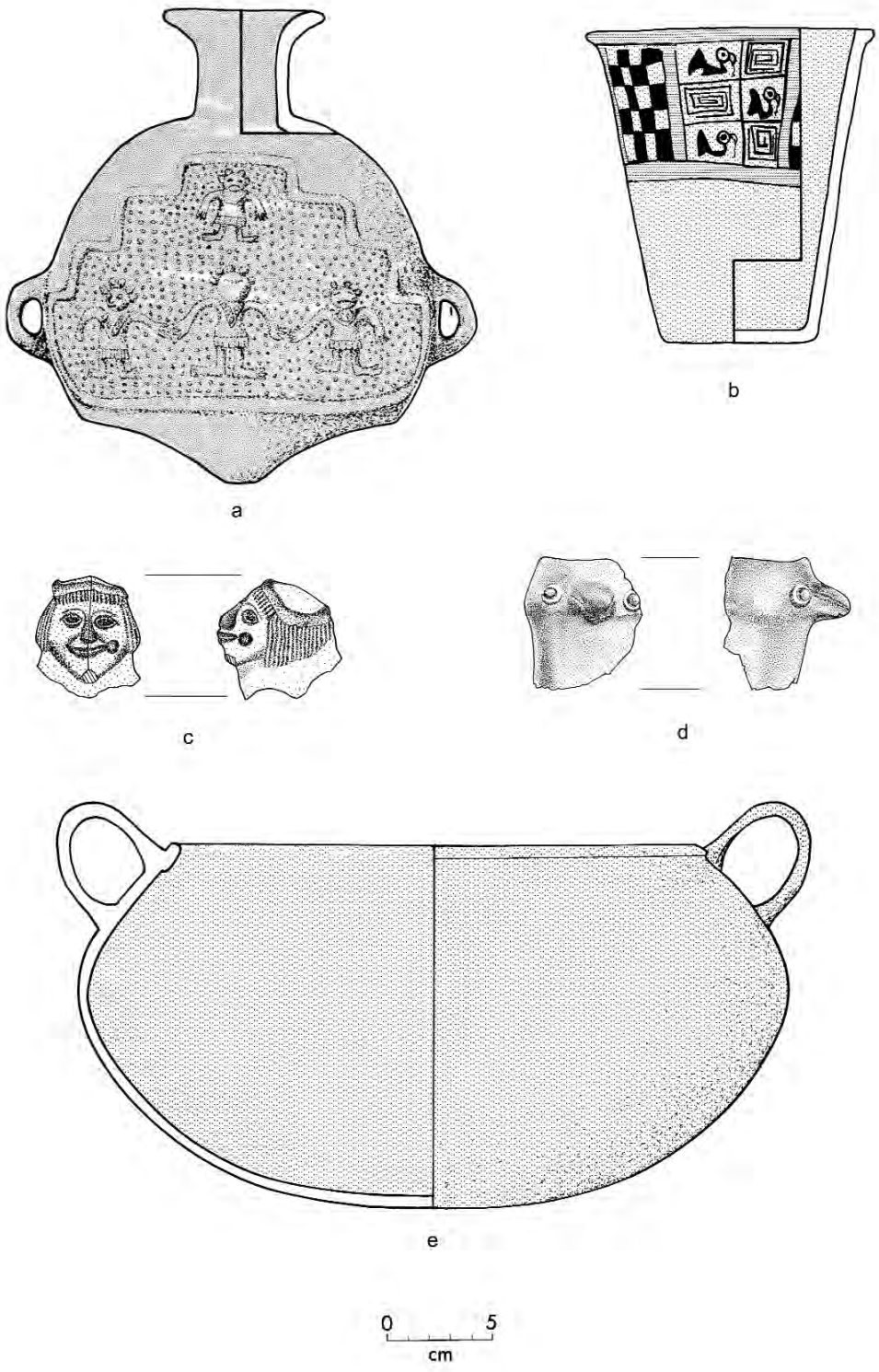


Figure 8 Chimu-Inca Late Phase ceramics.

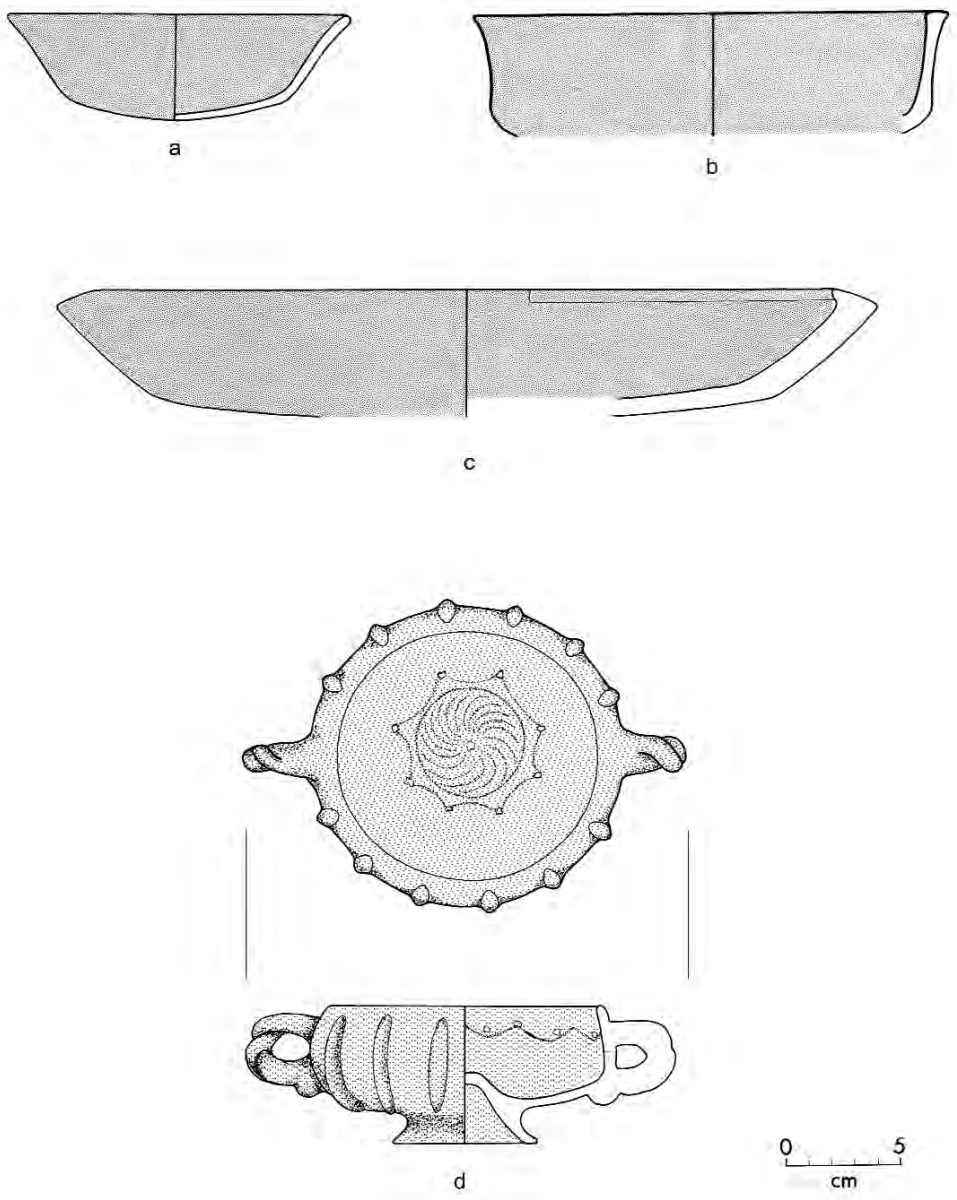


Figure 9 Chimu-Inca Late Phase ceramics (a–c); Colonial Late Phase ceramic (d).

In the following chapters this chronology will be used to describe the various areas that were excavated at Chotuna and Chornancap, to determine when the architectural units were constructed and occupied, and to identify the time period of features and burials.

Chapter 2
CHOTUNA

Chotuna is located in an area characterized by scrub forest and low dune formations interspersed with cultivated fields (Fig. 10). The latter provide the primary support for a modest population that lives in dispersed clusters of domestic dwellings. Archaeological evidence indicates that the ancient population living in this area was much larger than the population today.

The site consists of pyramids, palaces, walled enclosures, and domestic architecture scattered over an area of approximately 20 hectares. What is visible today, however, is probably only a fraction of the architecture that once characterized the site. Deep accumulations of windblown sand have buried much of the settlement. Some of the large dune formations may even obscure major pyramid and palace complexes. In some areas, wind and water erosion have destroyed portions of the architecture, leaving only traces of what once

Figure 10 The site of Chotuna and its surrounding area, looking northeast.

were major structures. As a result, it is extremely difficult to gauge the original size of the site or to assess the functional relationship between its architectural features. Nevertheless, we were able to map the site and determine the size and form of most of its major structures (Fig. 11).

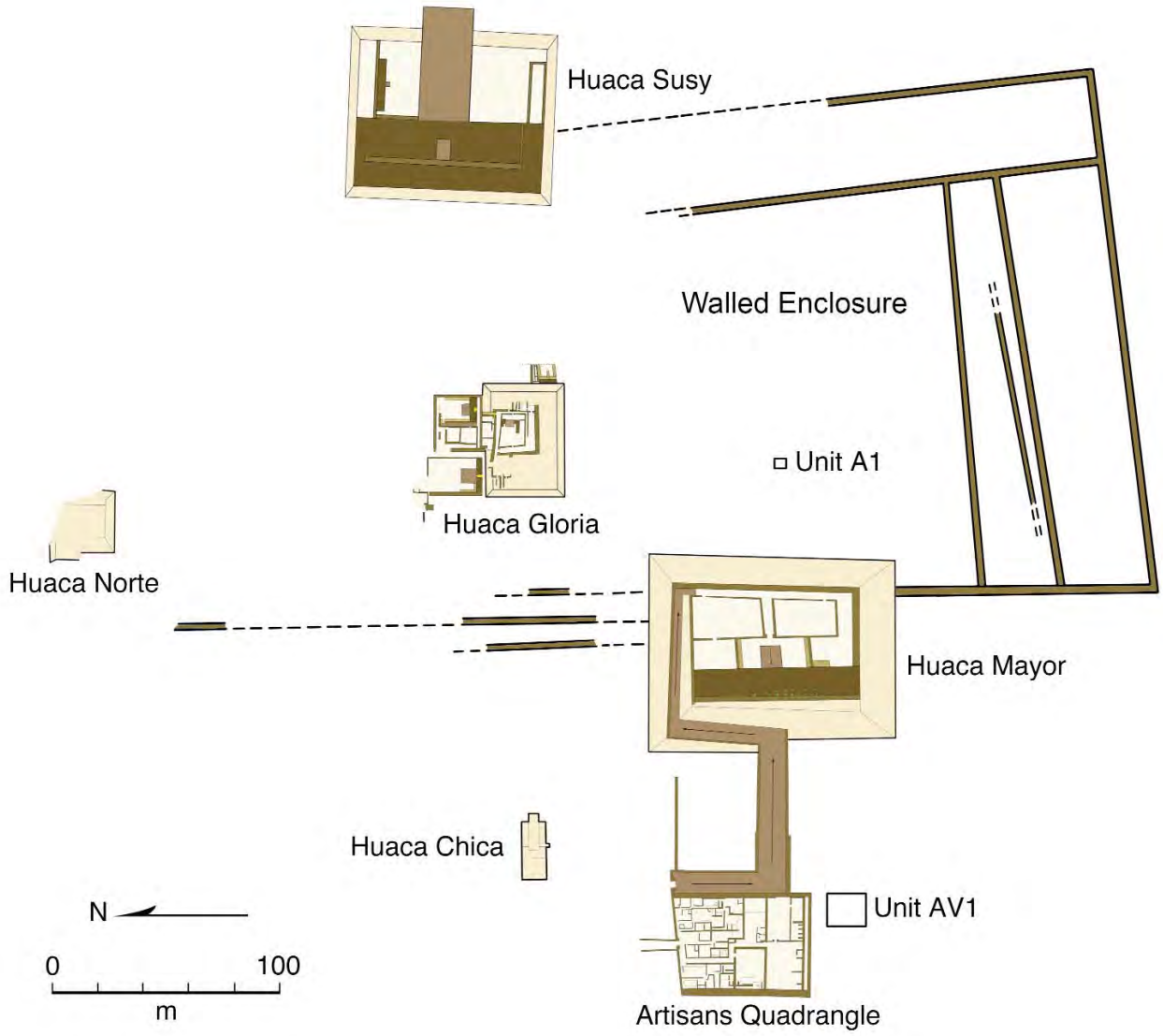


Figure 11 Plan of Chotuna.

Huaca Mayor

Huaca Mayor is the largest and most impressive structure at Chotuna (Figs. 11–13), with an elevation more than 28 meters above the surrounding plain. The variety of adobes used in its construction indicates that it was built over a period of many centuries (Bruce 1983). Flat rectangular adobes recorded at several locations near its base indicate that its construction began during the Early Phase. Most of the pyramid, as well as the exposed portions of the ramp, were built with loaf-shaped adobes characteristic of the Middle Phase, while nearly all of the architecture at the summit was built with tall loaf-shaped adobes and thus is attributed to the Late Phase.

Figure 12 Huaca Mayor, looking northeast.

SUMMIT

Although the summit of Huaca Mayor has been severely damaged by erosion and looting activity, excavation suggests how it appeared during the Late Phase (Fig. 14). The architecture involved considerable bilateral symmetry, with a central east-west corridor and ramp flanked by large rooms. The ramp led up to a platform approximately 2.5 meters high that extended along the entire west side of the summit, with a low wall on top of it. Two rows of postholes on the platform suggest that at least part of it had been roofed.

In addition to the surface architecture at the summit of Huaca Mayor, excavation revealed the remains of three subterranean corridors (Figs. 14–16). Two were along the east side of the summit; the other, along the south side. These corridors were just inside a thick wall that formed the outer edge of the pyramid. Narrow windows located at approximately 3 meter intervals along the wall would have provided light and ventilation as well as views of the surrounding countryside.

The subterranean corridors were approximately 180 centimeters from floor to ceiling. Both the corridors and windows were roofed with wood beams (Figs. 15, 16). All but one of the beams was an irregular branch or

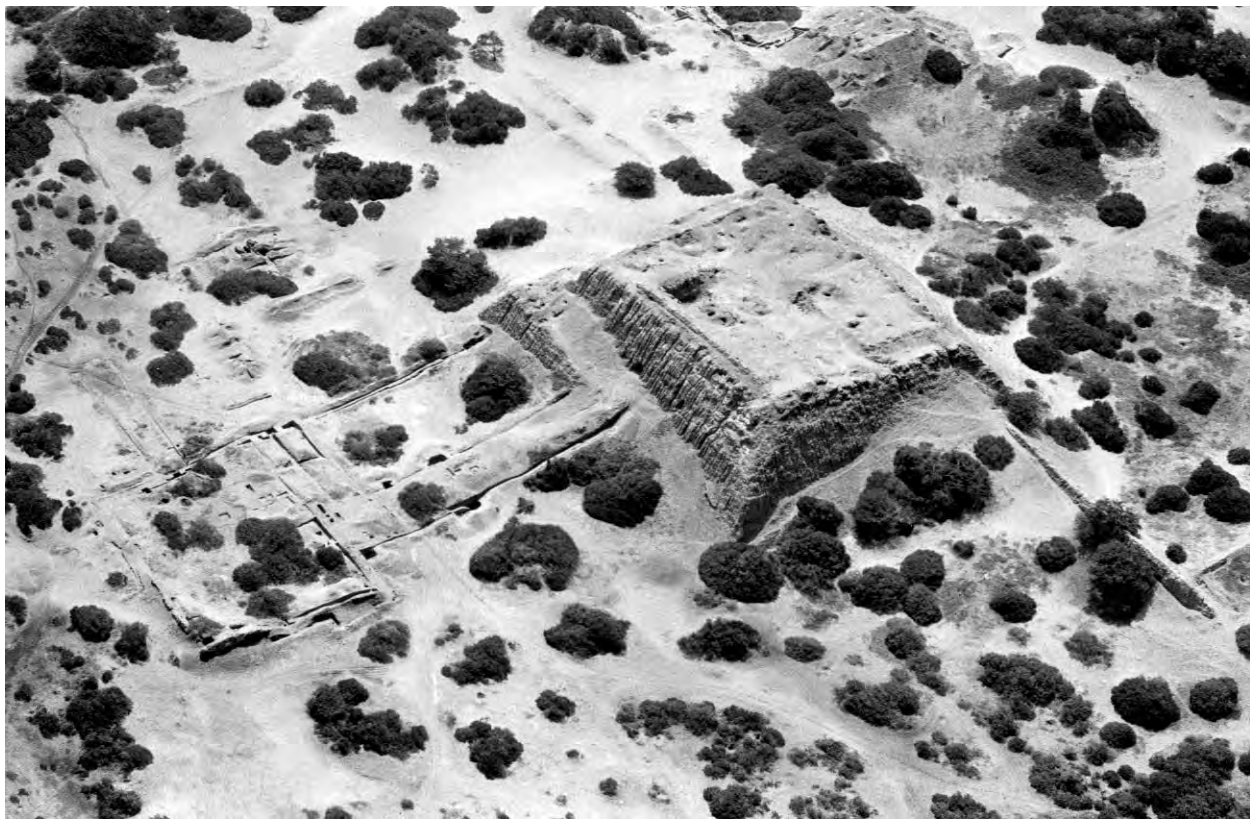


Figure 13 Huaca Mayor, looking northeast.

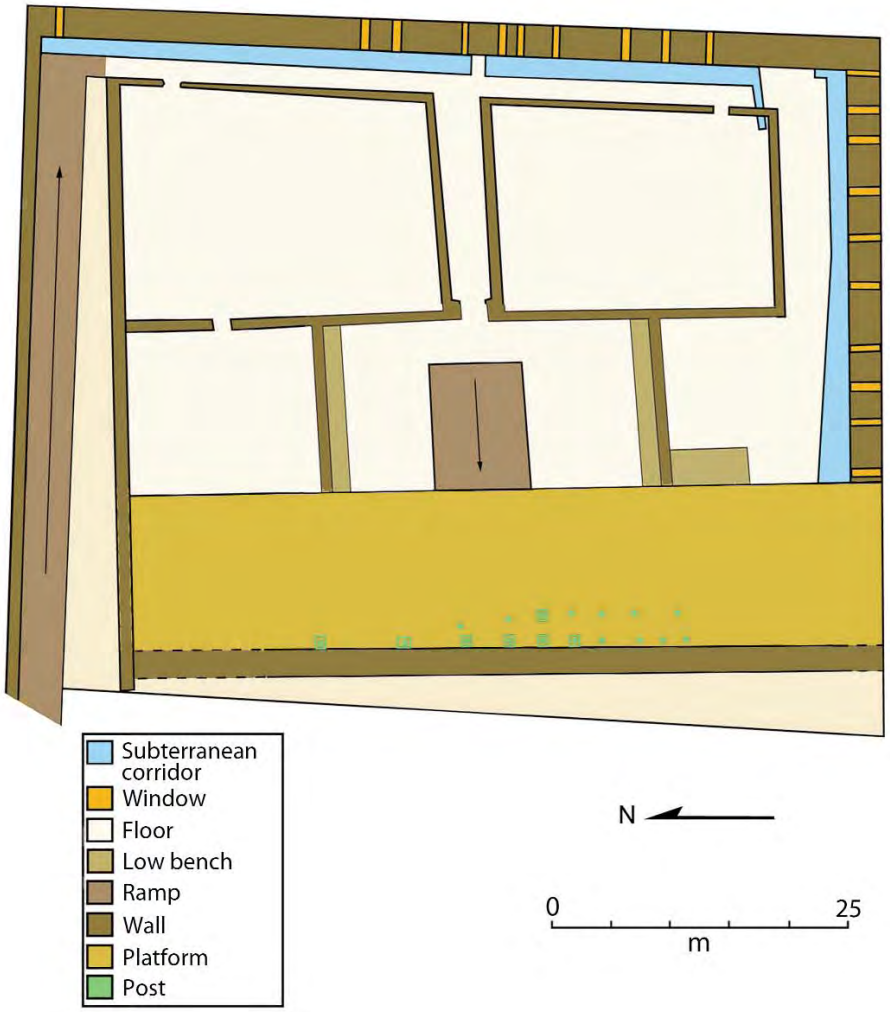


Figure 14 Plan of the summit of Huaca Mayor.

trunk of a tree 7 to 15 centimeters in diameter and 100 to 240 centimeters long. The exception, a short beam that spanned the top of a window along the south corridor, was part of a broken digging stick (Fig. 17). Once the beams were in place, the corridors and windows were covered with layers of tall loaf-shaped adobes, thus making the ground surface above them even with the floor of the summit.

The subterranean corridor located in the northeast portion of the summit had a stairway of six steps at its north end that led down from the summit floor. Similar stairways may have been built at one or both ends of the other subterranean corridors, but the ends of those corridors were not sufficiently well preserved, so the presence of stairways could not be confirmed.

Figure 15 The subterranean corridors being exposed. Note the lintel in place above one of the windows, and the beams spanning the top of the corridor.

Figure 16 A window (left) and subterranean corridor (right).

RAMP

A complicated ramp led down from the summit of Huaca Mayor (Figs. 13, 18, 19). Beginning near the northeast corner of the summit, it wound downward along the east, north, and west sides. Near the center of the west side, the ramp turned west and continued its decline for approximately 30 meters. At this point it leveled out to form a small platform before turning north and continuing down through a narrow room. The ramp filled the entire width of this room and terminated at a narrow doorway located at the north end. This narrow doorway provided the only access to the summit of Huaca Mayor.

The distance from the doorway at the base of the ramp to the top of the ramp at the northeast corner of the summit was approximately 240 meters. The difference in elevation between these two points was approximately 27 meters, thus making an average gradient of about 6 degrees.

The ramp was flanked by low balustrade walls. Its width became narrower as one proceeded from its base to the summit. The east-west section that led up to the center of the pyramid's west face was approximately 10.3 meters wide. Its width from that point to the pyramid's northwest corner was approximately 8.4 meters, and the section from the northwest corner to the northeast corner was approximately 3.5 meters wide.

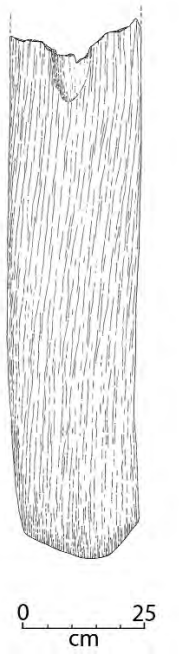


Figure 17 Portion of a broken digging stick used as a window lintel.

PLAZA A

North of the ramp that extends out in front of Huaca Mayor was a large open plaza (Figs. 18, 19). Its east side was formed by the west side of Huaca Mayor; its south side, by the ramp; and its west side, by the room at the base of the ramp. Its north side was defined by a long wall that extended east from this room, terminating approximately 10 meters from Huaca Mayor. Access to the plaza was through this 10 meter opening.

Although little excavation was conducted inside this plaza, it appears to have been a large open area that could have accommodated numerous people.

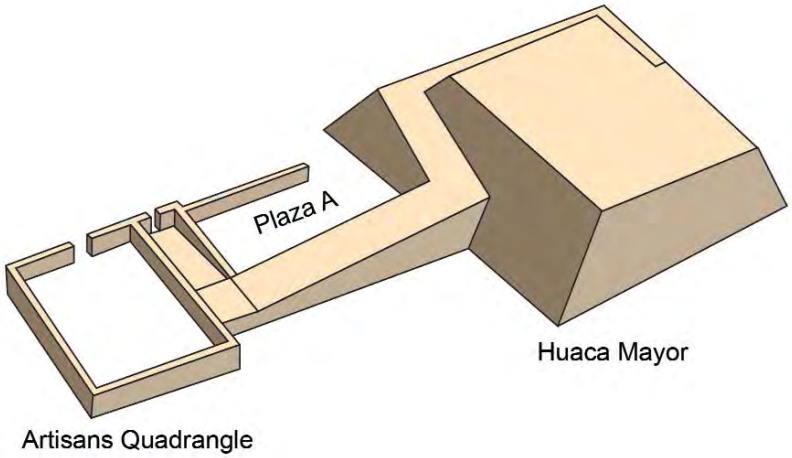


Figure 18 Isometric view of Huaca Mayor, looking northeast, showing the ramp leading from its summit to Plaza A and the Artisans Quadrangle.

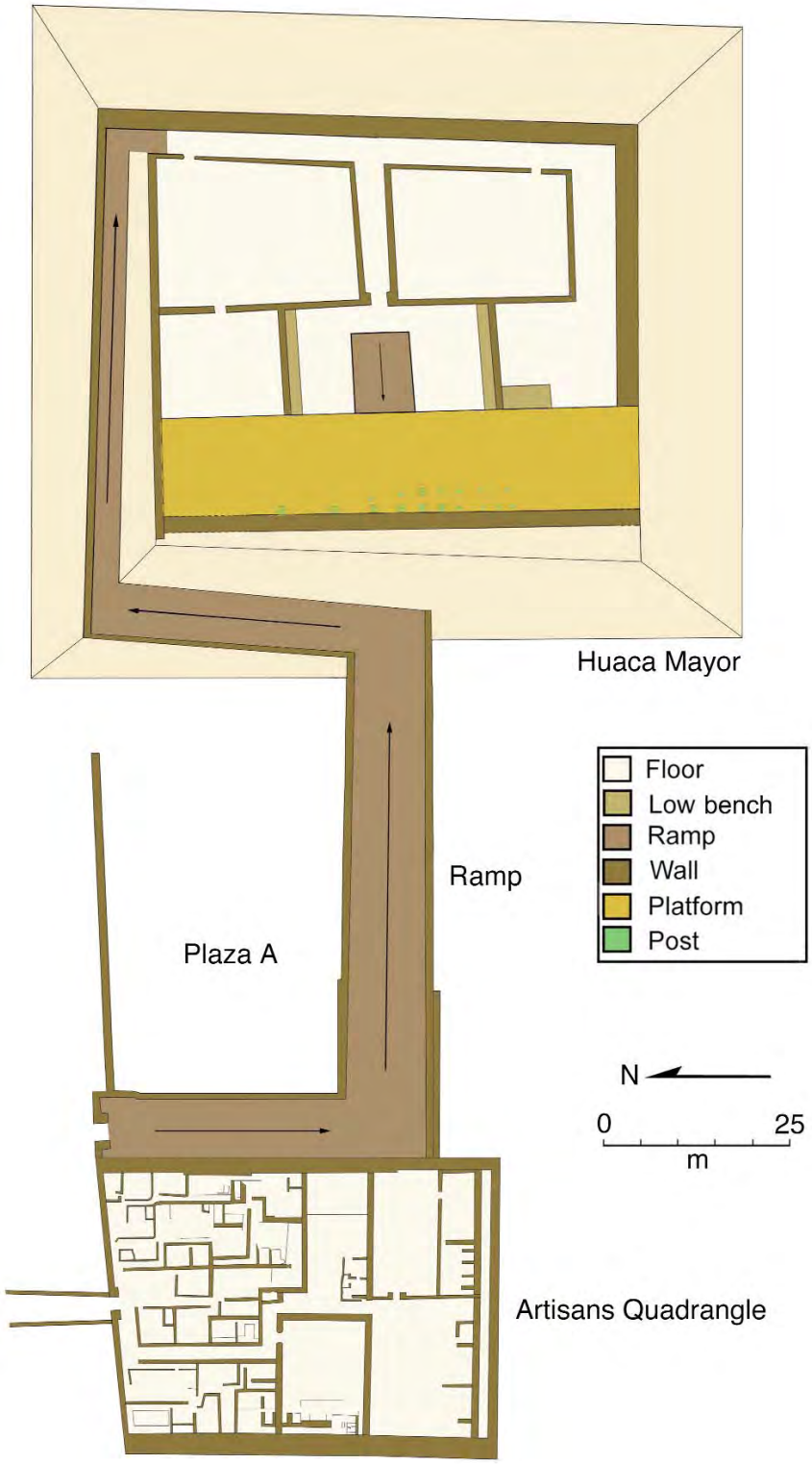


Figure 19 Plan of Huaca Mayor, Plaza A, and the Artisans Quadrangle.

Artisans Quadrangle

A large walled enclosure lies immediately in front of the ramp extending west from Huaca Mayor (Figs. 19, 20). It came to our attention during our 1980 field season, when we excavated a small test pit in what we later learned was the quadrangle's northeast portion. This test pit exposed a clay floor with a hearth that was clearly associated with crucible fragments and numerous droplets of corroded copper. In an effort to understand the context of this material, we expanded the test pit and soon found that that we were in a series of interconnected rooms, nearly all of which had similar hearths with associated crucible fragments and corroded copper objects. Because of the abundant evidence of metalworking activity found inside, we named it the Artisans Quadrangle.

Figure 20 Excavation of the Artisans Quadrangle's northeast portion, looking east, with Huaca Mayor in the background.

Figure 21 Excavation of the Artisans Quadrangle's northeast portion in 1980, looking west.

Figure 22 Excavation of the Artisans Quadrangle in 1981, looking west.

Figure 23 Excavation of the Artisans Quadrangle in 1981, looking northwest.

Our excavation of the Artisans Quadrangle was conducted in two stages. The northeast portion was excavated during our 1980 field season (Fig. 21). During the 1981 field season the rest of the quadrangle was excavated, and the backdirt was placed on top of the previously excavated portion (Figs. 22, 23). By combining the information from these two field seasons, we were able to create a plan of the entire quadrangle (Fig. 24), understand the sequence of its occupation, and reconstruct how distinct parts of it functioned.

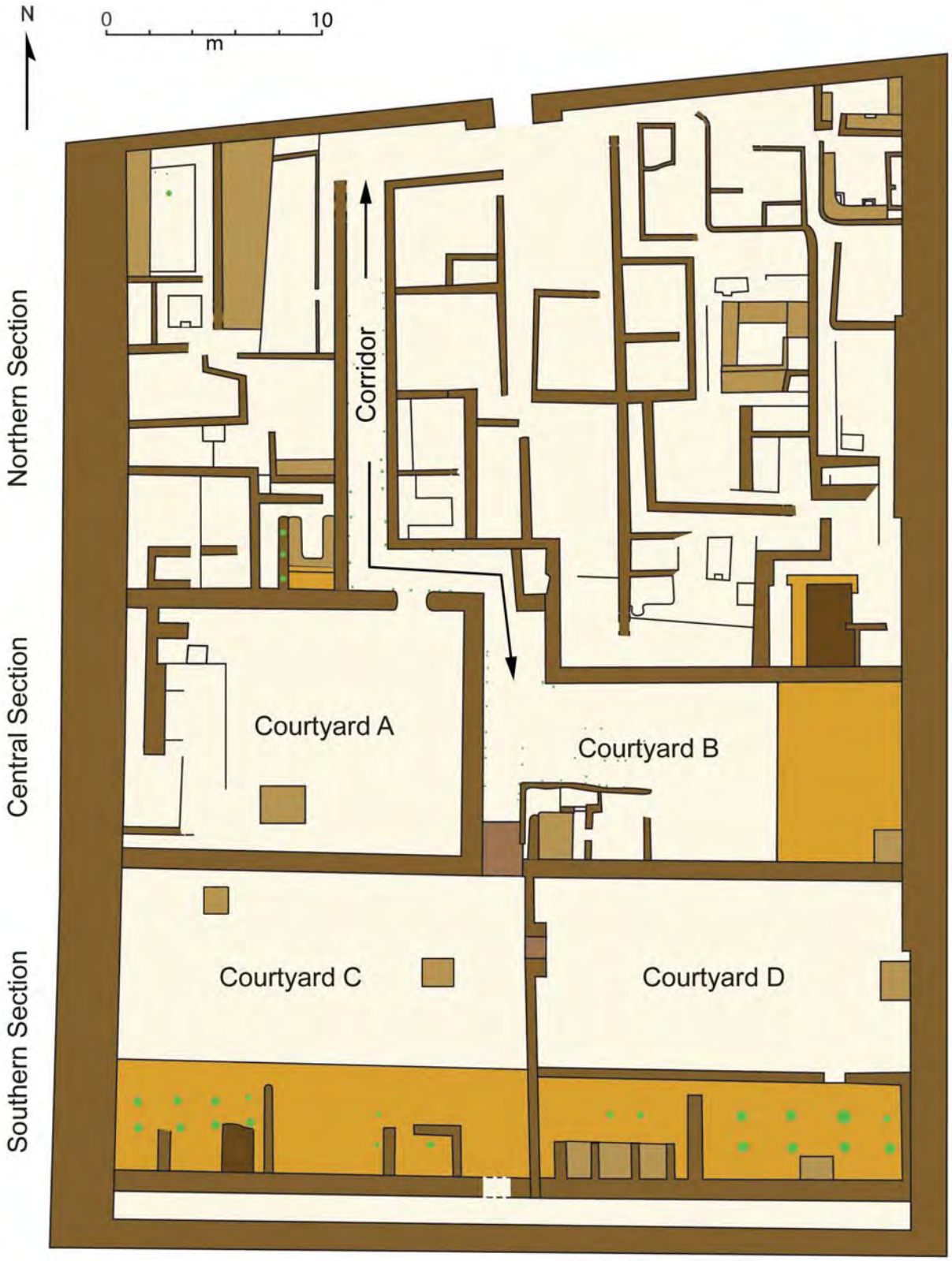


Figure 24 Plan of the Artisans Quadrangle (key on page 27).

The Artisans Quadrangle is defined by massive perimeter walls that originally may have been as high as 6 meters. Our excavation indicates that it was not constructed at one time. Some portions of what became the quadrangle's west and south perimeter walls, as well as the southern part of its east perimeter wall, were built with flat rectangular adobes, and thus were constructed during the Early Phase. Water erosion subsequently destroyed most of the Early Phase walls. The few remnants are so fragmentary that we could not reconstruct the original architectural form. It is clear, however, that the Early Phase walls did not create the quadrangle shown in Figure 24; the Early Phase portion of the west wall turned west before reaching the quadrangle's northwest corner, and there is no evidence of an Early Phase wall on its north side nor on the northern portion of its east side.

During the Middle Phase the Artisans Quadrangle was created using loaf-shaped adobes. Remnants of the Early Phase walls were repaired to form the quadrangle's south wall and the southern portions of its east and west walls. The east wall was extended to the quadrangle's northeast corner, and the west wall to its northwest corner. The north wall was also completed during the Middle Phase.

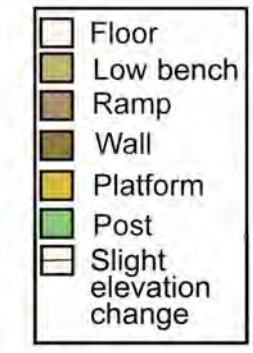
The four high perimeter walls produced a formidable boundary, with the only entrance through a narrow doorway located near the center of the north wall. Outside the narrow doorway a long corridor leading north (Fig. 19), formed by two parallel walls more than 30 meters long, would have further restricted access to the quadrangle. The interior of the quadrangle was divided into northern, central, and southern sections (Fig. 24), a tripartite division that characterized the quadrangle throughout its subsequent occupation.

The Middle Phase occupation, however, can be distinguished from the Late Phase occupation, primarily on the basis of stratigraphy and changes in the color of clay used to plaster the walls. The following sections describe the Artisans Quadrangle during the Middle Phase and the Late Phase.

MIDDLE PHASE

In the northern section a main corridor led through a series of right-angle turns from the entrance of the quadrangle to its central section (Fig. 24). Postholes along the sides of the corridor suggest that it was roofed.

The areas flanking the corridor were divided into numerous small rooms that functioned as domestic quarters. These rooms appear to have been constructed with only minimal planning and to have undergone repeated remodeling and renovation. Hallways sometimes connected three or more of the rooms, but more often the rooms connected through narrow doorways. Within the complex of rooms there does not appear to be any single room or patio area that provided access to multiple rooms.



Key to Figure 24.

Most of the rooms were rectangular, with the long axis oriented north-south. Many had low platforms along one or more of their walls (Fig. 25). A few had platforms along all four walls, forming a trough-like depression in the center of the room (Fig. 26). Some rooms had small bins built on their floors. The bins were rectangular enclosures formed by three low walls abutting an existing step or platform (Fig. 27). None of the bins had evidence of burning. They were always located at the southern end of the rooms, centered along the step or platform to which they were attached.

Four rooms had holes that were dug into the thick perimeter walls of the quadrangle (Fig. 27). The holes had no evidence of burning and were not painted. They probably served as storage compartments.

Nearly every room in the northeast portion of the quadrangle had at least one hearth, and many had several. The hearths were identified by reddish-yellow burned areas on the floors, often with charcoal and ash in situ (Figs. 26, 27). They were small, usually from 30 to 75 centimeters in diameter. Although some hearths were adjacent to walls or platforms, most were located near the center of the room. Fires were built directly on the floors, with neither a pit nor a surrounding ridge to contain the ashes.

Figure 25 Excavating rooms in the Artisans Quadrangle.

Figure 26 Room in the Artisans Quadrangle with platforms on all four sides. The reddish-yellow stain on the floor was a hearth.

Figure 27 Room in the Artisans Quadrangle with a small bin on the right and holes in the far wall. The reddish-yellow stains on the floor were hearths.

In the northern section, most of the rooms located east of the corridor had evidence of metalworking activity, including crucible fragments, copper objects, ceramic blow-tube tips, and stone metalworking tools (see Metalworking Activity below and Appendix 2). In contrast, there was no evidence of metalworking in the rooms west of the main corridor during the Middle Phase.

The central section of the Artisans Quadrangle was unlike the northern section. Instead of multiple small rooms, it had two large open courtyards (Fig. 24). Courtyard A, on the west side, had a door on the north wall that provided access from the main corridor. Postholes at each side of the door suggest that the corridor roof projected over the doorway and into the courtyard. Inside the courtyard was a low bench near the south wall and a cluster of rooms along the west wall.

Courtyard B, on the east side of the quadrangle, had a platform along its east wall with a bench in the southeast corner. The cluster of rooms along its south wall, shown in Figure 24, was not constructed during the Middle Phase but was added in the Late Phase (see below). Two rows of postholes along the west wall of the courtyard suggest that the roofed corridor leading from the quadrangle's northern section continued, leading to a ramp at the courtyard's southwest corner. This ramp led up from the floor of Courtyard B to a doorway that provided the only access to the quadrangle's southern section.

The southern section, like the central section, consisted of two large courtyards (Fig. 24). Courtyard C was accessed by the doorway in the southwest corner of Courtyard B. Two low benches were located on the floor of Courtyard C, and a low platform was built along the entire length of its south wall. There were remnants of architecture on top of the platform, and postholes that suggest that portions of it were roofed. At the southeast corner of the platform a doorway led into a narrow corridor that extended along the entire south side of the quadrangle. This was a blind corridor with no exit other than the door that led into it.

The east wall of Courtyard C had a low ramp leading up through a narrow doorway that provided access to Courtyard D (Fig. 24). There was a low bench along the east wall of Courtyard D and a low platform along the entire length of its south wall. A wall along the front of this platform created an enclosed space, separate from the rest of the courtyard. Access to this enclosed space required stepping up from the courtyard floor onto the platform through a narrow doorway. Once inside, there was a low bench opposite the doorway and a series of postholes, suggesting that the room was roofed. A door on the west wall of that room led into another room, which had three raised benches separated by low walls. Postholes in front of the benches suggest that this room also was roofed.

The Middle Phase construction in the Artisans Quadrangle utilized yellowish-gray clay for the floors and for the plaster on the walls. This color of clay is distinctive from that used in the quadrangle during the Late Phase.

LATE PHASE

Following the Middle Phase, the Artisans Quadrangle was inundated with windblown sand, particularly in the northern and central sections, where it buried floors to a depth of as much as 40 centimeters. The sand appears to have accumulated very rapidly and may have caused a partial or even total abandonment of the quadrangle.

The quadrangle then underwent a second period of occupation, occurring during the early part of the Late Phase. The clay used for floors and plaster at this time was a distinctive greenish color.

In the northern section there was very little effort to remove the windblown sand; new floors were simply constructed on top of it. The configuration of some of the rooms, doorways, and corridors was altered, and a few of the rooms became smaller. The rooms on the east side of the main corridor continued to serve as domestic quarters and as areas for metalworking. The rooms on the west side of the corridor also continued to serve as domestic quarters but for the first time were used for metalworking activity.

The main corridor that led through the northern section was refloored in greenish clay over approximately 30 centimeters of windblown sand. Postholes lining the sides of the corridor suggest that it continued to be roofed, as it had been during the Middle Phase.

The central section of the quadrangle changed very little during the early part of the Late Phase, although the courtyards were refloored over a layer of windblown sand, and the cluster of rooms along the south wall of Courtyard B, shown in Figure 24, was constructed at this time. Some of the walls were given a fresh coat of greenish plaster.

In the southern section, all windblown sand that may have accumulated after the end of the Middle Phase was removed rather then being floored over. The architecture appears to have had nothing more than a new coat of greenish plaster applied to its walls, floors, platforms, and benches.

Subsequently, the Artisans Quadrangle was again inundated with windblown sand, which buried much of the central and northern sections. The sand accumulated to a depth of more than 30 centimeters on some floors. This may have caused another partial or complete abandonment, but it was followed by a third period of construction.

In the northern section the windblown sand was again floored over rather than being removed. Yellowish-gray clay was used to construct the new floors

and to replaster some of the walls. The main corridor in the northern section was retained, but a few of the rooms on both the east and west sides of it were subdivided into even smaller rooms. The extensive refuse deposits in these rooms indicate that they continued to be used as living quarters as well as for metalworking.

The rooms and corridors in the central and southern sections were not changed. Some windblown sand was floored over in the central section, but the sand appears to have been entirely removed from the southern section. Much of the architecture in the central and southern sections was given a new coat of yellowish-gray plaster. This appears to have been the final remodeling of the Artisans Quadrangle.

SUMMARY OF ARCHITECTURE

The Artisans Quadrangle maintained its basic form, with only minor changes, from its original construction during the Middle Phase through its final abandonment in the Late Phase. The division into northern, central, and southern sections, as well as the plan of the main corridor, were developed shortly after the quadrangle's perimeter walls were completed and were retained throughout the subsequent periods of occupation.

Windblown sand, a recurring problem, was allowed to accumulate in the northern and central sections but was removed from the southern section. Habitation refuse was found in the rooms in the northern section, but was generally not found in the central and southern sections. Layers of windblown sand and habitation refuse separated multiple floors in the northern section, while in the central section there were fewer superimposed floors, and they were usually separated only by windblown sand. The southern section, with only a few exceptions, lacked sand and refuse between superimposed floors; it was kept clean, and its walls and floors were simply resurfaced with new coats of plaster.

It is clear that the northern section of the quadrangle served as domestic quarters, since evidence of the preparation and consumption of food was clearly present in most of the rooms. Moreover, in some of the rooms, footprints of infants and dogs had been pressed into the moist clay at the time the floors were being constructed, implying that complete families had inhabited these quarters. There was abundant evidence of metalworking activity in addition to the domestic refuse in most of the rooms. It appeared as though the primary, if not exclusive, occupation of the residents was metalworking.

It is not known whether the central and southern sections also served as domestic quarters. If so, they were kept free of domestic refuse. It is likely that they were used primarily for ceremonial and/or administrative functions.

Presumably, the central and southern sections were for members of an elite class who may have controlled the distribution of the metal objects being produced in the northern section.

METALWORKING ACTIVITY

The evidence of metalworking activity found during the excavation of the Artisans Quadrangle included hearths with concentrations of charcoal and ash, crucible fragments, pieces of corroded copper, ceramic blow-tube tips, and stone metalworking tools. This material was concentrated in the northern section of the quadrangle, in the areas of domestic architecture flanking the east and west sides of the main corridor.

Some evidence for metalworking was also found in the central section, but was restricted to the cluster of rooms along the south wall of Courtyard B, which were constructed at the beginning of the Late Phase (Fig. 24). There was no evidence of metalworking activity in the southern section.

Pre-Columbian metalworkers created a forced draft in their furnaces by means of long tubes blown by individuals positioned around a fire (Donnan 1973, 1998; Shimada et al. 1982). The tubes were made of hollow cane, with ceramic tips (tuyeres) socketed into the end near the fire to prevent the cane from burning. The tips also focused the flow of air passing through the tubes. Eight blow-tube tips were found in the northern section of the quadrangle, associated with hearths and crucible fragments (e.g., Fig. 28). The surface of one (Fig. 28d) was crazed and vitrified from intense heat and had been splattered with droplets of copper.

Numerous crucible fragments were also found in the northern section of the quadrangle (Fig. 29). They could be recognized by copper adhering to their concave surfaces. All were made from large fragments of broken ceramic vessels. Their thickness, temper, and surface finish suggest that most were fragments of cooking ollas, some with paddle-marked decoration on their exterior surface. A few crucibles were fragments of ring-base bowls. All of the crucibles appear to have been broken after they were used. Their pieces varied in size from as little as 1 centimeter to as large as 11 centimeters in diameter. In a few instances, larger portions of the crucibles could be reconstructed from two or more pieces. The largest reconstructed fragment (Fig. 29a) measures approximately 19 by 13 centimeters. It should be noted, however, that it is incomplete; the original crucible must have been considerably larger.

Pieces of corroded copper were associated with almost all of the hearths. Most were spherical and small, measuring between 1 and 5 millimeters in diameter. In some rooms, more than 100 of these droplets were found. Some

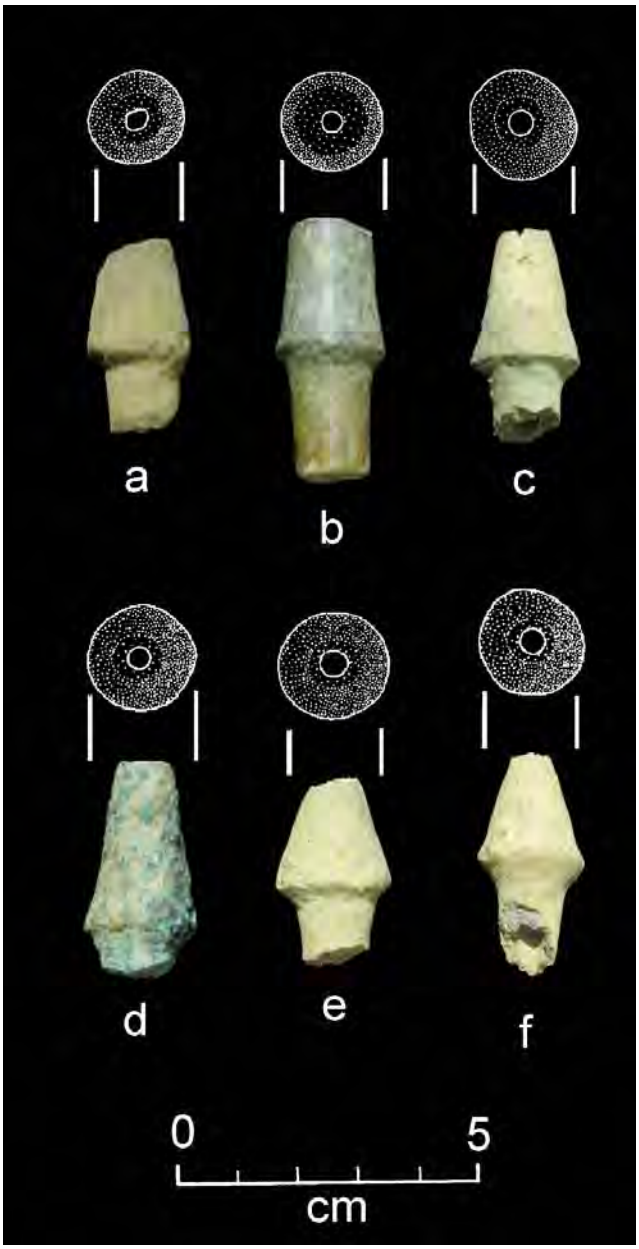


Figure 28 Blow-tube tips from the Artisans Quadrangle.

may have resulted from molten metal splattering out of the crucibles, but others are probably prill, the droplets of copper that are extracted from the glassy slag produced in the smelting of low-grade copper ores (Shimada et al. 1982).

Several stone tools for metalworking were found (Figs. 30, 31). Four were faceted stone hammers (e.g., Figs. 30a, b, 31a, b), presumably used to shape metal objects. One had fracture lines from having been struck with great force. Flakes from broken stone hammers were also found. Facets on some of the stone hammers were highly polished, suggesting that they had been used to rub flat metal sheets.

One pointed stone tool with a highly polished tip was recovered (Figs. 30c, 31c). It may have been used to create repoussé designs in sheet metal.

A stone tool with a highly polished concave surface (Figs. 30d, 31d) may have been used to polish metal objects by rubbing them along its surface with some form of polishing compound. A thin, flat stone with a slightly concave surface (Figs. 30e, 31e) may have served as an anvil on which sheet metal could have been flattened by hammering or rubbing.

With the exception of tiny droplets of copper, few metal objects were recovered from the Artisans Quadrangle. Some were copper needles, either complete (Fig. 32a) or fragmentary (Fig. 32b, c). One (Fig. 32d) was in the process of manufacture. It was flattened near one end, so the needle's eye could be formed by bending the upper part over and wrapping the flattened portion around it, as shown in Figure 33.

Bangles made of sheet copper (Fig. 32e) were also found. Most appeared to be in the process of manufacture, since they lacked perforations. There was also a pair of copper tweezers (Fig. 32f), which had been partially shaped by hammering but not yet folded at its midpoint to make it functional. Numerous

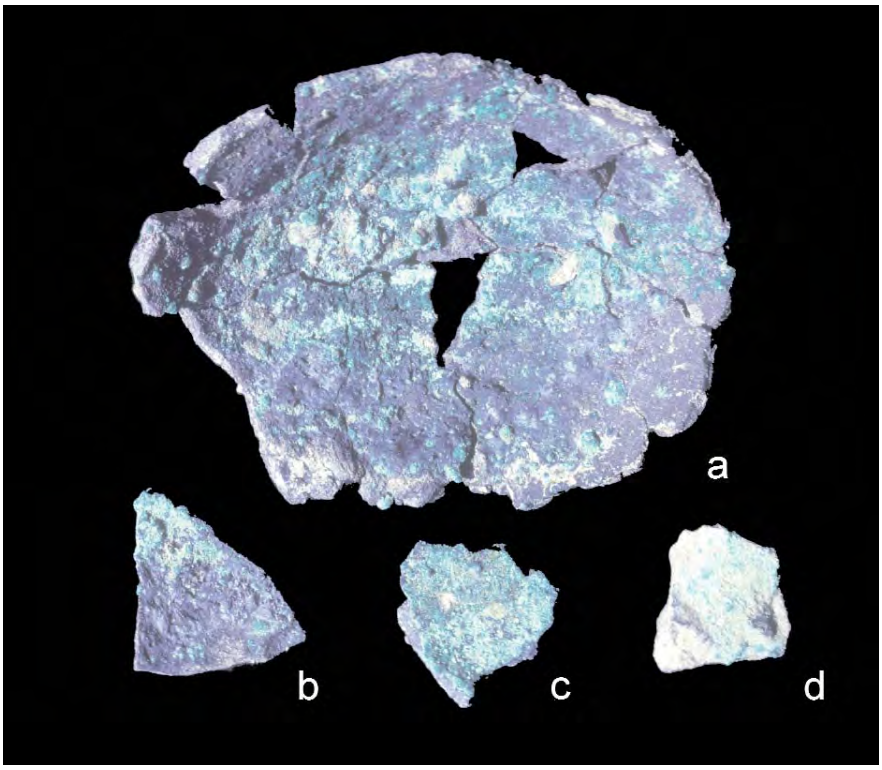


Figure 29 Crucible fragments from the Artisans Quadrangle.

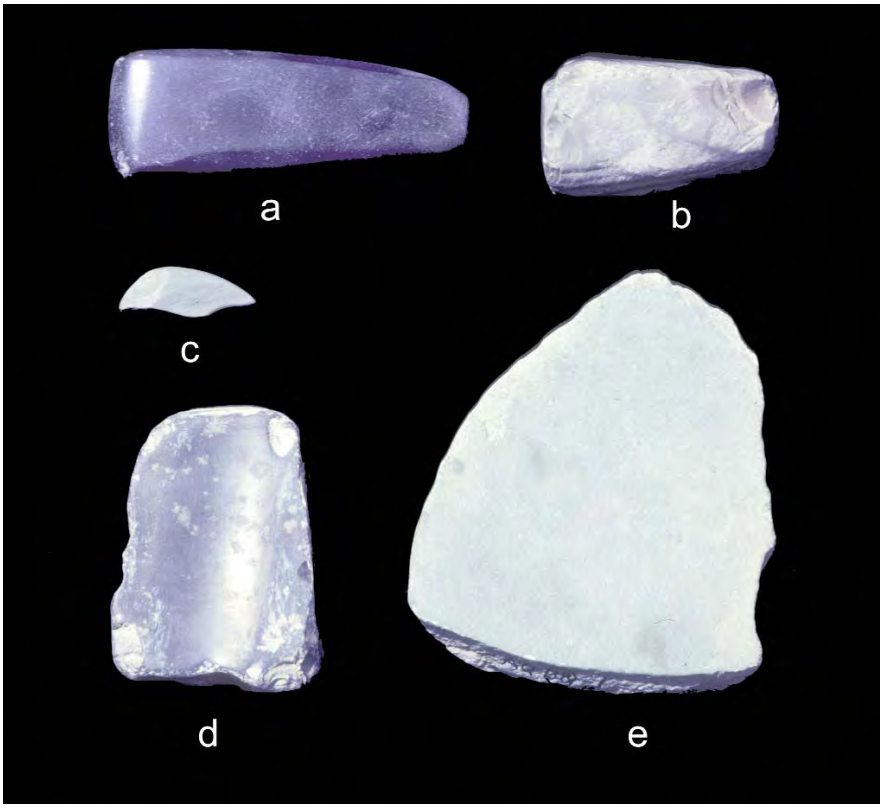


Figure 30 Stone tools for metalworking from the Artisans Quadrangle.

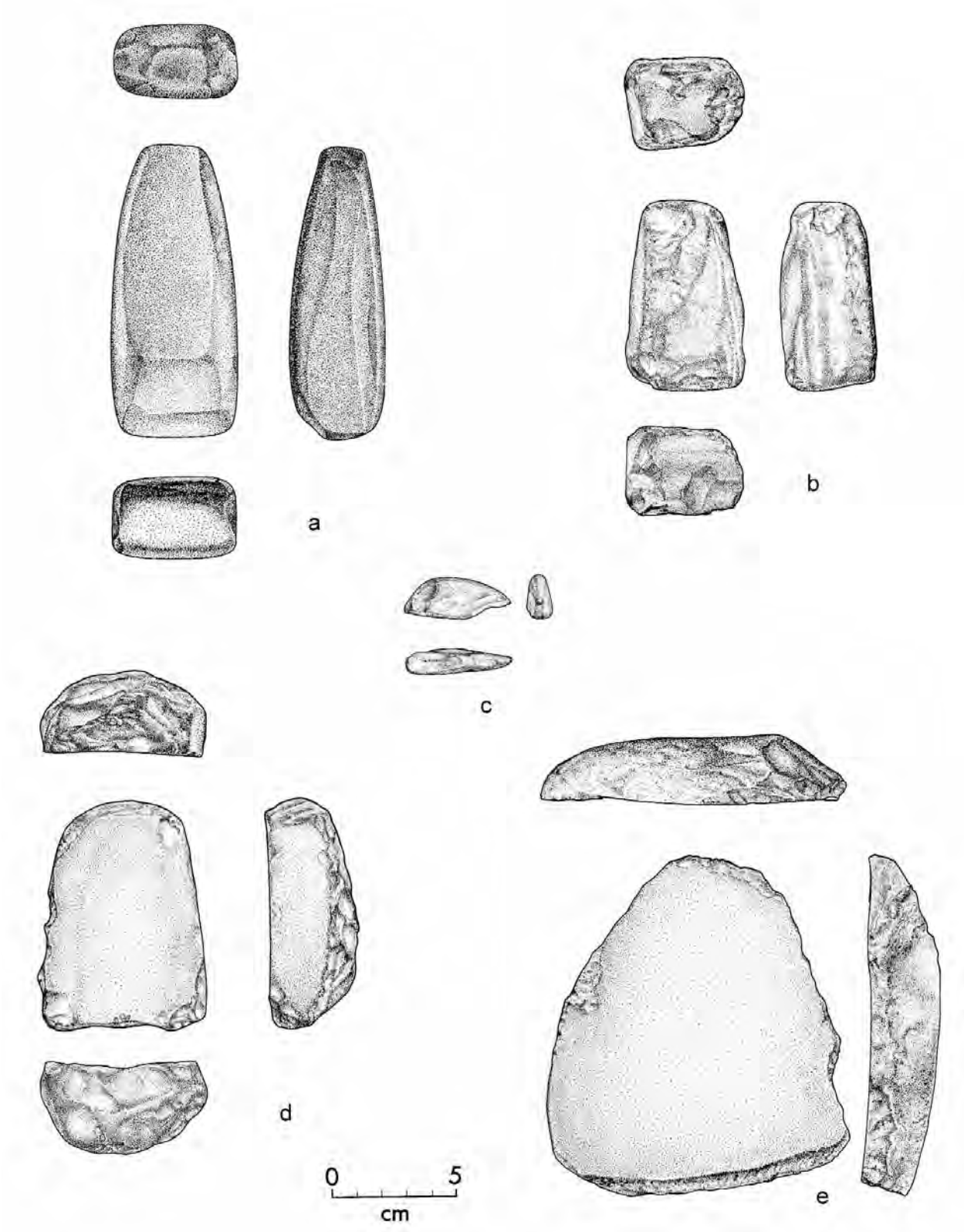


Figure 31 Stone tools for metalworking shown in Figure 30.

small pieces of copper were also found, including bands (Fig. 34a–e), rings (Fig. 34f), wires (Fig. 34g), and flattened chunks (Fig. 34h–k).

In reconstructing the metalworking activity that took place inside the Artisans Quadrangle, it is important to note the absence of certain types of material. First, there was no ore suitable for smelting, nor anything resembling native copper. Second, there was very little slag, the vitreous by-product from smelting operations. Third, there were no grinding stones suitable for crushing either ore or slag. The lack of these materials clearly indicates that the copper processed in the Artisans Quadrangle had come to Chotuna as metal rather than ore. Mining, crushing, and smelting operations must have taken place at other locations (see Appendix 2).

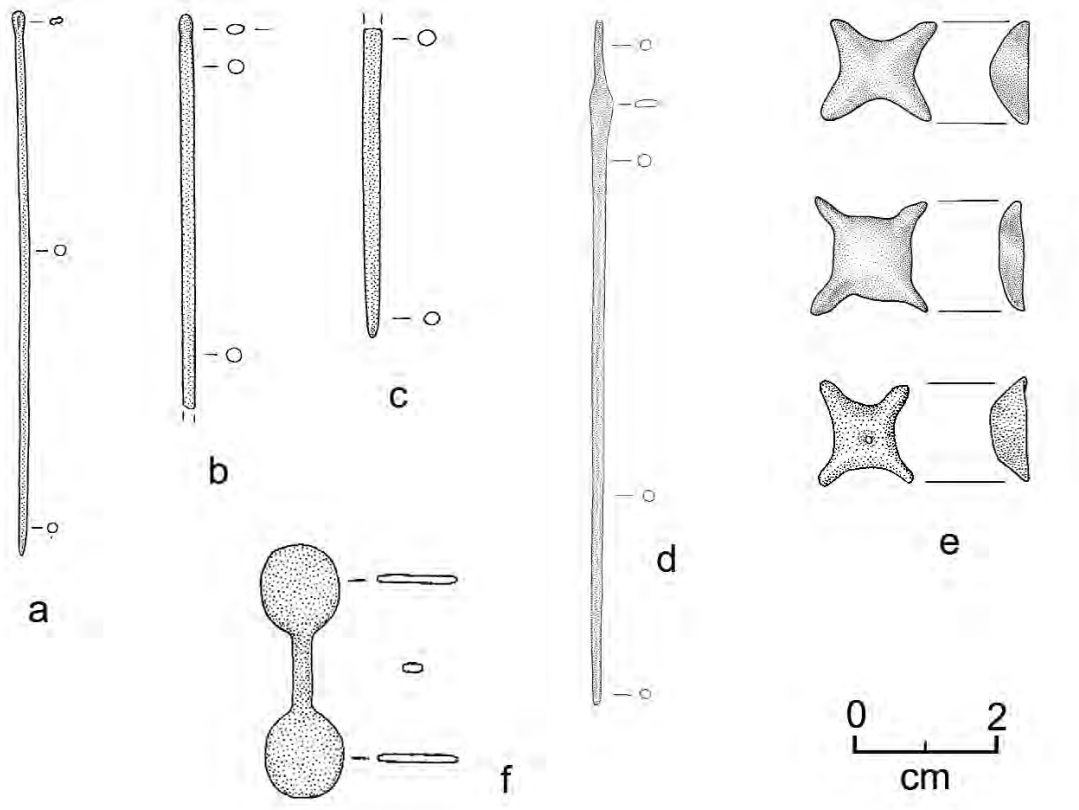


Figure 32 Copper objects from the Artisans Quadrangle: needles (a–d), bangles (e), unfinished tweezers (f).

Mold fragments were also absent in the Artisans Quadrangle, suggesting that the metallurgical activity did not involve casting metal objects. Instead, it seems to have focused on the production of small copper objects such as needles, bangles, and tweezers.

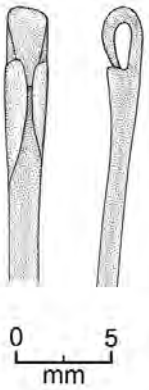


Figure 33 Detail of needle construction.

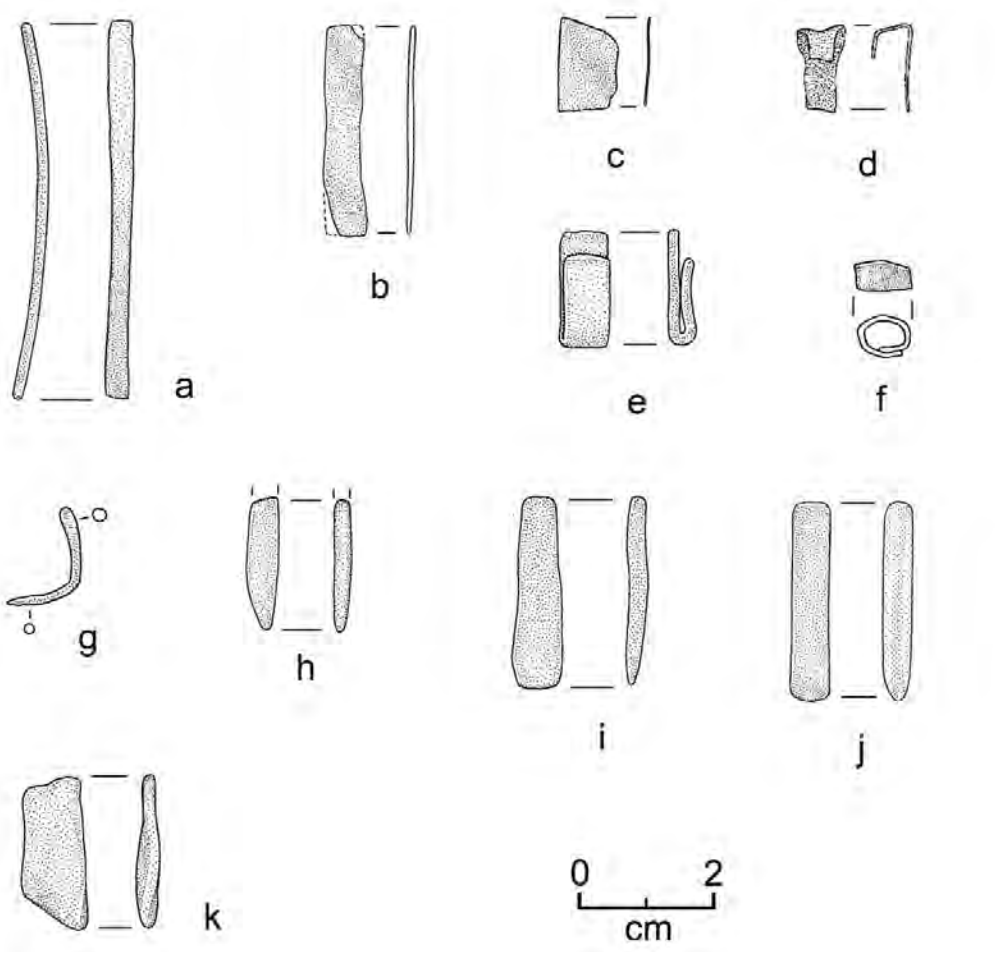


Figure 34 Copper objects from the Artisans Quadrangle: bands (a–e), ring (f), wire (g), flattened chunks (h–k).

BURIALS INSIDE THE ARTISANS QUADRANGLE

Six burials were found beneath floors inside the Artisans Quadrangle (Fig. 35). All were Late Phase.

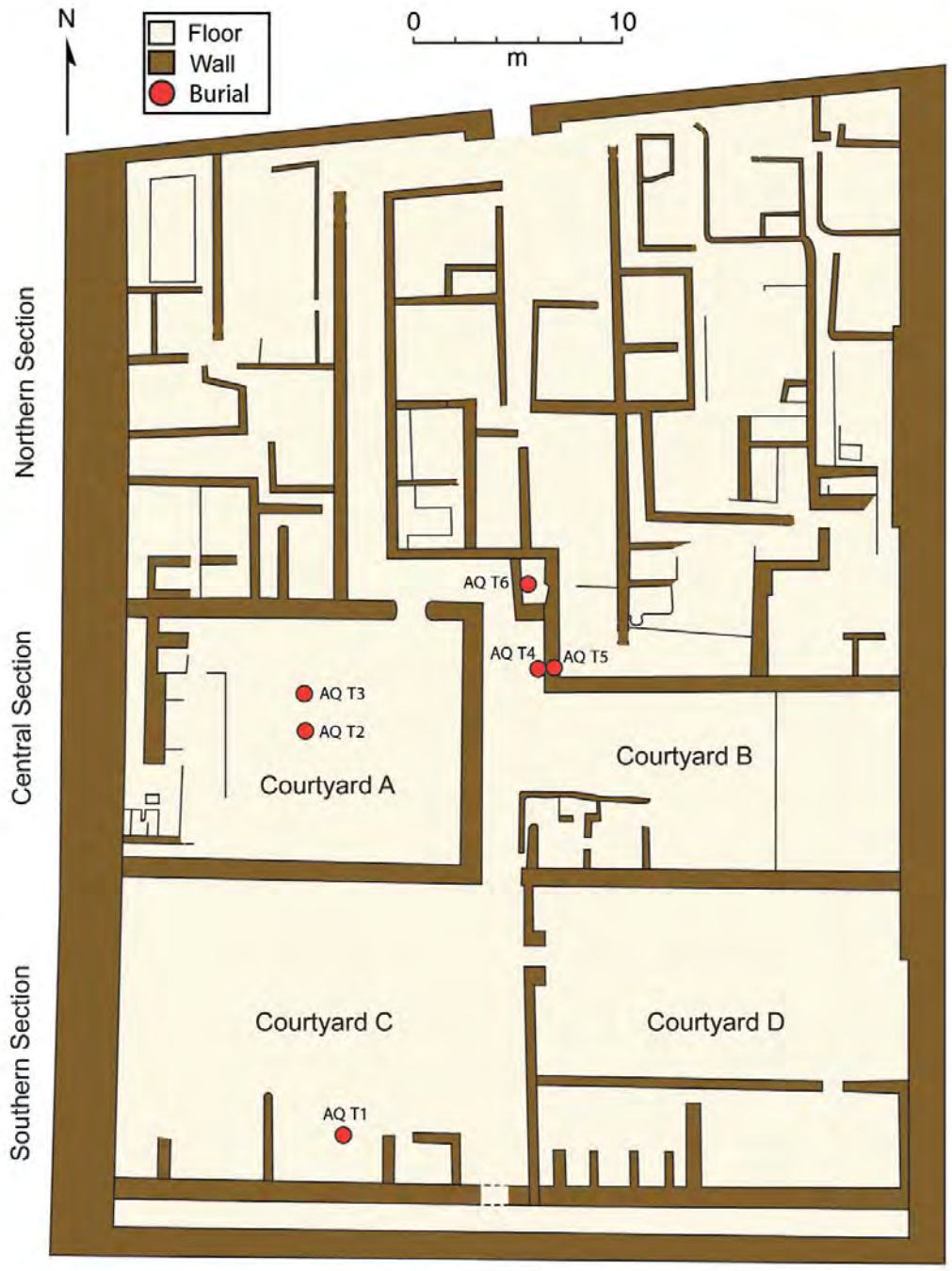


Figure 35 Plan of the Artisans Quadrangle showing the location of burials.

BURIAL AQ_T1

Period:

Chimu Late Phase

Tomb construction:

A circular burial pit was dug through the top of the platform on the south side of Courtyard C and through the floor below (Figs. 35–38). Once the contents of the burial were in place, the pit was filled with sand, and the top was covered with a compact, rusty-brown, fibrous material.

Individual:

Age: Adult

Sex: Indeterminate

Contents:

One ceramic vessel (Fig. 39)

109 *ofrendas* (miniature, crudely-made ceramic vessels)—98 were small, without lugs (Fig. 40 a–h), and 10 were large, with lugs (Fig. 40 i–k)

One *Spondylus* shell in the individual's right hand

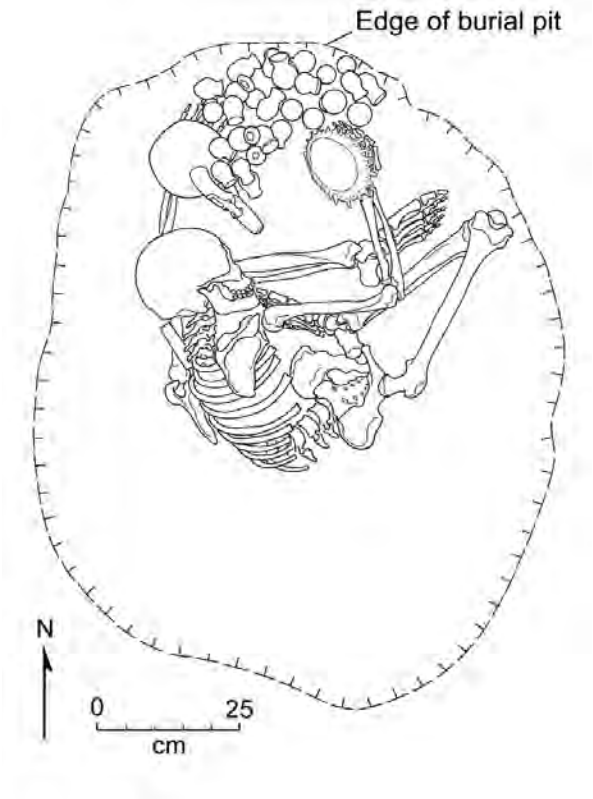


Figure 36 Plan of Burial AQ_T1.

Figure 37 Burial AQ_T1, looking northwest.

Figure 38 Burial AQ_T1, looking southeast.

Figure 39 Stirrup spout bottle from Burial AQ_T1. Height 24.5 cm.

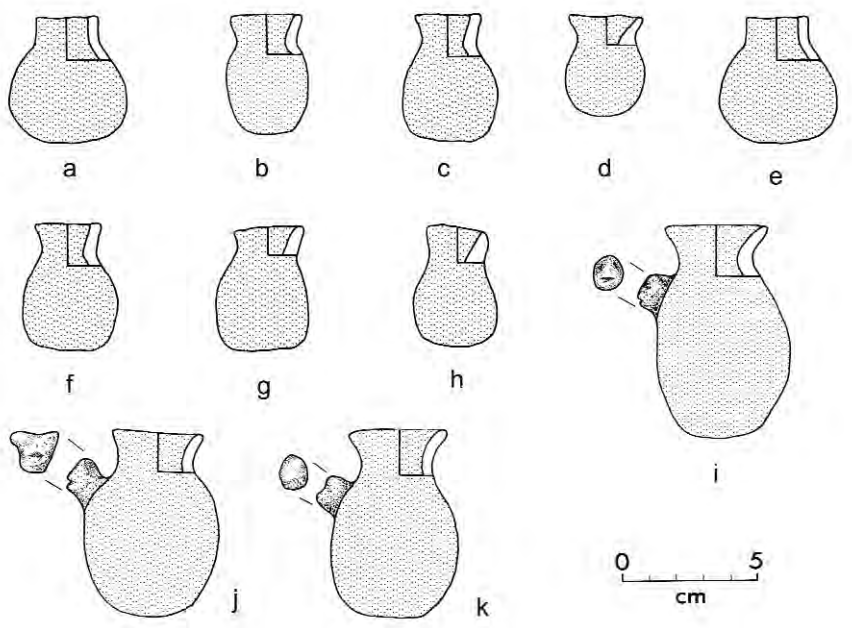


Figure 40 Ceramic ofrendas from Burial AQ T1.

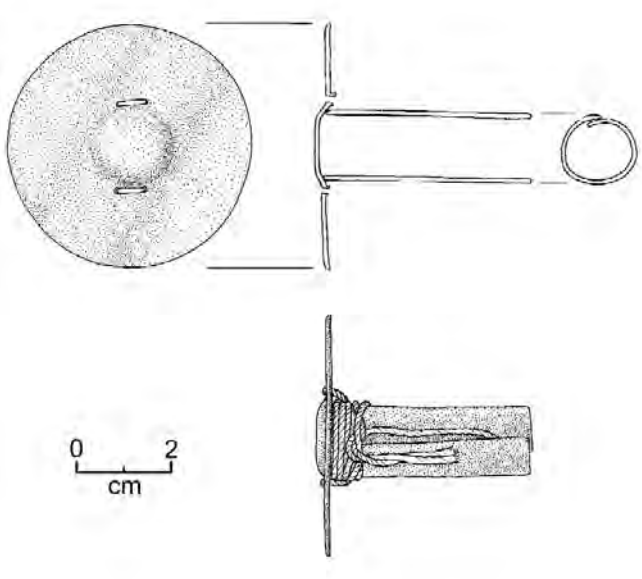


Figure 41 One of the pair of copper ear ornaments from Burial AQ T1.

A textile wrapping that enveloped the body (Tex 1, see Appendix 4)

A pair of copper ear ornaments (Fig. 41) wrapped in a textile (Tex 2, see Appendix 4); the frontlets of the ear ornaments were tied onto the stems with cotton string (S-spun, Z-plied)

Two fragments of a perforated copper band behind the individual's head (Fig. 42a, b)

A copper pin in the form of a feather beneath the individual's torso (Fig. 42c)

A copper needle beneath the individual's left shoulder (Fig. 43a), the eye of the needle formed as shown in Figure 33

A bundle, placed beneath the individual's head, consisting of a rolled textile (Tex 3, see Appendix 4) with shell beads and miniature copper tumis (Fig. 43b, c) sewn on it. Inside the bundle was a fragment of another textile (Tex 4, see

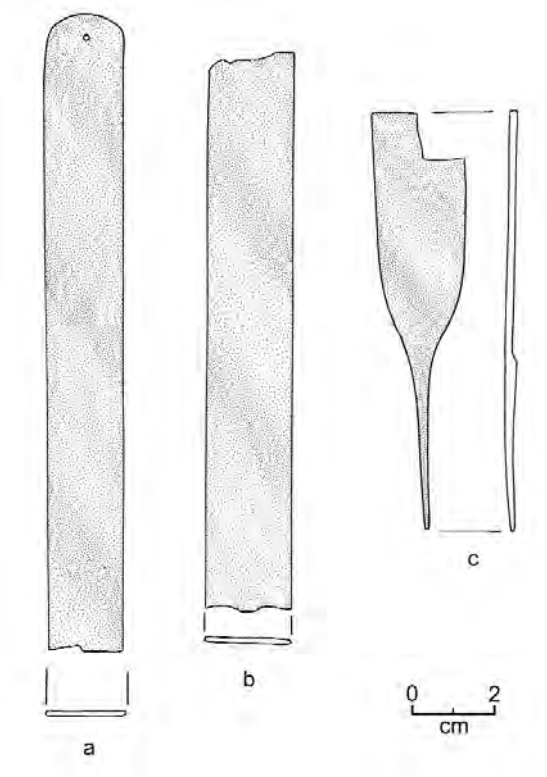


Figure 42 Copper objects from Burial AQ_T1: fragments of a band (a,b), pin (c).

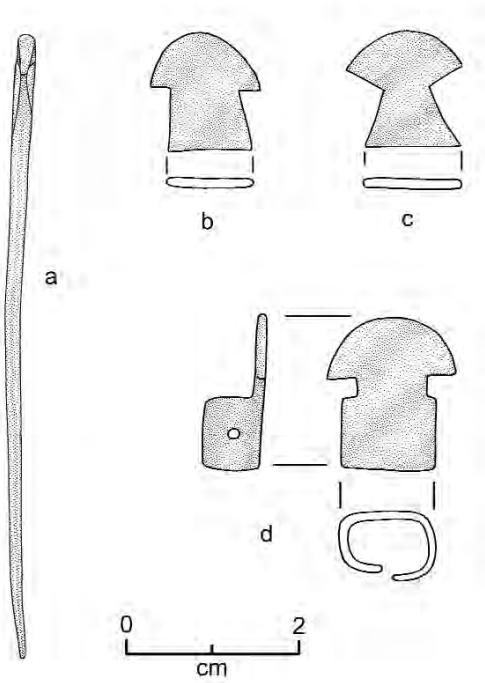


Figure 43 Copper objects from Burial AQ_T1: needle (a), miniature tumis (b,c), miniature headdress (d).

Appendix 4) with miniature copper headdresses (Fig. 43d) sewn on it.

Inside the bundle were various objects (Figs. 44, 45):

A miniature headdress (Figs. 44a, 45a)

A miniature litter (Figs. 44b, 45b)

A miniature double spout and bridge bottle (Figs. 44c, 45c)

A miniature pectoral (Figs. 44d, 45d)

Approximately 36 drilled espingo seeds

A string of shell beads

Adjacent to the bundle was a narrow band of textile (Tex 5, see Appendix 4), folded several times. It had miniature copper headdresses (like Fig. 43d) sewn on it.

Small quantities of two powdery pigments were found beneath the individual's chin: a red powder identified as a mixture of cinnabar and gypsum, and a gray powder identified as a clay compound with calcite and quartz.

Figure 44 Miniature copper objects from Burial AQ_T1: headdress (a), litter (b), double spout and bridge bottle (c), pectoral (d).

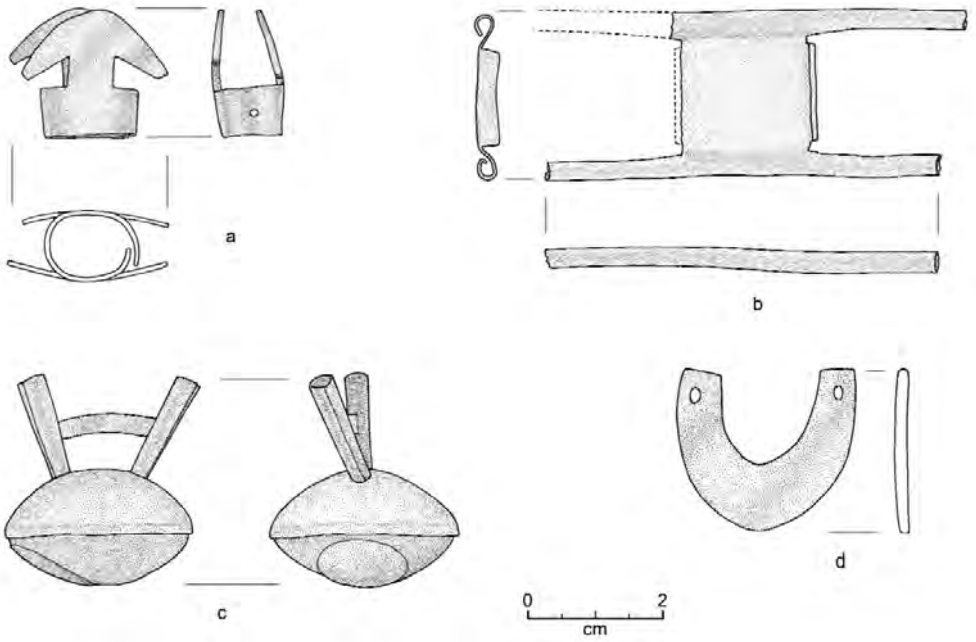


Figure 45 Miniature copper objects shown in Figure 44: headdress(a), litter (b), double spout and bridge bottle (c), pectoral (d).

BURIAL AQ T2

Period:

Probably Chimu Late Phase

Tomb construction:

A circular burial pit, approximately 90 centimeters in diameter and approximately 130 centimeters deep, was dug through the floor of Courtyard A (Fig. 35). After the contents of the burial pit were in place, the pit was filled with sand. The burial was badly disturbed; the skeletal material was so scattered and decomposed that neither the original position of the body nor the age and sex of the individual could be determined.

Individual:

Age: Indeterminate

Sex: Indeterminate

Contents:

38 ceramic ofrendas (e.g., Fig. 46)

Numerous miniature copper headdresses (Fig. 47a) and tumis (Fig. 47b)

Three ceramic vessels (Fig. 48)

Comments:

The ceramic vessels and miniature copper objects were broken and their pieces scattered within the burial pit.

The ceramic vessels are very similar to those found in AQ T3 (Fig. 52).

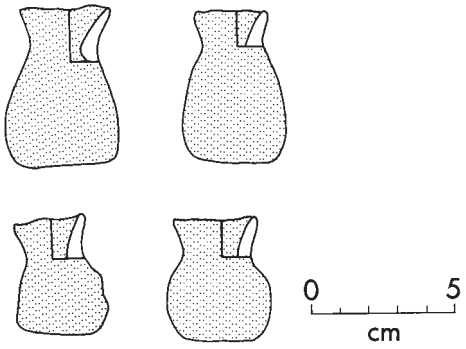


Figure 46 Ceramic ofrendas from Burial AQ T2.

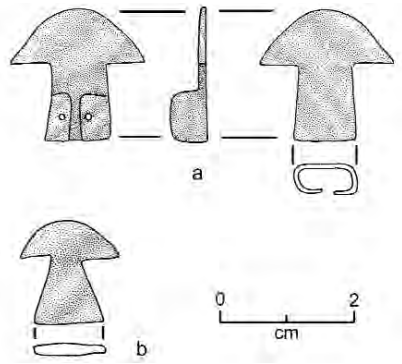


Figure 47 Copper objects from Burial AQ T2: miniature headdress (a), miniature tumi (b).

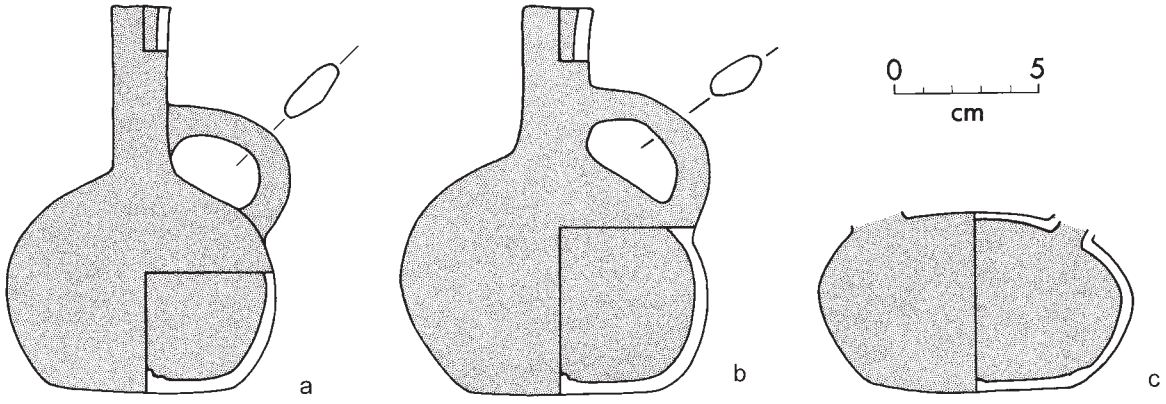


Figure 48 Ceramic vessels from Burial AQ T2: spout and handle bottles (a,b), double spout and bridge bottle (c).

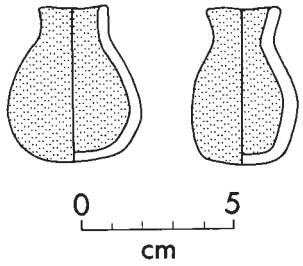


Figure 49 Ceramic ofrendas from Burial AQ_T3.

BURIAL AQ_T3

Period:

Probably Chimu Late Phase

Tomb construction:

A circular burial pit, approximately 85 centimeters in diameter and approximately 125 centimeters deep, was dug through the floor of Courtyard A (Fig. 35). After the contents of the burial pit were in place, the pit was filled with sand. The burial was badly disturbed. The skeletal material was so scattered and decomposed that we could not determine either the original position of the body or the age and sex of the individual.

Individual:

Age: Indeterminate

Sex: Indeterminate

Contents:

43 ceramic ofrendas (e.g., Fig. 49)

Five ceramic vessels (Figs. 50, 52)

Six *Spondylus* shells

Numerous miniature copper tumis (Fig. 51a) and headdresses (Fig. 51b, c)

Comments:

The ceramic vessels and miniature copper objects were broken and their pieces scattered within the burial pit.

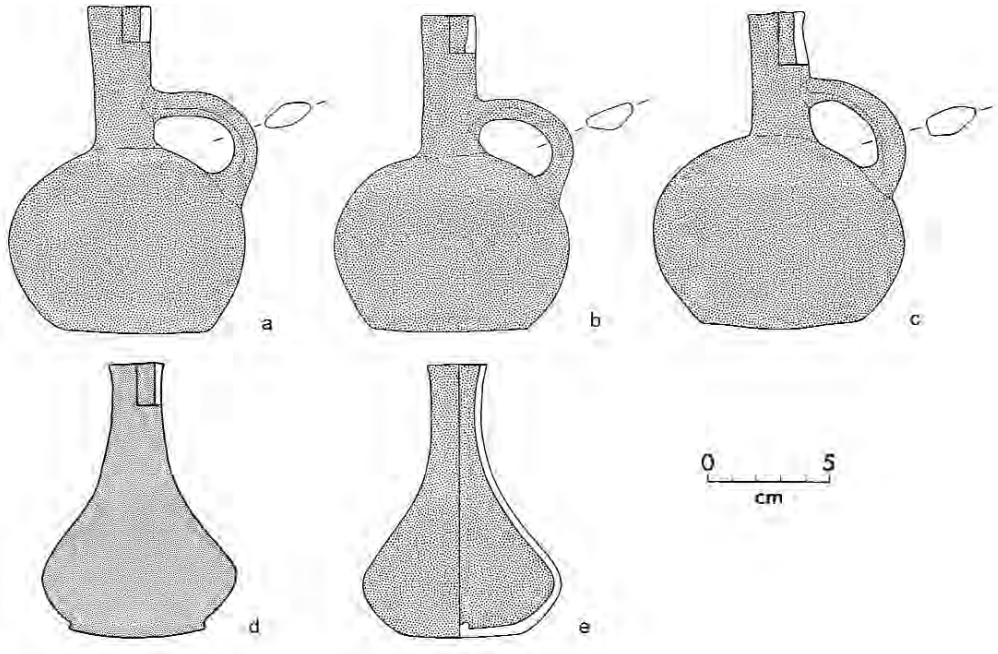


Figure 50 Ceramic vessels from Burial AQ_T3: spout and handle bottles (a–c), single spout bottles (d,e).

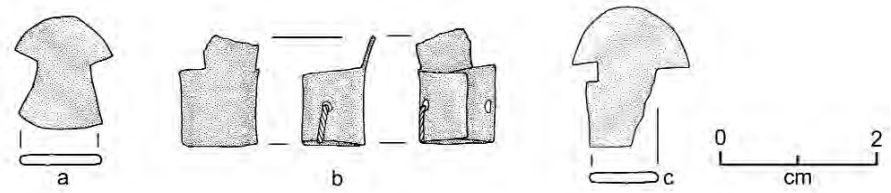


Figure 51 Copper objects from Burial AQ_T3: miniature tumi (a), miniature headdresses (b,c).

Figure 52 Ceramic vessels from AQ_T3.

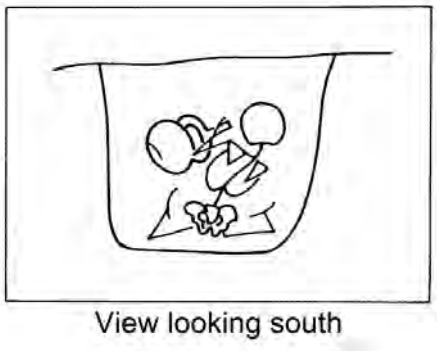
BURIAL AQ_T4

Period:

Chimu Late Phase

Tomb construction:

The burial pit was dug into a wall and through the floor of Courtyard C (Figs. 35, 53). After the contents of the burial pit were in place, the pit was filled with sand and chunks of



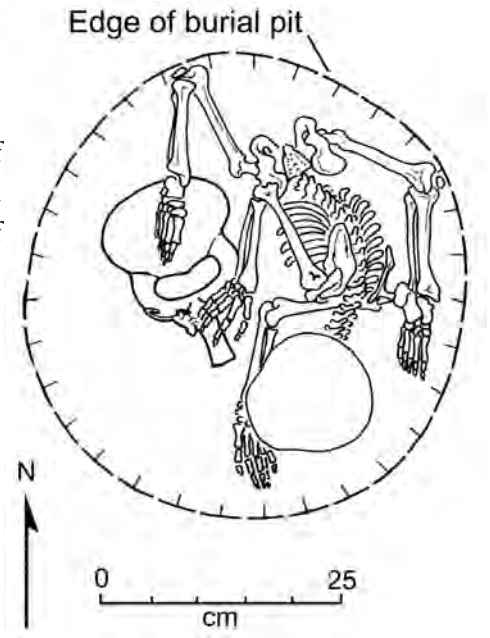


Figure 53 Profile and plan of Burial AQ_T4.

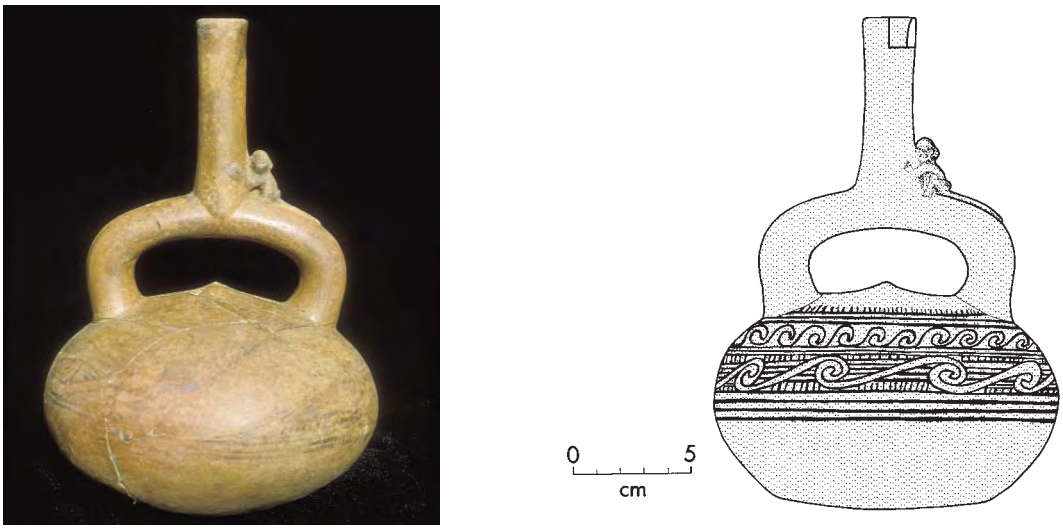


Figure 54 Stirrup spout bottle from Burial AQ_T4.

adobe. The top of the burial pit was then sealed with a cap of clay, approximately 4 centimeters thick.

Individual:

Age: 7–11 years

Sex: Indeterminate

Contents:

One ceramic vessel (Fig. 54)

Comments:

The skeletal material was very poorly preserved.

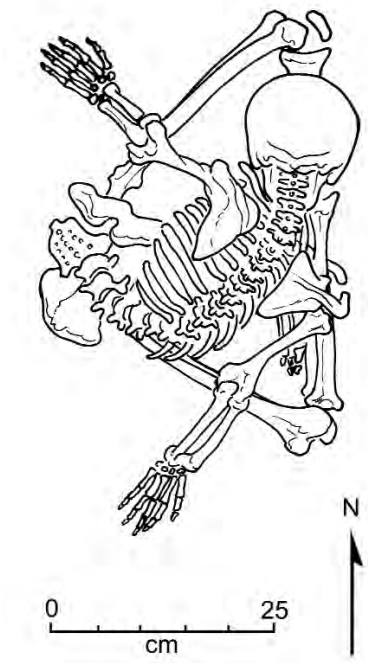


Figure 55 Plan of Burial AQ_T5.

BURIAL AQ_T5

Period:

Probably Chimu Late Phase

Tomb construction:

The burial pit was dug into a wall and through the floor near the northwest corner of Courtyard B (Figs. 35, 55). After the body was put in place, the pit was filled with sand and chunks of adobe. Then the top of the burial pit was sealed with a cap of clay, approximately 3 centimeters thick.

Individual:

Age: 12–15 years

Sex: Indeterminate

Contents:

None

BURIAL AQ_T6

Period:

Probably Chimu Late Phase

Tomb construction:

A circular burial pit was cut into a wall and through the floor near the entrance to Courtyard B (Figs. 35, 56). After the contents of the burial pit were in place, the pit was filled with sand and chunks of adobe, mixed with a few ceramic sherds, pieces of llama bone, chunks of charcoal, and small pieces of copper. The top of the burial pit was sealed with a cap of clay, approximately 3 centimeters thick.

Individual:

Age: 7–11 years

Sex: Indeterminate

Contents:

Shell beads, the greatest number at the back of the neck, and others near the mandible, strung in at least six strands that encircled the neck

Comments:

The skeletal remains were very poorly preserved.

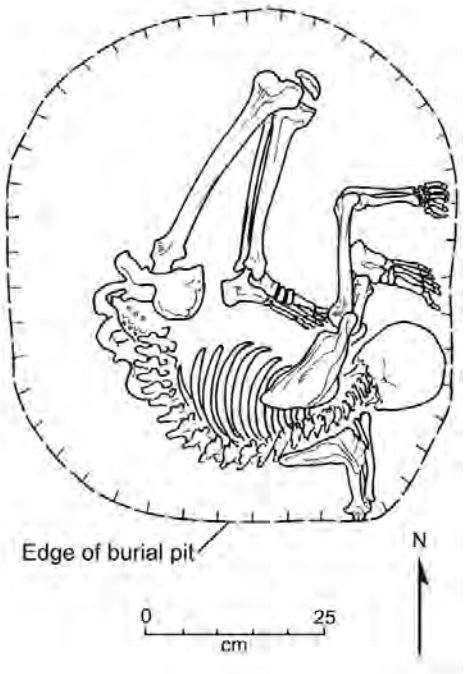


Figure 56 Plan of Burial AQ_T6.

TEMPORAL RELATIONSHIP OF THE BURIALS

The burials found in the Artisans Quadrangle appear to date to the Chimu Late Phase. Since three of the burial pits (AQ_T4–AQ_T6) were partially cut into previously constructed walls, the burials probably occurred after the final abandonment of the quadrangle.

The stirrup spout bottles in Burials AQ_T1 and AQ_T4 (Figs. 39, 54) are attributable to the Chimu Late Phase. Burials AQ_T2 and AQ_T3 each contained several unusual ceramic vessels that cannot be attributed to any known phase (Figs. 48, 50, 52). However, the burials also contained miniature copper objects and ceramic ofrendas that are very similar to those found in Burial AQ_T1 and therefore may be contemporary with it. If so, they are attributable to the Chimu Late Phase. The remaining two burials, AQ_T5 and AQ_T6, had no associated objects that indicate their phase, but the skeletal remains share the flexed body position of those from Burials AQ_T1 and AQ_T4, and were located close to Burials AQ_T2–AQ_T4. Therefore, it is likely that Burials AQ_T5 and AQ_T6 are also Chimu Late Phase.

Huaca Gloria

Northeast of Huaca Mayor is a small mound, called Huaca Gloria, that has been extensively damaged by erosion and looting (Figs. 11, 57). The summit elevation of this mound is more than 9 meters. Excavations conducted at Huaca Gloria revealed various periods of occupation with a complex sequence of construction.

Figure 57 Huaca Gloria, looking northeast.

EARLY PHASE

Deep excavation units along the sides of Huaca Gloria revealed massive, well-built walls made with flat rectangular adobes, indicating Early Phase construction. Unfortunately, only fragmentary evidence of these walls is available, since they are beneath subsequent construction; exposing them would have necessitated removal and destruction of the later architecture. This prevented reconstructing either the form or function of the Early Phase architecture, or determining whether it was a walled structure or a solid pyramid.

Following the Early Phase, the area was inundated with windblown sand more than 1 meter deep in some areas, which may have caused a partial or complete abandonment of this part of the site. Then, during the Middle Phase, new construction began.

MIDDLE PHASE

The truncated pyramid of Huaca Gloria was built at this time—possibly encapsulating an earlier pyramid. It appears to have had a complex ramp leading up from its north side, possibly reaching the summit near its northwest corner (Fig. 58). The exact plan of this ramp could not be determined because of extensive rebuilding and subsequent erosion on the north side of the mound.

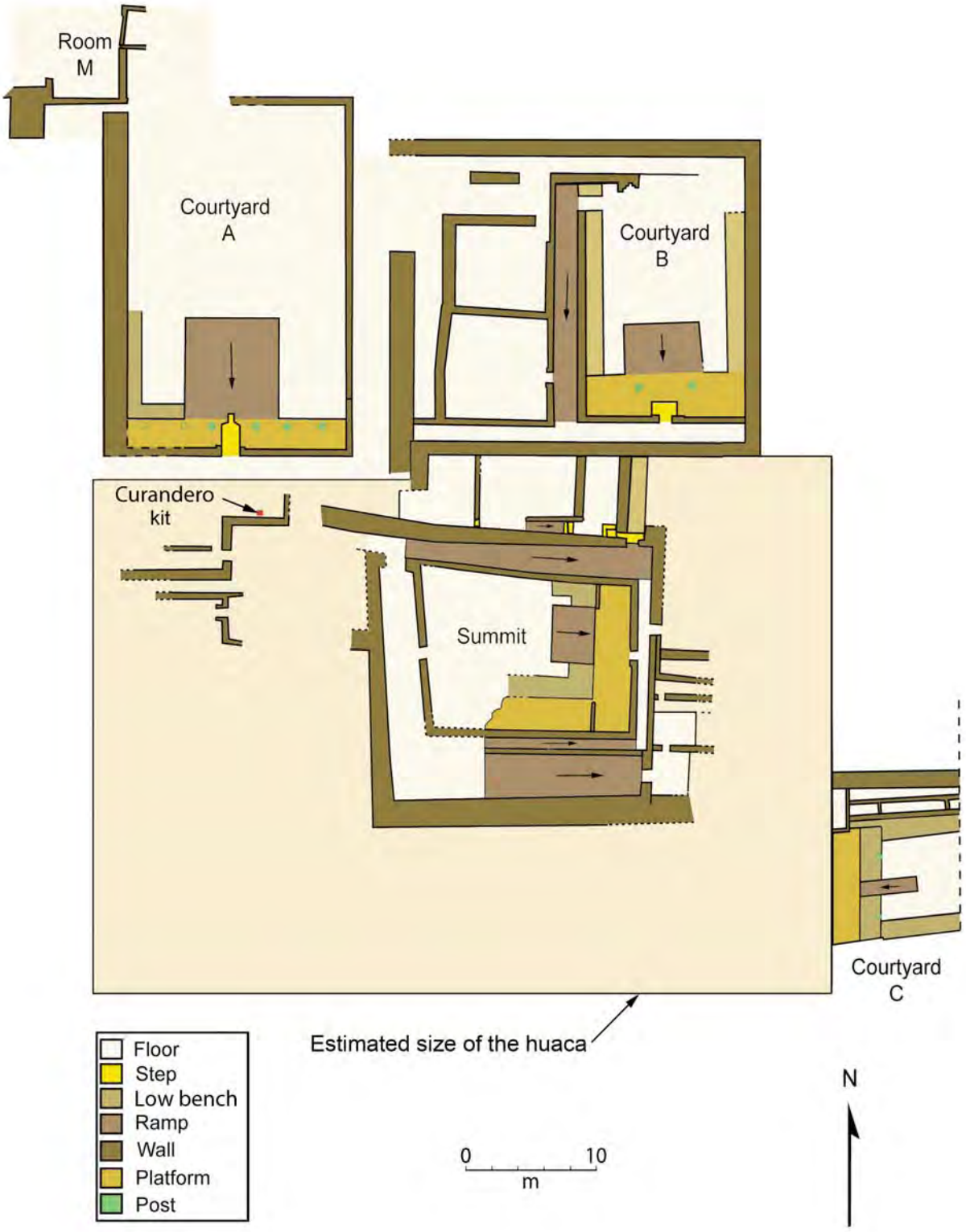


Figure 58 Plan of Huaca Gloria.

Summit

The summit of Huaca Gloria was extensively damaged by looters' pits and erosion, and only a few portions remained to suggest its original architectural form. It had clearly been remodeled on many occasions, and it was extremely difficult to recognize remnants pertaining to specific construction phases. Nevertheless, we could identify a narrow corridor with ramps that extended around all four sides of a large rectangular courtyard (Fig. 59). The courtyard could be entered from the corridor through a doorway at the center of its west wall. Inside the courtyard there was a platform along the east wall, accessed by a ramp leading up from the courtyard floor. From this platform another doorway near the center of the east wall led back into the surrounding corridor. A doorway on the east side of this corridor appears to have provided access to small rooms, some of which were connected by doorways. These rooms could also be accessed by a corridor along the south side of the summit. Unfortunately, the rooms along the east side of the summit have been almost entirely destroyed by erosion.

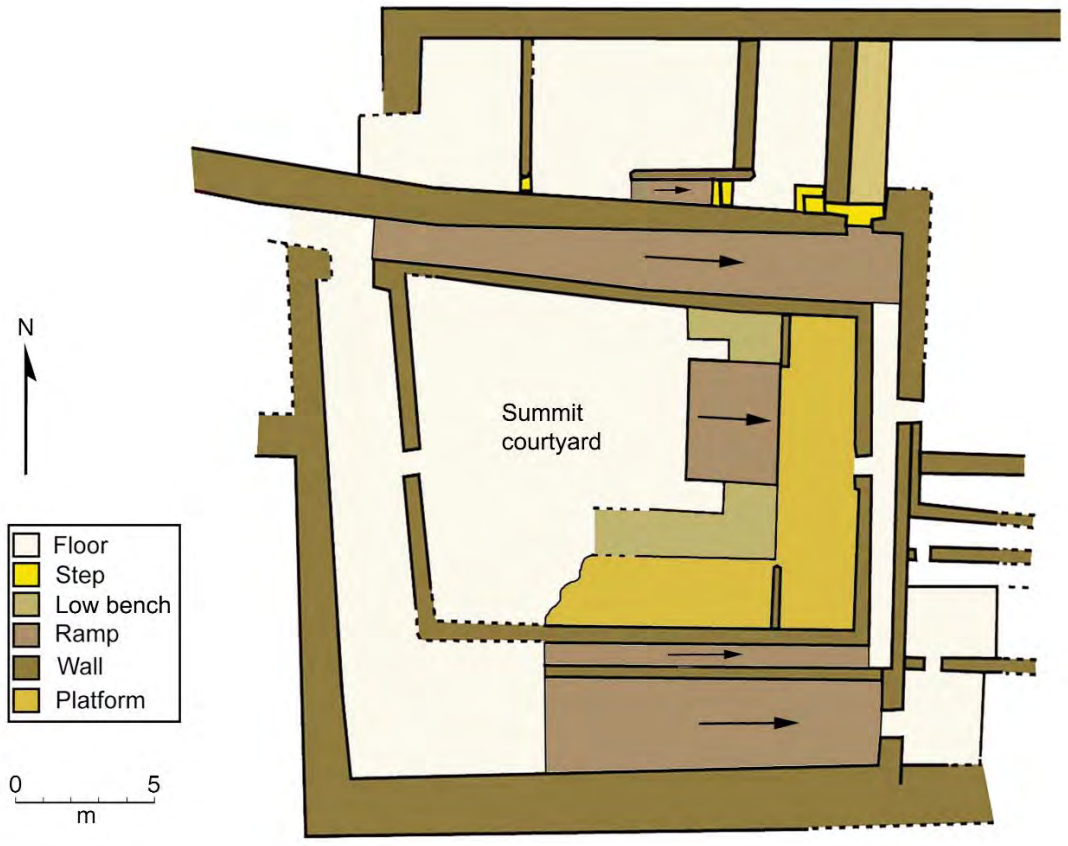


Figure 59 Plan of the summit of Huaca Gloria.

North Side

Two large rectangular courtyards were built on the north side of Huaca Gloria during the Middle Phase (Fig. 58). Each had a ramp, platform, and doorway arrangement similar to that of the courtyard at the summit, but oriented north-south instead of east-west. Courtyard A (Figs. 58, 60) was located at the northwest corner of Huaca Gloria, and Courtyard B (Figs. 58, 76) at the northeast corner. Between the two courtyards was a series of rooms and narrow corridors that probably provided access from one courtyard to the other and possibly to the summit of the huaca (Fig. 58).

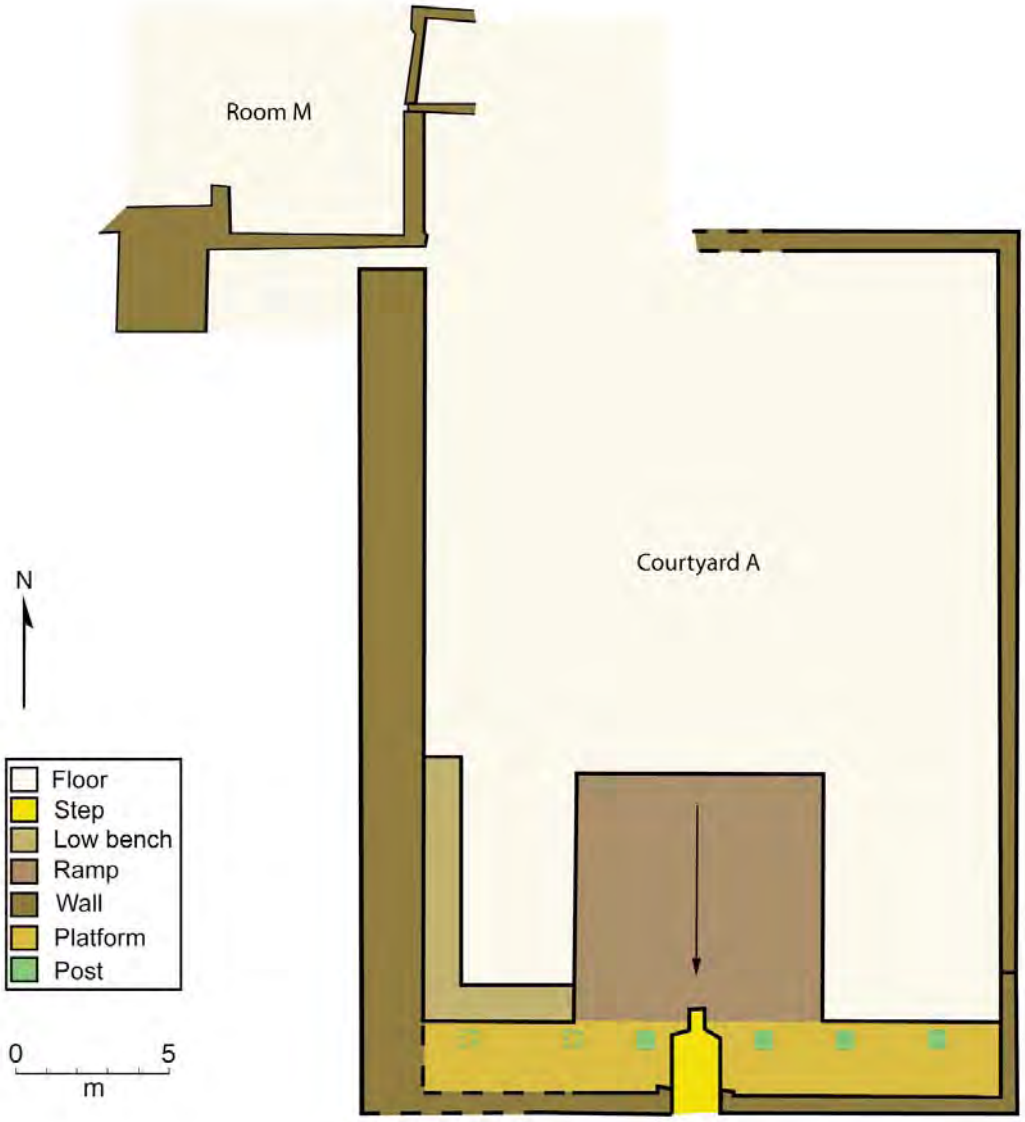


Figure 60 Plan of Courtyard A.

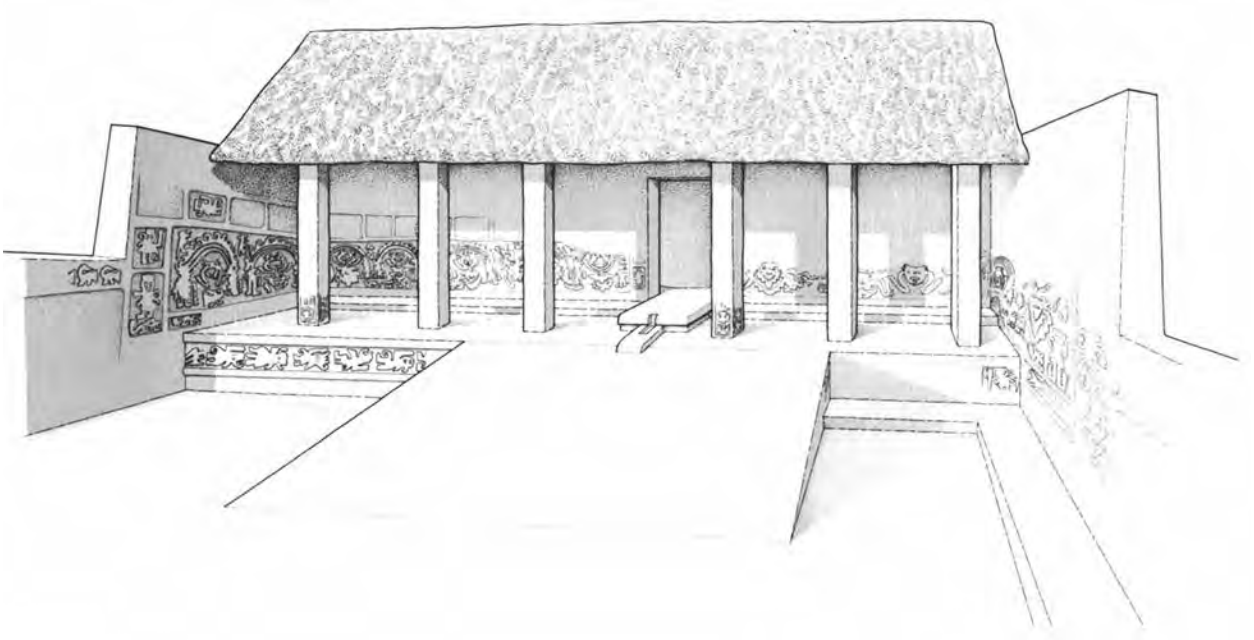


Figure 61 Courtyard A, looking south. The friezes shown are all that remained of the original decor.

Figure 62 The elaborate step at the top of the ramp.

Courtyard A

Courtyard A was originally constructed in the Middle Phase and later underwent a major renovation during the Late Phase. In the Middle Phase it had a central ramp at the southern end that led up to a raised platform (Figs. 60, 61). Located on the platform at the top of this ramp was an elaborate step with a trough that contained traces of crushed *Spondylus* shell (Figs. 61, 62). The step led through a doorway near the center of the courtyard's south wall.

Flanking the step were square columns that probably supported a sloping roof. Four columns were found, but it is almost certain that there were originally six; a large hole dug by looters appears to have destroyed two on the west side of the platform. Of the four columns that remained, two were undecorated, and two had friezes on each of their four sides (Fig. 61).

Each column originally consisted of a large hardwood post built into the platform. The posts were wrapped with rope, which provided purchase for a thick coating of clay. The posts and rope had decomposed, leaving only the delicate clay shell. The friezes that decorated two of the

columns were created on the exterior of this clay and then painted with yellow mineral pigment (Figs 63–66).[1]

Although the front of the platform and the sides of the ramp that led up to it had been decorated with friezes, only portions of them were preserved (Figs. 61, 71). The interior walls at the south end of the courtyard were also decorated with low-relief friezes (Figs. 61, 67–70), but most of them had been covered with a thick coat of clay during the Late Phase (see below). We carefully removed this clay so the friezes could be recorded. All of the frieze decorations were painted with goethite, the same yellow mineral pigment that was used on the columns.

By combining the information derived from our excavation of the courtyard with photographs taken in 1941 of parts of it that had been exposed by looters (see Appendix 6), we were able to make a plausible reconstruction of its original appearance (Fig. 61). It must have been very impressive—nearly all vertical surfaces at the south end were covered with elaborate friezes painted with yellow pigment.

Although the function of Courtyard A is not clear, the focus is clearly toward the south end. There the elevated platform, surrounded by the high, elaborately decorated walls, would have provided an ideal stage for the

Figure 63 The decorated column on the west side of the platform.

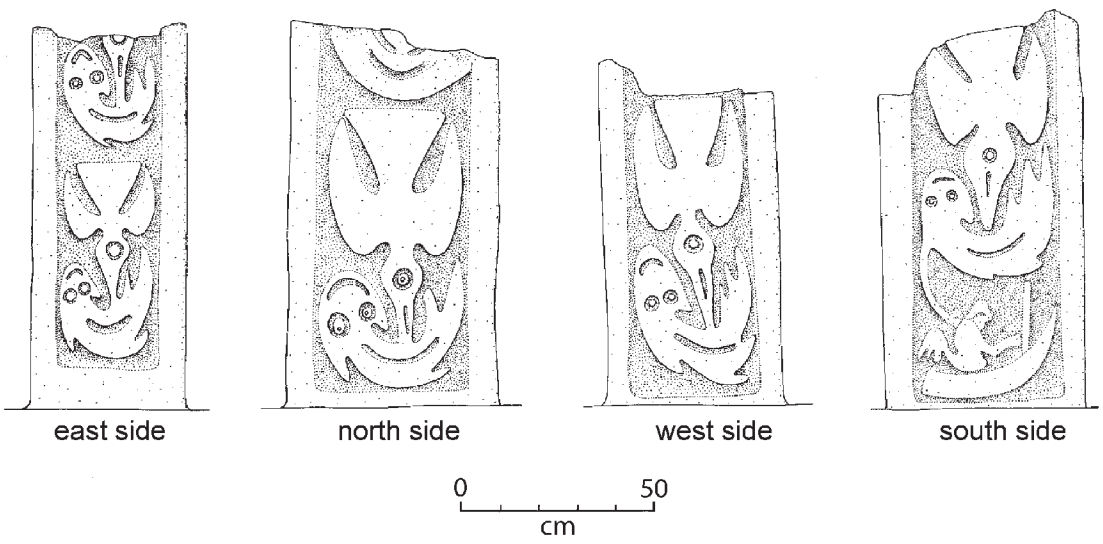


Figure 64 The four sides of the decorated column on the west side of the platform.

Figure 65 The decorated column on the east side of the platform.

performance of activities that could be witnessed by individuals in the courtyard below. The central ramp providing access to the elevated platform implies that some individuals moved between that area and the floor of the courtyard. In contrast, the elaborate step and trough in the center of the platform seem altogether unsuited for foot traffic. The overhanging lip around the top of the step and the carefully sculpted trough, which were constructed of adobe and mud plaster (Fig. 62), would have been destroyed if they had been repeatedly walked on. Perhaps the elaborate step served simply as a raised platform—an individual could have walked onto the step through the door at the back, remained on the platform during a ceremony, and exited through the same doorway.

Room M

A doorway near the northwest corner of Courtyard A led out through the west wall to a cluster of rooms that were badly eroded, with only lower portions of some of the walls still preserved (Fig. 60).

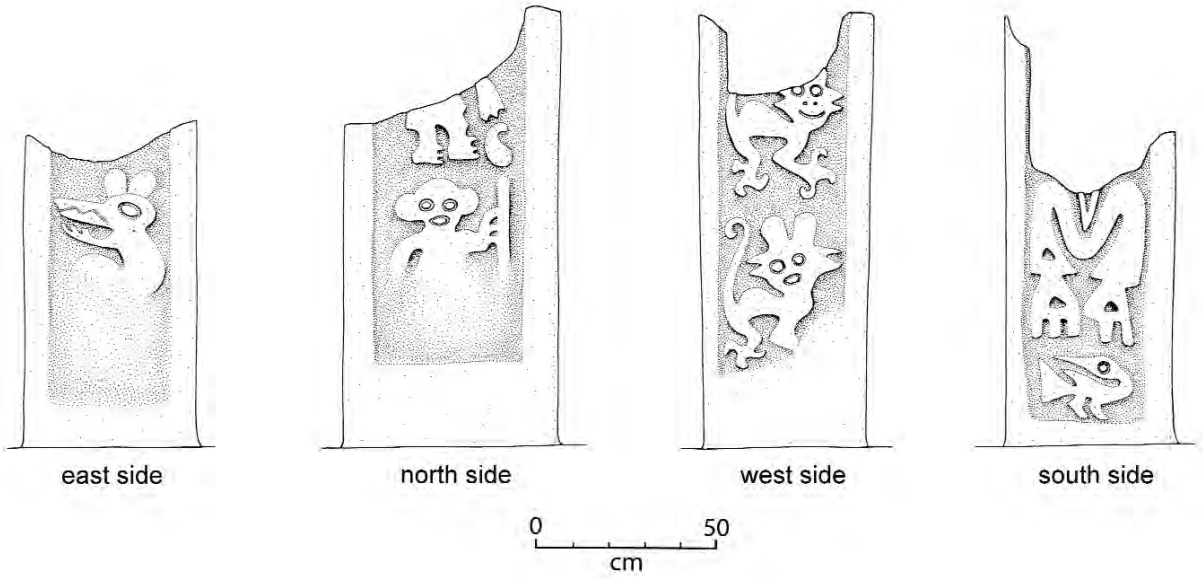


Figure 66 The four sides of the decorated column on the east side of the platform.

Figure 67 The southeast corner of Courtyard A.

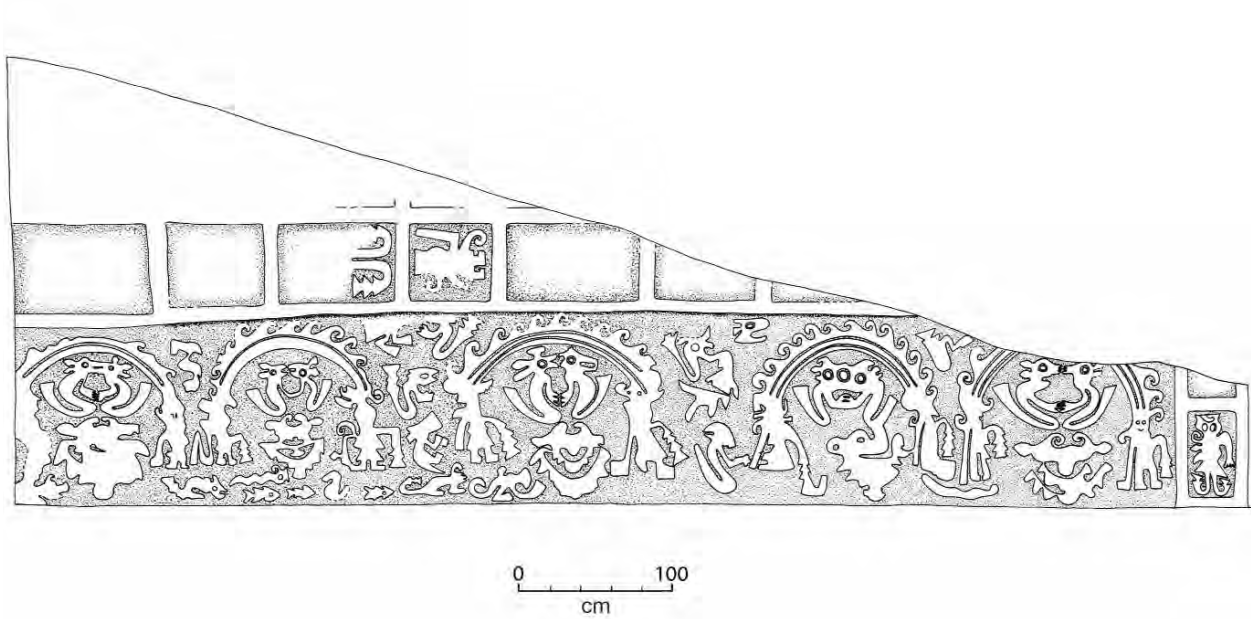


Figure 68 Frieze on the south wall of Courtyard A, east of the door.

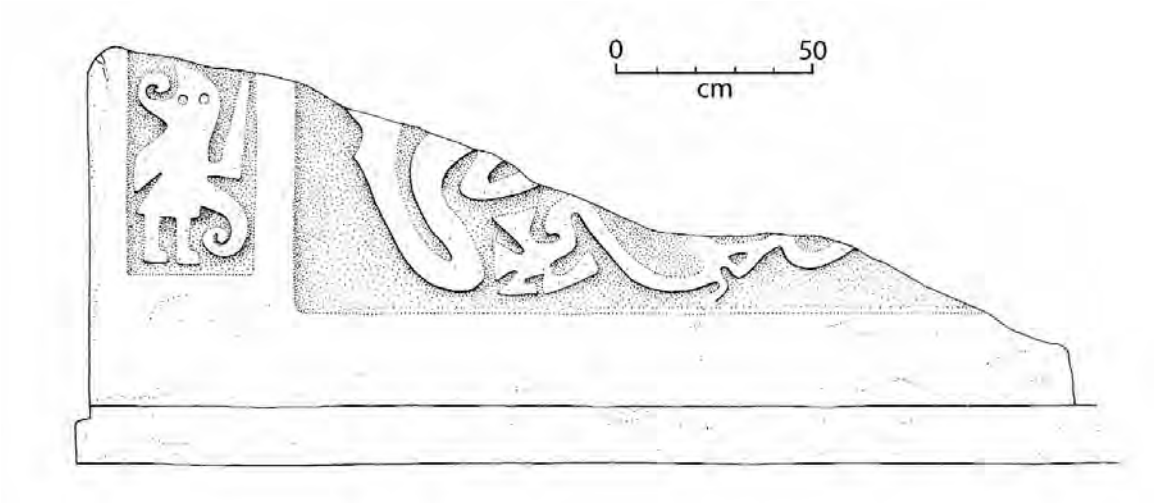


Figure 69 Frieze on the south wall of Courtyard A, west of the door.

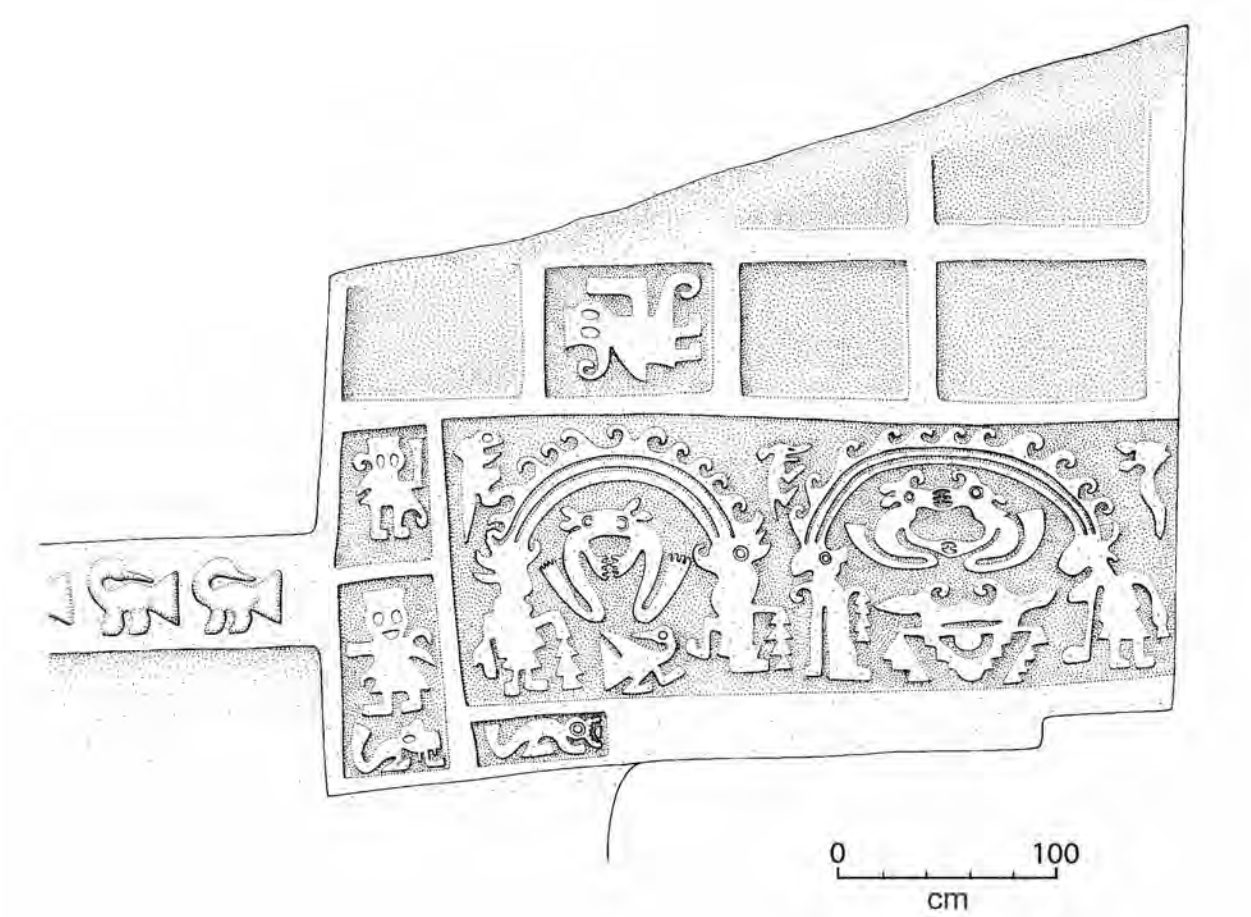


Figure 70 Frieze on the east wall of Courtyard A, north of the southeast corner.

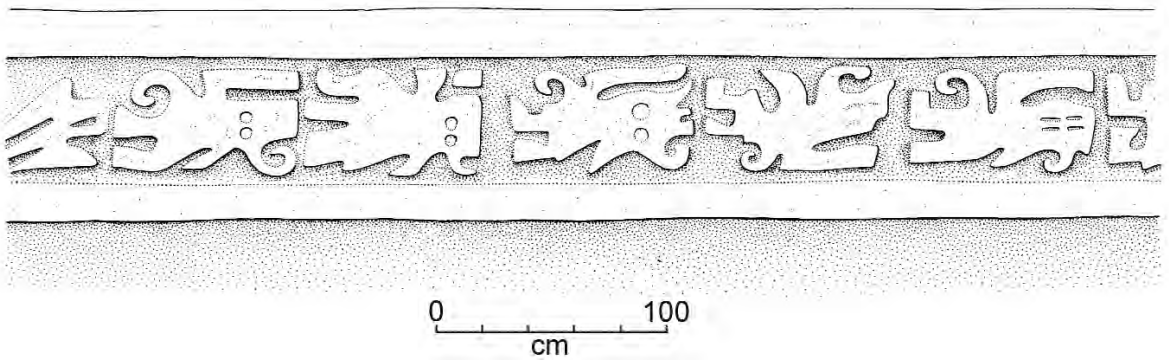


Figure 71 Frieze on the front of the platform in Courtyard A, east of the ramp.

Room M had a painted geometric design on its east wall (Fig. 72) and an elaborate frieze on its south wall (Figs. 73, 74). The elaborate frieze had traces of red and yellow pigment, better preserved on the lower horizontal row than on the upper horizontal row. The figures in the lower horizontal

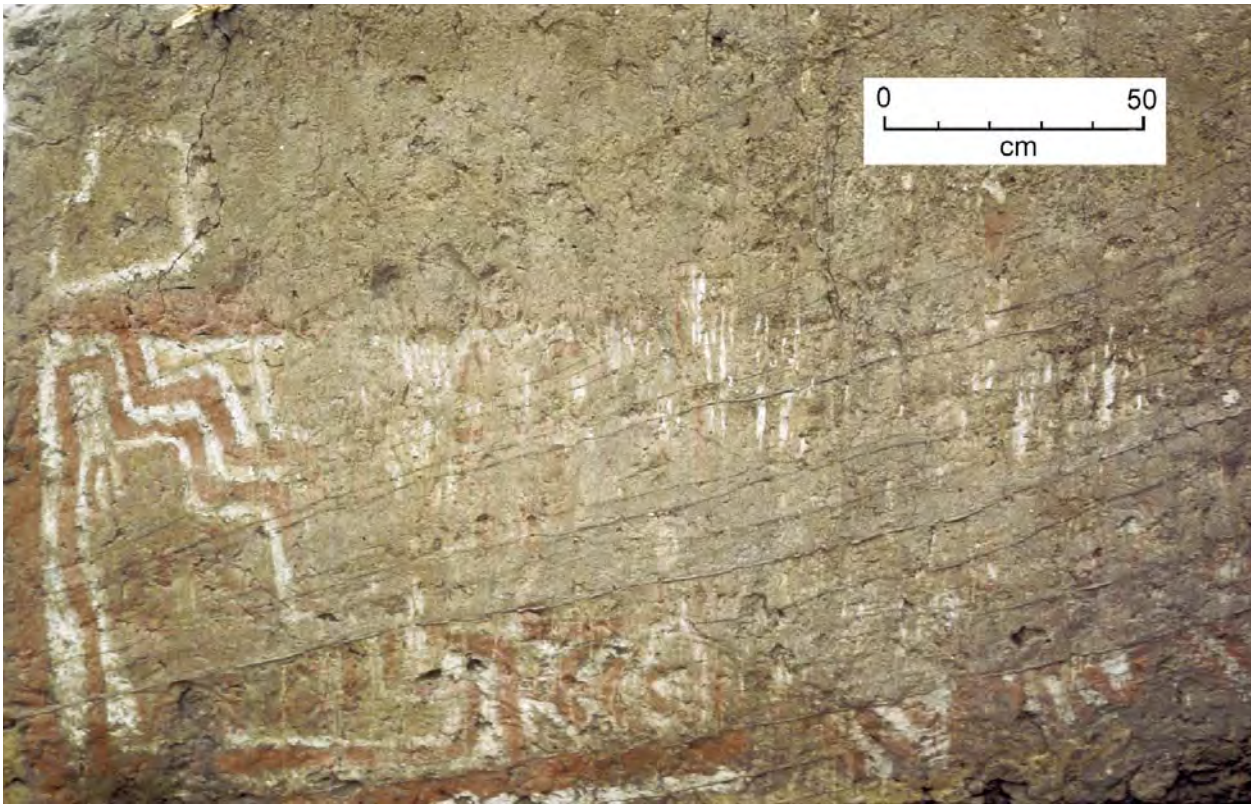


Figure 72 Painting on the east wall of Room M.

row are yellow with a red background. In the upper horizontal row, both the figures and the background appear to have been yellow.

Courtyard B

Courtyard B, at the northeast corner of Huaca Gloria, was similar to but smaller than Courtyard A (Fig. 58). Like Courtyard A, it was originally constructed during the Middle Phase and later underwent a major renovation

Figure 73 Portion of the frieze on the south wall of Room M.

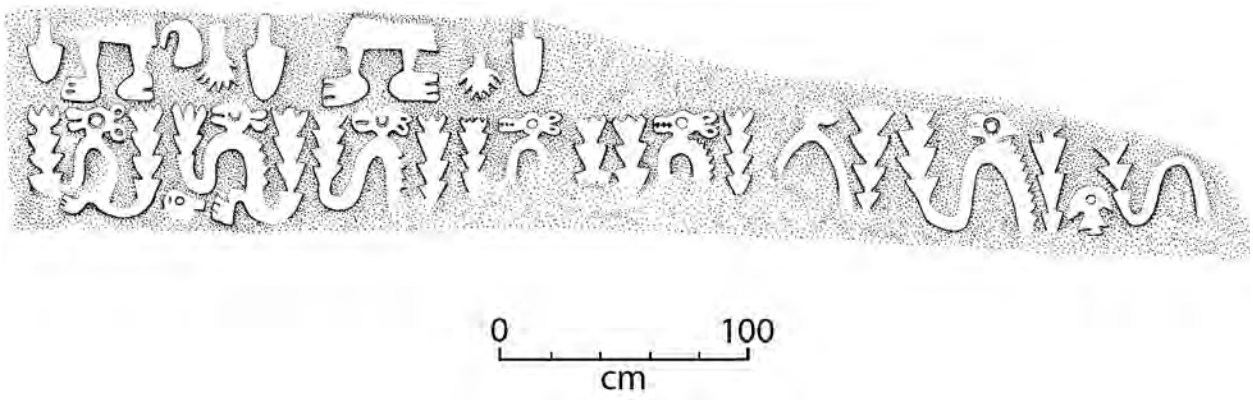


Figure 74 Frieze on the south wall of Room M.

during the Late Phase. Because much of the Middle Phase construction was covered by well-preserved Late Phase construction, we decided to leave the Late Phase construction largely intact and conduct only minimal excavation to reveal portions of the courtyard's Middle Phase appearance.

In the Middle Phase the courtyard had low benches along its east and west walls. Like Courtyard A, it had a central ramp that led up to a raised platform at the southern end (Figs. 75, 76). There may have been an elaborate step at the top of this ramp, like the one in Courtyard A (Fig. 62), but if so, it was covered by the Late Phase renovation. There was, however, a doorway flanked by frieze panels near the center of the courtyard's south wall (Fig. 77), which was similar to the doorway in the south wall of Courtyard A. As will be discussed below, the designs on these frieze panels suggest that they were either added or reworked during a Late Phase renovation of the courtyard.

On the raised platform (Fig. 76) there were at least two columns that probably supported a sloping roof like the one in Courtyard A (Fig. 61). If there were friezes on the walls of Courtyard B, they were covered with a thick coat of clay in the Late Phase. We did not cut into the wall surfaces to

Figure 75 Excavation of Courtyard B, looking west.

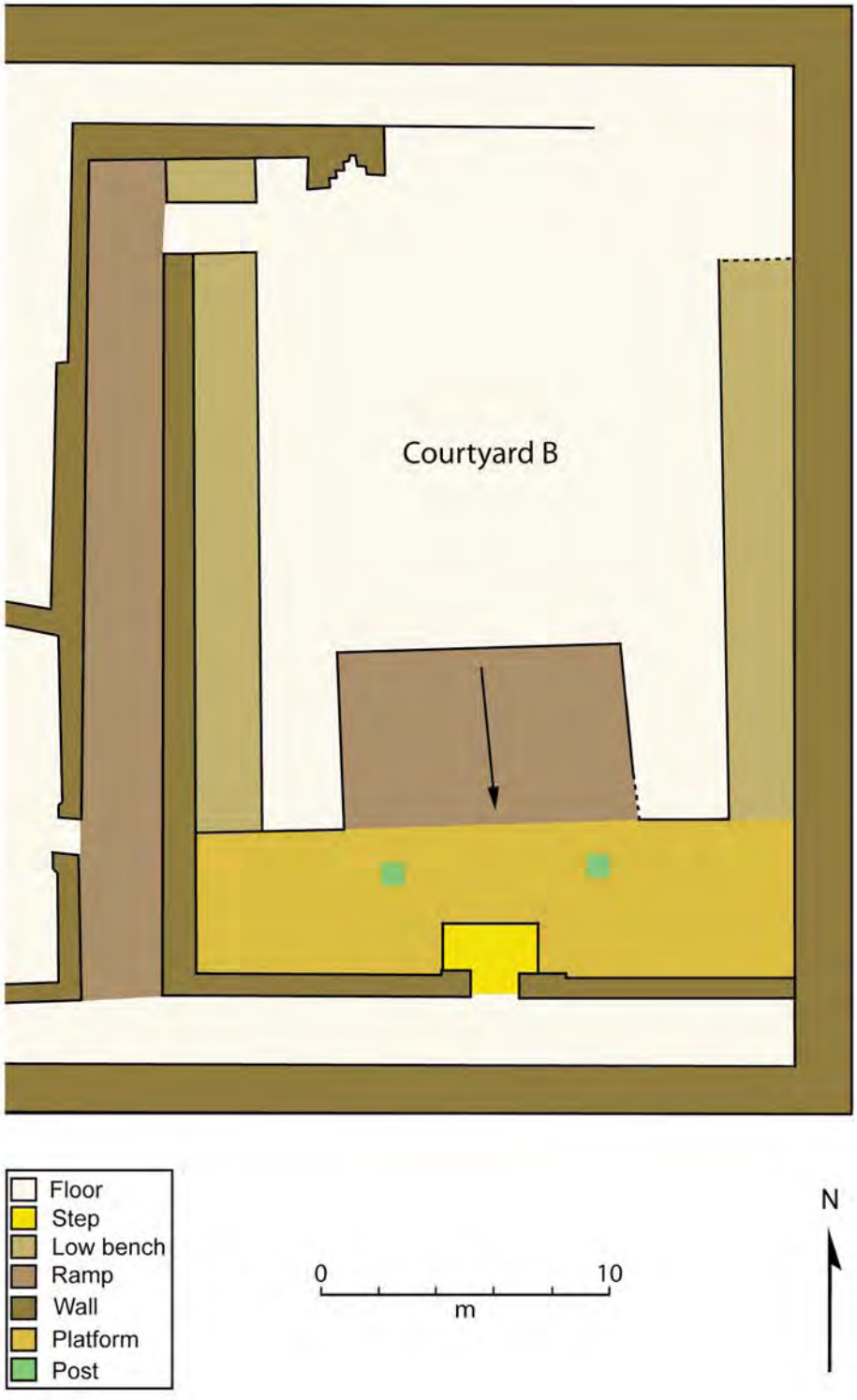


Figure 76 Plan of Courtyard B.

Figure 77 Doorway through the south wall of Courtyard B.

determine the presence or absence of friezes. There may also have been friezes along the front of the platform and sides of the ramp similar to those in Courtyard A during the Middle Phase, but these parts of the architecture were covered by the Late Phase renovation.

The doorway located in the center of the south wall of Courtyard A exited into a corridor with a ramp leading up to the west. It is assumed that this corridor continued along the north face of Huaca Gloria and finally reached the summit near the northwest corner of the mound. Another doorway near the northwest corner of the courtyard led into the area between Courtyard A and Courtyard B (Fig. 58).

West, South, and East Sides

There was some construction along the west side of Huaca Gloria during the Middle Phase, but it is difficult to reconstruct either its form or function. Later utilization of this architecture involved major destruction and alteration. Furthermore, the area has been heavily eroded and damaged by looters. Nevertheless, it is clear that massive walls in this area during the Middle Phase formed large rectangular rooms attached to the west side of the huaca. We found no indication of Middle Phase structures on the south and east sides of the huaca.

Most of the Middle Phase construction at Huaca Gloria was buried by windblown sand prior to the Late Phase. Whether this was the result of repeated periods of sand accumulation, or a single major inundation followed by a general abandonment of the area, could not be determined. The sand was certainly a substantial problem; the Late Phase construction at Huaca Gloria was often built on windblown sand that accumulated on top of the Middle Phase architecture.

LATE PHASE

Late Phase modification of nearly all portions of Huaca Gloria often involved substantial renovation of the Middle Phase architecture.

Summit

The truncated pyramid at Huaca Gloria was enlarged by adding a thick, solid mass of adobes along the south and east sides. This enlarged the summit, and additional small rooms were constructed along its periphery on these two sides. The central courtyard at the summit had been covered with windblown sand, and new construction was built above it. Unfortunately, heavy erosion and looting have almost completely destroyed this architecture, preventing accurate reconstruction of its form. Abundant habitation refuse on the room floors, however, indicates that the summit was occupied. Its ceremonial and religious function during the Middle Phase apparently shifted and, at least by the end of the Late Phase, it had become a place of secular domestic occupation.

North Side

Courtyard A

Courtyard A, at the northwest corner of Huaca Gloria, was extensively renovated during the Late Phase. The platform at the south end of the courtyard was enlarged by the construction of a wall across the courtyard about 1.5 meters in front of and 1 meter higher than the original platform (Fig. 78). Sand was used to fill the space between the new wall and the original platform and to make the new height of the platform level with the top of the new wall.

The increased height of the platform necessitated a similar increase in height of the ramp that provided access to it. Therefore, the sides of the ramp were raised, and sand was used to fill the volume between the elevated sides. The upper surface of the ramp and the platform were then capped with a new floor of thick clay.

Figure 78 Courtyard A, looking southwest. On the right is the top of the Middle Phase ramp, the floor of the Middle Phase platform, the elaborate step, and the friezed portions of the Middle Phase column and wall. On the left is the Late Phase platform floor, constructed on top of sand, and portions of the south and east walls, where the friezes were covered with a thick layer of clay.

The enlargement of the platform sealed off some of the elaborate friezes at the south end of the courtyard, including the frieze on the original front of the platform (Fig. 71), parts of the friezes on the side and back perimeter walls near the platform (Figs. 67–70), and the friezes on the lower part of the columns (Figs. 63–66). The elaborate step that led through the doorway near the center of the south wall (Fig. 62) was also sealed off by the new platform floor.

Once the platform and ramp were enlarged, the friezes that were still visible in the courtyard were covered with a thick layer of clay. This concealed the low-relief designs by filling in the recessed portions and created a fresh, smooth surface on the exposed walls, ramp, and columns. Portions of these new surfaces were then decorated with incised designs (Figs. 79, 80). The designs were particularly evident on the walls at the southeast corner of the courtyard, where they were buried by windblown sand (Fig. 80). The incised

Figure 79 Detail of incised designs on the south wall of Courtyard A.

designs were stylistically distinct from those of the friezes. They include geometric step motifs, bands of geometrically stylized fish and birds, a standing figure, and numerous irregular lines. There appears to have been very little planning or care taken in the creation of these designs, nor were they painted. Overall, one has the impression that the Late Phase renovation involved considerable effort to obscure the Middle Phase friezes by covering them with clay, but only minimal effort to create new, incised decorations.

Some low-relief framing panels were added along the upper part of the south and east walls and the north end of the east wall (Fig. 81). These panels originally framed low-relief images, but the images were so poorly preserved that the motifs could not be identified. Figure 81 suggests how Courtyard A would have appeared after the Late Phase renovations.

During the Late Phase renovations, apparently just before the new clay floor was constructed at the top of the platform, five ceramic ofrendas were placed in the sand at the southeast corner of the platform. These ofrendas are different from those in the Artisans Quadrangle burials (Figs. 40, 46). They are larger, with thicker walls,

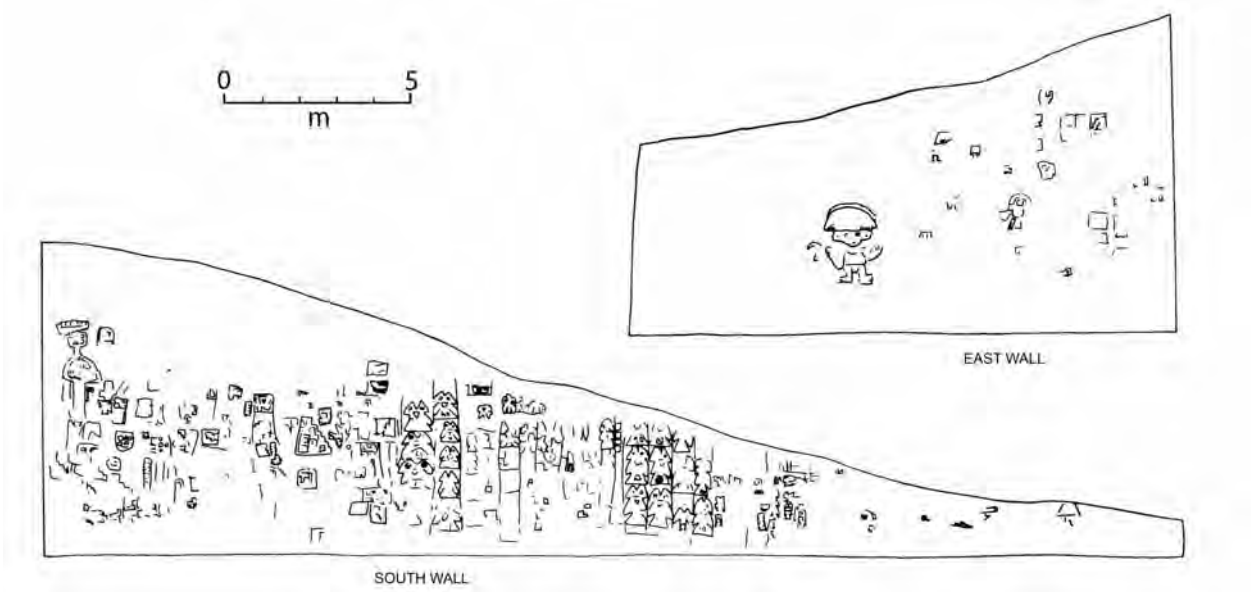


Figure 80 Incised designs on the east and south walls of Courtyard A.

and have distinctly squared rather than rounded lips (Fig. 82). They are also more oblate, with wide, low chambers and short necks, and were reduction fired. This may be a style of ceramic ofrenda that was not in use until the latter part of the Late Phase. If so, this would imply that the Late Phase renovation of Courtyard A occurred near the end of the site's occupation, perhaps during the Chimu-Inca Late Phase.

Courtyard B

Courtyard B, at the northeast corner of Huaca Gloria, was also renovated during the Late Phase in a manner similar to the renovation of Courtyard A. The platform at the south end of the courtyard was elevated, which necessitated raising its access ramp (Fig. 83). If there were friezes on the walls, ramp, and columns during the Middle Phase, like the ones in Courtyard A, they were either plastered over or covered by enlargements of the ramp and platform. The walls were then incised with designs much like those in Courtyard A (Fig. 84). The similarity of the incised designs in the two courtyards suggest that they are contemporary. The designs on the frieze panels flanking the doorway of Courtyard B (Figs. 77, 83) are very similar to the designs incised on its walls, suggesting that the frieze panels as well as the incised designs are Late Phase. Moreover, because similar designs occur on Chimu-Inca Late

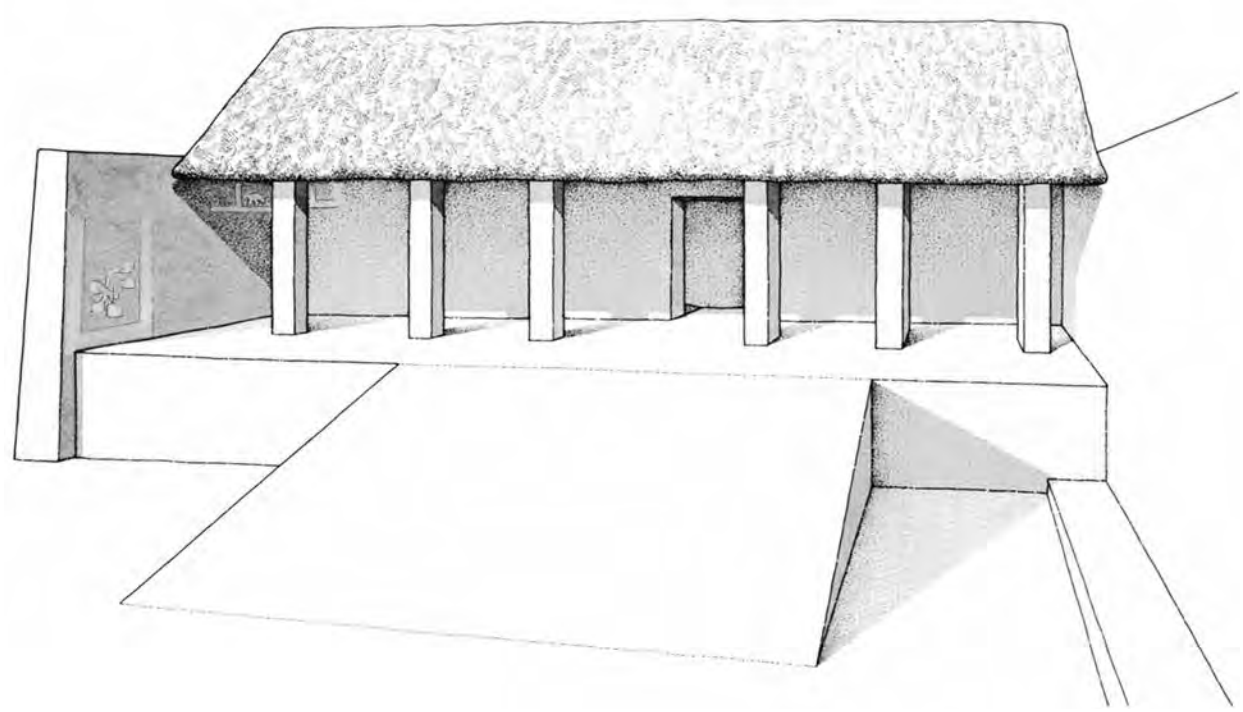


Figure 81 Isometric view of Courtyard A with the Late Phase renovations, looking south.

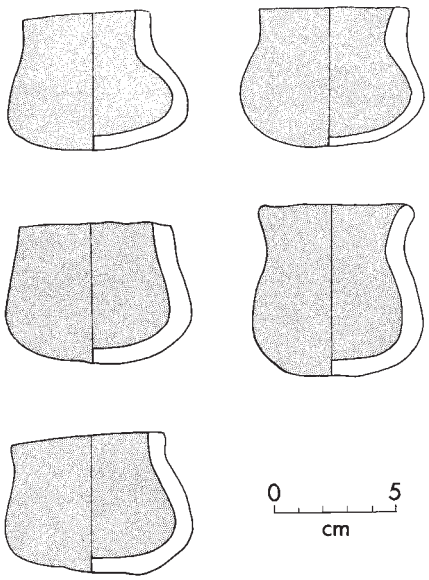


Figure 82 Late Phase ceramic ofrendas.

Phase ceramics in burials excavated on the east side of Huaca Gloria (Figs. 92, 97, 98), Courtyard B was probably renovated during the Chimu-Inca Late Phase occupation of Chotuna.[2]

Windblown sand that accumulated in Courtyard B at the end of the Middle Phase appears to have been leveled and a new clay floor constructed over it. At the northeast corner of the courtyard, six ceramic ofrendas, nearly identical to those found in Courtyard A (Fig. 82), had been placed in the sand immediately beneath the new clay floor, again suggesting that the Late Phase renovations of Courtyard A and Courtyard B were contemporary.

Most of the rooms and corridors between Courtyards A and B were re-floored during the Late Phase, and some changes appear to have been made in the size of the rooms and placement of doorways.

Figure 83 Cleaning the top of the Late Phase ramp, platform floor, and incised wall at the south end of Courtyard B. The top of the Middle Phase ramp can be see at the lower left.

East Side

Courtyard C

Courtyard C is located on the east side of Huaca Gloria, near its southeast corner (Fig. 58). It appears to have been built during the Late Phase and consists of a rectangular courtyard, oriented east-west, with a central ramp leading up to a raised platform on the courtyard's west side (Figs. 85, 86). The platform apparently had a roof supported by two posts located along the platform's east side and beams that were supported at one end by holes dug into the east face of the huaca.

Figure 84 Detail of incised designs on the south wall of Courtyard B.

Figure 85 Courtyard C, looking northwest. Note the two postholes along the front of the platform.

BURIALS AT HUACA GLORIA

Nine human burials and one llama burial were found in Courtyard C (Fig. 86). All appear to pertain to either the Chimu-Inca Late Phase or the Colonial Late Phase.

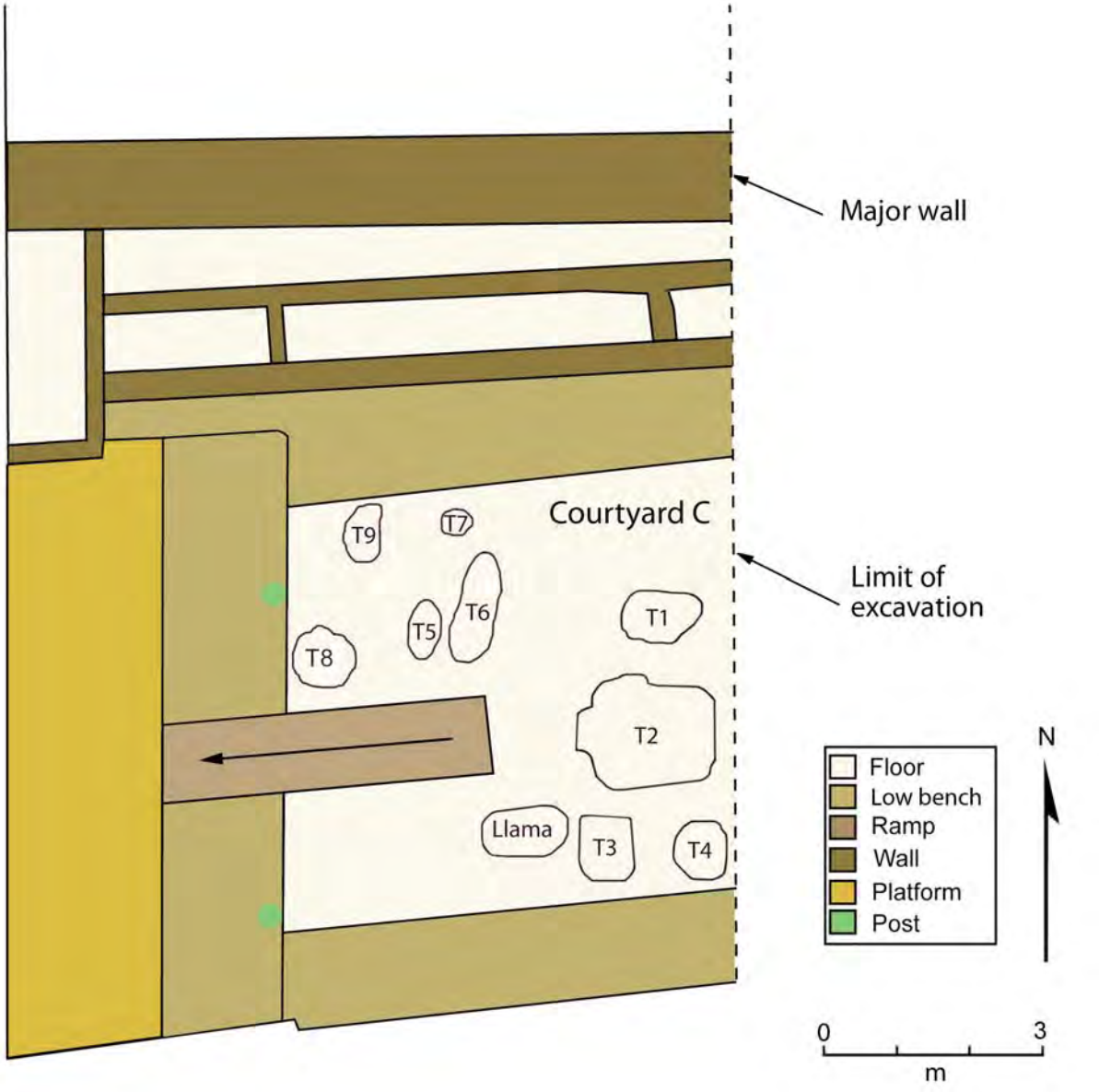


Figure 86 Plan of Courtyard C, showing the location of the burials and llama offering. Numbers T1, T2, etc., refer to Burials A2 T1, A2 T2, etc.

BURIAL A2 T1

Period:

Probably Chimu-Inca Late Phase

Tomb construction:

Body lying in alluvial layers of fine clay, with sand and broken adobes above it (Fig. 87)

Individual:

Age: 25–35 years

Sex: Male

Contents:

One ceramic vessel (C1, Fig. 88)

One large sherd of a cooking olla (C2, Fig. 89)

Comments:

Portions of the skeleton were bleached white, suggesting that it was exposed to the sun for a period of time.

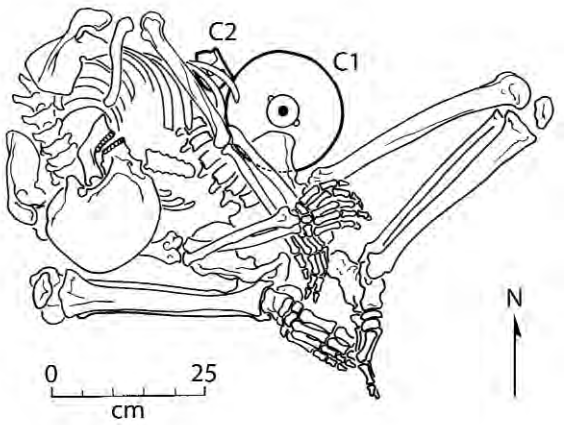


Figure 87 Plan of Burial A2 T1.

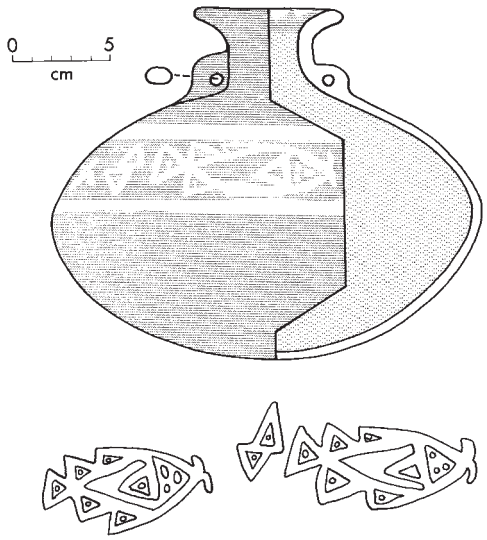


Figure 88 C1 from Burial A2 T1.

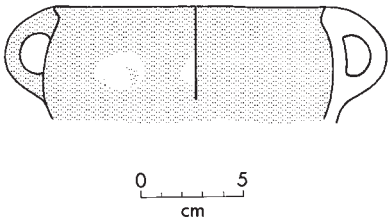


Figure 89 C2 from Burial A2 T1.

Burial A2 T1 was above Burials A2 T2–A2 T4 and may be somewhat later in time. Burials A2 T2–A2 T4 appear to pertain to the Chimu-Inca Late Phase. They share the following features:

1) The burial pits were circular or semirectangular, with concave floors.
2) The bodies were tightly flexed and resting on their lower backs.
3) The bodies were wrapped in loose-fitting textiles that extended up over the heads.
4) Clean windblown sand was used to fill beneath, around, and on top of the bodies.
5) The burial pits were filled with sand and broken adobes.
6) The burial pits were dug into the floor of Courtyard C and subsequently filled to floor level.

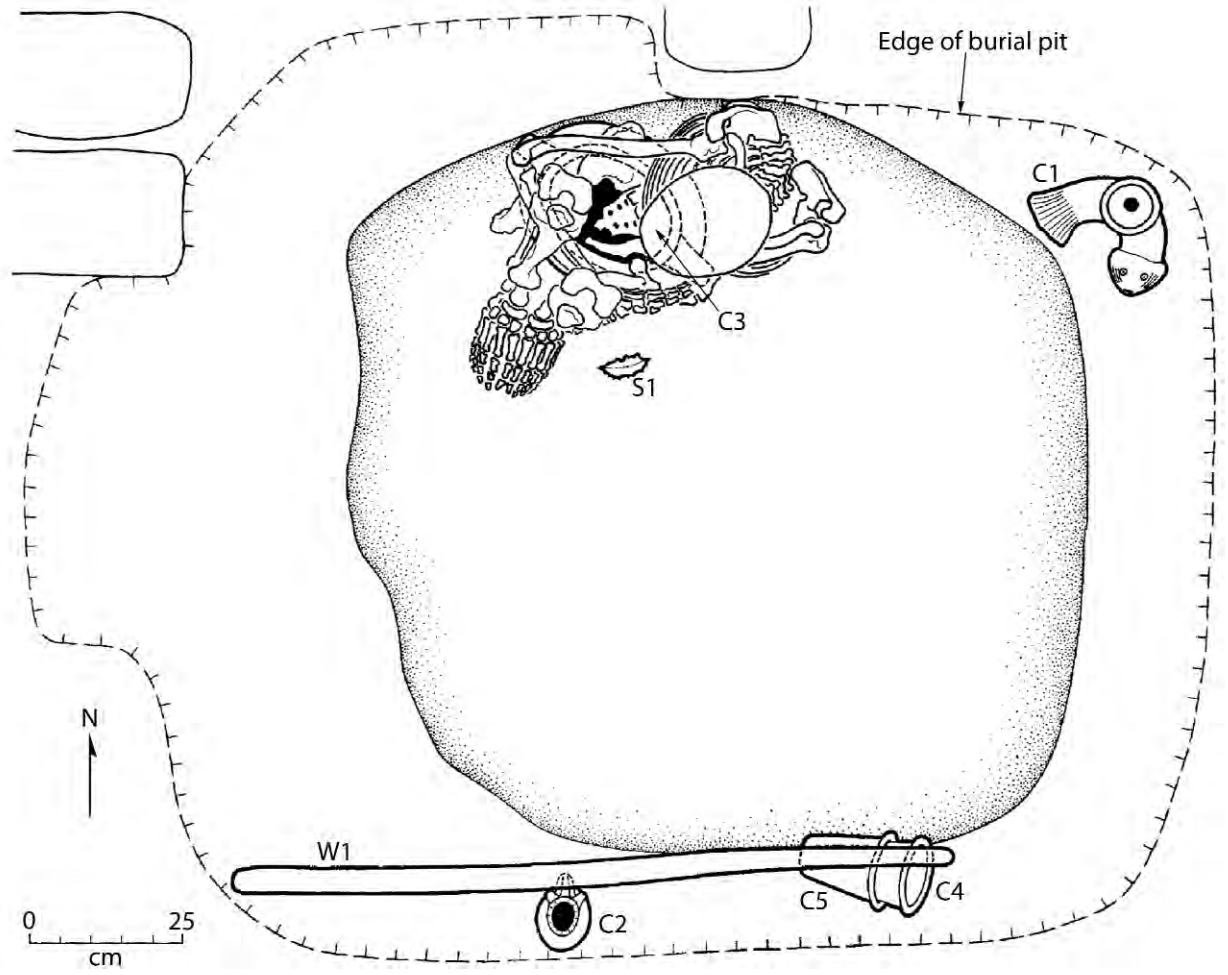


Figure 90 Plan of Burial A2 T2.

BURIAL A2 T2

Period:

Chimu-Inca Late Phase

Tomb construction:

Pit dug through the floor of Courtyard C and into hard fill consisting of decomposed adobes (Figs. 90, 91)

Individual:

Age: 50+ years

Sex: Male

Contents:

Five ceramic vessels (C1–C5, Figs. 90–98)

One complete *Spondylus* shell (S1)

Shell beads (see Appendix 5)

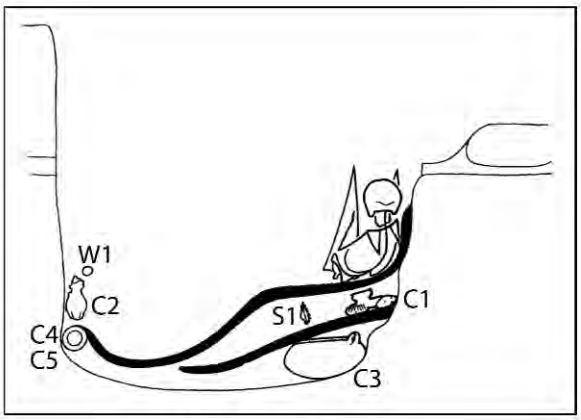


Figure 91 Profile of Burial A2 T2.

Figure 92 Ceramic keros (C4 and C5) in situ.

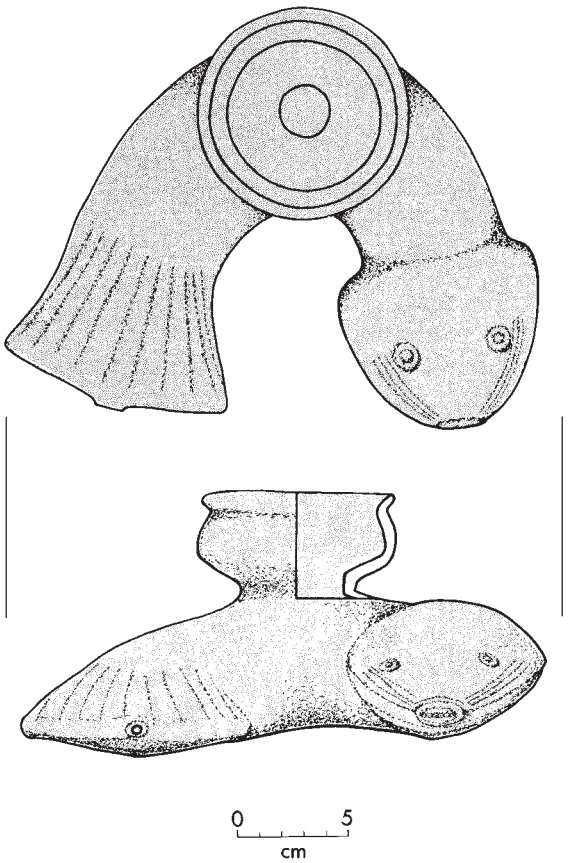


Figure 93 C1 from Burial A2 T2.

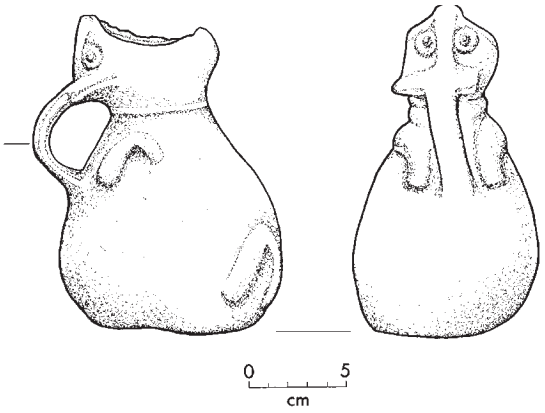


Figure 94 C2 from Burial A2 T2.

One wood staff (W1)
Bones of two guinea pigs (inside C3)
Several textiles and woven mats in two layers below the body (Tex 1, Tex 2, see Appendix 4)

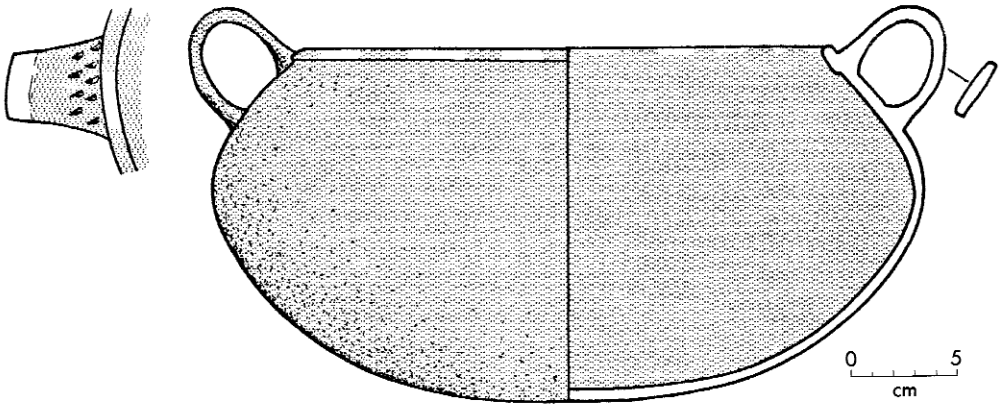


Figure 95 C3 from Burial A2 T2.

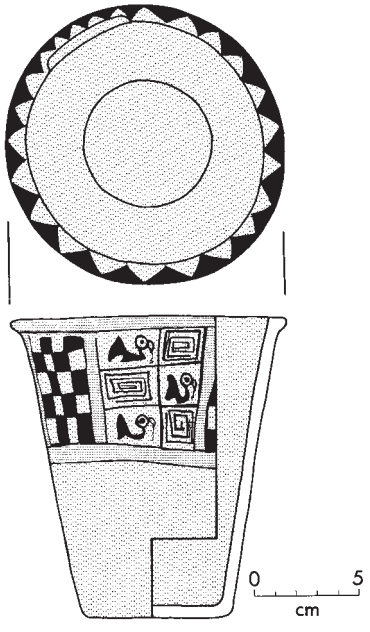


Figure 96 C4 from Burial A2 T2.

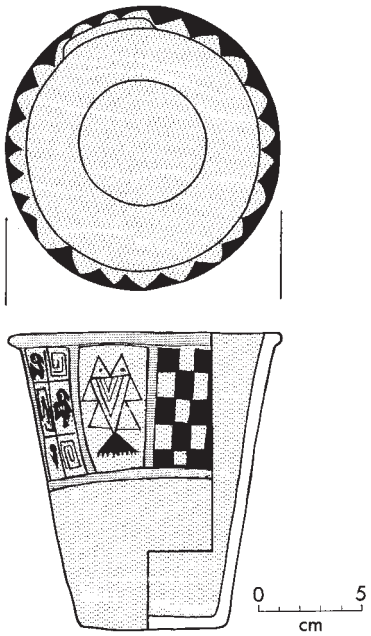


Figure 97 C5 from Burial A2 T2.

Figure 98 Ceramics from Burial A2 T2.

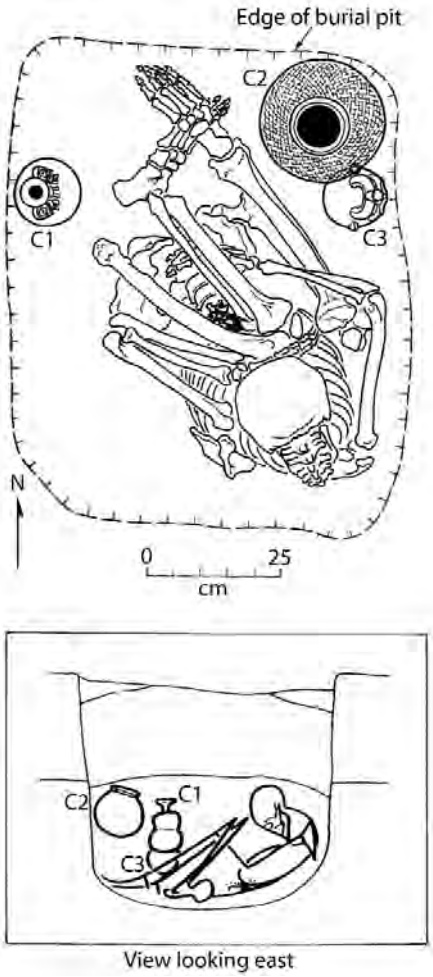


Figure 99 Plan and profile of Burial A2 T3.

BURIAL A2 T3

Period:

Chimu-Inca Late Phase

Tomb construction:

Pit dug through the floor of Courtyard C and into hard fill consisting of decomposed adobes (Fig. 99)

Individual:

Age: 25–35 years

Sex: Male

Contents:

Three ceramic vessels (C1–C3, Figs. 100–102, 106)

One copper lime spoon with a bird finial (Fig. 103)

Two pairs of copper tweezers (Fig. 104)

Three textile fragments (Tex 1–Tex 3, see Appendix 4)

Three fragmentary strands of shell beads (Fig. 105, see Appendix 5)

Comments:

The three metal objects (Figs. 103, 104) and the beads (Fig. 105) were found alongside the individual's right hip.

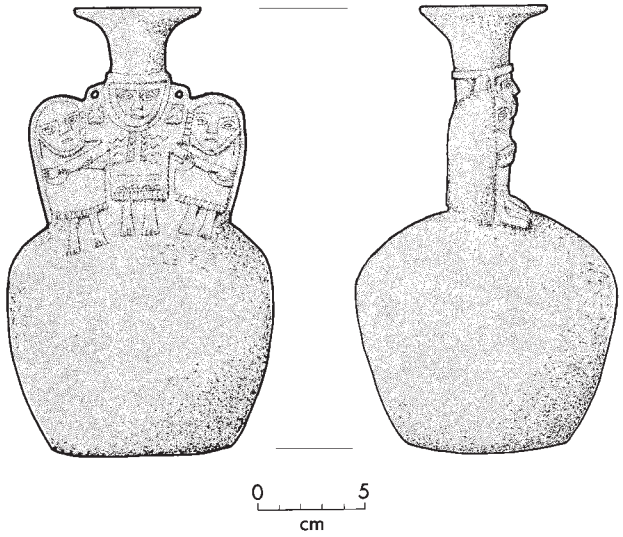


Figure 100 C1 from Burial A2 T3.

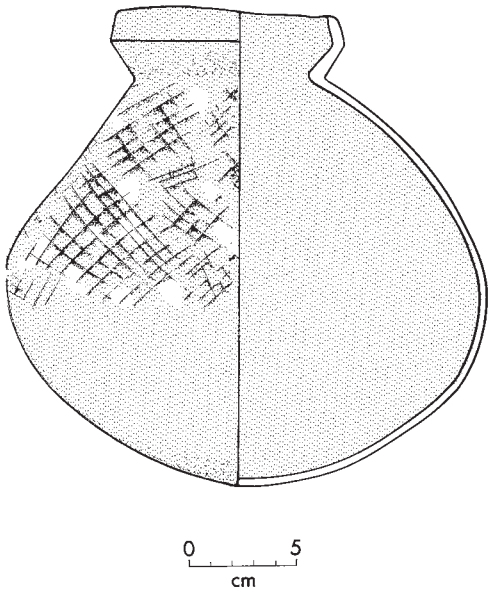


Figure 101 C2 from Burial A2 T3.

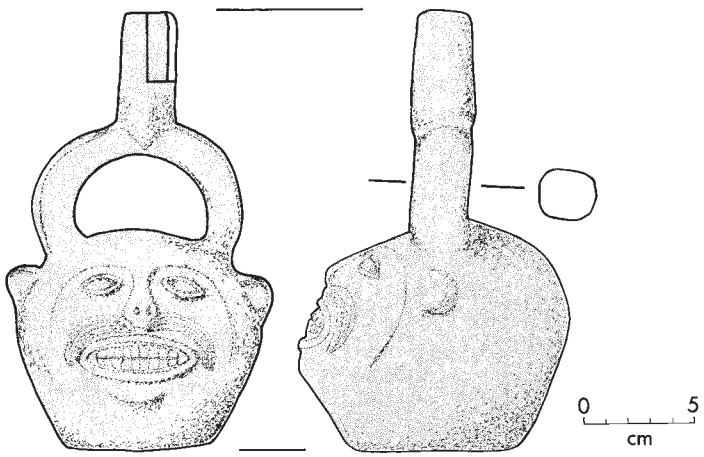


Figure 102 C3 from Burial A2 T3.

Figure 103 Copper lime spoon from Burial A2 T3.

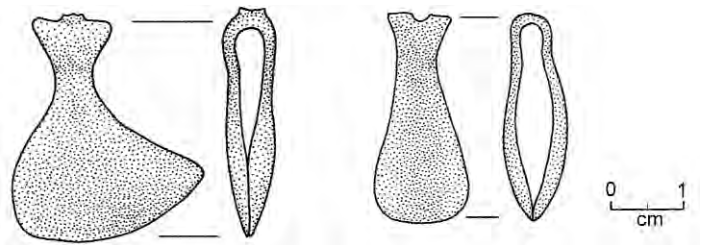


Figure 104 Copper tweezers from Burial A2 T3.

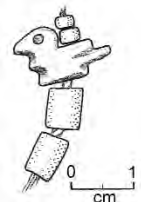


Figure 105 Beads from Burial A2 T3.

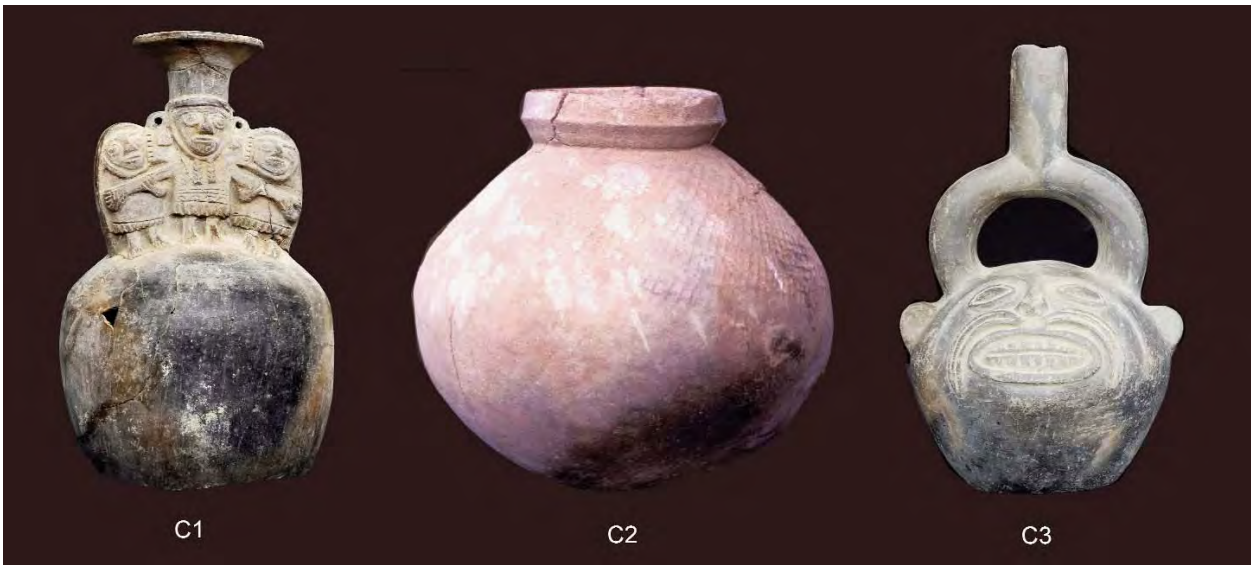
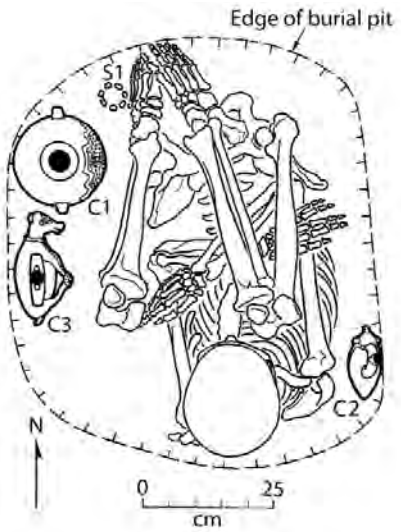


Figure 106 Ceramics from Burial A2 T3.



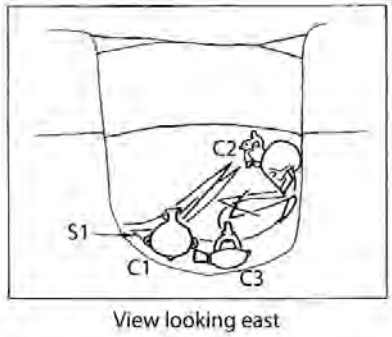


Figure 107 Plan and profile of Burial A2 T4.

BURIAL A2 T4

Period:

Chimu-Inca Late Phase

Tomb construction:

Pit dug through the floor of Courtyard C and into hard fill consisting of decomposed adobes (Fig. 107)

Individual:

Sex: Male

Age: 20–22 years

Contents:

Three ceramic vessels (C1–C3, Figs. 108–110, 112)

Nine small, rectangular pieces of shell (S1, Fig. 111), found in a circle as though they were inlaid on a round object, perhaps a wood container

Various textile fragments (none analyzable)

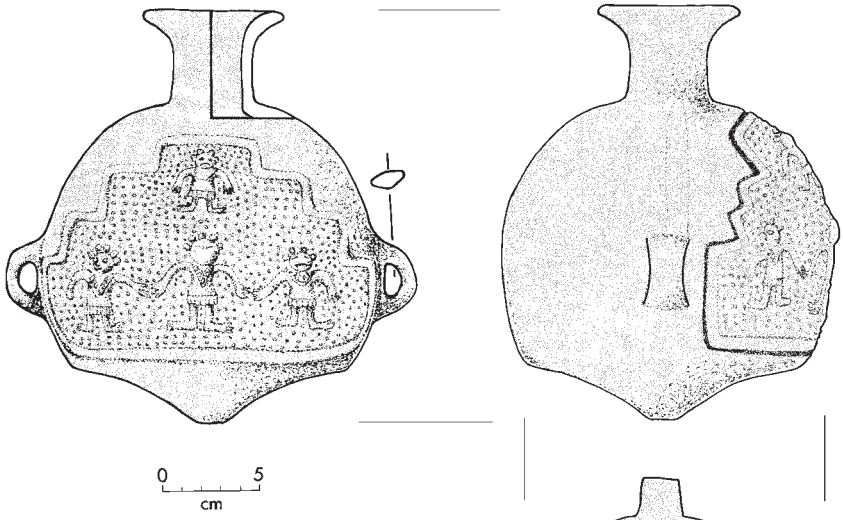


Figure 108 C1 from Burial A2 T4.

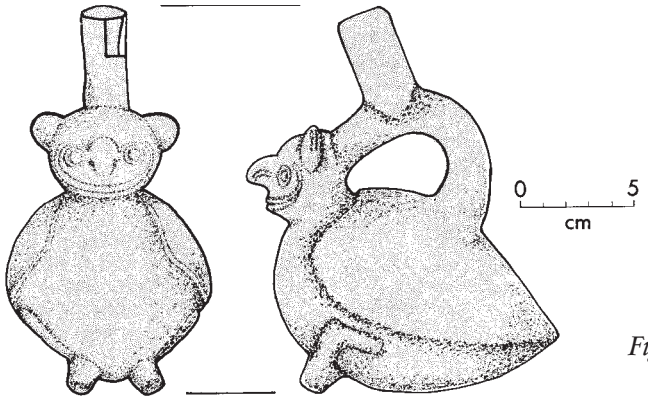


Figure 109 C2 from Burial A2 T4.

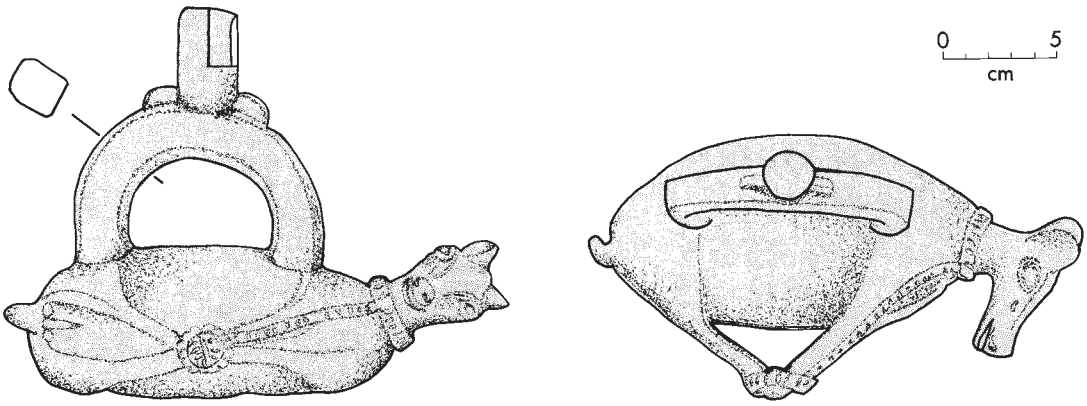


Figure 110 C3 from Burial A2 T4.

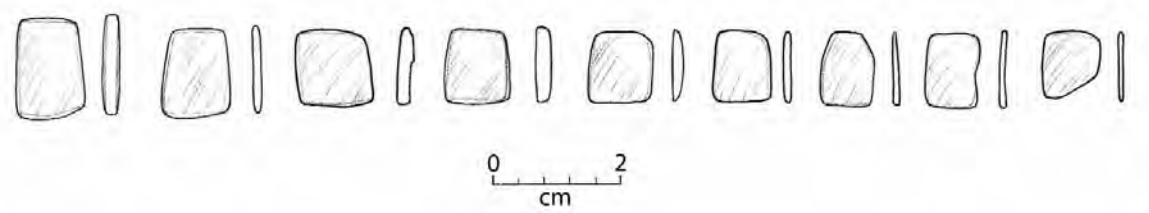


Figure 111 Rectangular shell pieces from Burial A2 T4.

Figure 112 Ceramics from Burial A2 T4.

In the early part of the Colonial Late Phase, the east side of Huaca Gloria was buried with windblown sand. Following the sand inundation, looting occurred at the summit of the huaca. The looters dumped backdirt down the east side of the mound, forming a deep deposit of broken adobes and other rubble. Subsequently, five Colonial Late Phase graves (A2 T5–A2 T9) were dug into this deposit (Fig. 86). The bodies were in both extended and flexed positions. Among the burial contents were European glass beads, an iron implement, and a ceramic vessel with European characteristics.

BURIAL A2 T5

Period:

Colonial Late Phase

Tomb construction:

Pit dug into windblown sand and broken adobes (Fig. 113)

Individual:

Age: 10–18 months

Sex: Indeterminate

Contents:

One bone tube (B1, Fig. 114)

One shell pendant (S1, Fig. 114)

Small chunks of iron (M1)

One textile fragment (Tex 1, see Appendix 4)

Glass and shell beads (see Appendix 5)

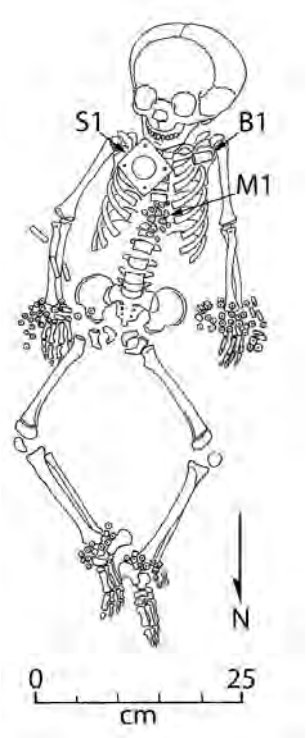


Figure 113 Plan of Burial A2 T5.

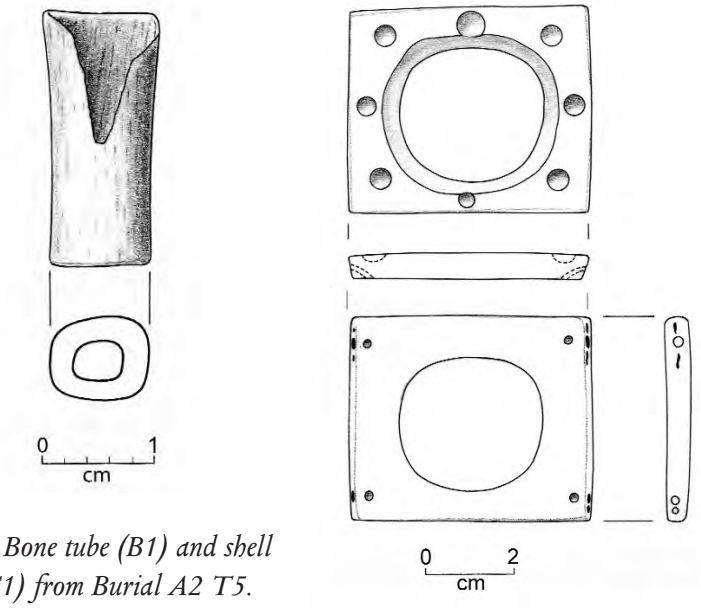


Figure 114 Bone tube (B1) and shell pendant (S1) from Burial A2 T5.

Comments:

The body appears to have been wrapped in textiles.

BURIAL A2 T6

Period:

Colonial Late Phase

Tomb construction:

Pit dug into windblown sand and broken adobes (Fig. 115)

Individual:

Age: 11–13 years

Sex: Indeterminate

Contents:

One copper ring (M1, Fig. 116) around the fourth finger of the right hand

Two textile fragments (Tex 1, Tex 2, see Appendix 4)

Glass and shell beads (see Appendix 5)

Guinea pig bones in sand fill above skull

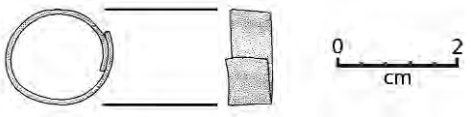


Figure 116 Copper ring (M1) from Burial A2 T6.

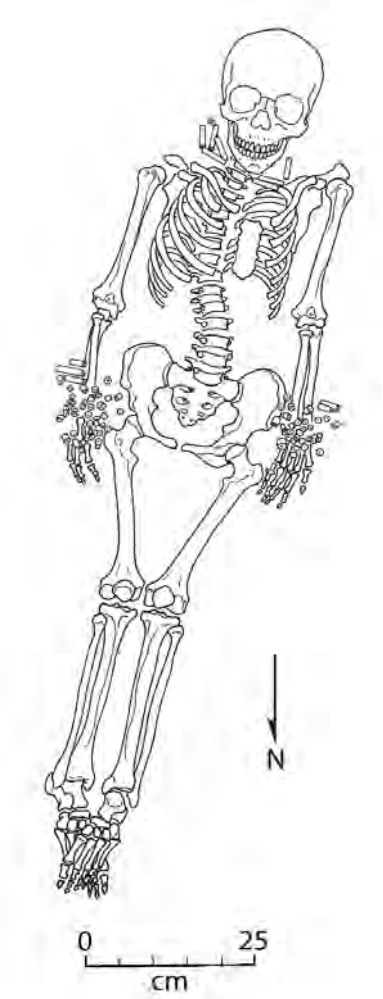


Figure 115 Plan of Burial A2 T6.

BURIAL A2 T7

Period:

Colonial Late Phase

Tomb construction:

Pit dug into windblown sand and broken adobes

Individual:

Age: 6–8 months

Sex: Indeterminate

Contents:

Two textile fragments (Tex 1, Tex 2, see Appendix 4)

Glass beads (see Appendix 5)

Comments:

The skeleton was badly decomposed and could not be drawn. The body appears to have been in fetal position, and wrapped in textiles.

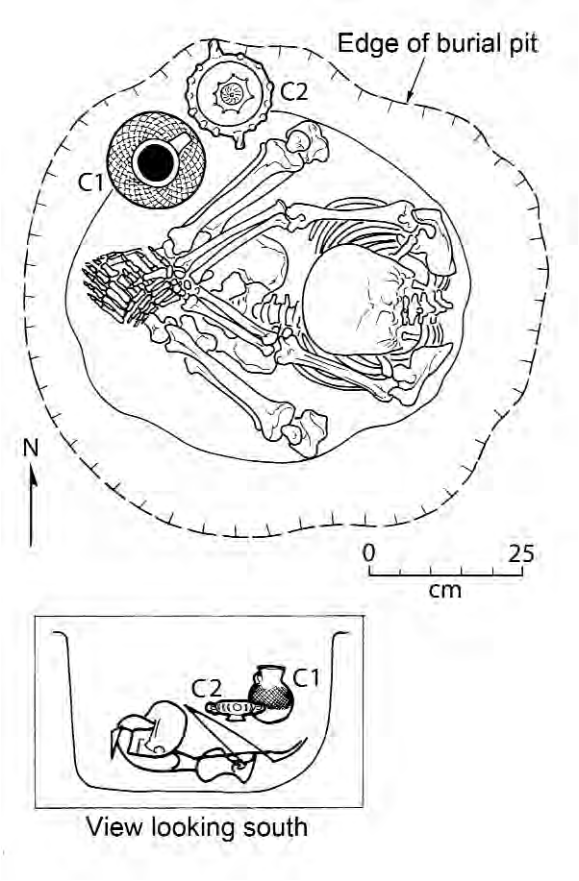


Figure 117 Plan and profile of Burial A2 T8.

BURIAL A2 T8

Period:

Colonial Late Phase

Tomb construction:

Pit dug into windblown sand and broken adobes (Fig. 117)

Individual:

Age: 35–45 years

Sex: Male

Contents:

Two ceramic vessels (C1, C2, Figs. 118, 119, 121)[3]

Four pairs of copper tweezers (Fig. 120), three of which have perforations

Eight textile fragments (Tex 1–Tex 8, see Appendix 4)

Glass and shell beads (see Appendix 5)

Comments:

The copper tweezers were found in the area of the neck and chest. It was not possible to determine whether they were part of a necklace.

The body appears to have been wrapped in textiles.

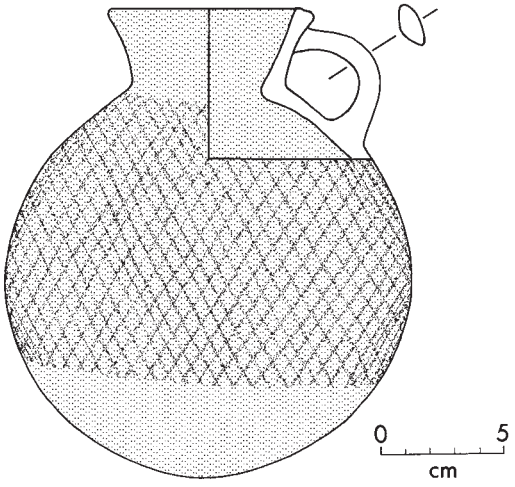


Figure 118 C1 from Burial A2 T8.

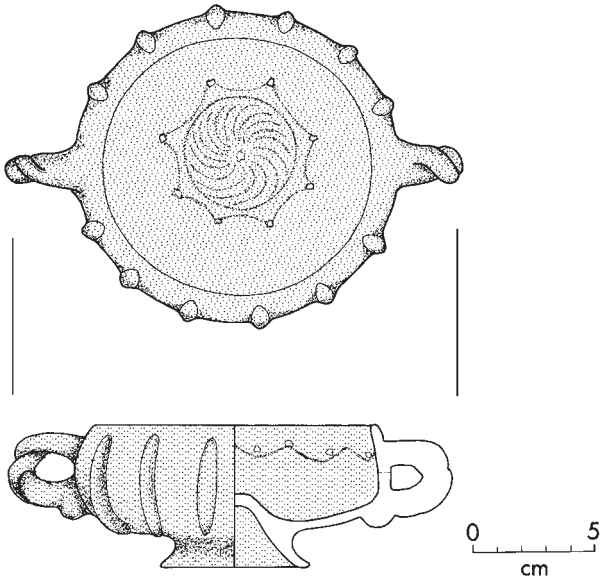


Figure 119 C2 from Burial A2 T8.

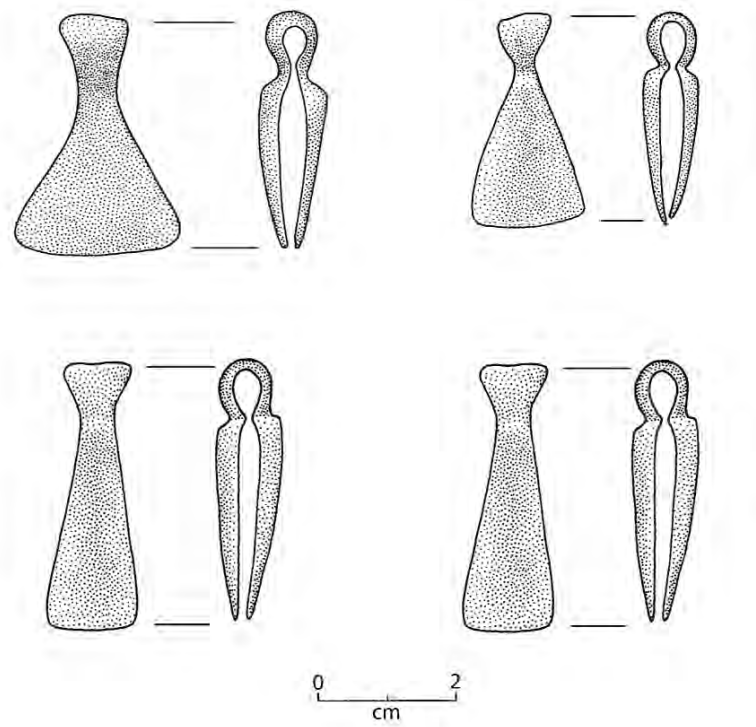


Figure 120 Copper tweezers from Burial A2 T8.

Figure 121 Side and top view of C2 from Burial A2 T8.

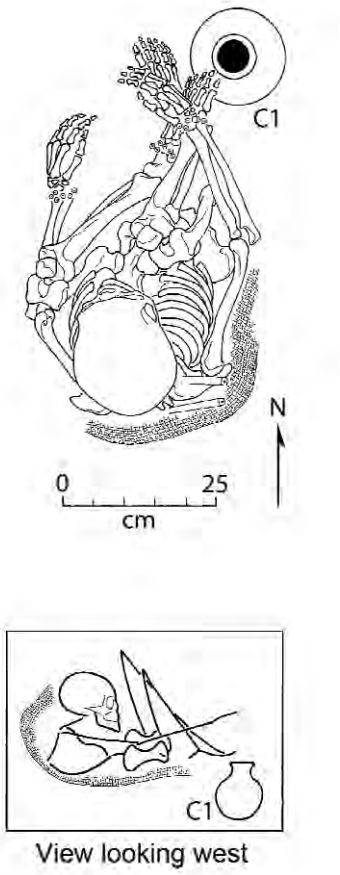


Figure 122 Plan and profile of Burial A2 T9.

BURIAL A2 T9

Period:

Colonial Late Phase

Tomb construction:

Pit dug into windblown sand and broken adobes (Fig. 122)

Individual:

Age: 11–13 years

Sex: Indeterminate

Contents:

One ceramic vessel (C1, Fig. 123)

One pair of silver tweezers, perforated (Fig. 124)

Three tassels (Tex 3, see Appendix 4)

Glass and shell beads (see Appendix 5)

Comments:

The silver tweezers served as a central pendant on the necklace.

Two layers of textile fragments (Tex 1, Tex 2, see Appendix 4) may have formed a burial shroud encircling the body.

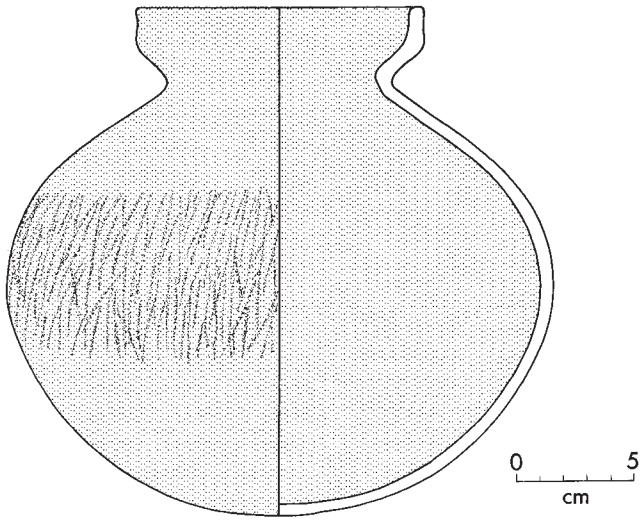


Figure 123 C1 from Burial A2 T9.

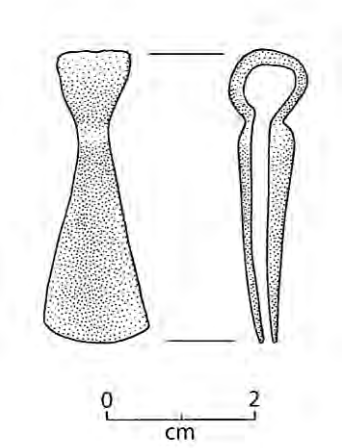


Figure 124 Silver tweezers from Burial A2 T9.

LLAMA

One complete, articulated llama skeleton was lying approximately 1 centimeter above the floor of Courtyard C (Fig. 86) on a layer of windblown sand. The llama was in an oval-shaped pit that had been cut into the sand layer from about 30 centimeters above the floor (Fig. 125). It was on its left side, severely contorted, with the neck doubling back above the body. The small size of the animal suggests that it was young, perhaps less than one year old. There were no associated artifacts. The llama probably pertains to the Chimu-Inca Late Phase.

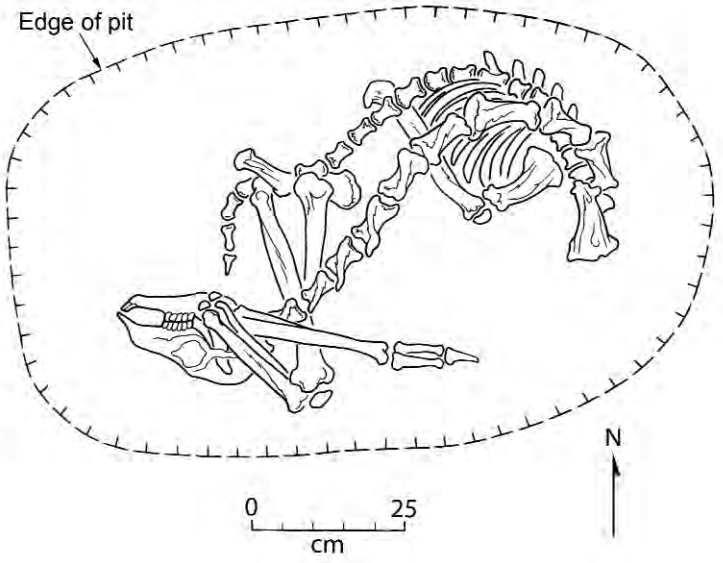


Figure 125 Llama.

TEMPORAL RELATIONSHIP OF BURIALS

The burials on the east side of Huaca Gloria (Fig. 86) appear to pertain to at least two distinct periods of time. The lower level of burials (A2 T2–A2 T4) contained Chimu-Inca style ceramic vessels and lack any objects of European origin. These burials probably all pertain to the Chimi-Inca Late Phase. Three of the five burials in the upper level (A2 T5, A2 T6, A2 T8) contained objects of European origin and therefore pertain to the Colonial Late Phase. The two other burials in the upper level (A2 T7, A2 T9) did not contain objects of European origin, but since they are clustered with the other three upper-level burials, they probably also pertain to the Colonial Late Phase.

Burial A2 T1 was between the lower and upper levels of burials. The two ceramic vessels it contained are Chimu-Inca Late Phase, and it probably pertains to this period. It is also possible, however, that it pertains to the Colonial Late Phase.

CURANDERO KIT

Near the northwest corner of Huaca Gloria we found what appears to be a *curandero* (folk healer) kit, a basket of objects that were used in curing rituals. It was in windblown sand that had accumulated between the huaca and a wall (Figs. 58, 126). The remains of a textile that was wrapped around the outside of the basket (A53-f Tex 1, see Appendix 4) were radiocarbon dated with a calibrated age of AD 1445–1495.[4]

Although the basket was badly deteriorated and extremely fragile, we were able to reconstruct its original size and form and to determine how it was constructed. It was approximately 50 centimeters wide, 50 centimeters long, and 28 centimeters high. A lid fit over the top of the basket, with sides approximately 8 centimeters high (Fig. 127). The basket and lid were made with splints of cane, approximately 2 centimeters wide, which were positioned parallel to one another in two layers and lashed together with cotton string, forming an X-shaped pattern. The exterior splints around the sides of the basket and the lid were vertical and were matched by horizontal splints on the inside. Some Pre-Columbian ceramic vessels from the north coast of Peru depic healers with very similar baskets (e.g., Fig. 128).

Figure 126 The curandero kit, looking southeast (left), viewing the curandero kit (right).

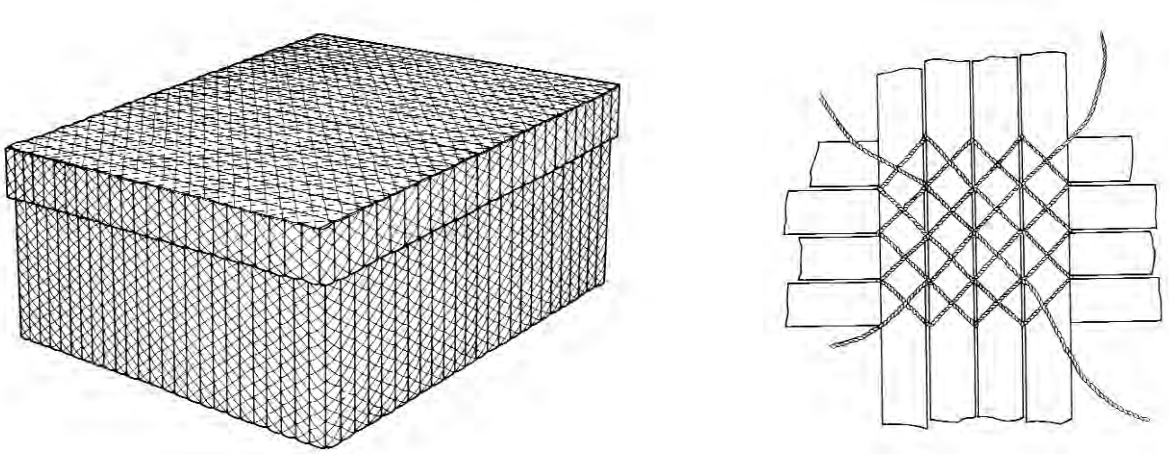


Figure 127 Reconstruction of the basket (left), detail of its construction (right).

Figure 128 Ceramic vessel depicting a healer with a patient and a box-like curandero kit. Not found at Chotuna.

Inside the basket (Fig. 129) were the following objects:

One-half of a *Spondylus* shell (Fig. 130a)

Small chunks of yellow pigment (jarosite and kaolinite) (Fig. 130b)

One rounded black stone (magnetite) with a natural bowl-like depression containing traces of red pigment on the surface and some organic material in the bowl (Fig. 130c)

One copper needle (Fig. 130d)

Three chunks of green stone (malachite) (Fig. 130e)

One rounded piece of quartz (Fig. 130f)

One quartz crystal (Fig. 130g)

One amethyst crystal (Fig. 130h)

One slab of quartz crystals (Fig. 130i)

Both halves of a *Spondylus* shell (Fig. 130j)

Figure 129 View insde the curandero's kit, from above .

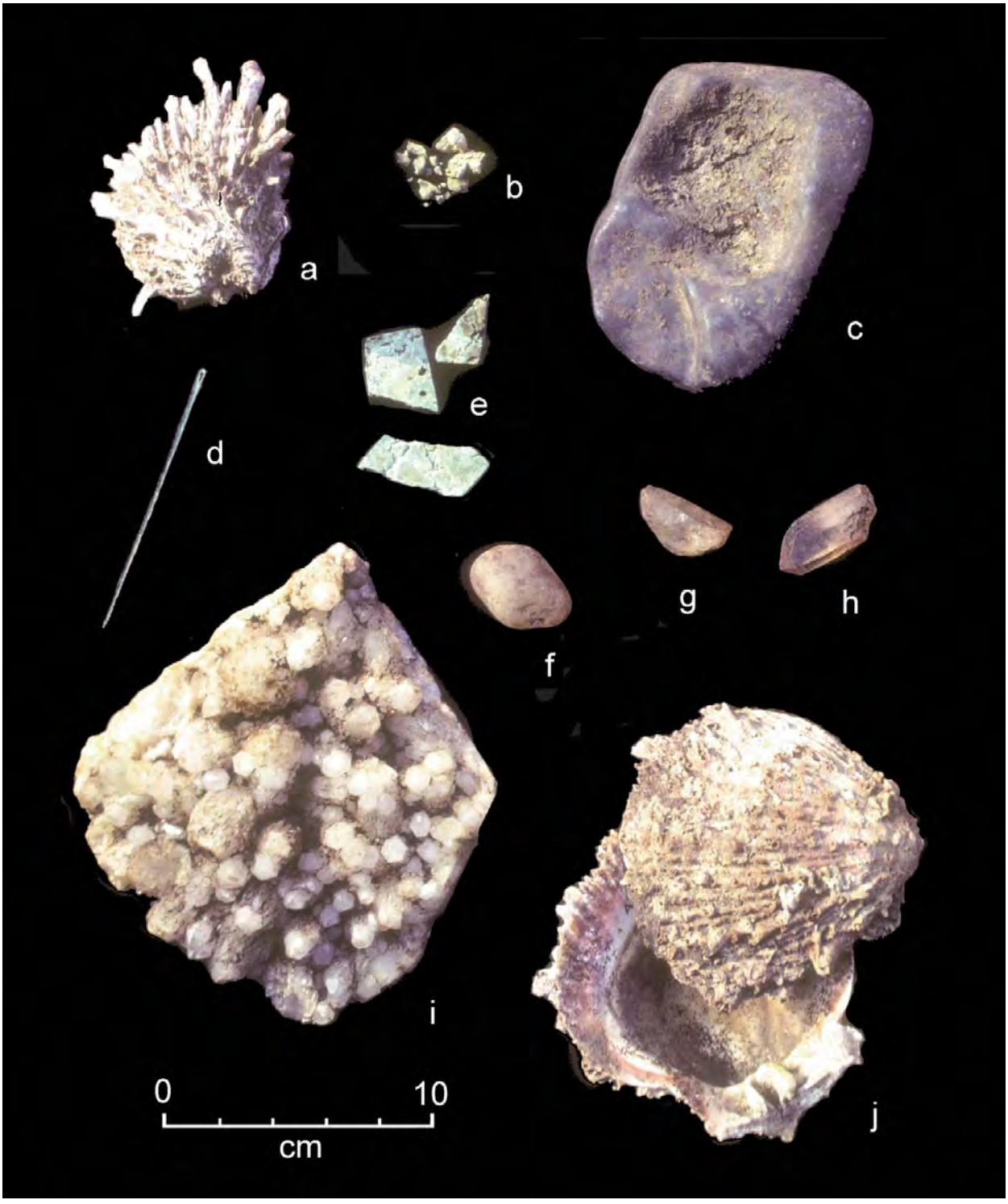


Figure 130 Contents of the curandero kit: one-half of a Spondylus *shell (a), yellow pigment (b), magnetite (c), copper needle (d), three chunks of malichite (e), rounded piece of quartz (f), quartz crystal (g), amethyst crystal (h), slab of quartz crystals (i), both halves of a* Spondylus *shell (j).*

Curanderos still practice traditional folk medicine on the north coast of Peru (Gillin 1947, Sharon 1978, Joralemon and Sharon 1993). Many of their beliefs, practices, and ritual objects are derived from traditions that extend back into the pre-Columbian past. Some of the object types that were found in the curandero kit excavated at Chotuna are still used by curanderos as ritual objects.

Shells, including *Spondylus*, are among the most common ritual objects used today. They are often utilized to confuse sorcerers and to drive spells and curses into the sea to be washed away.

Stones are also very common ritual objects and often have distinctive colors or unusual shapes. Quartz crystals are associated with light and purity and are thought to make sparks that drive off sorcerers or evil spirits. Dark crystals are reportedly used to help clarify the curer's psychic sight for divination and to aid patients in perceiving solutions to their problems. One folk healer reported by Joralemon and Sharon (1993:68) keeps a huge block of quartz as a symbol of clarity and psychic insight. Magnetite, because of its magnetic property, is believed to attract good luck or fortune and is sometimes used in star divination. It is also thought to be effective in extracting pain.

HUACA SUSY

Huaca Susy is a large truncated pyramid located at the eastern edge of the site (Figs. 11, 131). It is made almost entirely of flat rectangular bricks and thus dates primarily to the Early Phase occupation (Bruce 1983). Because of the deep sand dunes banked against all four sides of Huaca Susy, we did not excavate the base of the mound. Thus, neither its original height nor the area of its base could be accurately determined. Nevertheless, it is clearly an enormous structure, second only to Huaca Mayor in volume.

Huaca Susy has a large central ramp that ascends toward the west (Figs. 132, 133). This ramp cuts through the east side of the pyramid to form two flanking plazas and provides access to a large platform. On top of the platform a smaller ramp abuts a long north-south wall.

Figure 131 Huaca Susy, looking east.

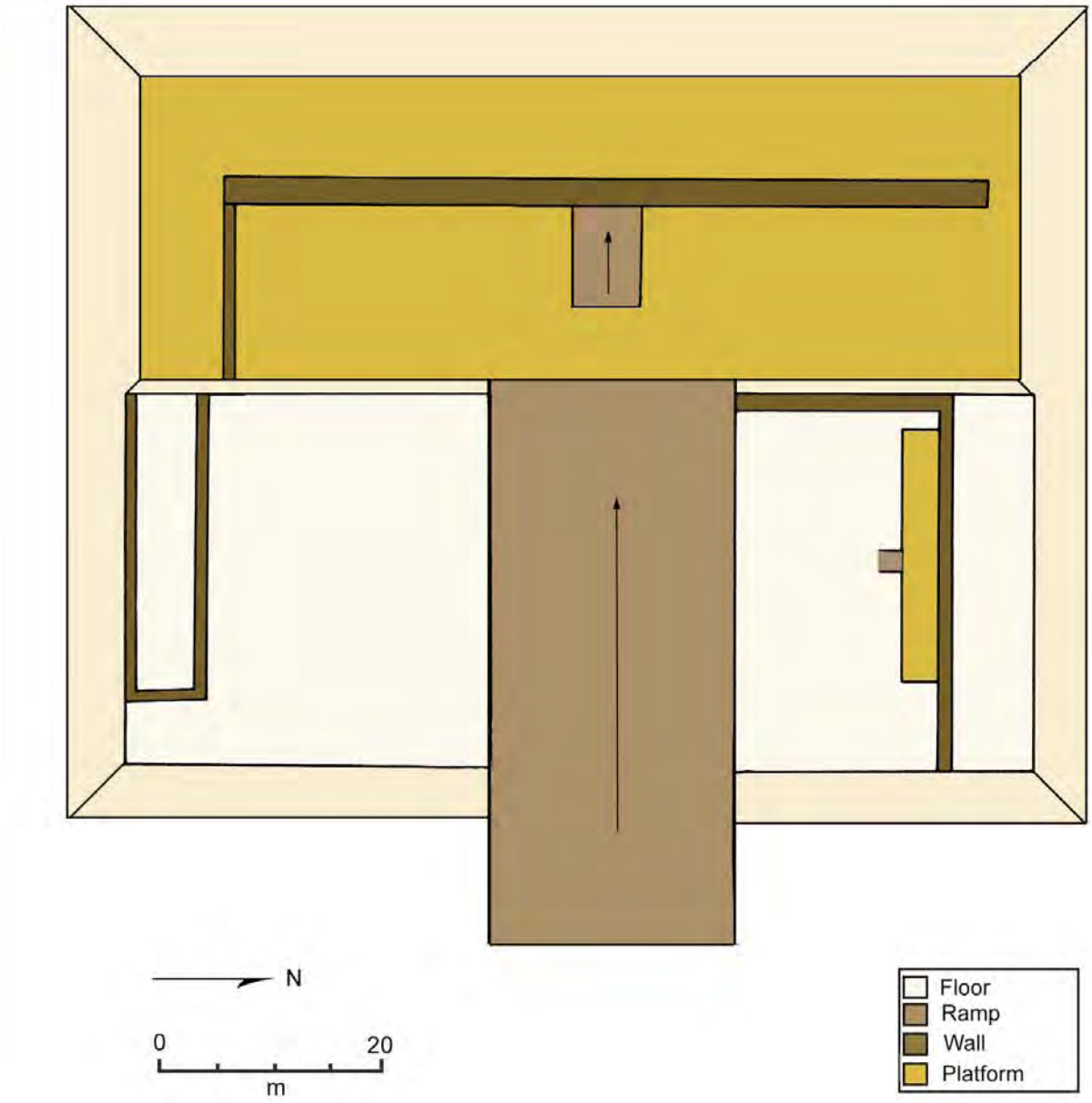


Figure 132 Plan of Huaca Susy (approximate dimensions).

During the Middle Phase, long walls were constructed of loaf-shaped adobes on the two plazas that flank the central ramp. In the northern plaza a small platform was constructed adjacent to an east-west wall, with a central ramp that provided access to its upper surface.

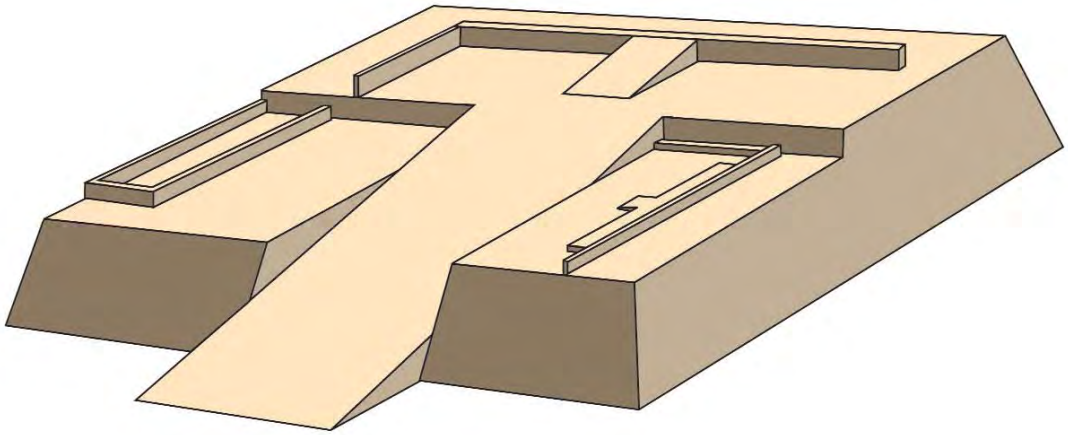


Figure 133 Isometric reconstruction of Huaca Susy, looking southwest.

There is no evidence of domestic occupation on Huaca Susy during the Early or Middle Phases, and it is assumed that the mound functioned only for ceremonial activity. In the Late Phase, however, charcoal, ash, food remains, three textiles (A32-3-Tex–A32-3-Tex 3, see Appendix 4), and abundant pottery fragments accumulated on the plaza north of the ramp, indicating that people had begun to live on the plaza. Ceramics excavated from the refuse suggest that the occupation may have begun during the Chimu-Inca Late Phase; however, sherds of glazed ceramics were also found, indicating that the occupation was ongoing during the Colonial Late Phase.

HUACA CHICA

North of the ramp of Huaca Mayor is a small low mound designated Huaca Chica (Fig. 11). It was badly eroded, particularly along the western side, and had been extensively damaged by looting. The part that remained was carefully excavated, revealing a solid adobe mound approximately 2.5 meters high (Figs. 134–136). There is no evidence of adjacent walled enclosures, nor of rooms or internal passageways inside or on top of the mound. Apparently, it was a small, solid platform set apart from other architecture, with wide ramps on the east and west sides and a smaller ramp on the south side.

The mound was built in stages. The first construction, of loaf-shaped adobes, occurred during the early part of the Late Phase. The central portion, the lower portion of the east ramp, and the small south ramp were built at that time (Fig. 135). During the latter part of the Late Phase, the upper ramp on the east side and the wide ramp leading down toward the west were built of tall loaf-shaped adobes. The upper ramp on the east side was subsequently raised by adding one layer of tall loaf-shaped adobes, thus giving it the height shown in Figure 136.

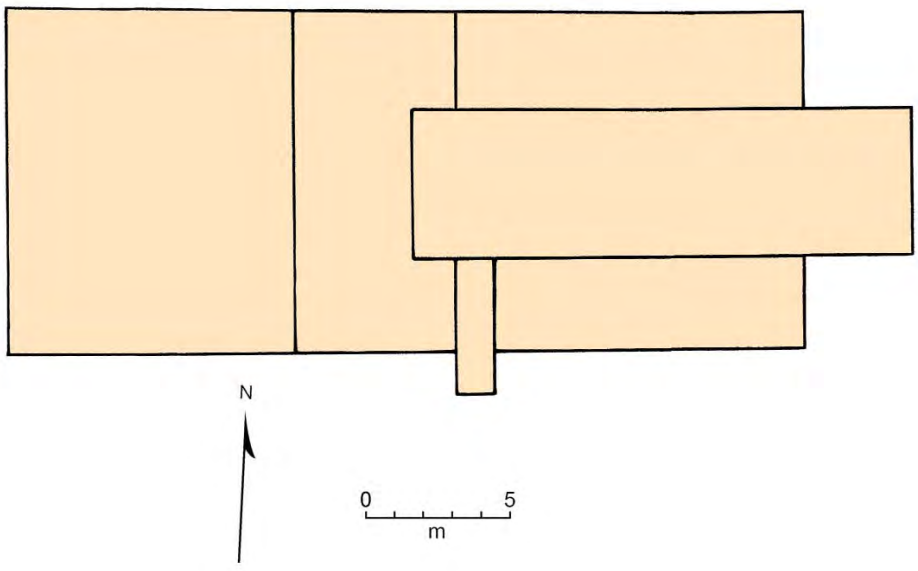


Figure 134 Plan of Huaca Chica.

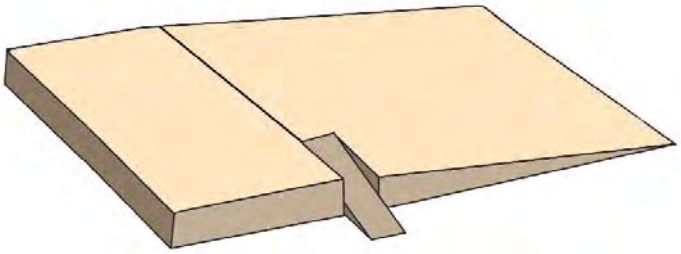


Figure 135 Isometric reconstruction of Huaca Chica as it appeared in the early part of the Late Phase, looking northeast.

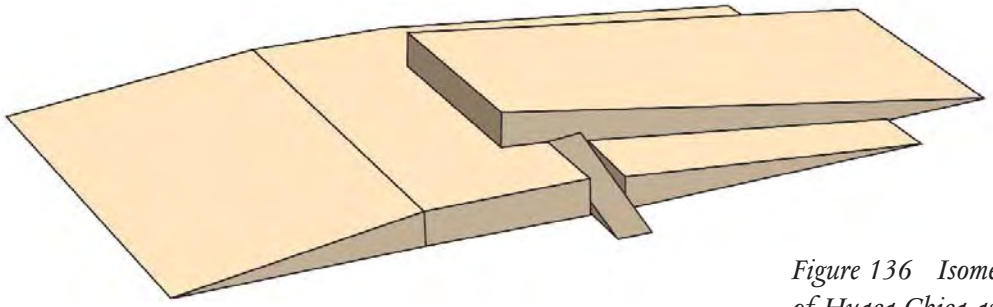


Figure 136 Isometric reconstruction of Huaca Chica as it appeared in the late part of the Late Phase, looking northeast.

Structures similar to Huaca Chica have been reported from Pacatnamu, a site overlooking the delta of the Jequetepeque Valley (Fig. 1). At that site small platforms with lateral ramps were located inside enclosed patios (Donnan 1986: Figs. 3, 4). The upper surface of one of the platforms had abundant organic residue that is believed to be blood (op. cit.: Fig. 6), suggesting that it was used to perform sacrifices. Perhaps Huaca Chica was used in the same way.

WALLED ENCLOSURE

The remains of the large Walled Enclosure can be seen on the south side of Chotuna (Figs. 137, 138). The walls at its southern end, including its south wall and its southwest and southeast corners, are more than 9 meters high. The west perimeter wall extends north from the southwest corner and connects to the south side of Huaca Mayor. The east perimeter wall extends north from the southeast corner and may have connected to the south side of Huaca Susy.

Remnants of three parallel walls on the north side of Huaca Mayor may have been part of the Walled Enclosure. The middle wall aligns with a rem-

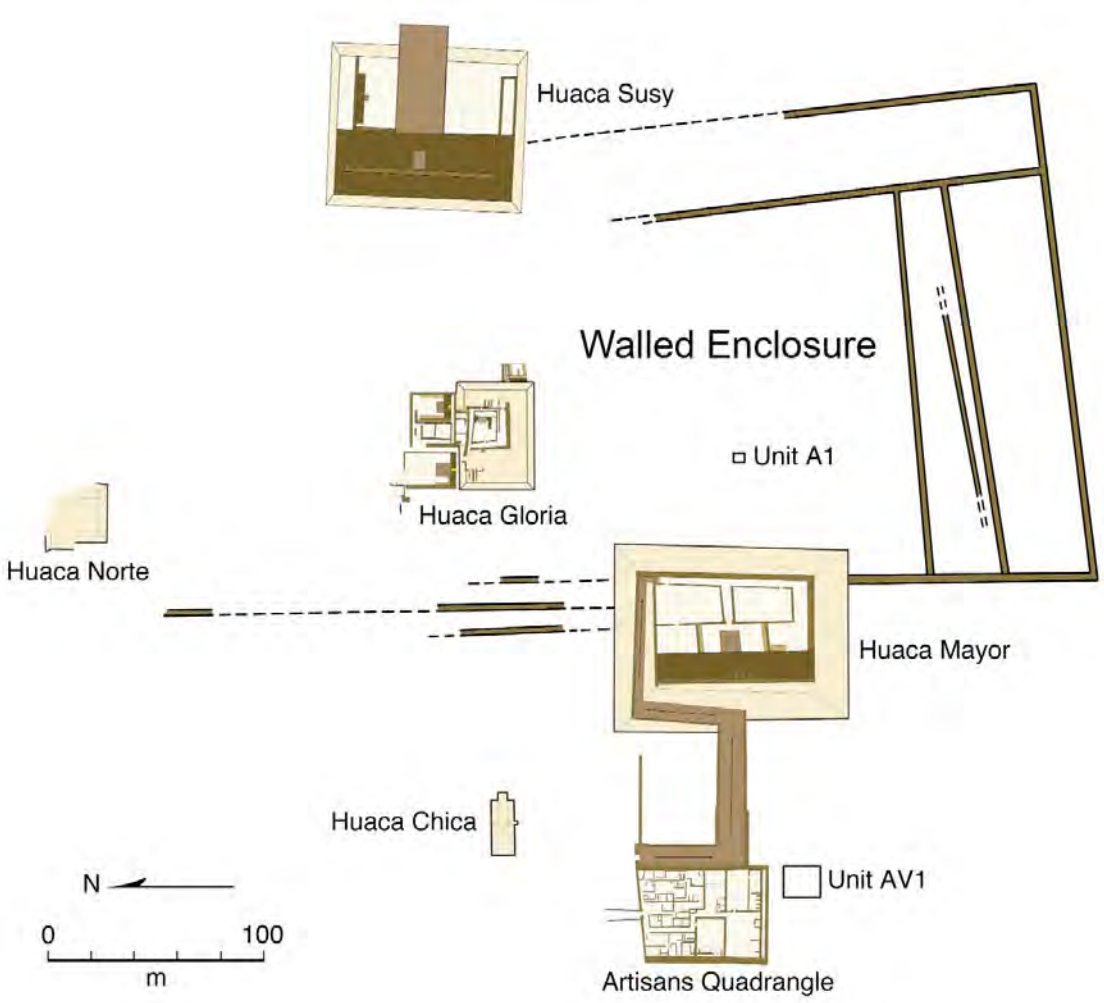


Figure 137 Plan of Chotuna showing the Walled Enclosure. The dashed lines indicate possible walls.

nant of a wall located southwest of Huaca Norte. This suggests that the Walled Enclosure may have extended at least that far north.

The Walled Enclosure was made of tall loaf-shaped adobes, indicating that it was constructed after the conquest of the Lambayeque Valley by the Kingdom of Chimor. Since large walled enclosures are characteristic of Chimu and Chimu-Inca architecture, the Walled Enclosure at Chotuna was likely a foreign architectural feature that was added to the indigenous architectural complex.

When we began our excavation at Chotuna, we had no idea how long the site had been occupied nor how deep its earliest occupation level might be. In hopes of obtaining a stratigraphic sequence from the site's earliest through latest occupation, we selected a location inside the Walled Enclosure and began a 2 x 2 meter strata cut designated Unit A1 (Figs. 137, 139). The upper part of this unit continued to be expanded as the excavation went deeper. It ultimately became 6 x 6 meters, with the excavation finally reaching sterile soil, just above water table, at a depth of 6 meters. The 12 stratigraphic levels that we excavated provided a good ceramic sequence. The lowest levels (9 through 12) contained exclusively Early Phase ceramics, while levels 1 through 6 were Middle/Late Phase. Levels 7 and 8 were mixed. This ceramic sequence was confirmed by excavations in other parts of the site (see Appendix 1).

Figure 138 The southeast corner of the Walled Enclosure, looking northwest. Huaca Mayor is above, and Huaca Gloria is on the right.

Figure 139 Stratigraphic excavation of Unit A1, looking southeast.

Chapter 3
CHORNANCAP

The site of Chornancap is located approximately 1.5 kilometers west of Chotuna. It consists of a single truncated pyramid surrounded by numerous low sand dunes, many of which contain remnants of ancient architecture and occupation refuse (Figs. 140–143). Our excavations at Chornancap focused primarily on the truncated pyramid (Huaca Chornancap) and on the architectural complex immediately north of the pyramid, where prevailing winds have deposited a deep accumulation of sand. Excavation was also conducted at a low mound north of Huaca Chornancap, designated Site K (Fig. 143).

Huaca Chornancap

Huaca Chornancap is T-shaped, with the central ramp leading up to the summit from the east side. Extensive erosion and looting at the summit of the pyramid made it impossible to reconstruct its original form in detail (Figs. 140, 141). It is clear, however, that the highest level was along the west side of the summit, while the east side was lower and divided into two parts by

Figure 140 Huaca Chornancap, looking northwest.

the central ramp (Fig. 142). Excavations at the northeast, northwest, and southwest corners of the huaca indicate that its base is well below present ground surface.

In both form and orientation, Huaca Chornancap is remarkably similar to, although considerably smaller than, Huaca Susy at Chotuna (Figs. 132, 133) and is made of a different type of adobes. Whereas Huaca Susy is built largely of flat-rectangular adobes and thus pertains to the Early Phase, Huaca Chornancap is built of loaf-shaped adobes characteristic of the Middle Phase.

Windblown sand deposited on the north side of Huaca Chornancap has preserved an extensive area of adobe architecture consisting of rooms,

Figure 141 Huaca Chornancap during excavation, looking southwest.

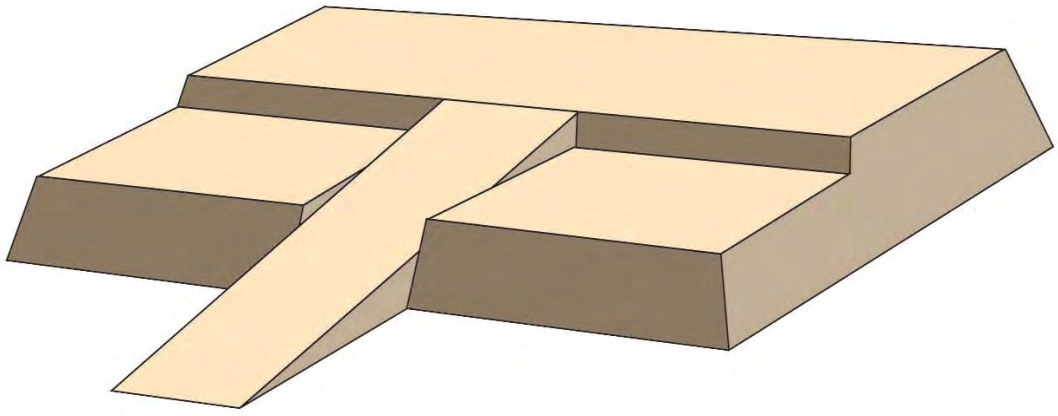


Figure 142 Isometric reconstruction of Huaca Chornancap, looking southwest.

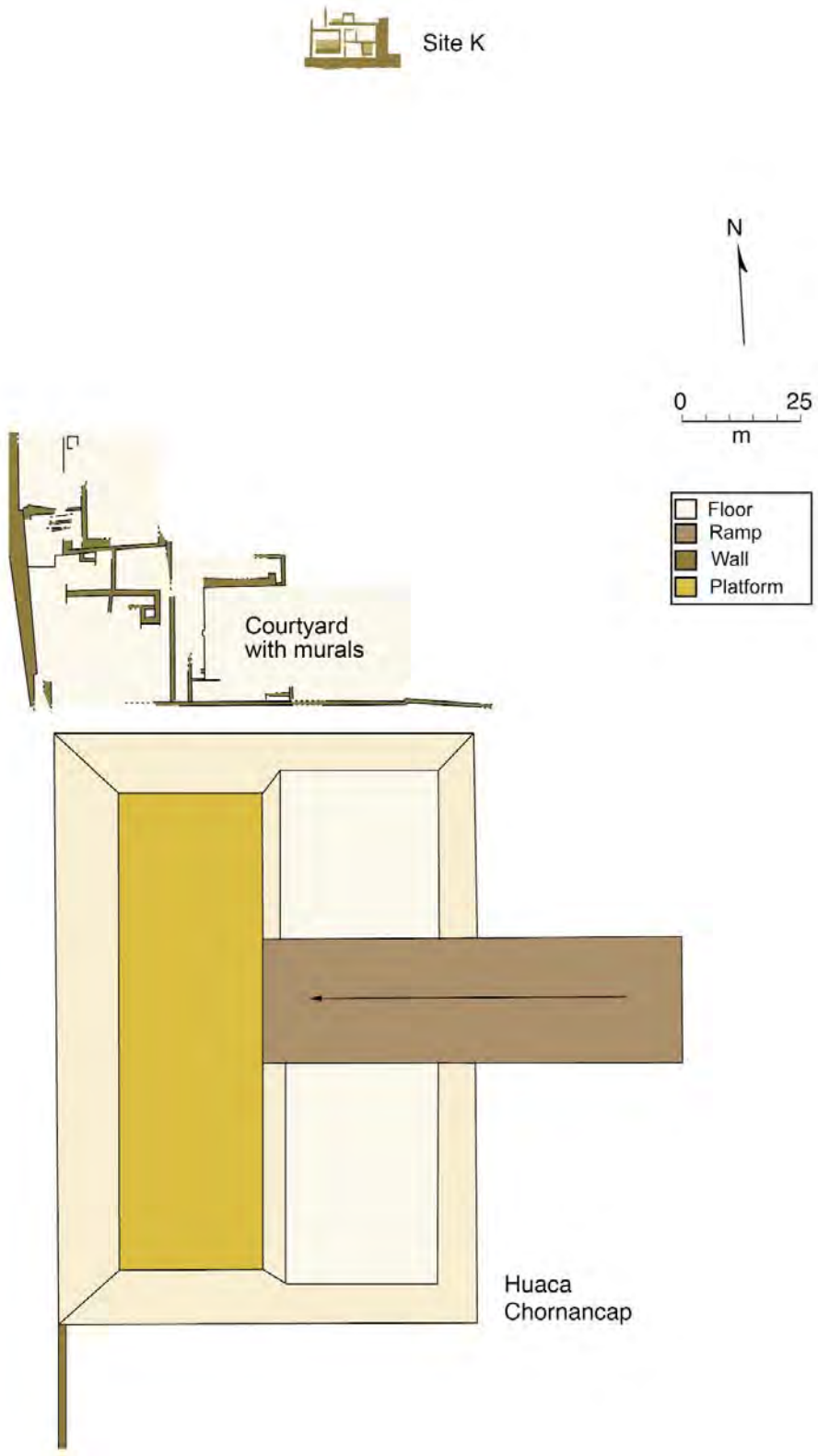


Figure 143 Plan of Chornancap.

corridors, and open courtyards (Fig. 143). The upper levels of architecture in this area were often superimposed over multiple layers of earlier construction, suggesting a long period of occupation with multiple periods of rebuilding.

Courtyard with Murals

Polychrome murals decorated the interior walls of a large open courtyard on the north side of Huaca Chornancap (Figs. 143, 144). Although most of the courtyard was destroyed by erosion, portions of the south, west, and north walls were preserved. The murals were painted in recessed panels along the upper edge of the walls, approximately 2.6 meters above the courtyard floor (Fig. 144). The recessed panels on the courtyard's west and south walls were preserved, but the upper portion of the north wall, which also may have had a recessed panel with polychrome murals, had been destroyed by erosion. Beneath the polychrome murals the walls were painted white.

A vertical cleft near the center of the west wall (Figs. 144, 145) is identical to those depicted on some Lambayeque style ceramic bottles (Fig. 146). Although the cleft provides the central focus for the wall, it is not clear how it functioned. It may have been covered with a long textile suspended from the top of the wall extending down along the outward curving surface of the cleft and terminating near the courtyard floor.

All sections of the mural (Fig. 147) appear to have been painted in the same way, with the same inventory of pigments applied in the same sequence. The painting style is consistent in all sections of the mural, suggesting that the work was completed at one time.

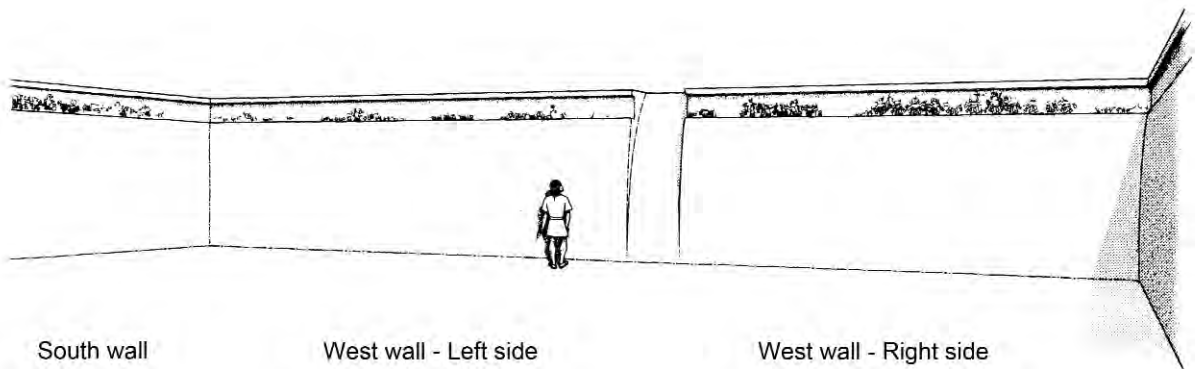


Figure 144 Isometric reconstruction of the courtyard with murals, looking southwest. Note the vertical cleft near the center of the west wall and the murals decorating a recessed panel along the top of the walls.

Figure 145 The vertical cleft near the center of the courtyard's west wall.

Figure 146 Vertical cleft shown on a Lambayeque style ceramic vessel.

Figure 147 The upper part of the west wall with polychrome murals, looking southwest.

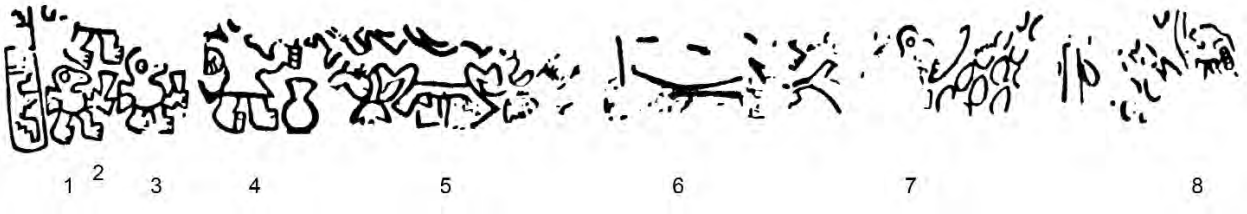


Figure 148 Mural on the courtyard's south wall.

There is, however, a clear distinction between the objects and activities painted on the south wall (Figs. 148, 149) and those painted on the west wall (Figs. 150–154). Although only a small part of the mural on the south wall remains, it depicts several anthropomorphized birds (#'s 1–4, 7). There is a large jar in front of #4. There is also a human figure (#5) standing in frontal view, with feet turned outward. In each hand he holds a single plant, with roots, stalk, and leaves. Another individual (#6) appears to have been similar to #5.

To the right of #7 is a large object that may be another plant. It has a central vertical staff or trunk, with elliptical objects on both sides. A vertical panel with geometric designs can be seen to the left of #1, adjacent to where the mural presently ends.

Figure 149 #'s 1–3 from the courtyard's south wall (see Figure 148).

Figure 150 Mural on the courtyard's west wall, left side.

Figure 151 #16 from the courtyard's west wall, left side (see Figure 150).

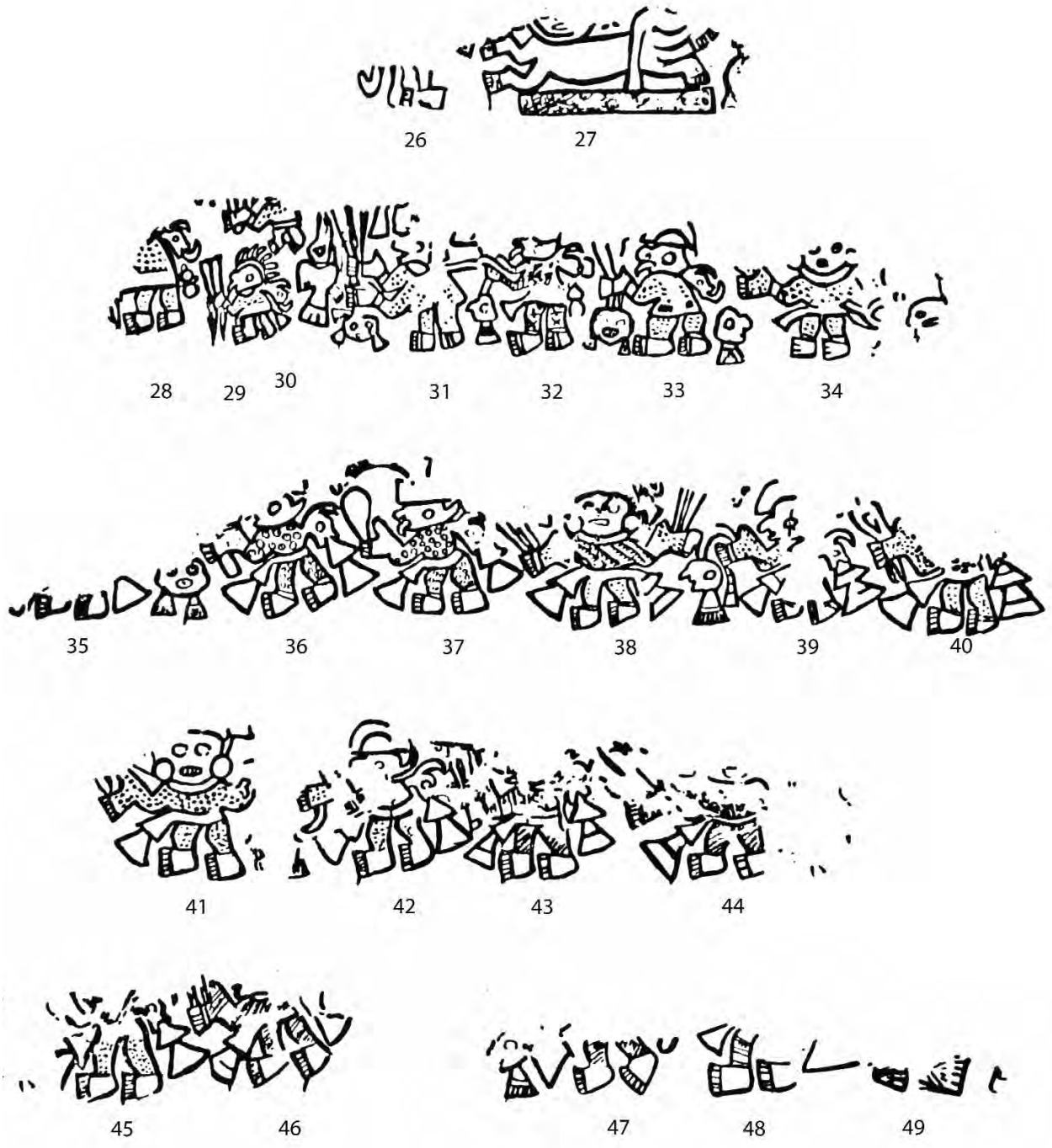


Figure 152 Mural on the courtyard's west wall, right side.

Figure 153 #'s 28–30 from the courtyard's west wall, right side (see Figure 152).

Figure 154 #'s 36–38 from the courtyard's west wall, right side (see Figure 152).

The mural painted on the west wall has an entirely different cast of figures and objects from those on the south wall. It depicts a series of figures associated with trophy heads. Nearly all of the figures are standing with their feet facing the central cleft in the wall. The most notable exceptions are #27, who is shown in a prone position, and #25, who is standing in frontal position with his feet turned outward.

All but two of the figures on the west wall appear to be human, the exceptions being #26, which has an animal tail, and the bird in front of #31. Although most of the figures are either holding or standing adjacent to trophy heads, #29 is holding vertical staffs or darts, #37 appears to be holding a club, and #'s 40 and 43 appear to be holding whips or slings. Several other figures hold objects that are not identifiable.

Six colors of pigments were used in painting the walls and creating the polychrome murals. Samples of each pigment were analyzed by the X-ray diffraction technique, which yielded the primary components for each color. The red pigment came from hematite and goethite; yellow from hematite, goethite, and alunite; the dark and light green from malachite and paratacamite; white from calcite and plagioclase; and black from graphite and chalcosiderite. The analyses suggest that the red and yellow pigments were produced from minerals that are commonly found together in the same deposits and can be easily sorted into red and yellow groups. The difference in color was further accentuated when the minerals were ground, since the finer the grain size, the more the color shifts from red to yellow. The grain size in the yellow pigment was much finer than in the red pigment.

The malachite and paratacamite that produced the two shades of green also frequently occur together geologically. Malachite tends to be somewhat lighter green than paratacamite. Simple visual sorting into chunks with lighter and darker hues would have produced the two distinct colors.

To create the mural, the artists began by applying an overall coat of red pigment to both the vertical face and the lower horizontal surface of the recessed panels. The upper horizontal surface was painted yellow. The polychrome murals were then painted on the vertical surfaces of the recessed panels.

The yellow pigment was applied first, directly on the overall red surface. The white pigment was then applied directly on the red, not overlapping the yellow. Next, the two shades of green were applied. They were generally painted over areas that had previously been painted either yellow or white, although in a few instances they were painted directly on the red.

Both shades of green are fugitive and have spalled off in many areas. This is particularly true of the dark green pigment, of which only a slight residue remains. Nevertheless, it is clear that the two shades of green tended to be used in distinct parts of the design. For example, light green was used for feet;

dark green, for the lower parts of tunics (Fig. 153). Some triangular tassels have both shades of green, consistently painted in distinct areas (Fig. 154).

The black pigment was applied last. It was noticeably thicker than the other pigments and often showed traces of brushstrokes. It may have been mixed thicker to obscure the colors over which it was painted. Black was used to provide detail and to outline the areas of green, yellow, and white.

A test pit was excavated in the northwest corner of the courtyard, immediately adjacent to the north and west walls. This revealed a deep deposit of broken mud brick and rubble fill, which contained no artifacts. At a depth of approximately 3 meters from the present surface the clay floor of the courtyard was reached. It had a great deal of white pigment on its surface, identical to the white pigment used to paint the lower part of the walls beneath the recessed panels.

The test pit revealed several designs that had been incised into the lower part of the north wall sometime after it was painted with white pigment (Fig. 155). These designs, which include two birds, a human figure, and geometric design elements appear to be of a different style from that of the murals.

The remarkable preservation of the polychrome murals and incised designs was the result of an ancient remodeling of the courtyard. The remodeling apparently took place when the murals were still in good condition and

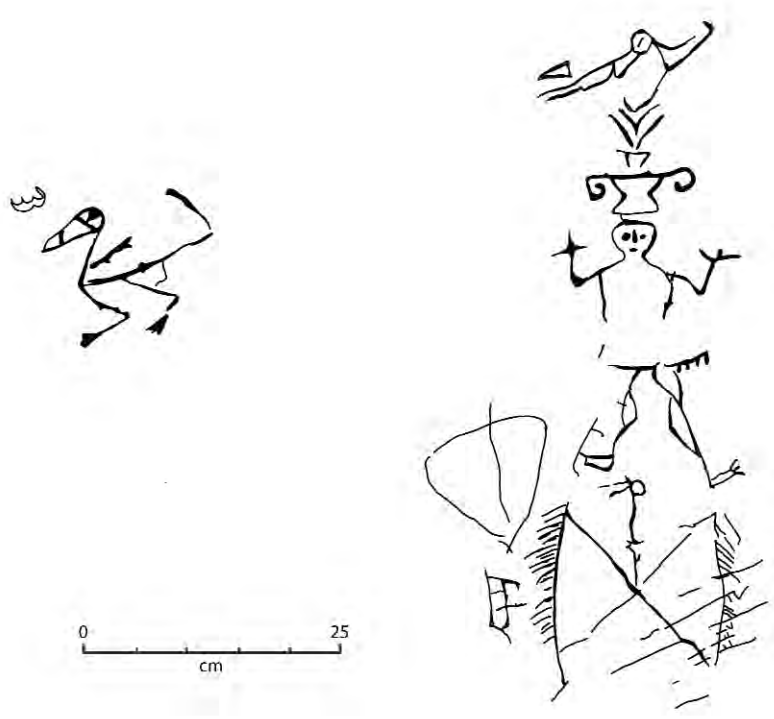


Figure 155 Motifs incised into the north wall .

involved the construction of a new wall along the west side of the courtyard, parallel to and about 2 meters east of the wall with murals. The space between the two walls was then deliberately filled with rubble. Thus the original west wall, as well as the western portion of both the north and south wall, were effectively sealed and remained so until exposed by our excavation.

It is difficult to assign a chronological or stylistic attribution to the murals. No associated organic remains were found that could be radiocarbon dated, nor were there clearly associated ceramics. Some iconographic features, however, suggest that the murals are Lambayeque in style, dating between AD 900 and 1300. An important feature is the animal head that hangs back over the shoulders of many of the mural figures. It is characterized by the tongue

Figure 156 Ceramics of Lambayeque style. Not found at Chotuna and Chornancap.

curling upward in front of the mouth and the ears curling forward. Similar animal heads are depicted in Lambayeque ceramics (Fig. 156), where they often flank the neck of a central figure (Fig. 156c).

Some elements of elaborately woven Lambayeque style tapestries are remarkably similar to those on the Chornancap murals, including figures wearing scarf-like objects that terminate in animal heads (Fig. 157). The figures often have yellow legs and arms that are decorated with black, white fingernails and toenails outlined in black, ankle stripes, and tassels that are similar to those shown in the murals.

Figure 157 Textile of Lambayeque style. Not found at Chotuna and Chornancap.

The similarities between the Chornancap murals and Lambayeque textiles suggest that the two were directly related. It is even possible that the design for the murals was copied from a textile of this style. Unfortunately, ancient textiles have not been preserved at Chornancap, but a small fragment of this style of textile was found at Chotuna (see Appendix 4, Fig. 227).

In light of the similarities between the Chornancap murals and Lambayeque textiles, it is worthwhile to consider again the vertical cleft near the center of the west wall of the courtyard. This cleft was carefully constructed and clearly served as a focus for the polychrome murals. Yet in contrast to the colorful mural panels and the brilliant white pigment on the walls beneath the murals, the central cleft was unpainted and simply had a smooth surface coat of mud plaster (Fig. 145). Careful examination of this surface did not reveal vertical striations to indicate that something had been moved up or down against it, nor were there perforations or other evidence that something had been attached to it. What then was the function of the cleft?

As mentioned previously, the cleft was possibly meant to be covered with a long textile suspended from the top of the wall, extending down along the outward curving surface of the cleft and terminating near the floor. Flat ban-

ners or wall hangings are known from the north coast of Peru during this period. A textile placed in this central cleft may have been a tapestry, depicting an elaborately dressed figure in frontal view, or a series of such figures positioned one above the other.

Site K

Approximately 150 meters north of Huaca Chornancap was a low mound covered with vegetation, which was designated Site K (Figs. 143, 158). Excavation revealed the remnants of an architectural complex consisting of rooms and corridors, with a large wall on its south side (Figs. 158, 159). The north side of the large wall had a series of niches.

Because of extensive erosion, only a small portion of the architecture remained. The rooms were small and interconnected by a complex system of corridors with step-over doors. Four of the rooms had low benches.

Figure 158 Site K, looking south.

Erosion had destroyed the east and west ends of the wall with niches, but twelve complete and five partial niches still remained (Figs. 160, 161). Of these, all but two had a stepped form (Fig. 162). The exceptions, niches 10 and 12 (Fig. 161), had a trapezoidal form (Fig. 163). The stepped niches were shallow, extending only approximately 25 centimeters into the wall, whereas the trapezoidal niches extended approximately 50 centimeters into the wall.

It is curious that two distinct types of niches were constructed and that the placement of the two trapezoidal niches appears to be random, leaving the pattern of niches asymmetrical. The function of the niches could not be determined.

Two looter's pits in the rooms at Site K revealed multiple superimposed floors. This, plus the evidence of architectural modification and replastering, as well as both loaf-shaped and tall loaf-shaped adobes, suggest an extensive period of occupation. Only a few diagnostic ceramics were recovered; they all pertain to Late Phase and include some that are clearly Chimu-Inca Late Phase.[1]

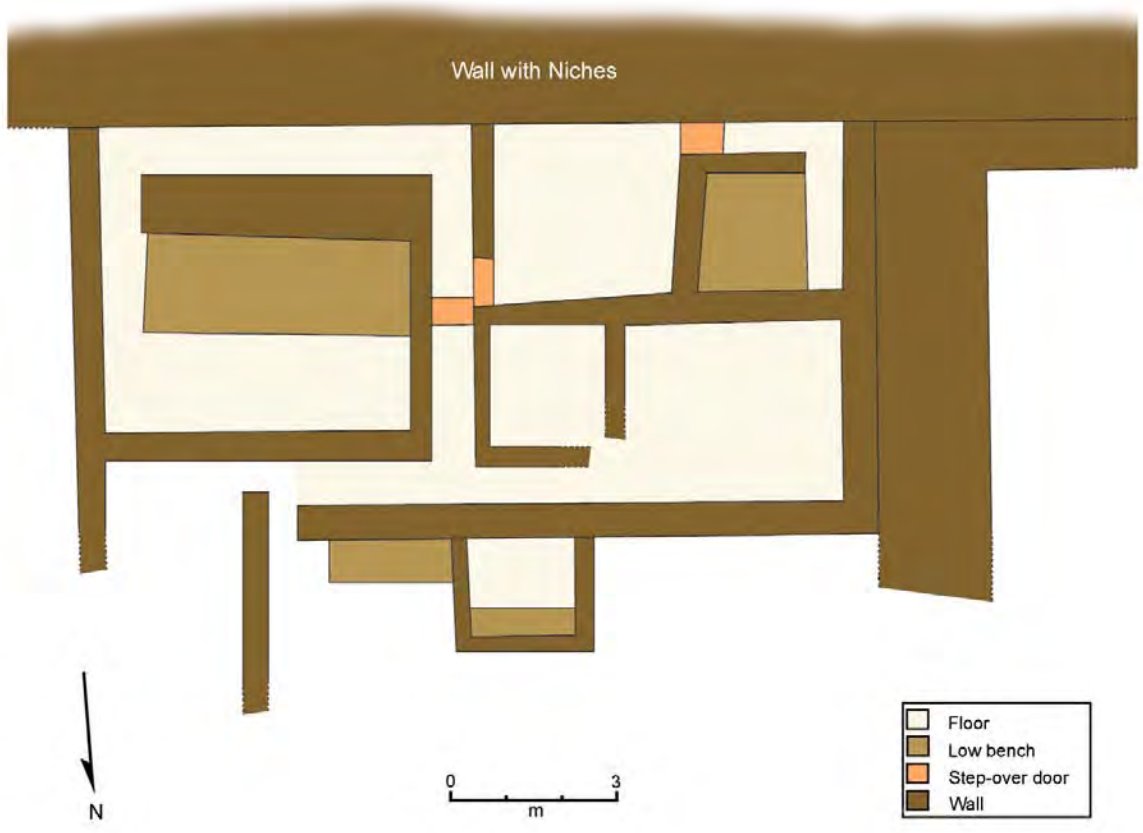


Figure 159 Plan of Site K.

Figure 160 Measuring the wall with niches.

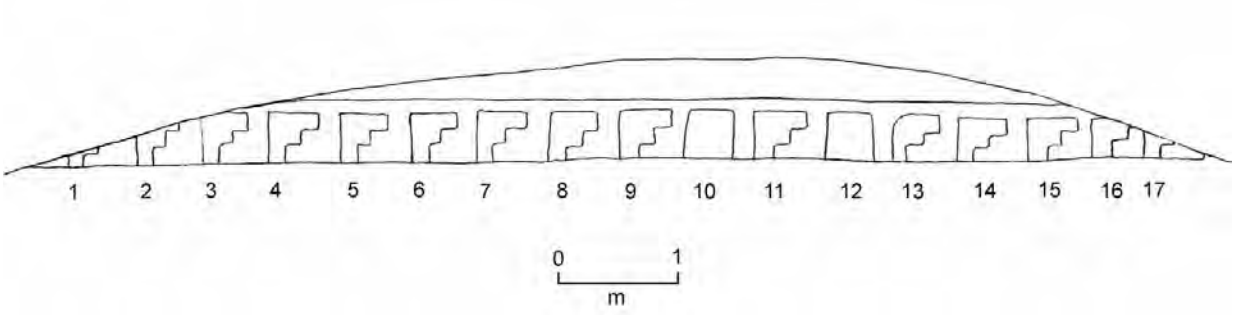


Figure 161 Niches.

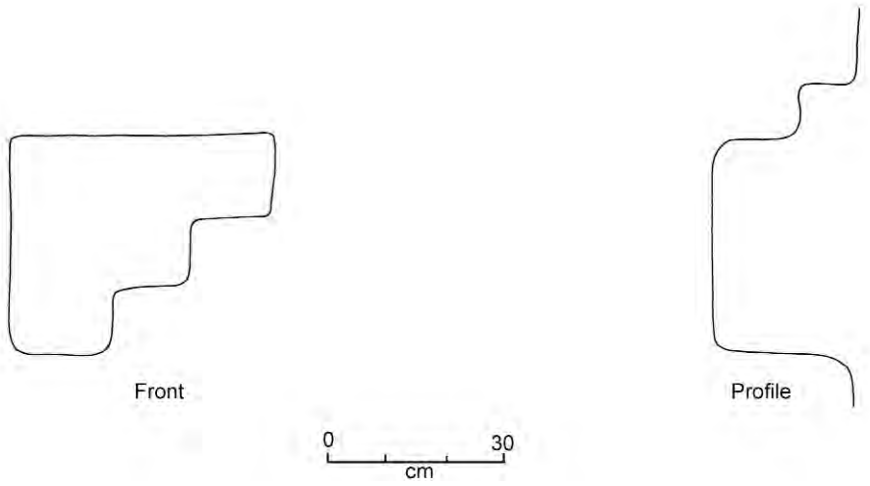


Figure 162 Stepped niche.

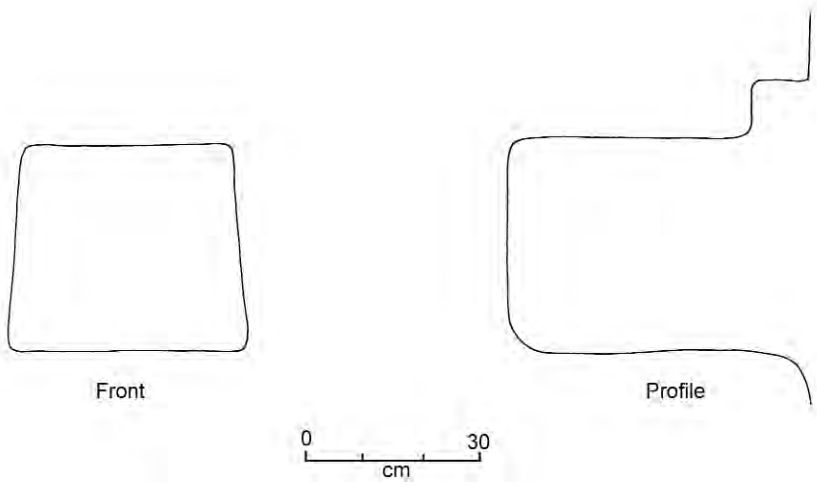


Figure 163 Trapezoidal niche.

Chapter 4

ASSESSING THE VALIDITY OF THE NAYMLAP LEGEND

Although some scholars have argued that the story of the Naymlap dynasty is mythical (e.g., J. Rowe 1948; Zuidema 1990), it may well contain information about real people and places and describe events that actually occurred. In this chapter, I will review the arguments for and against the validity of the Naymlap dynasty and assess the accounts of the dynasty in light of the archaeological evidence we recovered at Chotuna and Chornancap.

A translation of the Naymlap legend, as recorded by Cabello Balboa, was presented in Chapter 1. In essence, the legend tells how Naymlap came to the Lambayeque Valley on a fleet of balsa rafts, bringing with him a principal wife and many followers. Landing at the mouth of a river called Faquisllanga, they then went inland half a league, where they built a settlement with palaces. They named the settlement Chot, where Naymlap ruled until his death. His attendants buried him secretly and spread word that he had taken wings and flown away.

Naymlap was succeeded by his oldest son, Cium, and subsequently by 10 successive members of the dynasty, each of whom is named. The last member of the dynasty, Fempellec, slept with the devil, who appeared to him as a beautiful woman. This brought on a torrential 30-day rain followed by a year of sterility and famine. Believing that this calamity was the result of Fempellec's liaison with the devil, the priests and nobles tied his hands and feet and threw him into the sea.

There followed a period when the area was without a principal ruler. Then the area was invaded by the Chimu (spelled Chimo), and a Chimu ruler named Pongmassa was put in charge. When he died, his son Pallesmassa succeeded him, and when Pallesmassa died, his son, Oxa, took over the throne. During Oxa's reign, the local people became aware of the Incas (spelled Yngas), who were to conquer the neighboring highland area of Cajamarca (spelled Caxamarca) and subsequently gain control over the coastal people. After Oxa, there were six sucessive rulers, the last of whom, Pecfunpisan, was in charge when the Spanish entered Peru.

In 1931 Philip Means analyzed Cabello Balboa's account of the Lambayeque dynasties and treated both the Naymlap dynasty and the later one founded by the Chimu as history (Means 1931: 50–55). John Rowe, however, stated that the early dynasties of the north coast, and particularly the story of Naymlap,

. . . are partly explanations of monuments and customs whose origins have been forgotten, and partly just stories to entertain. To interpret them, we cannot go far wrong if we follow the principle that if a story explains the origin of a shrine or custom, or if the hero becomes a divinity or disappears instead of dying, then it belongs to the realm of legend. (1948: 36)

Rowe goes on to state that:

Chot is almost certainly the ruin called Huaca Chotuna in modern times . . . . The story as a whole . . . seems to be little more than an explanation of the origin of the inhabitants of the various districts of Lambayeque valley and of their monuments . . . . We may conclude then that the "Naymlap" story is pure legend. It may even be of relatively late origin. (1948: 38)

Although the Naymlap story may be legend, it seems inappropriate to dismiss it as such on the basis of Rowe's criteria. In many parts of the world there are monuments, shrines, and ceremonies whose origins are derived from historical people or events. Therefore, a story cannot be dismissed as mythical for this reason.

Some scholars (e.g., Zuidema 1990) who have analyzed the Naymlap story consider it to be a water or flood myth because Naymlap is said to have come from the water (the sea) and his dynasty ended with water (the 30-day rain that led to the death of Fempellec). Though it is interesting to consider the Naymlap story in this way, both Naymlap's arrival by boat and the Fempellec rain are events that could reasonably have taken place on the north coast of Peru.

First, let us consider the arrival by boat. A new dynasty for the Lambayeque Valley could have begun either with someone local or with an outsider. Assuming that the founder was an outsider, there are only three avenues of entry: from the mountains to the east, from the coastal land to the

north or south, or from the sea by boat. One means is just as probable as another, and arrival by boat is certainly not an unreasonable possibility. There is good archaeological and historical evidence for oceangoing vessels traveling along the west coast of South America from the Gulf of Guayaquil in the north to the Chincha Valley in the south (Edwards 1965; Rostworowski 1975; Cordy-Collins 1972, 1990). Large reed boats containing multiple passengers and cargo are depicted in Phase V Moche iconography (Cordy-Collins 1972; McClelland 1990; McClelland et al. 2007), and the large ocean-going balsa rafts that traveled the coast of Peru at the time of European contact may well have been in use since the Middle Horizon, if not earlier. Given this evidence, it is perfectly reasonable that the founder of a new dynasty in Lambayeque could have arrived by boat. If the Naymlap story was simply a water myth, why not have it begin with Naymlap issuing forth from the rivers that flow out of the Andean Cordillera, or coming with his people as drops of rain? If indeed he is to come from the sea, why not simply appear directly out of the ocean? Yet the story tells us more about boats, the people disembarking from them, and where they came ashore than it does about the ocean.

In considering the end of the Naymlap dynasty, we also find a series of events that are perfectly reasonable given the natural conditions of the Peruvian north coast. While this area normally receives little or no precipitation, periodically there are years of major rainfall that have a devastating impact on the population. The complex oceanographic and meteorological factors that create the rain are not well understood, but it is clear that this is a recurring phenomenon. The last occurrence of an El Niño, as these conditions are called, was in 1982–83, when rains saturated the normally parched landscape and runoff transformed dry washes and ravines into torrential streams. Flash floods destroyed villages, cut road systems, and ruined many of the complex irrigation canal systems on which local agriculture depends. At the same time, warm sea currents, which are an integral part of El Niño conditions, upset the delicate marine ecosystem along the coast, thus greatly altering the available maritime resources.

The immediate impact of El Niño conditions are always death and destruction, as well as famine and great suffering. Reestablishing the food supply from farming depends upon the time-consuming process of rebuilding the damaged canal networks, and the fishing industry must await a gradual reconstruction of the normal marine food chain.

Given that El Niño conditions occur intermittently but relentlessly along the northern coast of Peru, we would expect that they also occurred in the pre-Columbian past. Recent archaeological and geological evidence has confirmed the presence of such catastrophic events, as well as their effect on

archaeological sites and ancient canal systems (Nials et al. 1979; Sandweiss et al. 1983; Shimada 1990; Kolata 1982; Moseley and Deeds 1982; Moseley et al. 1983; Moseley et. al. 2008). In some instances, as will be discussed in detail later, El Niños that occurred in the pre-Columbian past appear to have been of considerably greater magnitude than those in the historic period. This evidence indicates that an event such as the 30-day rain of the Naymlap story is not at all impossible for the northern coast of Peru. On the contrary, it is not only possible, but expectable. Furthermore, one could assume that a major El Niño would have had exactly the consequences that are described in the Naymlap story. Such catastrophic conditions may well have precipitated the end of a dynastic reign, particularly if the local people had held their ruler responsible for the disaster.

Of course, the fact that El Niños occur intermittently does not confirm the validity of the Fempellec flood any more than the existence of oceangoing craft along the coast in ancient times verifies the story of Naymlap's arrival. They do, however, make such occurrences plausible and certainly underscore the importance of keeping an open mind to the possibility that part, if not all, of the story of the Naymlap dynasty is based on fact.

If the story is true, where and when did the events take place? As Means points out:

The territory involved in this story is roughly coterminous with the modern department of Lambayeque. . . . It is not certain just what river is indicated by the name Faquisllanga in the legend, but it is probable that it designates the Lambayeque River. . . (1931: 54).

Chotuna, which is located in the lower part of the Lambayeque Valley, is the most likely candidate for Chot, where Naymlap is said to have built his palace, and Chornancap, located approximately 1.5 kilometers west of Chotuna appears to have been an outlier of that site.

Our excavations at Chotuna and Chornancap provided a good sequence for the occupation of these sites. As explained in Chapter 1 (pages 6–13), the sequence is divided into an Early Phase (approximately AD 700–1100), a Middle Phase (AD 1100–1370), and a Late Phase (AD 1370–1600). This chronology has been used in presenting the results of our excavations in the preceding chapters. It now allows us to assess the degree to which the archaeological evidence corresponds to the legend of Naymlap.

DATING THE DYNASTIES

The chronological information provided in Cabello Balboa's account supplies some interesting clues for dating the dynasties that are said to have ruled the Lambayeque Valley. The late dynasty, with Pongmassa as the first ruler, would have begun shortly after the Chimu conquered the area around AD

1370. The third ruler of that dynasty, Oxa, must have reigned around AD 1470, because that was the time of the Inca conquest of Cajamarca and the north coast. The ninth ruler of the dynasty, Pecfunpisan, is said to have been ruling when the Spanish entered Peru, which we know was appproximately AD 1530.

The earlier dynasty beginning with Naymlap is more difficult to assign to a chronological period. This is largely because Cabello Balboa's narrative is not specific about the length of time between the two dynasties. Means (1931: 54–56) suggested that the interregnum was contemporary with Huari influence on the north coast, thus making the Naymlap dynasty contemporary with the latter part of the Moche kingdom. Arbitrarily assigning an average reign of 25 years to each of the 12 rulers of the Naymlap dynasty, he suggested that it must have lasted about 300 years and occurred during the first six centuries AD. When Wendell Bennett conducted an archaeological reconnaissance of the Lambayeque Valley in 1936, he found little evidence of Moche occupation and suggested that the Naymlap dynasty occurred during the early part of the Chimu domination of the north coast rather than during the Moche period (Bennett 1939: 120).

Since 1969, however, substantial evidence of Moche occupation in the Lambayeque Valley has been uncovered (Day 1971; Donnan 1972; Shimada 1976, 1990; Alva 1989; Alva and Donnan 1993). This opens the possibility that the oral tradition of the Naymlap dynasty might actually be referring to events that occurred as early as the Moche occupation of the north coast (Donnan 1978: 86–101), and that Naymlap might have been a Moche king. When we began our excavations at Chotuna in 1980, we anticipated that we might find evidence of a Moche occupation. During our three seasons of excavations there, however, not a piece of diagnostic Moche ceramics was found, nor has any been found in subsequent excavations. Therefore, it is clear that if Chotuna is indeed Chot of the Naymlap story, then Naymlap and his followers were not Moche.

What we did find at Chotuna, however, is a chronological sequence that is perfectly compatible with the accounts of the Naymlap dynasty. In assessing how the dynastic accounts fit the archaeological evidence, the transition between the Early Phase and Middle Phase occupation is the key. This transition, which is thought to have occurred around AD 1100, is the only clear break in what otherwise appears to be a continuous occupation by people maintaining their cultural traditions.

Much of the Early Phase architecture at Chotuna has been severely damaged by erosion, apparently due to massive flooding. While this flooding cannot be dated precisely, it appears to have occurred at or near the end of the

Early Phase (approximately AD 1100) and may have been responsible for the end of this occupation.

In recent years there has been substantial independent evidence of a major El Niño occurring about AD 1100 that had a dramatic impact on a large part of the Andean area. For example, at Pacatnamu, located at the mouth of the Jequetepeque Valley approximately 85 kilometers south of Chotuna, there is evidence of a major El Niño at this time, which appears to have caused abandonment of the site (Donnan 1986: 22). As at Chotuna, the reoccupation of Pacatnamu after AD 1100 involved an entirely new brick type and ceramic assemblage. There is also evidence of major flooding in the Moche Valley at this time (Moseley and Deeds 1982; Moseley and Kolata 1985). It may be that the sudden abandonment of Poma in the Batan Grande area of the upper Lambayeque Valley at about this time (Shimada and Elera 1983: 46; Shimada 1990) was also related to a major El Niño. Moreover, coring of the Quelccaya ice cap, located in the central sierra of Peru, has provided evidence of substantial El Niño activity between AD 1097 and 1109 (Thompson 1985).

IF NAYMLAP LIVED DURING THE EARLY PHASE

If the break between the Early and Middle Phase occupation at Chotuna is due to a major El Niño, it is tempting to correlate this with the flood of Fempellec that brought an end to the Naymlap dynasty. The implications of such a correlation are:

1. Naymlap and his followers were the first inhabitants of Chotuna.
2. Naymlap lived approximately AD 700.
3. The Early Phase architecture at Chotuna, utilizing flat, rectangular bricks, was built during the reign of the Naymlap dynasty.
4. The people living at Chot during the Naymlap dynasty used Early Phase ceramics.
5. The flooding that ended the Naymlap dynasty effectively destroyed the cultural traditions of the people living at Chotuna and possibly caused an abandonment of the site.
6. The flooding had a more severe impact on the local people than any subsequent El Niño prior to the arrival of Europeans in the sixteenth century.

IF NAYMLAP LIVED DURING THE MIDDLE PHASE

The Naymlap dynasty can also be correlated with the Middle Phase occupation at Chotuna and Chornancap, implying that:

1. Naymlap and his followers came to the lower Lambayeque Valley shortly after it had been devastated by a major El Niño.
2. Naymlap lived approximately AD 1100.

3. Much of the Middle Phase architecture at Chotuna and Chornancap, utilizing loaf-shaped bricks, was built during the reign of the Naymlap dynasty.

4. The basic Middle/Late Phase ceramic assemblage may have been introduced to the Lambayeque Valley by Naymlap and his followers.

5. The flood that ended the Naymlap dynasty with the reign of Fempellec was relatively mild by comparison to the one that immediately preceded Naymlap's arrival in Lambayeque. It did not leave any evidence in the archaeological record of a subsequent time of chaos, nor lead to an abandonment of Chotuna and Chornancap.

6. The friezes that decorate Huaca Gloria and the murals at Chornancap were probably created during the Naymlap dynasty.

The major weakness in this correlation is the lack of evidence for a major El Niño near the end of the Middle Phase. While the Fempellec flood may have resulted from a weaker El Niño than the one at the end of the Early Phase, it seems more plausible that it was a major environmental perturbation, one that left a lasting, indelible impression on the folk memory of the people of Lambayeque and remained a vivid part of their oral traditions for more than five centuries. The fact that Chotuna clearly experienced such an event at the end of the Early Phase occupation provides such an excellent correlation between the archaeological evidence and the Naymlap story that it compels us to opt for equating the Naymlap dynasty with the Early Phase occupation; however, it is important to realize that the Naymlap dynasty can also be equated with the Middle Phase occupation.

This discussion in no way should be seen as an effort to prove the validity of the Naymlap story. Given the present evidence, such proof is not possible; however, it is also impossible to demonstrate that the Naymlap story is mythical.

Our excavations at Chotuna and Chornancap could have demonstrated that the Naymlap story did not take place at these sites. If, for example, neither site had been occupied until after the Chimu conquest of the north coast, then Naymlap, having ruled the Lambayeque Valley prior to the Chimu, could not have been present at these sites. Alternatively, if all of the construction and occupation of these sites occurred prior to AD 600, it would have been too early to correlate to the Naymlap story. The fact that the ancient occupation of Chotuna correlates with our expectation of when Naymlap and his descendants lived provides some support for the validity of the story. The flood that created a break in the occupation at about AD 1100 also offers a plausible correlation to the Fempellec flood that terminated the dynasty.

While field archaeology is severely limited in its ability to confirm or deny the validity of myths, legends, and oral traditions, it can provide important insights that can help in their analysis. Andeanists should be encouraged

to frame hypotheses from the oral traditions that can be tested through field archaeology. They should also be cautious about accepting or rejecting the validity of these traditions until more evidence is available.

Appendix 1
CERAMICS

Christopher B. Donnan

The ceramic descriptions that follow are organized chronologically, following the Early, Middle and Late Phase sequence defined in Chapter 1 (pages 6–13). The illustrations utilize the color coding shown in Figure 164.

Early Phase ceramics are very distinctive from those of later phases and can be defined because of several unmixed assemblages that were found in excavation units at Chotuna. In most instances, clear distinctions cannot be made between Middle and Late Phase ceramics, partly because very few ceramics were recovered from contexts that were exclusively Middle Phase. In addition, it is clear that Middle and Late Phase ceramics are basically the same tradition, which did not evolve substantially during the centuries in which it was in use. Most of the paste types, vessel forms, and decorative techniques appear to have been established in the Middle Phase and to have persisted with only subtle changes throughout the Late Phase. Although changes must have occurred, they cannot be identified within our sample. Therefore, most of the Middle and Late Phase ceramics will be combined in the descriptions that follow and will be referred to as Middle/Late Phase ceramics.

While Middle/Late Phase ceramics represent the local tradition at Chotuna and Chornancap, there are three periods when this tradition experienced outside influence. The first was Chimu influence, which occurred after approximately AD 1370; the second was Inca influence, which occurred after approximately AD 1470; and the third was European influence, which occurred after AD 1530. To the extent that these influences could be identified, they are described separately in the discussion that follows, and the ceramics are identified as Chimu Late Phase, Chimu-Inca Late Phase, and Colonial Late Phase.

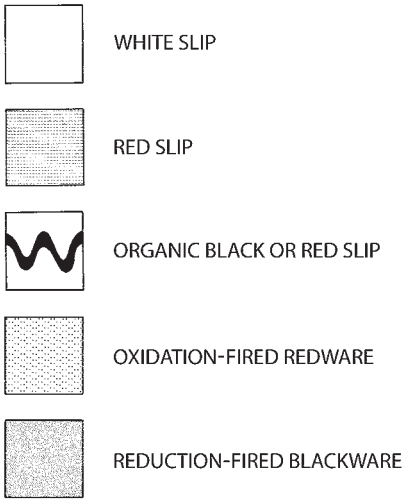


Figure 164 Key to ceramic illustrations.

EARLY PHASE CERAMICS

No Early Phase ceramics were found at Chornancap. Possibly the site was not occupied at that time. Early Phase ceramics were found in various locations at Chotuna, however, consistently associated with the earliest evidence of occupation at this site. Two areas yielded abundant Early Phase ceramics. One was a domestic habitation area (Unit AV1), located south of the Artisans Quadrangle (Fig. 11), where the adobe architecture was built exclusively of flat rectangular bricks and where there does not appear to have been any Middle or Late Phase occupation.

Early Phase ceramics were also found in the lowest levels of Unit A1, the deep excavation located on the east side of Huaca Mayor (Fig. 11). The Early Phase material was found immediately above sterile soil, near the present water table. These were the lowest levels excavated at Chotuna, and the material they contained is presumed to represent the earliest occupation of the site.

Several features distinguish Early Phase ceramics from those of the Middle/Late Phase. Most notable is the complete absence of paddle-marked ceramics in the Early Phase assemblages. In addition, three-color decoration is present in the Early Phase ceramics, but absent from the Middle/Late Phase assemblages. Three-color decoration, consisting of red, white, and black slip, was found on a unique flask-shaped bottle (Fig. 165a) and on plates (Fig. 165b–g).

Red-on-white slip-painted decoration is also characteristic of Early Phase ceramics. It is particularly common on plates (Fig. 166) and was also found on one unique modeled head (Fig. 167a) and one bottle (Fig. 167b). A third painted decoration, consisting of organic black pigment applied to a brownish-buff surface color, is found on Early Phase ceramics (Fig. 167c–e) and also on ceramics of the Middle/Late Phase.

Tripod base plates (Fig. 167f–h) are found only among Early Phase ceramics, as are spout and handle bottles with oblate chambers (Fig. 167i, j) and jars with *Spondylus*-like surfaces (Fig. 167k–m).

An exclusively Early Phase decorative technique is simple, prefired incision on large oxidization-fired jars and ollas that are unslipped and unburnished (Fig. 168a–e). The incisions are broad and form crossed lines or rectangles.

Ceramic ofrendas are miniature vessels that are unslipped and unburnished. Those of the Early Phase are consistently tall and upright in form. They can be distinguished from those of the Middle/Late Phase by pronounced shoulders on the upper part of their chambers (Fig. 168f–j).

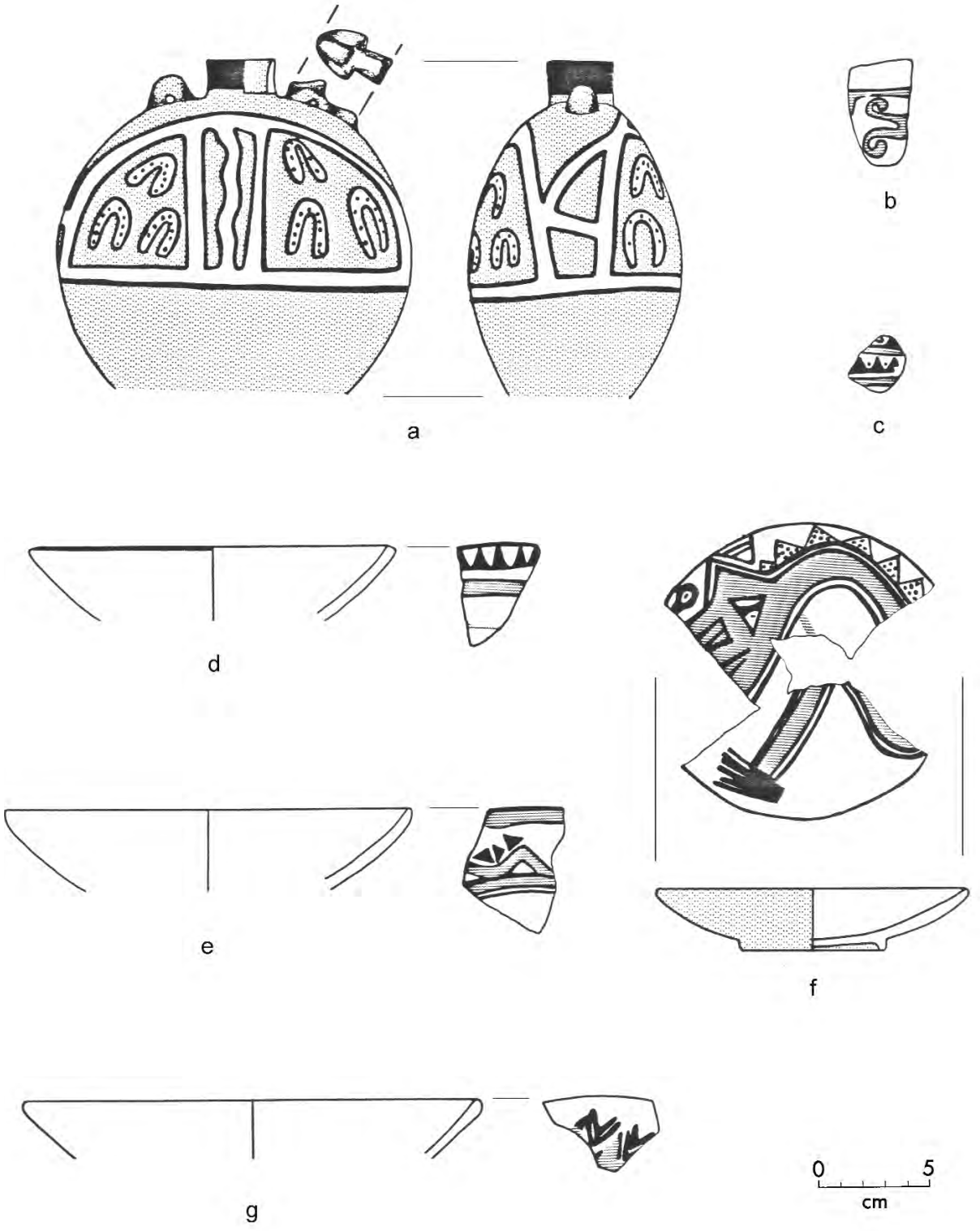


Figure 165 Early Phase ceramics.

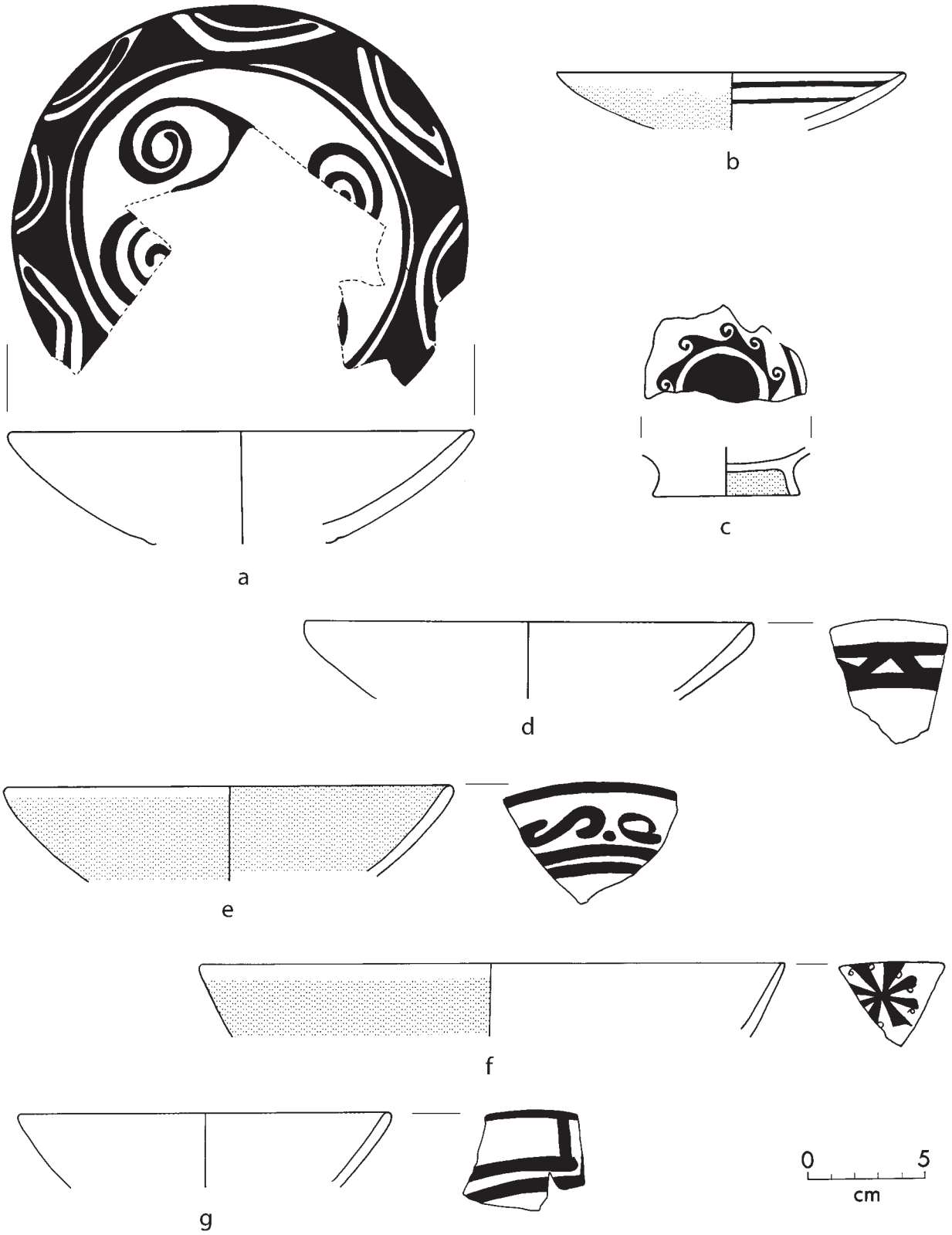


Figure 166 Early Phase ceramics.

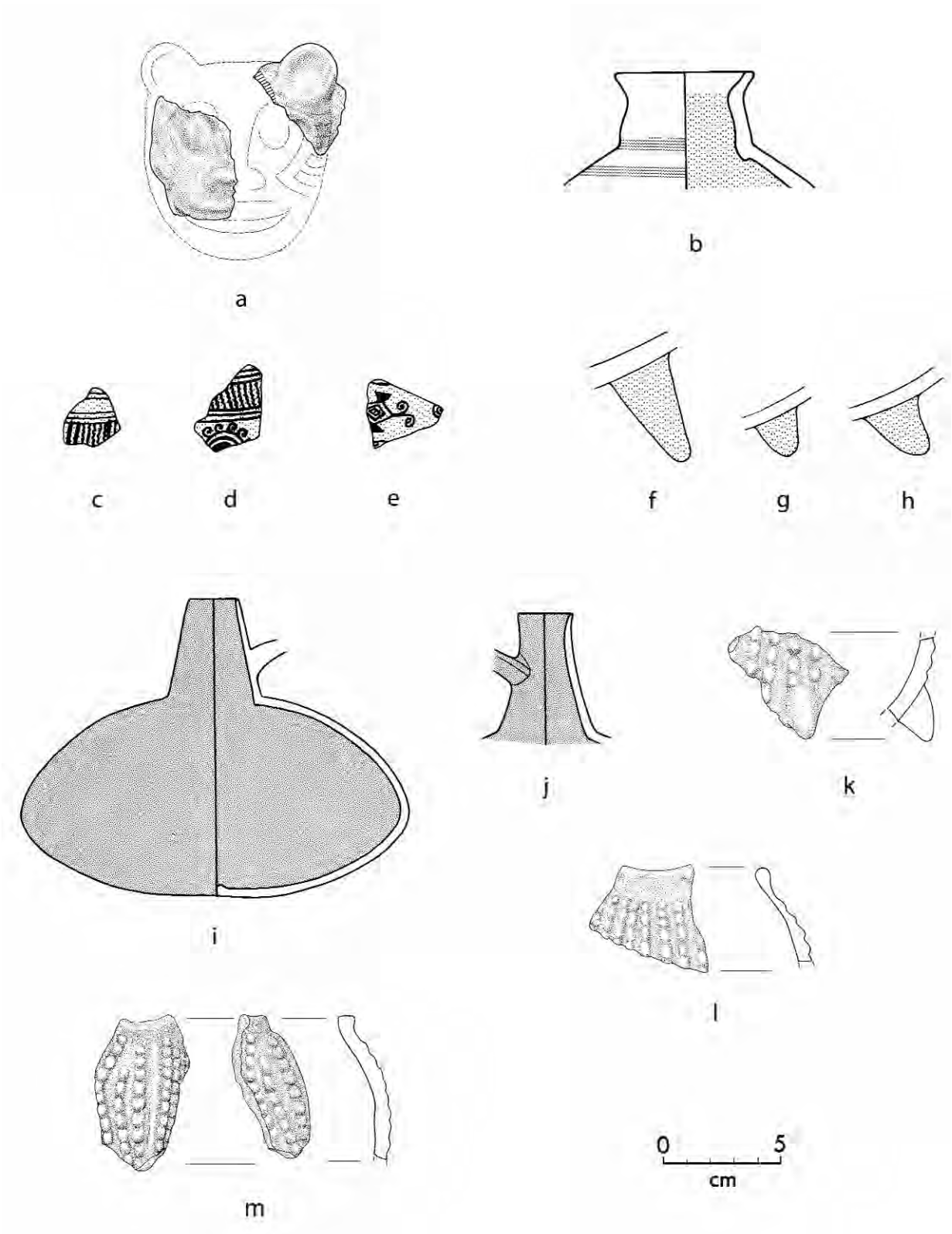


Figure 167 Early Phase ceramics.

Most Early Phase ring-base plates are unslipped or are painted with an overall coating of red or white slip (Fig. 168k–p). Ring-base plates with press-molded decoration on their exterior surface are exclusively Early Phase (Fig. 169). One unique specimen of this type (Fig. 169c) has a press-molded design on the exterior surface and a prefired incised decoration on the interior surface.

A variety of molded faces were found in Early Phase deposits (Fig. 170a–e). Two (Fig. 170a, b) appear to be from jar necks; a third (Fig. 170c) probably projected from a vessel chamber. As noted below, faces of this type continue in Middle/Late Phase ceramic assemblages.

Two modeled human heads with large circular ear ornaments were found in Early Phase deposits (Fig. 170d, e). They are hollow and open at the base of the neck. One Early Phase ocarina was also found (Fig. 170f), as were two small fragments of ceramic masks (Fig. 170g, h). One of the masks (Fig. 170g) has an opening at the left eye, while the other (Fig. 170h) is open at the mouth.

An exclusively Early Phase jar form has a characteristic neck that rises vertically from the chamber and flares abruptly at the rim (Fig. 171a–f). The vertical section of the neck generally has a slight bulge and often has a distinctive decoration resulting from having been pinched with either two or three fingers on the outside of the neck while the clay was still moist (Fig. 171a–c). One example (Fig. 171d) has an animal face created by a stamp. Another exclusively Early Phase vessel form has a bulge in the upper part of the chamber, just below the neck (Figs. 171g–i, 172b).

Various other forms of utility-ware vessels are also present in Early Phase ceramic assemblages but apparently continue into the Middle/Late Phase. They include jars with flaring rims (Fig. 172a), ollas with incurving rims (Fig. 172c–f), bowls with flaring rims (Fig. 173a–d), and jars with incurving rims (Fig. 173e, f) or flaring rims (Fig. 173g). Finally, Early Phase ceramics include numerous neckless ollas (Fig. 174).

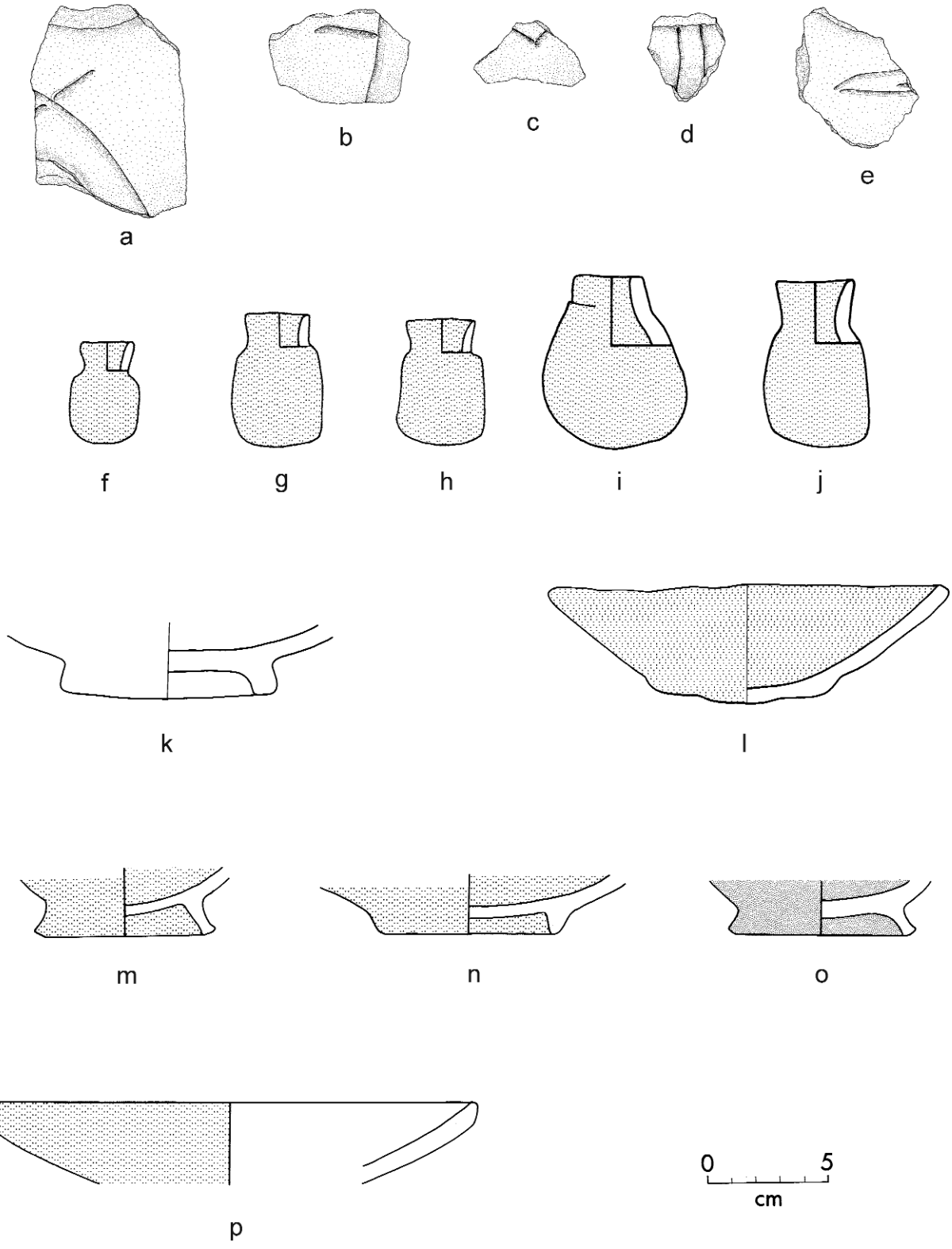


Figure 168 Early Phase ceramics.

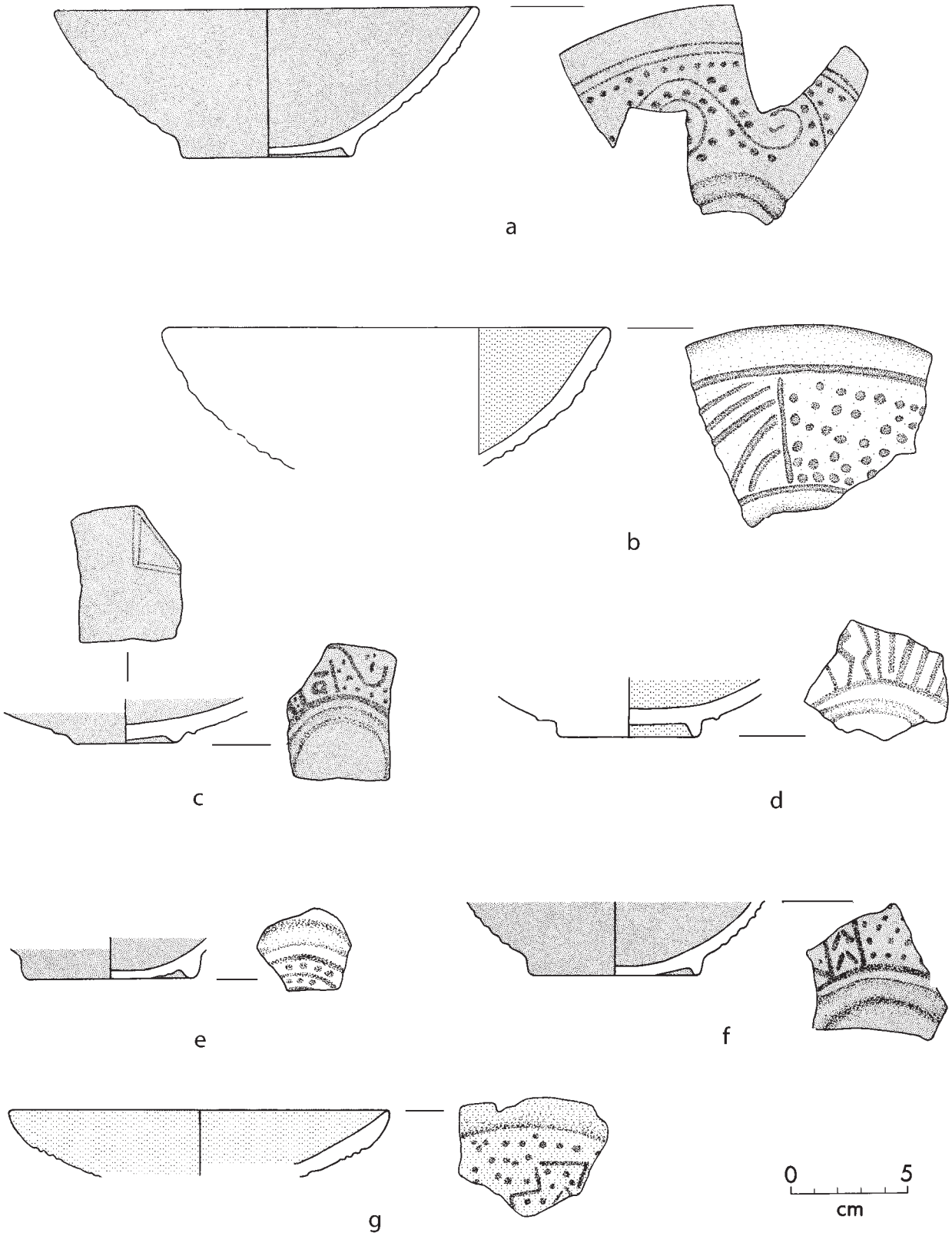


Figure 169 Early Phase ceramics.

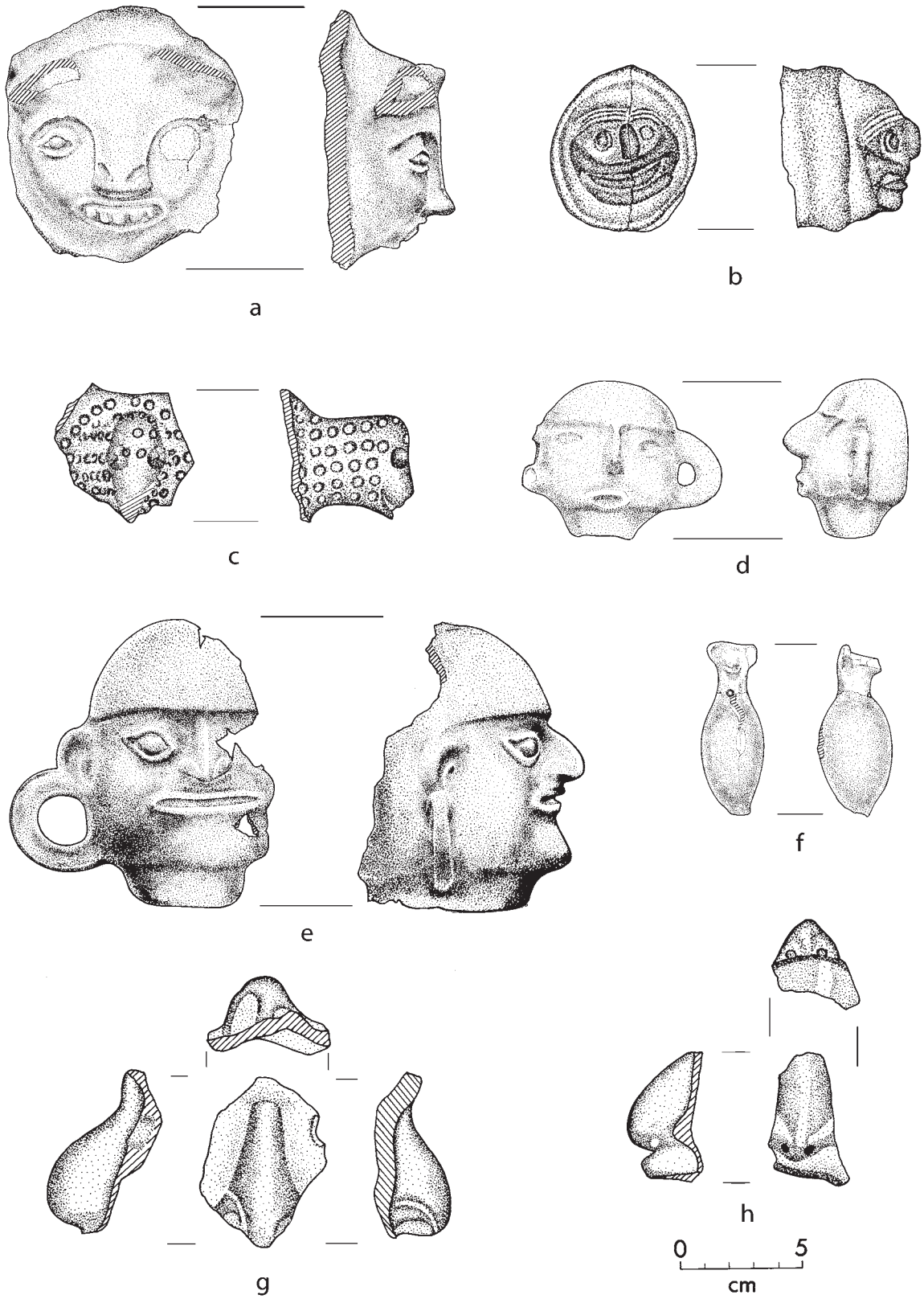


Figure 170 Early Phase ceramics.

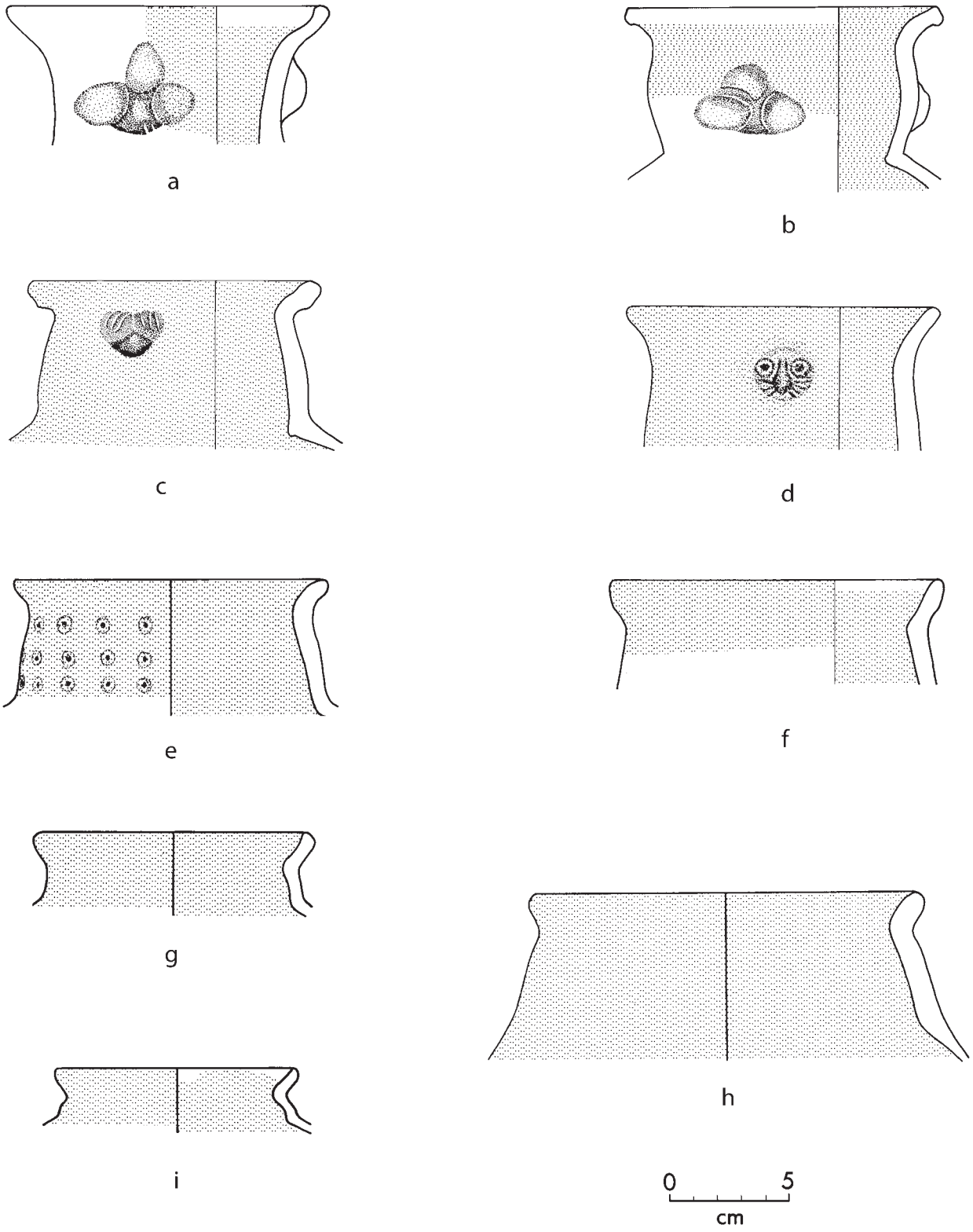


Figure 171 Early Phase ceramics.

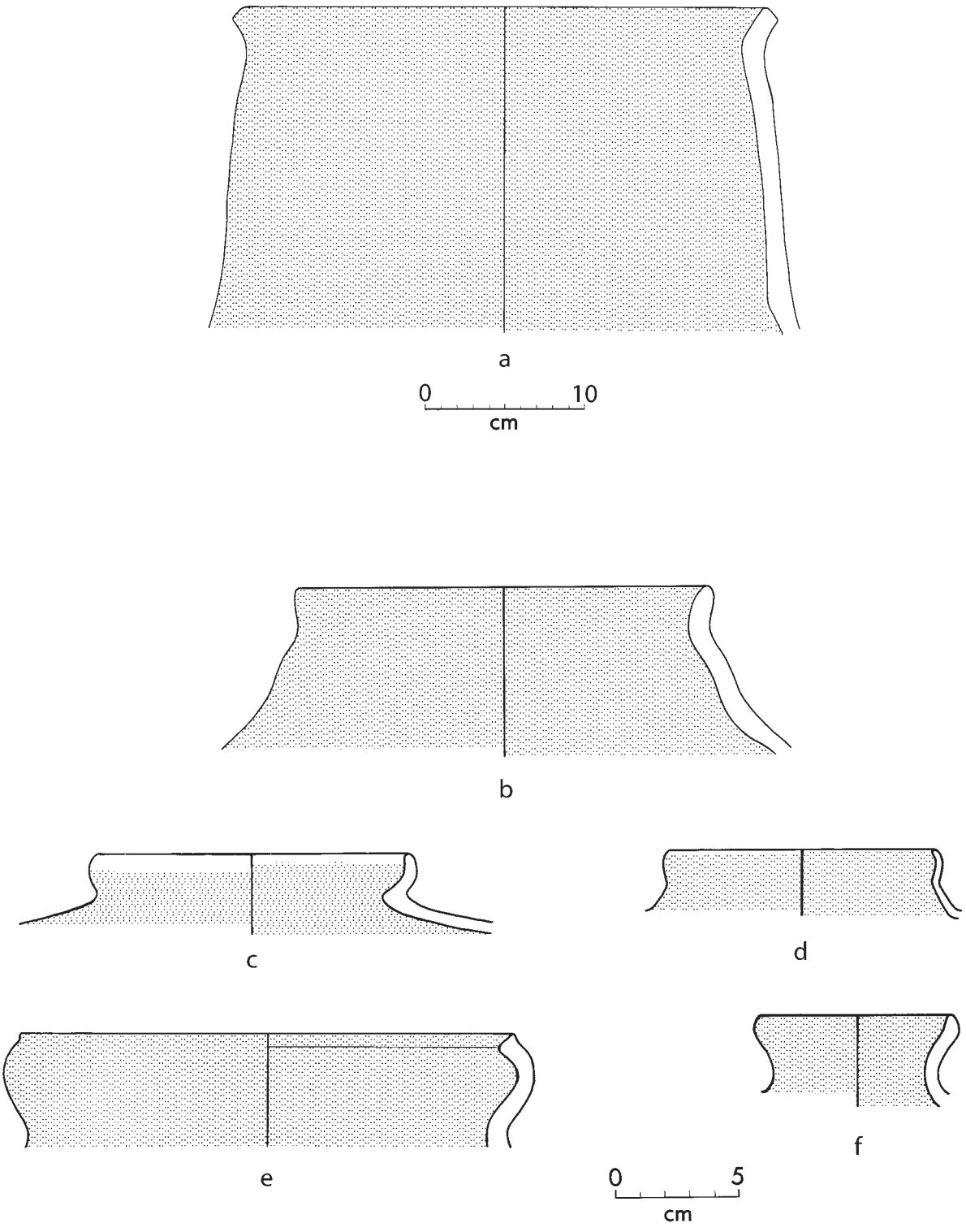


Figure 172 Early Phase ceramics.

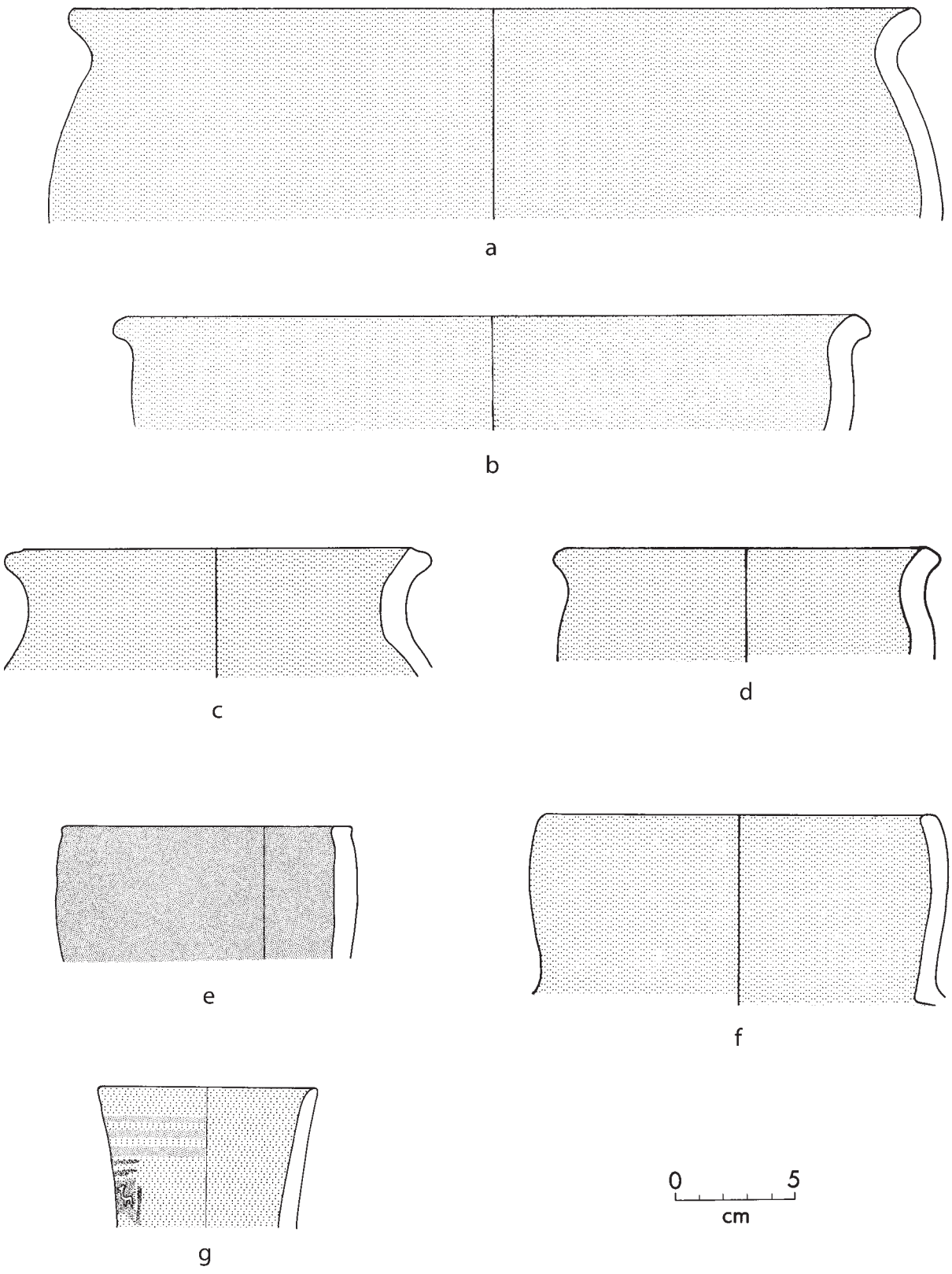


Figure 173 Early Phase ceramics.

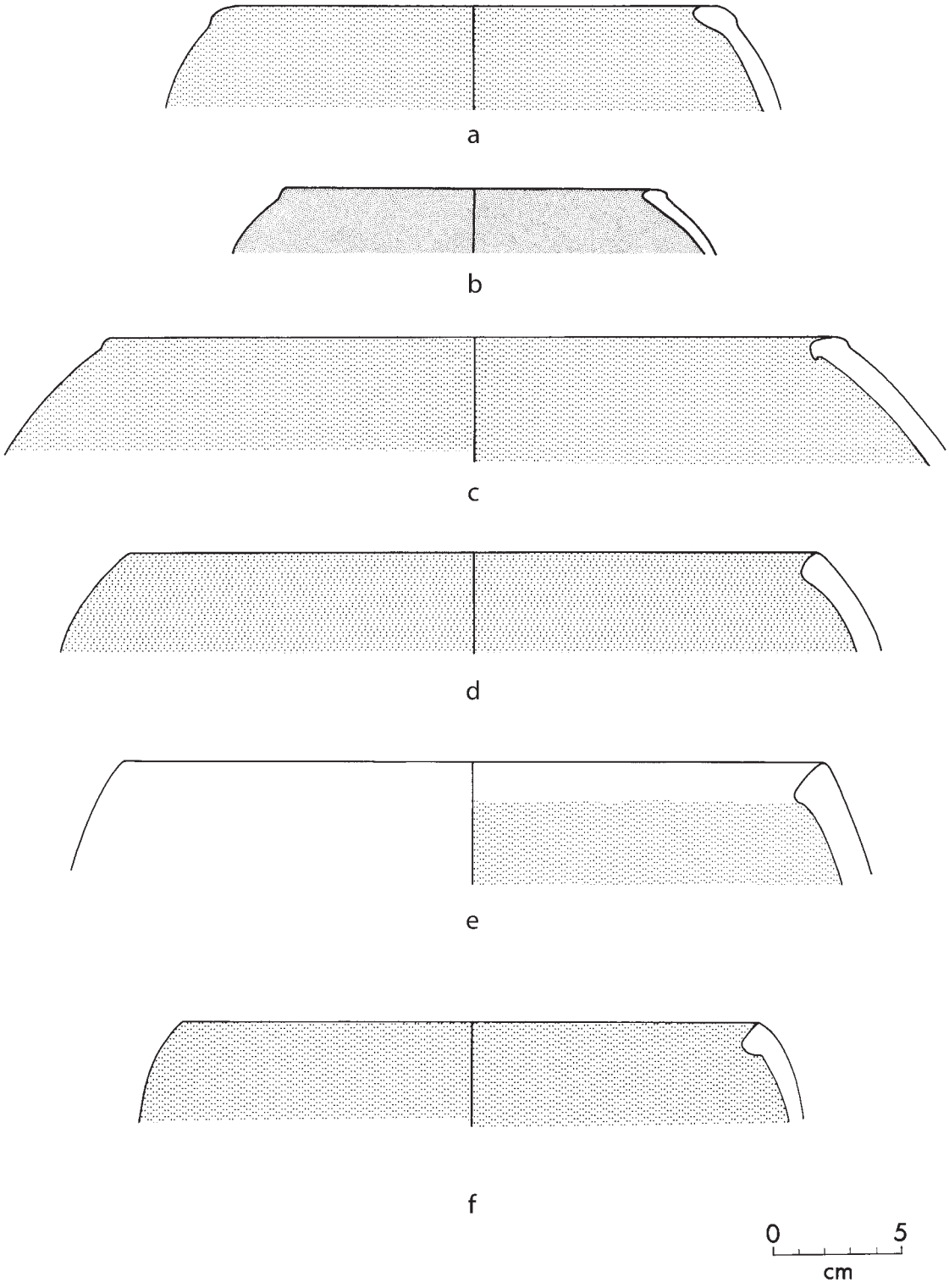


Figure 174 Early Phase ceramics.

MIDDLE PHASE CERAMICS

Most Middle Phase domestic ceramics could not be distinguished from those of the Late Phase and are combined into what is termed here as Middle/Late Phase ceramics. A few forms of fine ware, however, were in use when the Middle Phase began and do not appear to have continued into the Late Phase (Fig. 175). They include double spout and bridge bottles with high pedestal bases and long tapering spouts (Fig. 175a–g). The bridges on these bottles are often thin, slightly curved bands (Fig. 175a, c), but some of the bridges are twisted (Fig. 175b) or round (Fig. 175c). Other examples are hollow, with press-molded decoration (Fig. 175d), or are elaborated with figures (Fig. 175f) or scalloped edges (Fig. 175g). Middle Phase ceramics also include jars with human faces that have almond-shaped eyes (Fig. 175h) and bottles with heads and strap handles (Fig. 175i). Nearly all of the forms are reduction-fired blackware, without any slip painting. These Middle Phase ceramics are often identified as Lambayeque style.

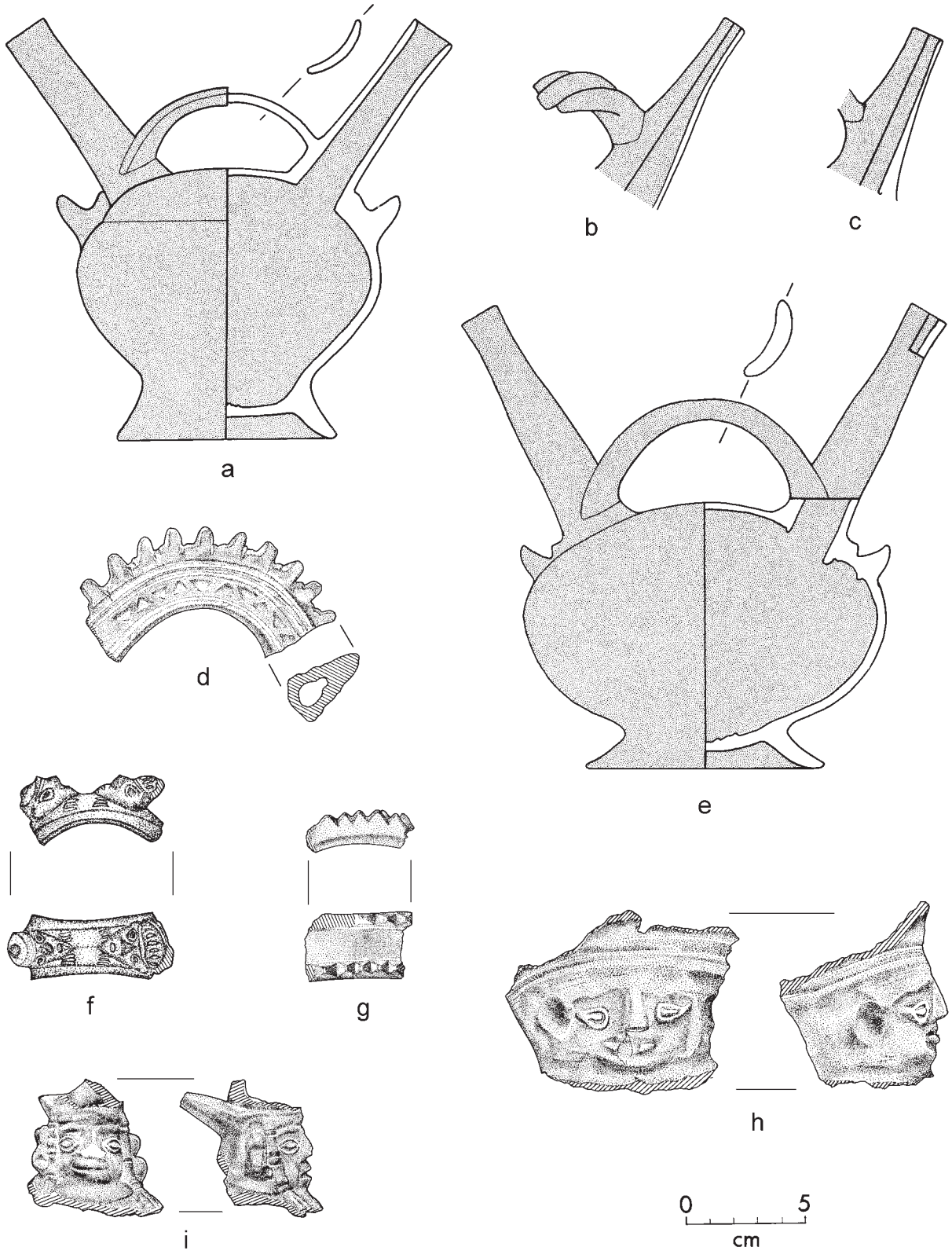


Figure 175 Middle Phase ceramics.

MIDDLE/LATE PHASE CERAMICS

The most significant new feature of Middle/Late Phase ceramics is paddle marking, which is a very common decorative technique (e.g., Fig. 176a–d). However, three-color decoration, consisting of red, white, and black slip, does not continue from the Early Phase, and red-on-white slip painted decoration is very rare.

The most common Middle/Late Phase vessel form is an olla with a distinctive recurved rim (Figs. 176, 177). These are generally paddle marked and/or painted with a thin white slip.

Another common Middle/Late Phase vessel form is an olla with a flaring rim (Figs. 178, 179). Many of these are also paddle marked and/or painted with a thin white slip. There is also a variety of tall neck jars with flaring or recurved rims (Figs. 180, 181), as well as incurving bowls both with and without rims (Fig. 182). Various other forms of utility-ware vessels are also present in the Middle/Late Phase (Figs. 183, 184).

Middle/Late Phase ceramics include numerous lugs in the form of human heads (Fig. 185a-f), bird heads (Fig. 185g–j), and animal heads (Fig. 186). These appear to be from the chambers or necks of large jars. Some were made in two-piece molds, while others were created with stamps.

Plates continue to be common in Middle/Late Phase ceramics, although they are no longer decorated with either press molding or polychrome slip paint. Instead, they are usually unpainted or given an overall application of white or red slip (Fig. 187). Some are reduction fired.

There is a variety of bottle forms in the Middle/Late Phase assemblages, (Fig. 188a, b). One unique specimen (Fig. 188c) had a white-on-red decoration reminiscent of some Early Phase slip painting.

Only five grater bowl fragments were found at Chotuna and none were found at Chornancap. Apparently, grater bowls were seldom used. All were in Middle/Late Phase assemblages (Fig. 188e).

Several Middle/Late Phase ceramic fragments from the chambers of large vessels were decorated with low-relief serpents (Fig. 188d).

Middle/Late Phase ceramic ofrendas (Fig. 188f–k) are similar to those of the Early Phase (Fig. 168f–j) but do not have pronounced shoulders on the upper part of their chambers.

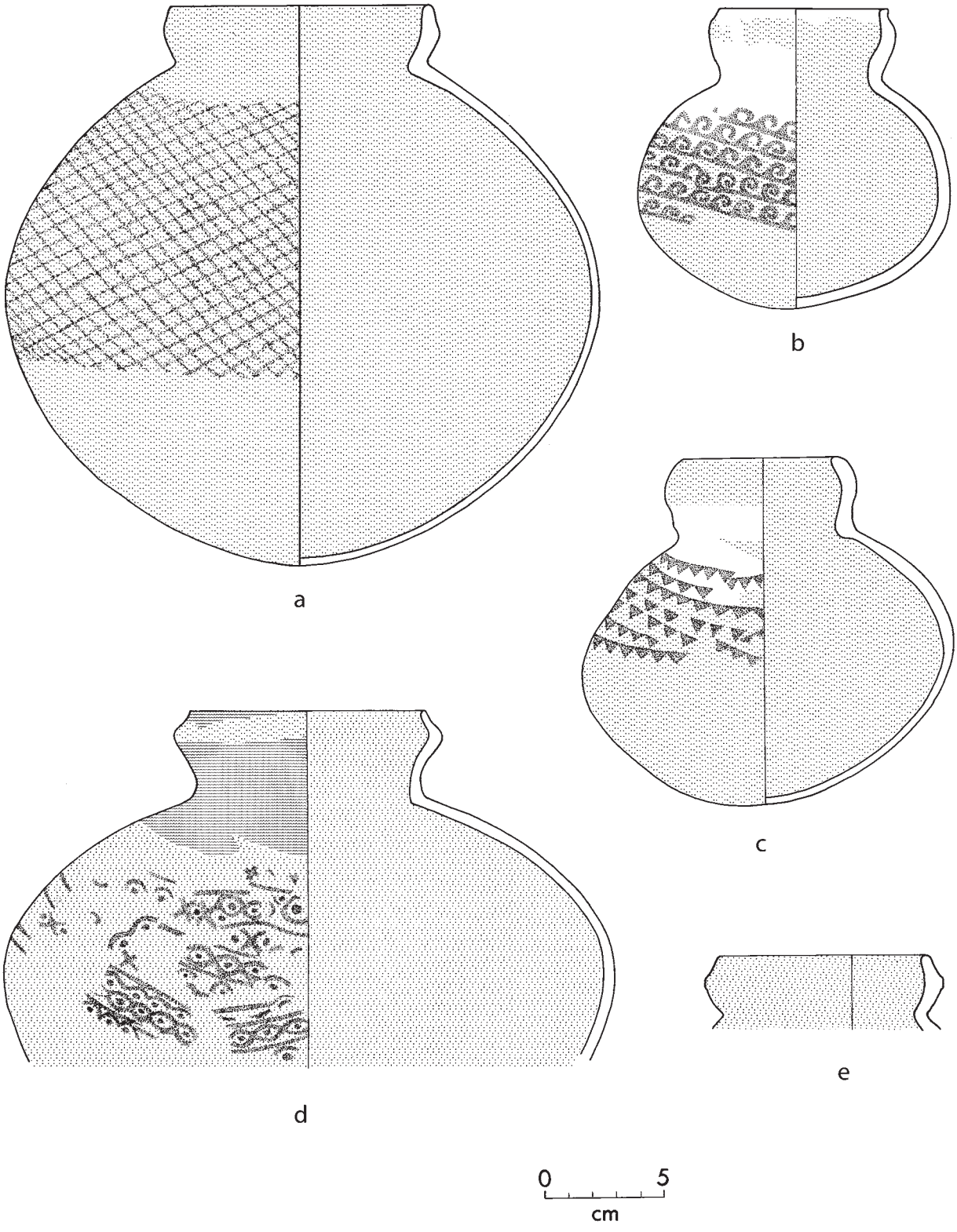


Figure 176 Middle/Late Phase ceramics.

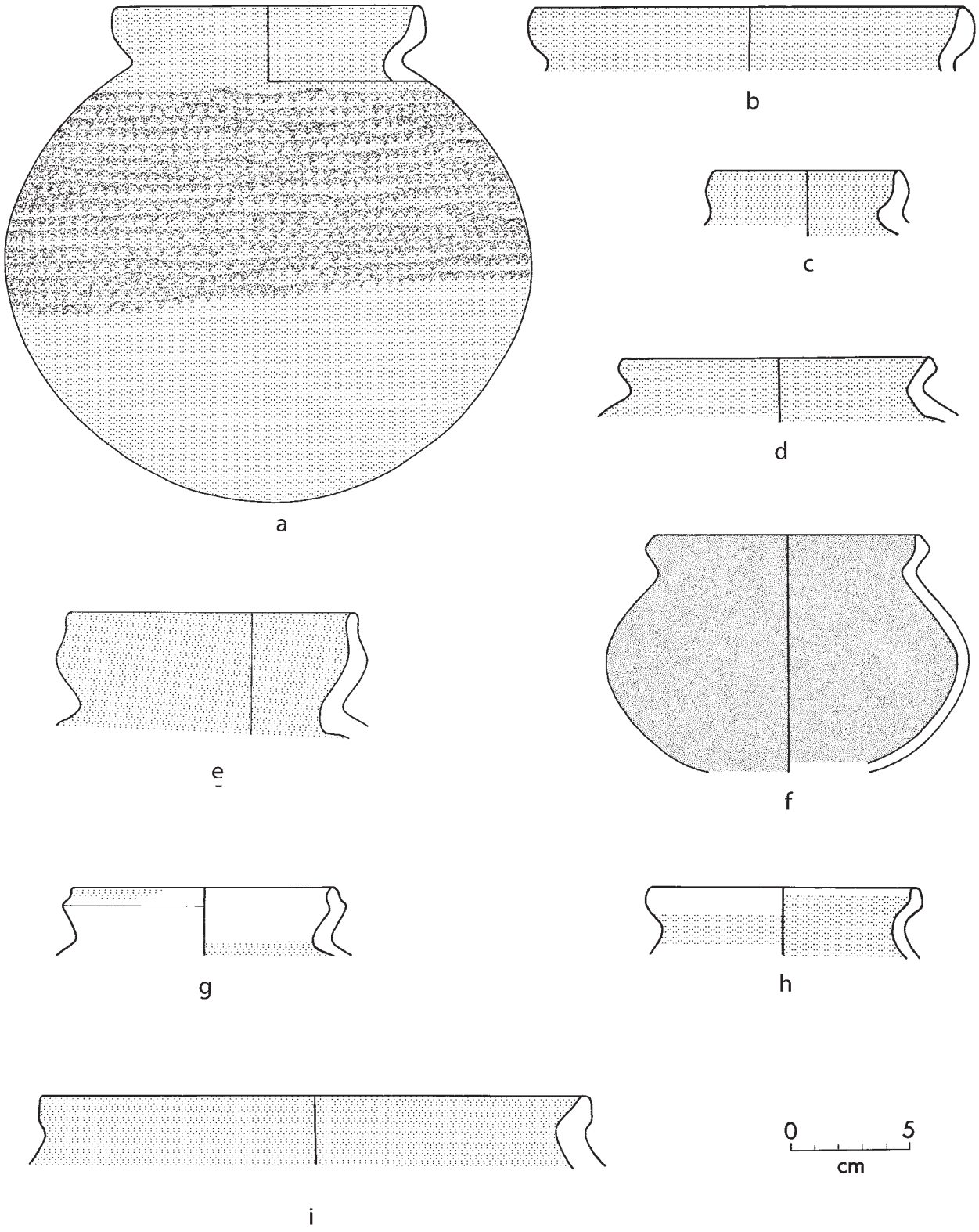


Figure 177 Middle/Late Phase ceramics.

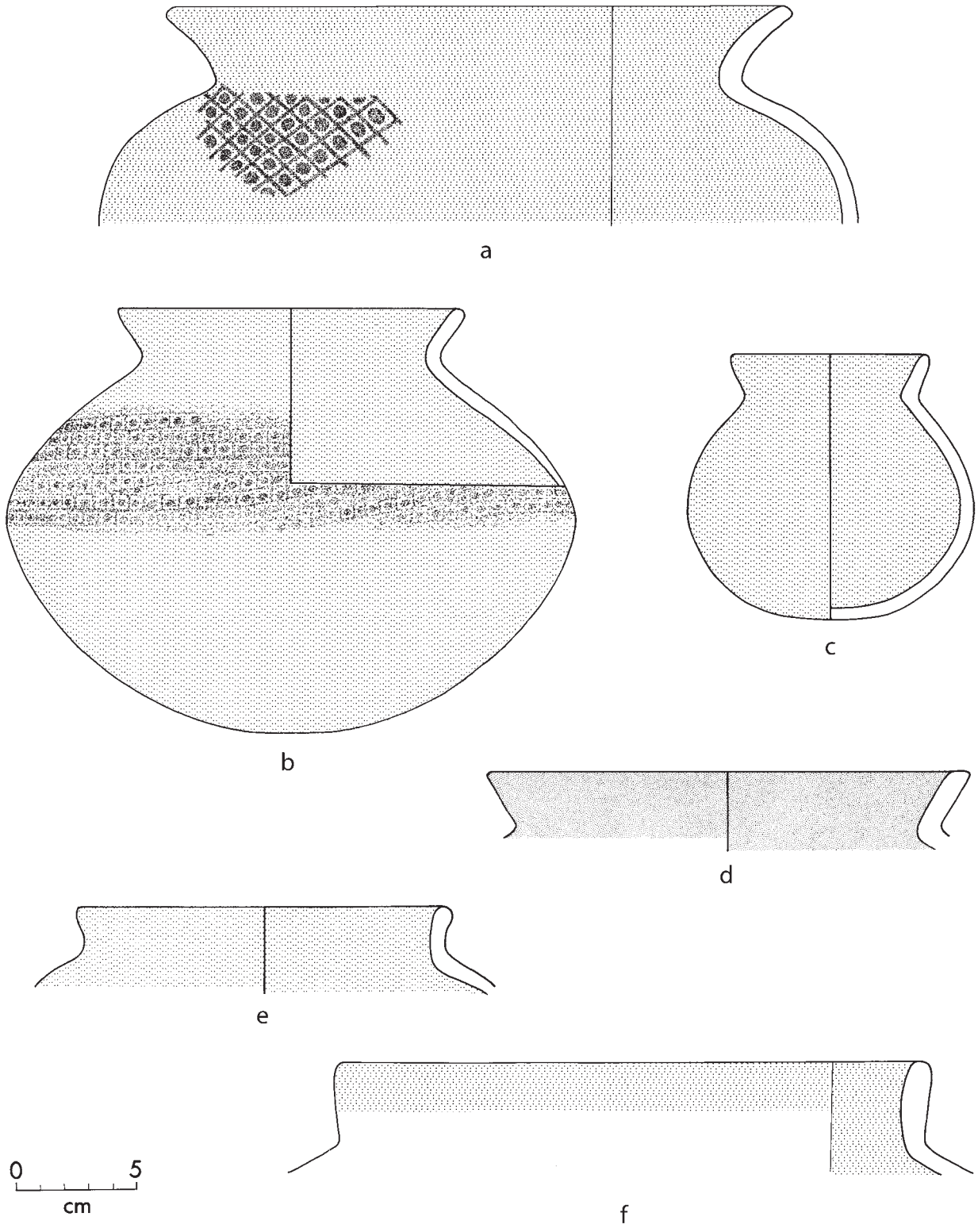


Figure 178 Middle/Late Phase ceramics.

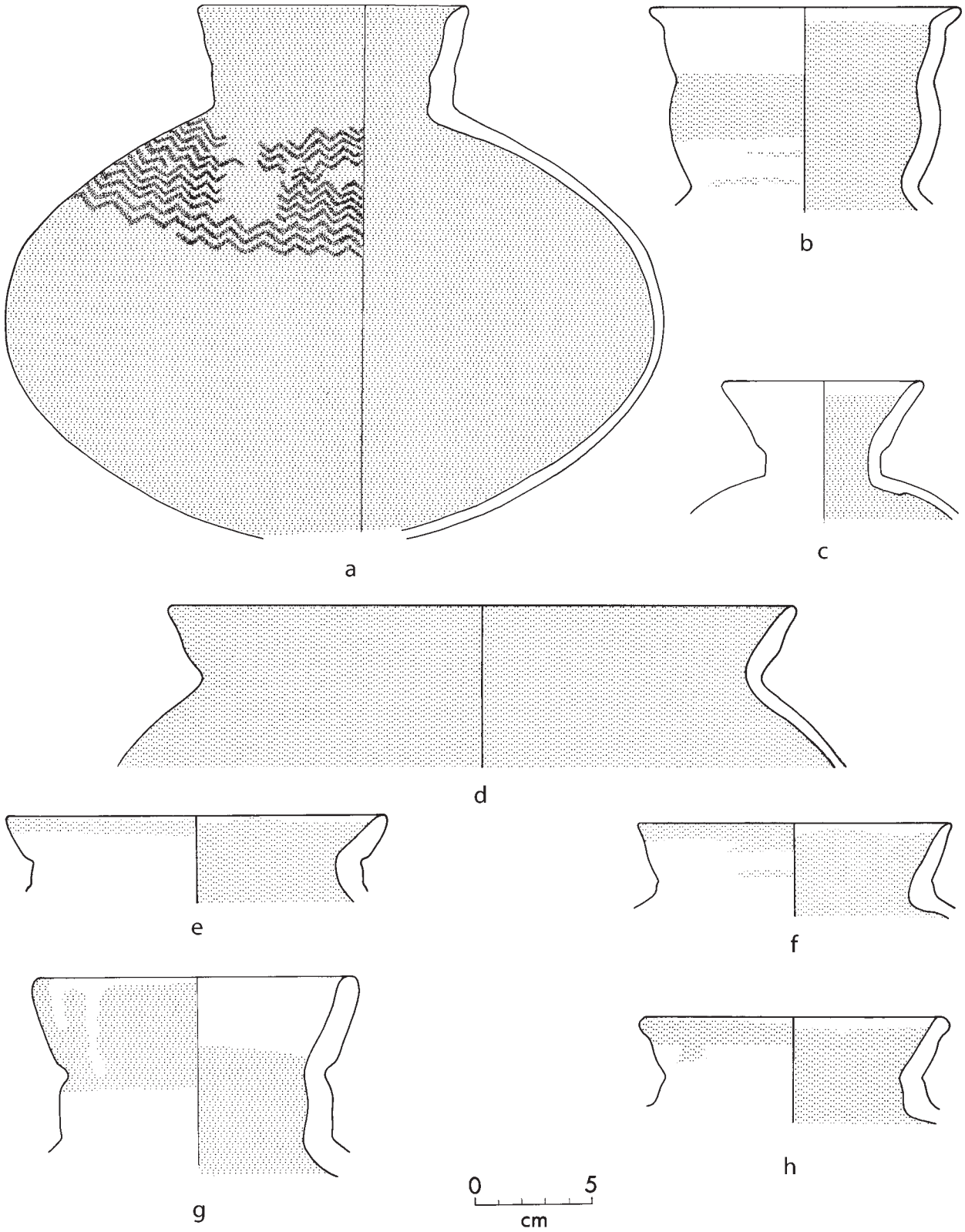


Figure 179 Middle/Late Phase ceramics.

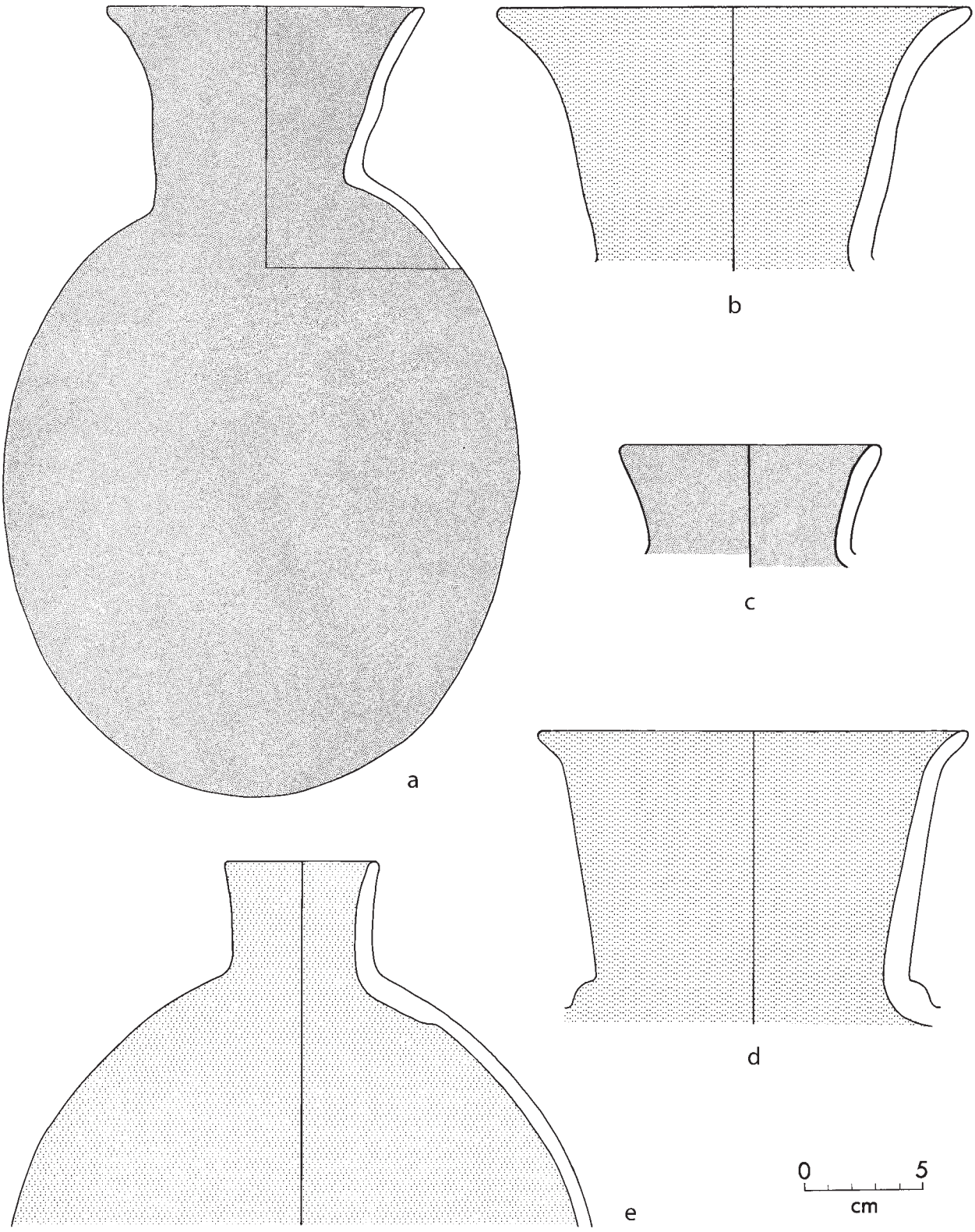


Figure 180 Middle/Late Phase ceramics.

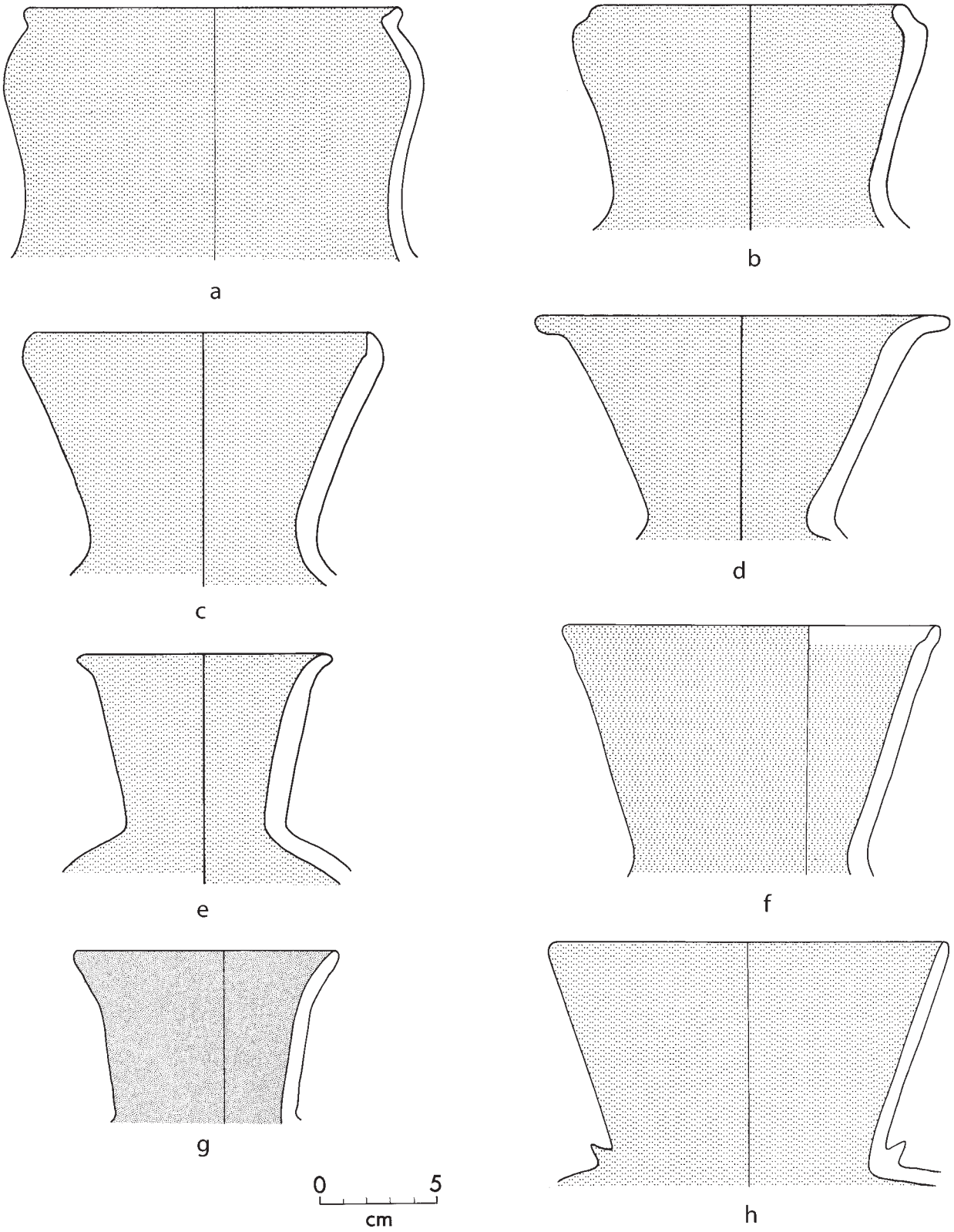


Figure 181 Middle/Late Phase ceramics.

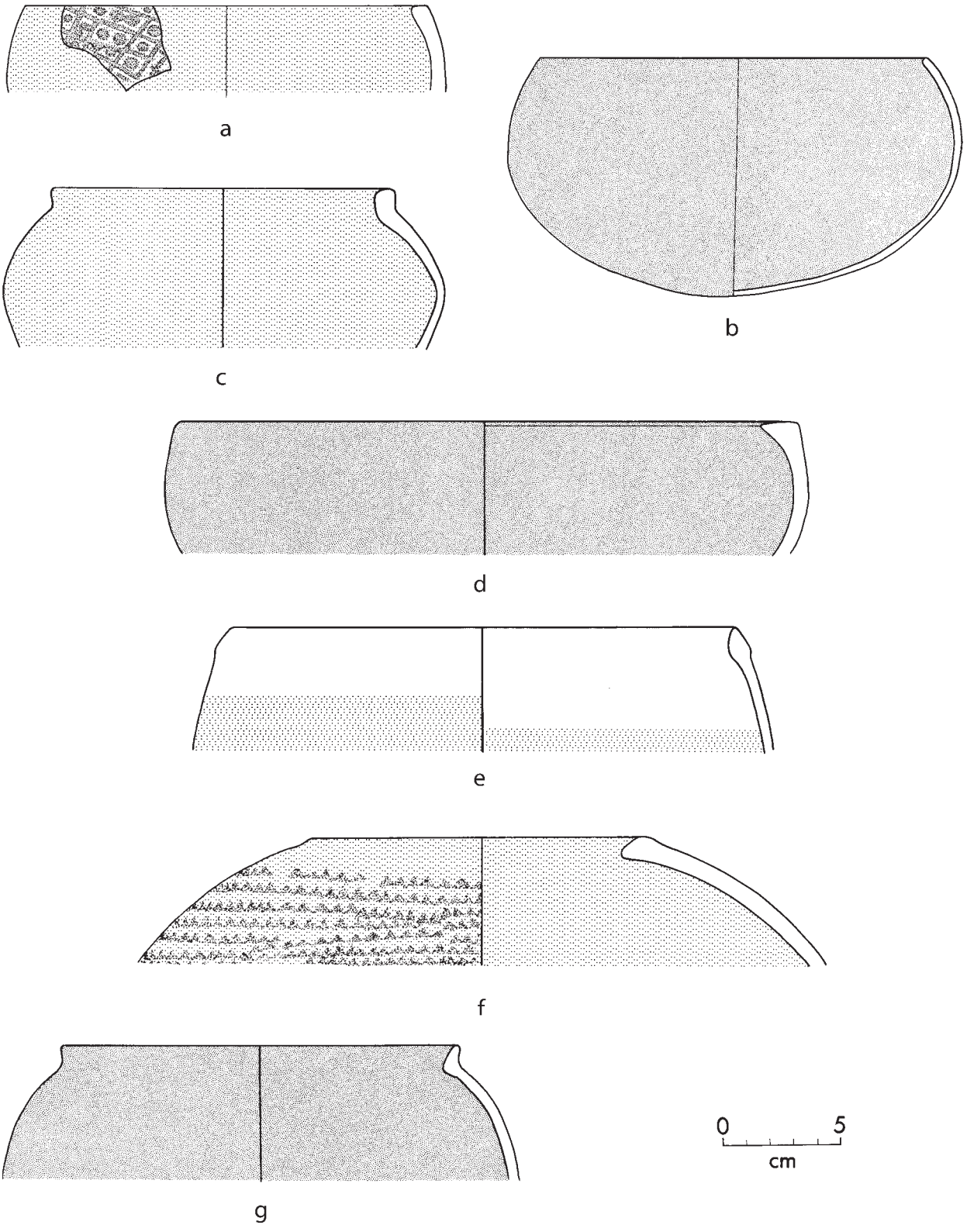


Figure 182 Middle/Late Phase ceramics.

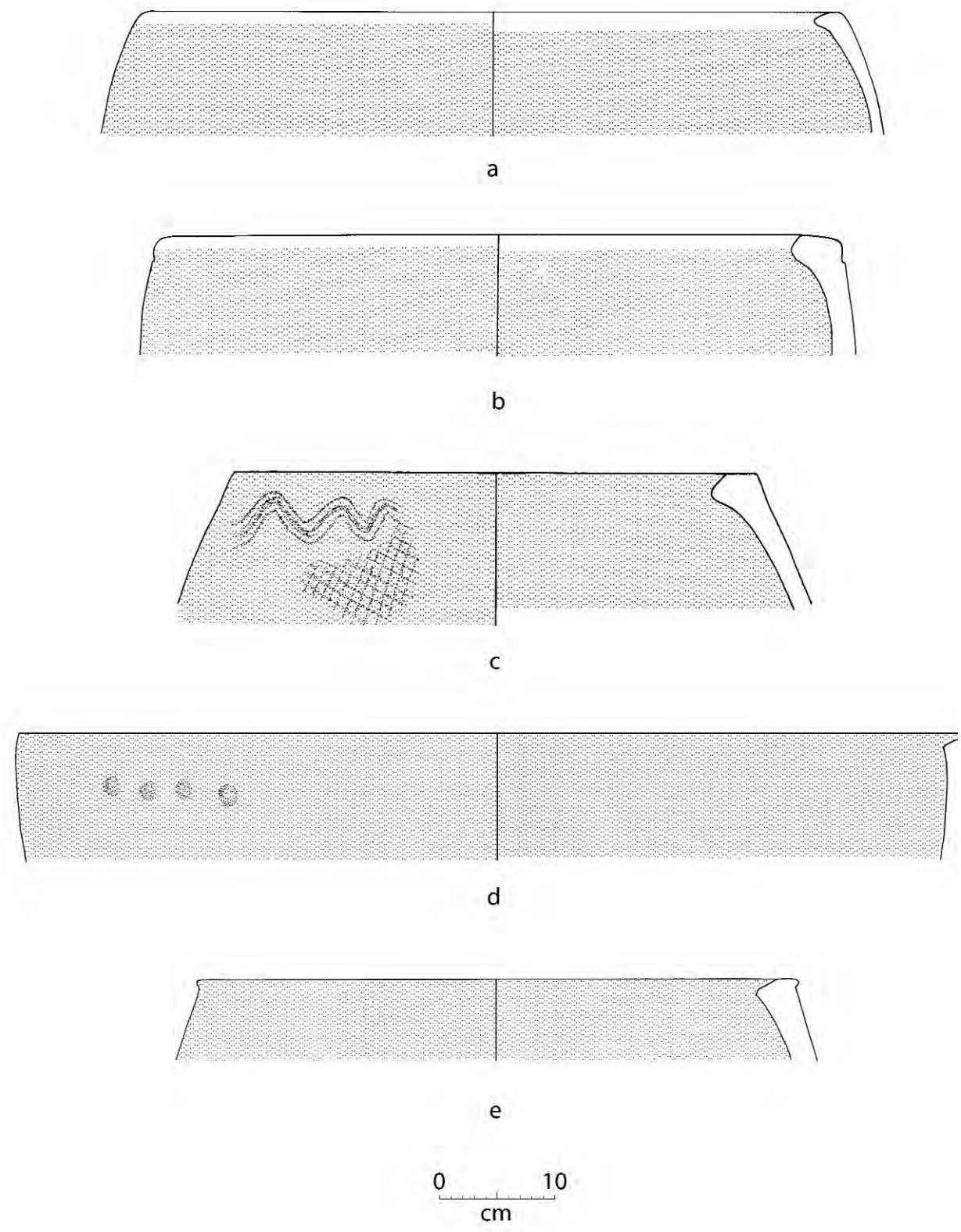


Figure 183 Middle/Late Phase ceramics.

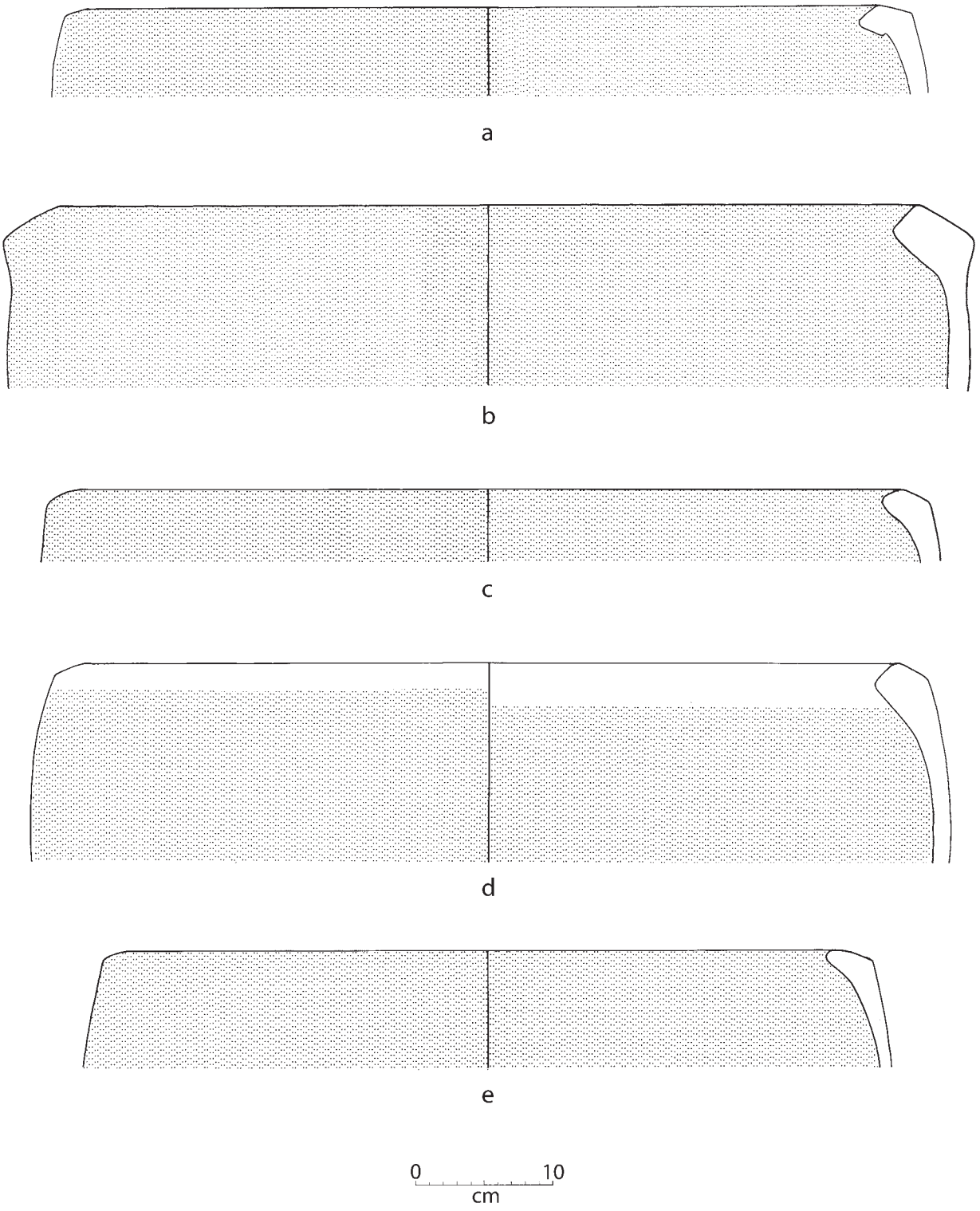


Figure 184 Middle/Late Phase ceramics.

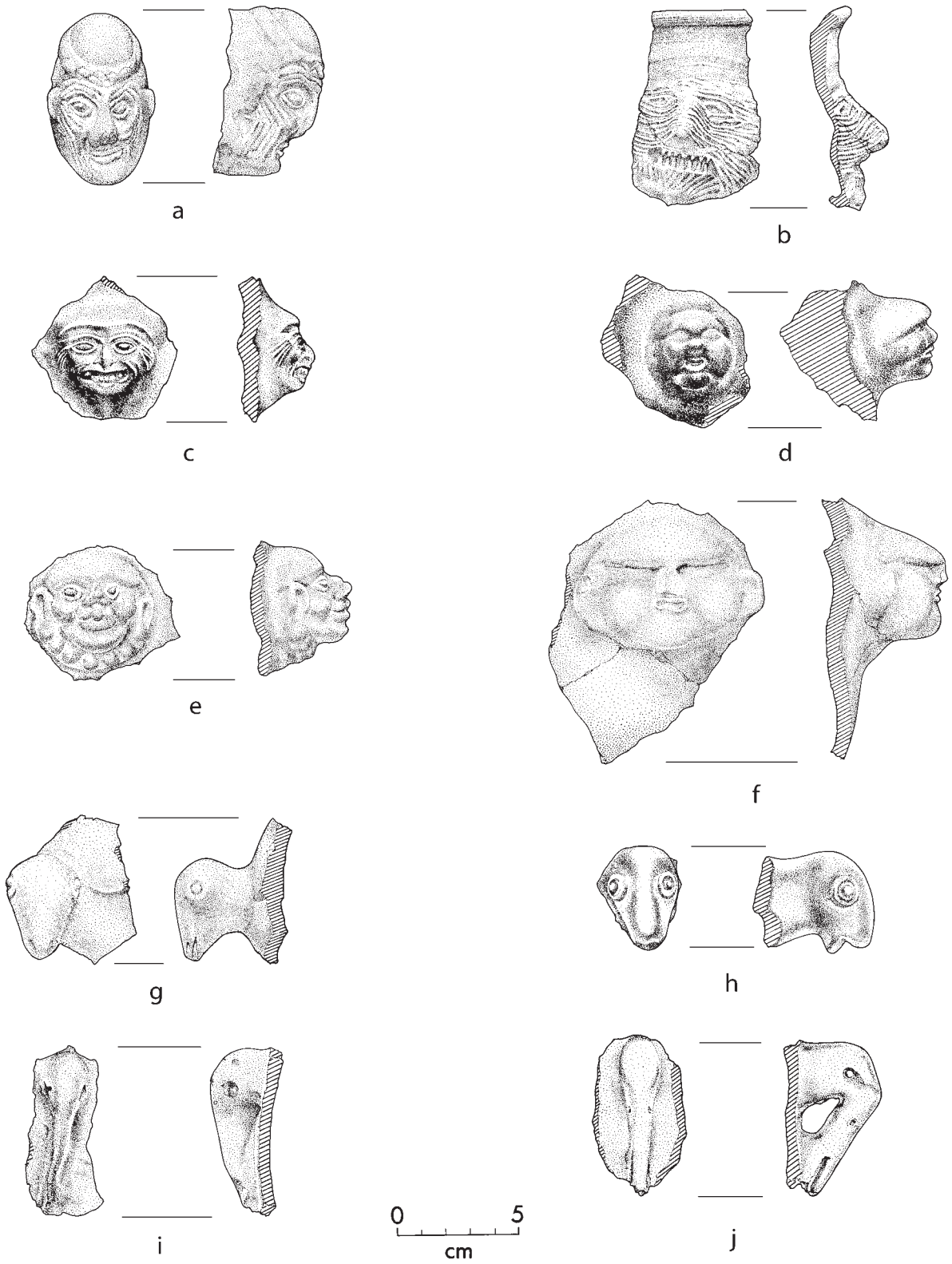


Figure 185 Middle/Late Phase ceramics.

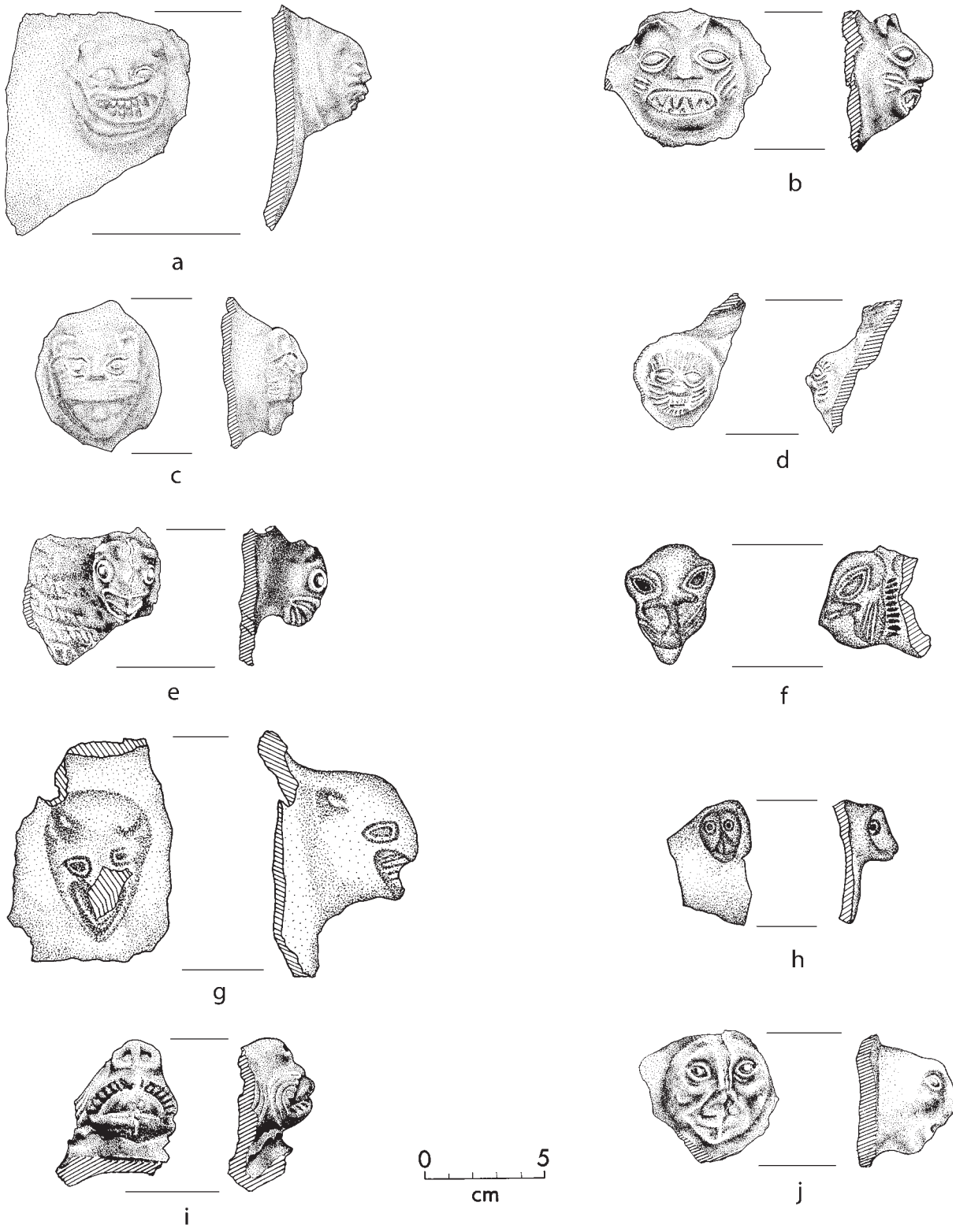


Figure 186 Middle/Late Phase ceramics.

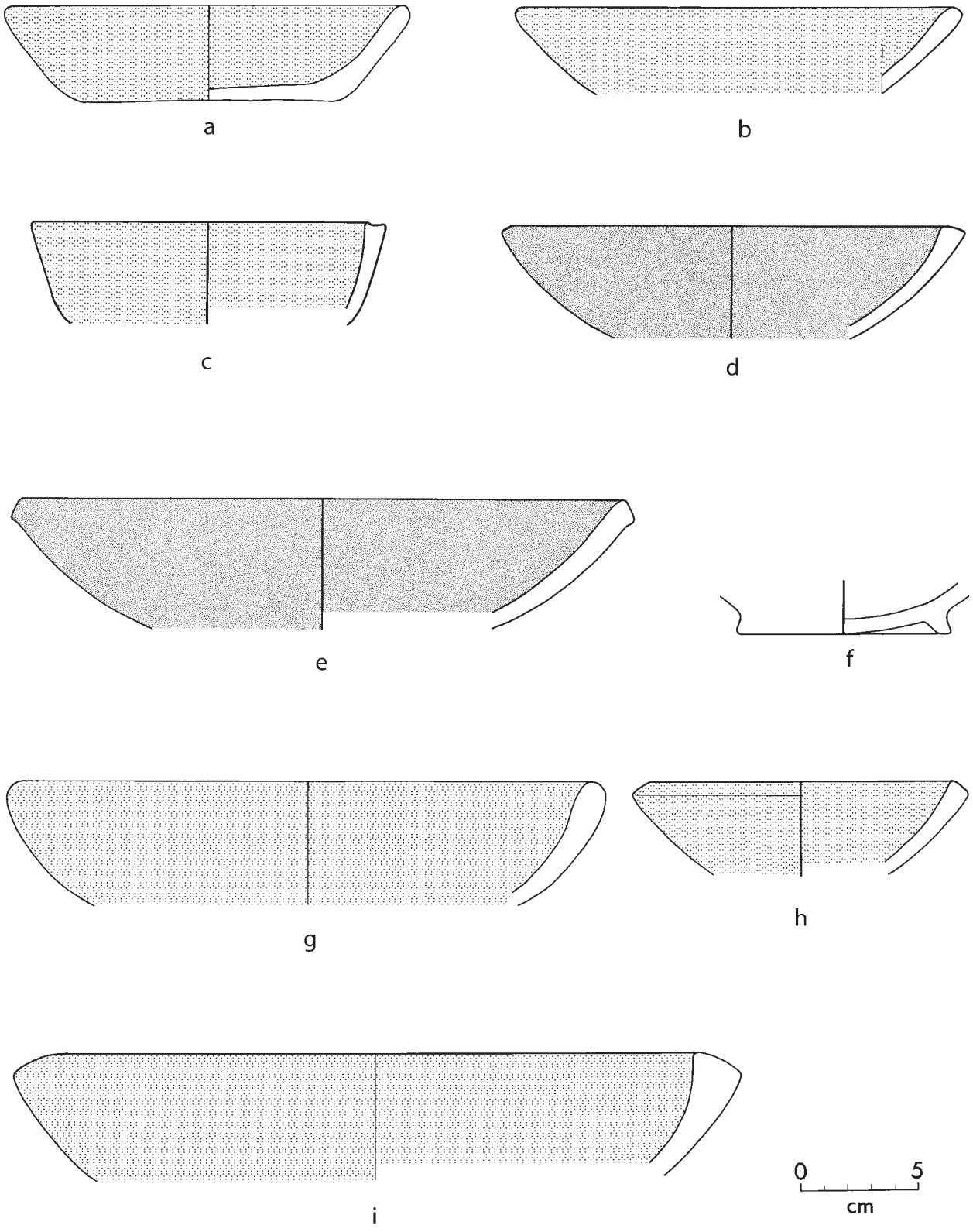


Figure 187 Middle/Late Phase ceramics.

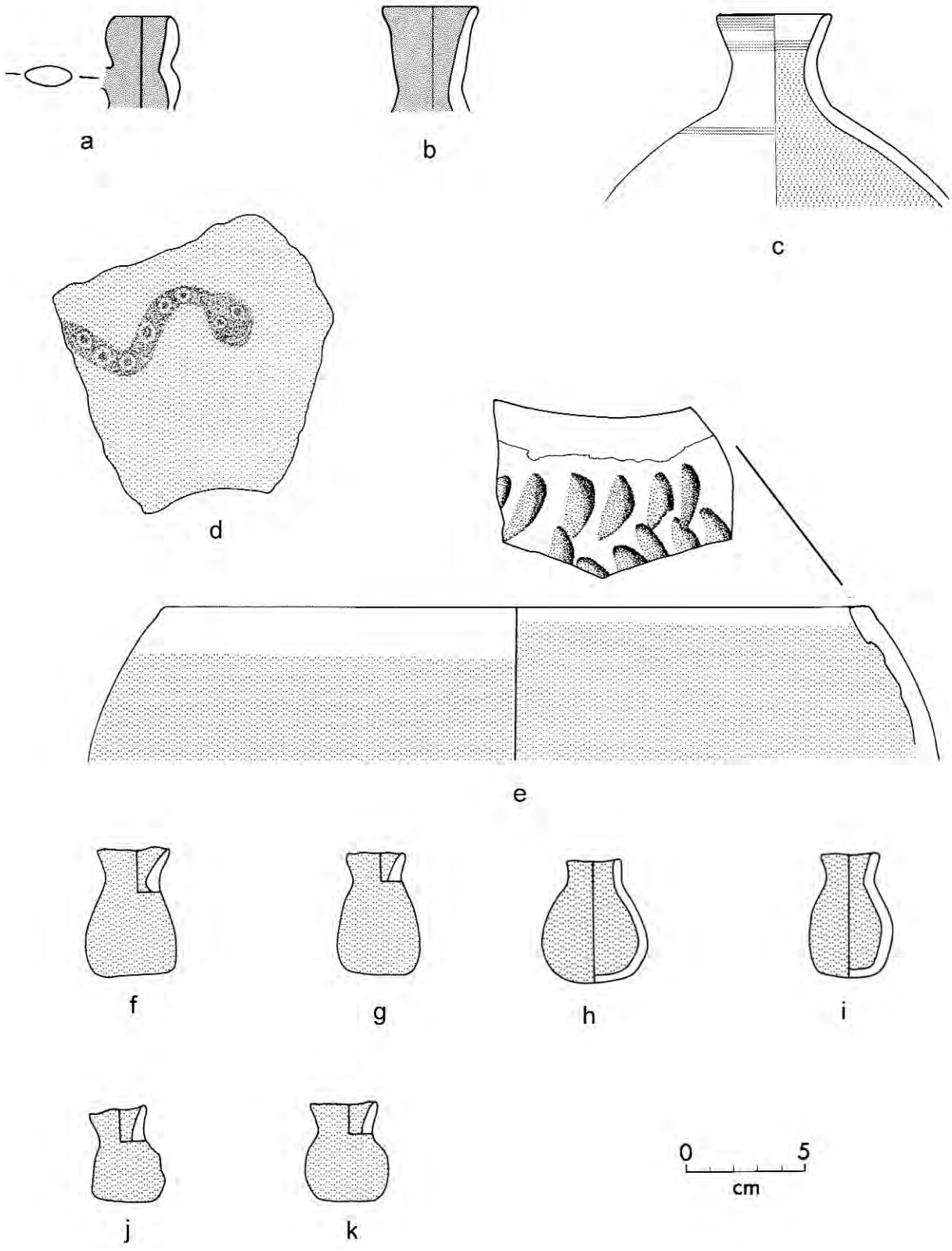


Figure 188 Middle/Late Phase ceramics.

CHIMU LATE PHASE CERAMICS

Only one feature can be recognized as having been introduced by the Chimu, who conquered the Lambayeque Valley around AD 1370: the stirrup spout bottle with a lug on the spout (Fig. 189). Five examples of the lugs were found in our excavations at Chotuna. Three of the lugs are monkeys (Figs. 189, 190a), and two are birds (Fig. 190b, c).

Also included in Chimu Late Phase ceramics are very crude blackware single spout bottles (Fig. 190d), spout and handle bottles (Fig. 190e), and double spout and bridge bottles (Fig. 190f).

The stirrup spout bottle in Figure 189a was in a burial (Fig. 36) with 109 ofrendas. Of these, 98 (e.g., Fig. 190g–k) were very similar to ofrendas that are typical of the Middle/Late Phase (e.g., Fig. 188f–k), indicating that this form continued to be in use during the Chimu Late Phase. However, the other 10 ofrendas (e.g., Fig. 190l–n) were taller and had lugs on the upper part of their chambers . This suggests that ofrendas with lugs may be a new form that was in use during the Chimu Late Phase.

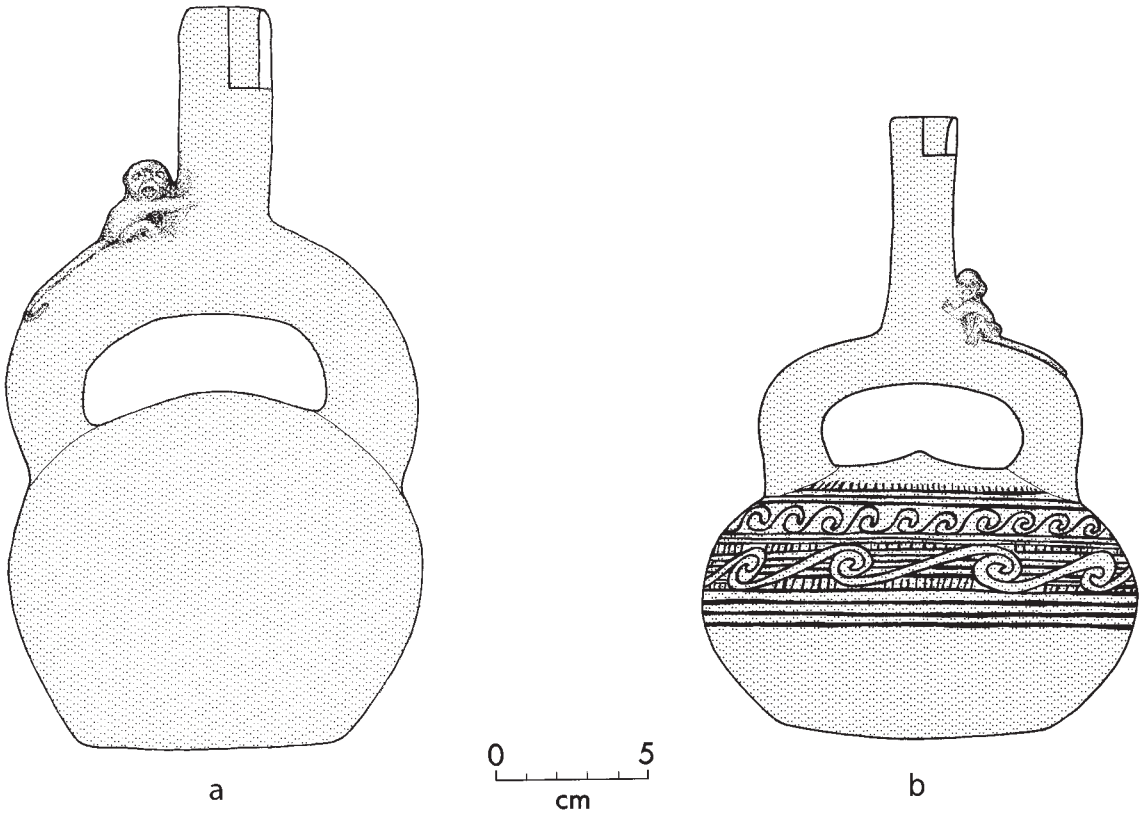


Figure 189 Chimu Late Phase ceramics.

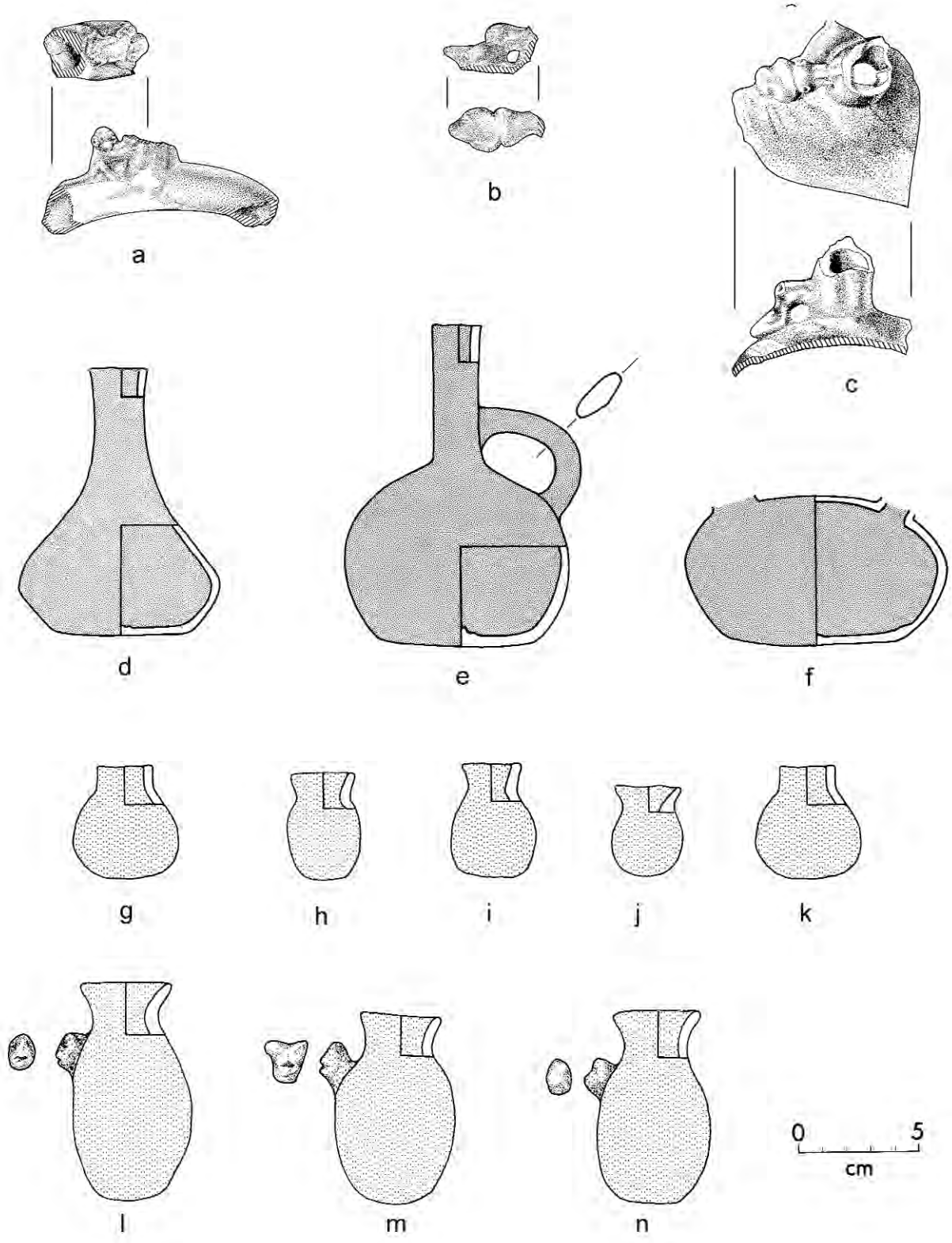


Figure 190 Chimu Late Phase ceramics.

CHIMU-INCA LATE PHASE CERAMICS

Several new features appear in the ceramics at Chotuna and Chornancap after the Inca conquest of the Lambayeque Valley in about AD 1470 that can be identified as Chimu-Inca Late Phase.

The best association of Chimu-Inca Late Phase ceramics comes from graves excavated on the east side of Huaca Gloria. In addition, numerous Chimu-Inca Late Phase ceramics were obtained from the summits of Huaca Gloria and Huaca Susy at Chotuna and from Site K at Chornancap.

The new vessel form most clearly derived from Inca ceramics is the arybaloid bottle (Fig. 191a). Its flaring spout was almost certainly the inspiration for the flaring spouts that occur on other bottles (Figs. 191b, 192c) and jars (Fig. 192a).

Stirrup spout bottles of the Chimu-Inca Late Phase do not have lugs in the form of monkeys or birds, as they did in the Chimu Late Phase. Instead, they have two rounded lugs (Fig. 193a) or are without lugs (Fig. 193b, c).

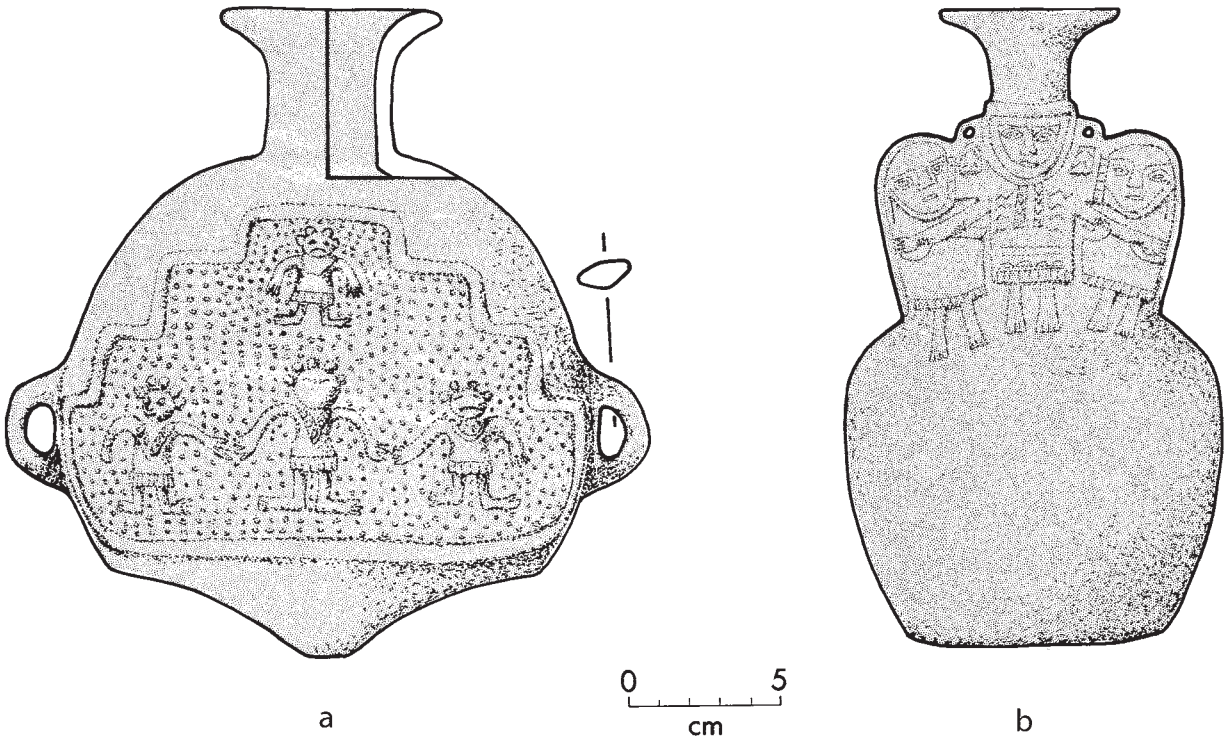


Figure 191 Chimu-Inca Late Phase ceramics.

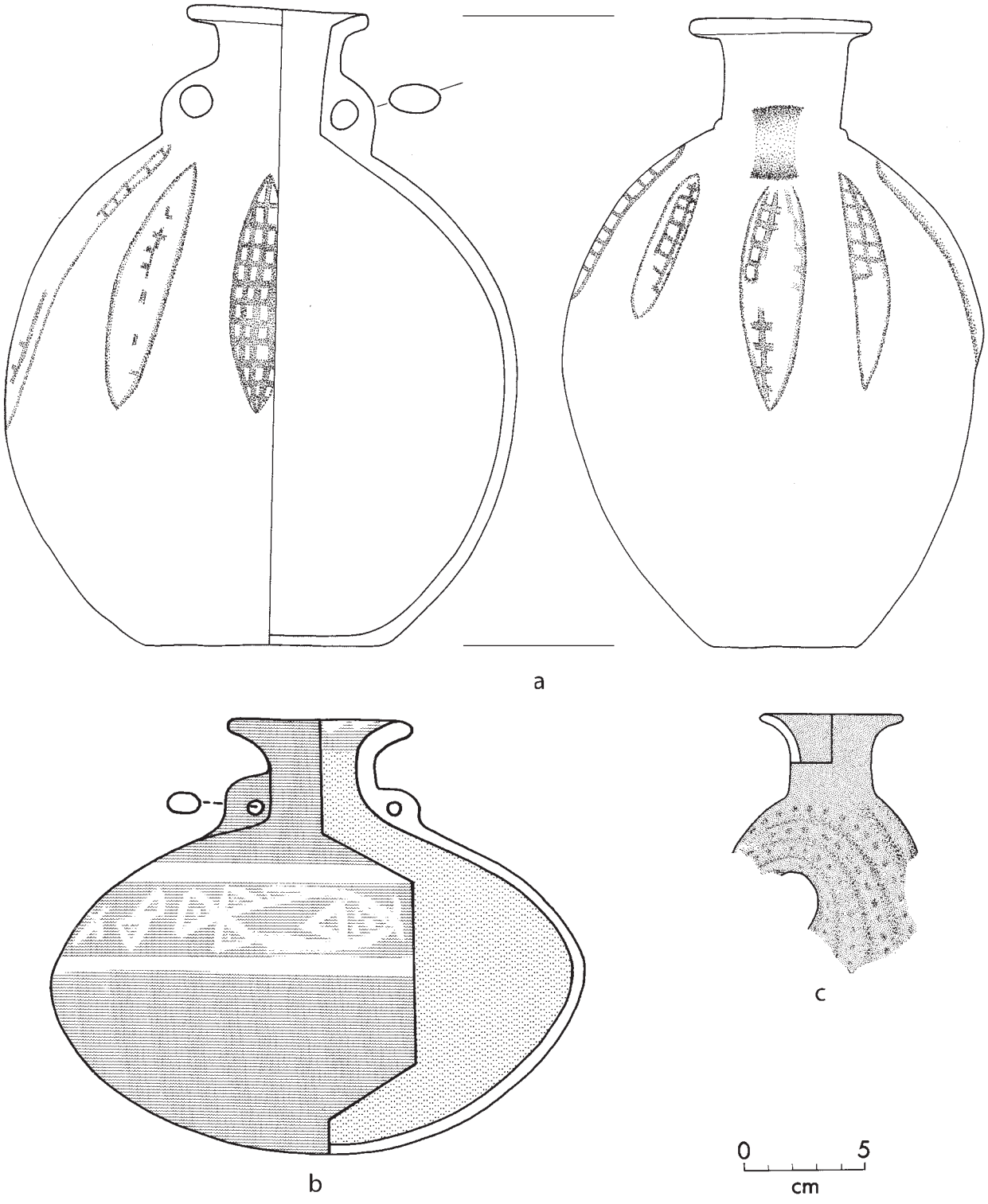


Figure 192 Chimu-Inca Late Phase ceramics.

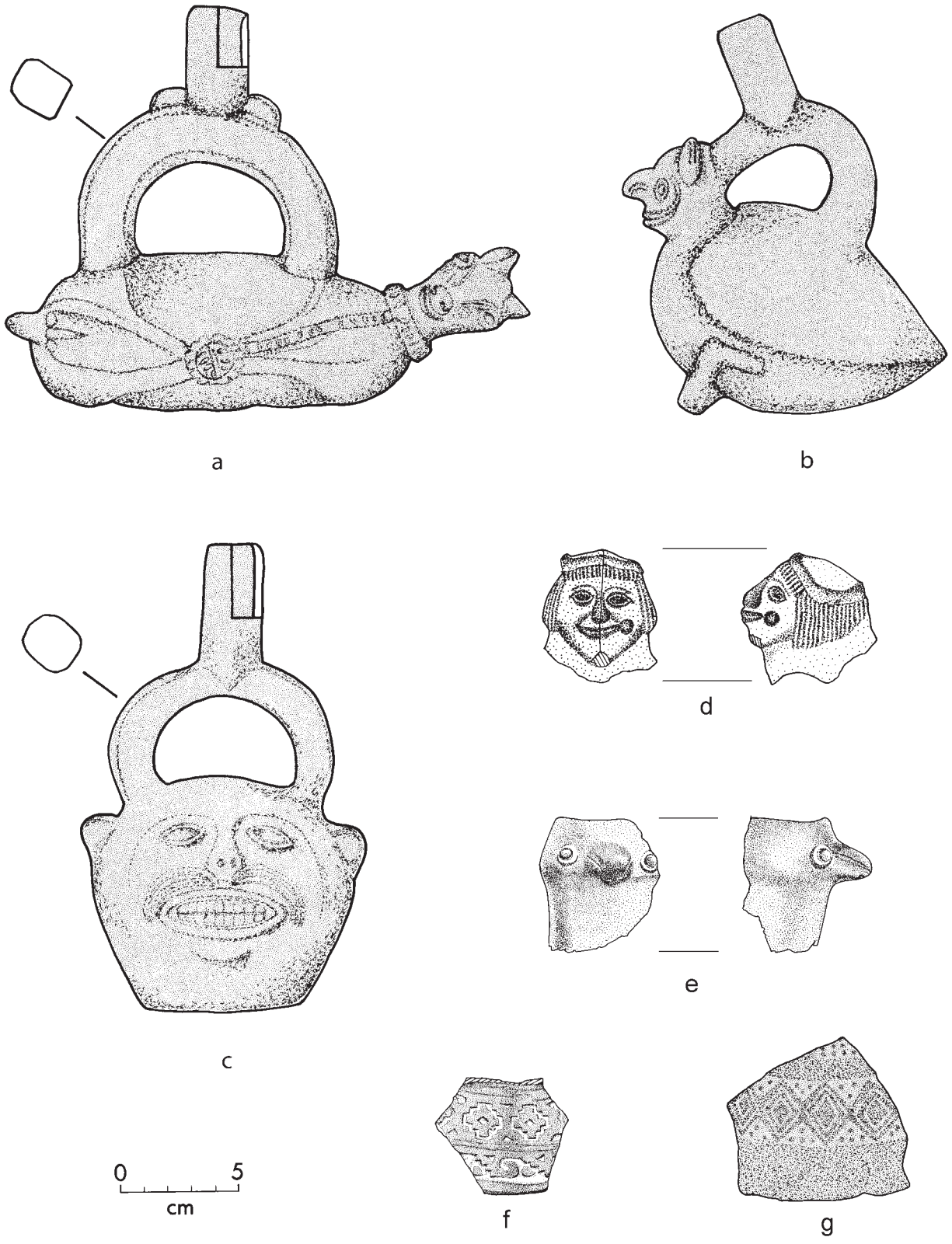


Figure 193 Chimu-Inca Late Phase ceramics.

New features in Chimu-Inca Late Phase ceramics include human heads with short, cropped hair (Fig. 193d), jar necks in the form of bird heads (Fig. 193e), and some press-molded geometric designs (Fig. 193f, g). Several new vessel forms are also part of the Chimu-Inca Late Phase ceramic assemblage. One *paccha* (ritual vessel; Fig. 194) was found in a Chimu-Inca Late Phase burial (Fig. 90). It has large a opening at the top for filling the chamber with liquid and a small spout near the base for pouring. Two keros (Fig. 195) were found in the same burial. Also new are double handle bowls (Fig. 196) and a variety of plate forms (Fig. 197).

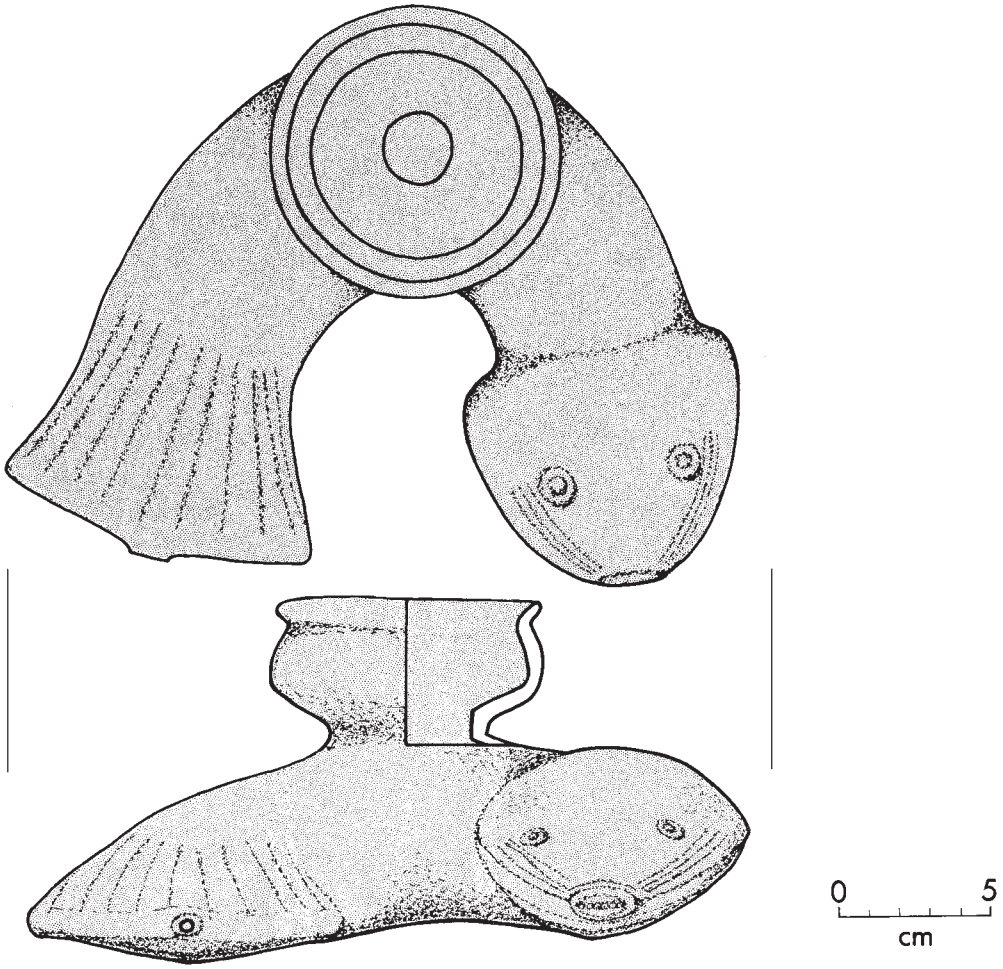


Figure 194 Chimu-Inca Late Phase ceramics.

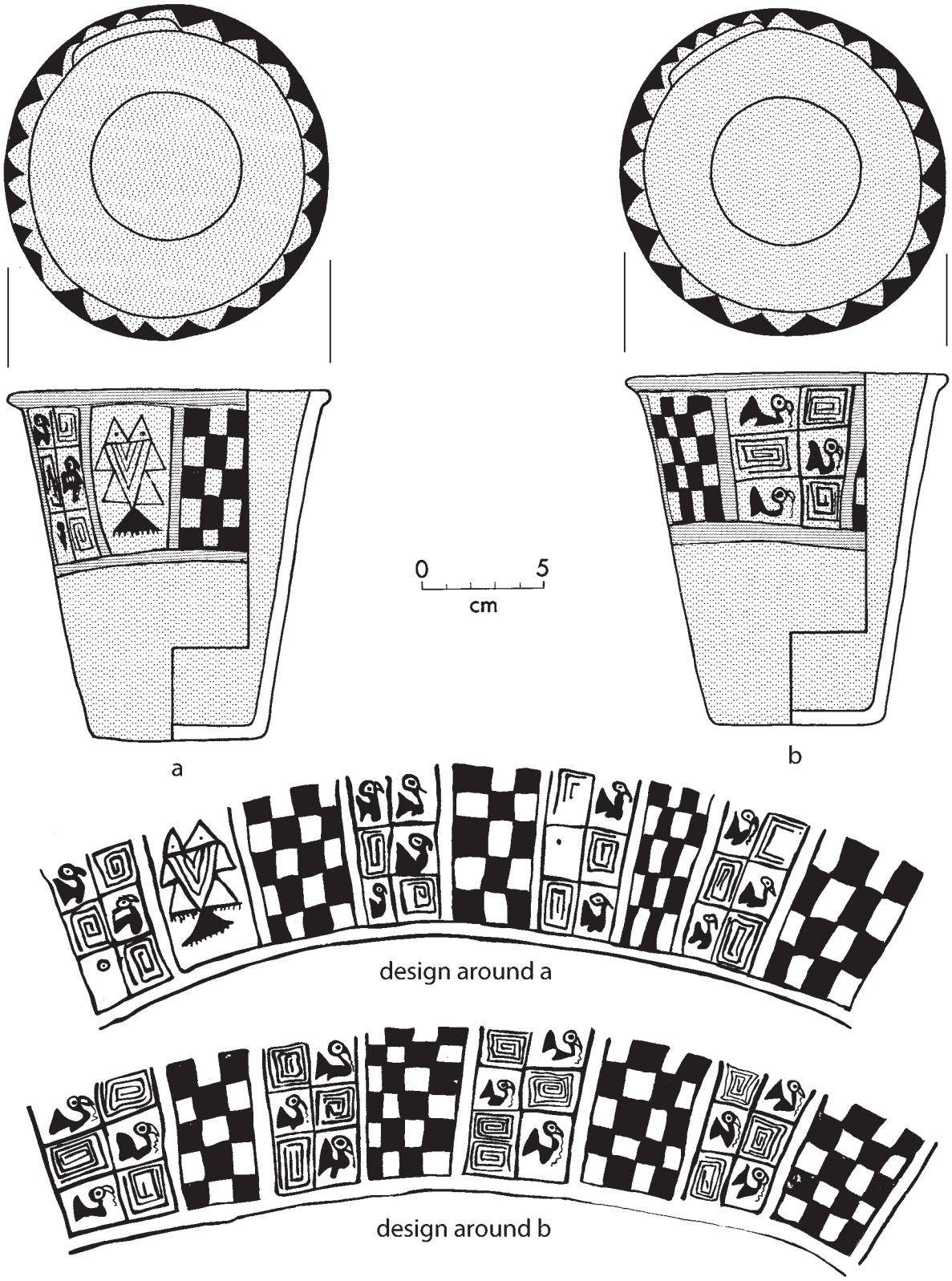


Figure 195 Chimu-Inca Late Phase ceramics.

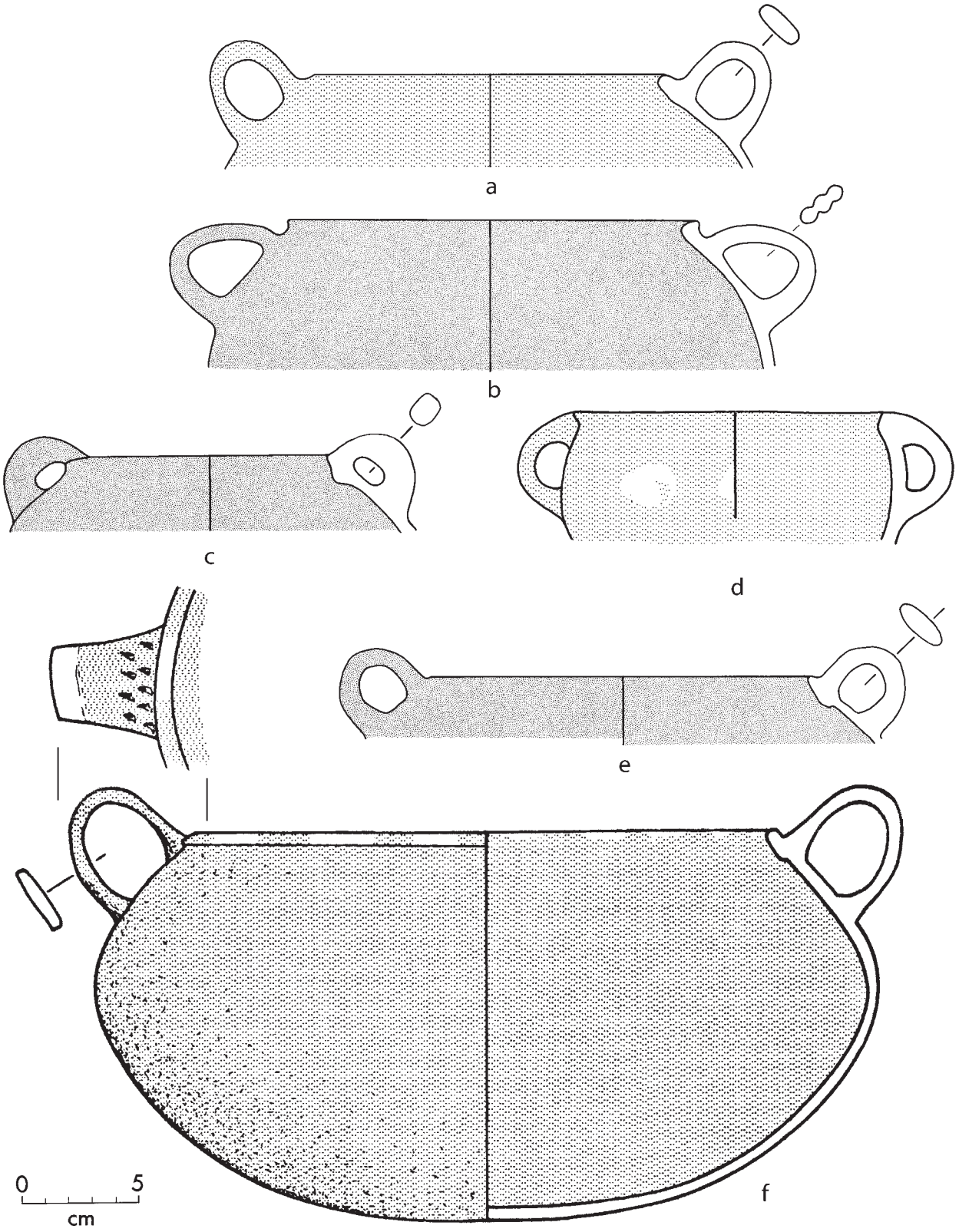


Figure 196 Chimu-Inca Late Phase ceramics.

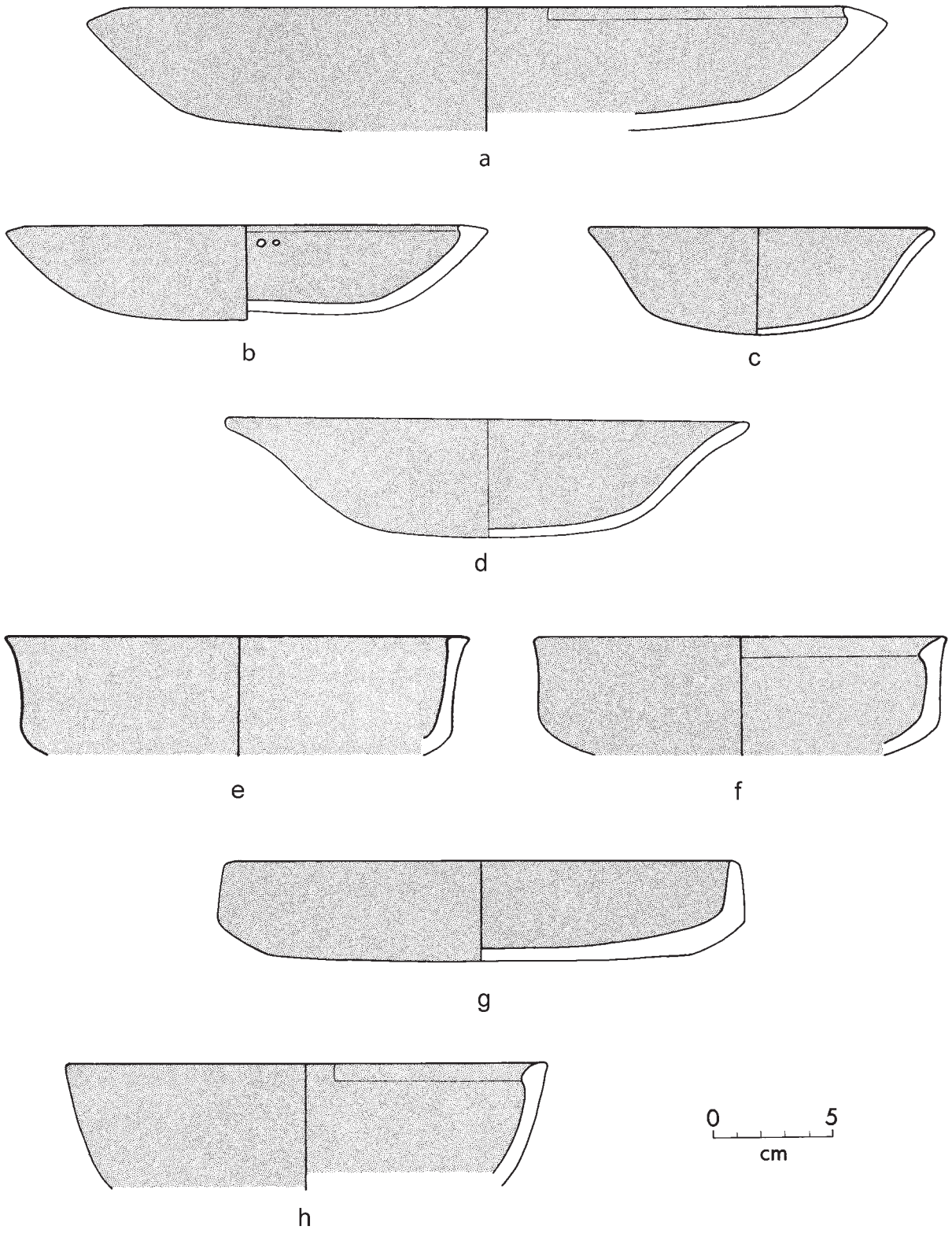


Figure 197 Chimu-Inca Late Phase ceramics.

Chimu-Inca Late Phase ollas are similar to those of the Middle Phase in having paddle-stamped decoration and recurved rims. However, the rims are usually more open, and the upper part is nearly vertical (Figs. 198, 199a).

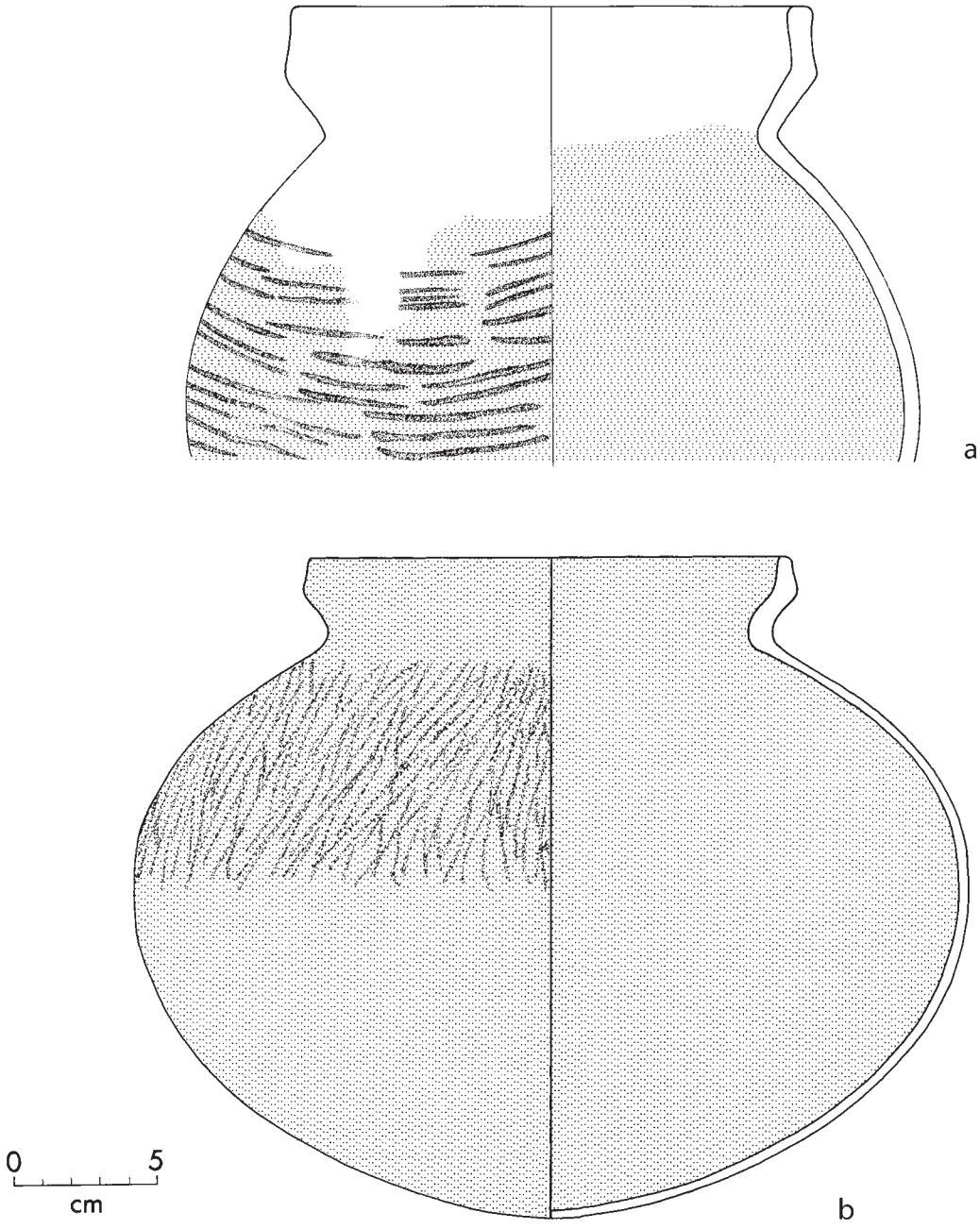


Figure 198 Chimu-Inca Late Phase ceramics.

Chimu-Inca Late Phase ofrendas are larger than those of the Early and Middle/Late Phases and have thicker walls (Fig. 199b–f). They are also more oblate, with wide, low chambers and short necks and are reduction rather than oxidation fired.

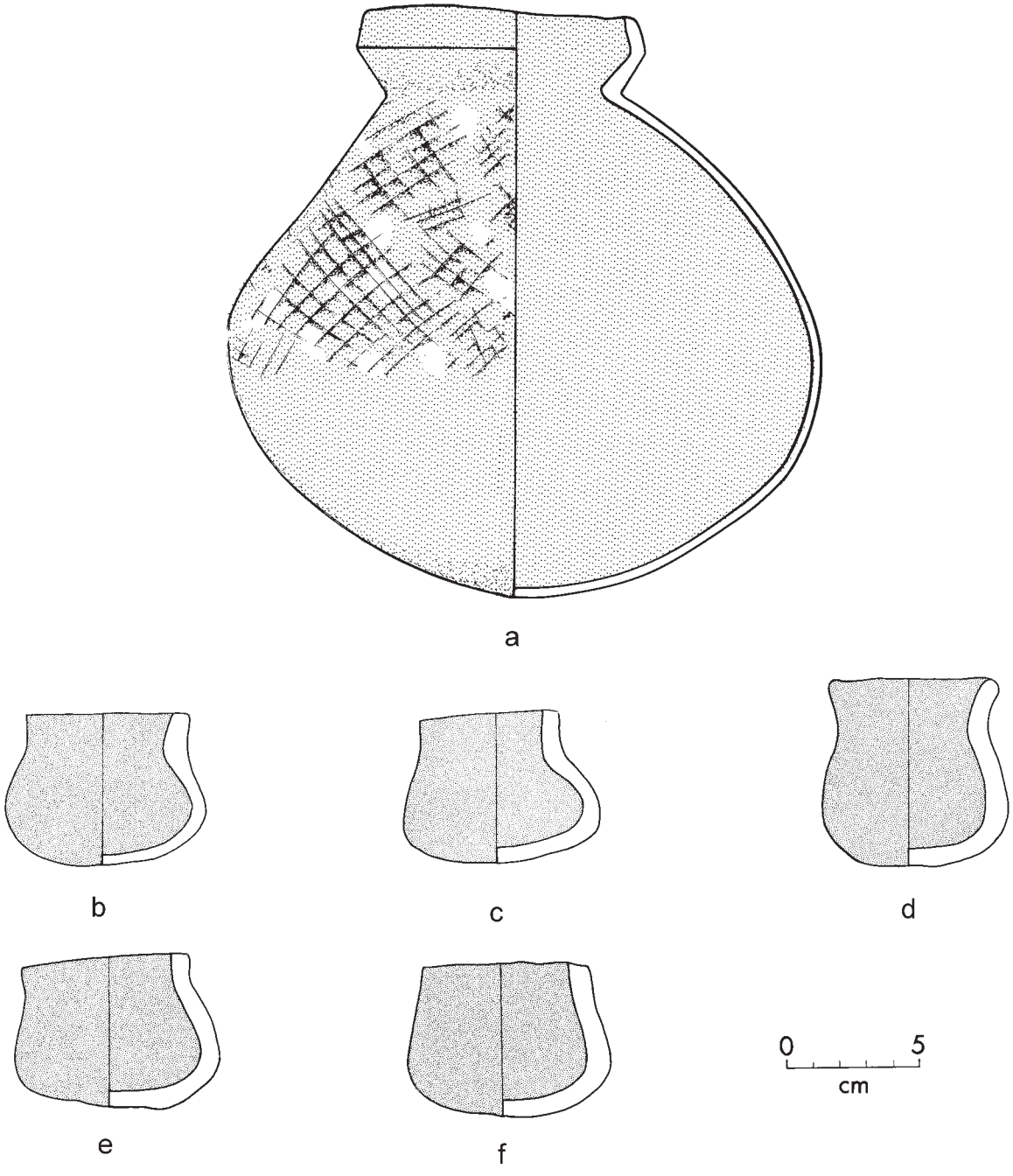


Figure 199 Chimu-Inca Late Phase ceramics.

COLONIAL LATE PHASE CERAMICS

Only a few Colonial Late Phase ceramics were found at Chotuna, and none were found at Chornancap. They included two small sherds with green glaze, as well as three complete vessels excavated in two Colonial Late Phase graves (Figs. 117, 122). Only one of the complete vessels exhibited clear European influence (Fig. 200). It is a two-handled cup with a pedestal base. The interior is decorated with incision and inlaid with small pieces of white stone.

The scarcity of Colonial Late Phase ceramics found in our excavations does not necessarily indicate that a small population was living at the sites at this time. It is likely that most of the ceramics in use during the early Colonial Late Phase were similar to Chimu-Inca Late Phase ceramics in use immediately prior to European contact.

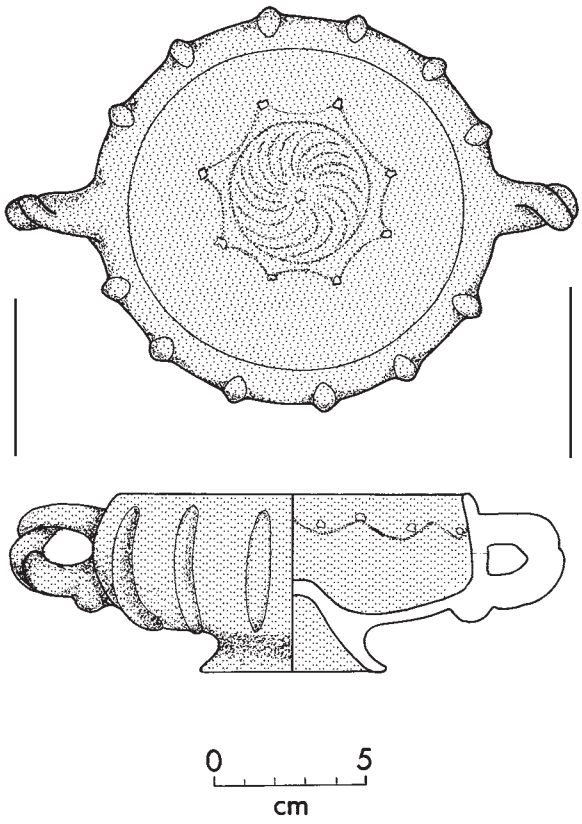


Figure 200 Colonial Late Phase ceramic.

Appendix 2

METALLURGICAL ACTIVITY

DESCRIPTION, TECHNICAL ANALYSIS, AND RECONSTRUCTION

Bruce Owen

About 4.8 kilograms of copper and copper-working debris were found in non-mortuary contexts inside the Artisans Quadrangle at Chotuna (Table 1).

COPPER OBJECTS

Only 2 percent of the mass of metallurgical debris recovered from inside the Artisans Quadrangle comprises fragments of copper objects. These are dominated by fragments of sheet copper and fragments of round copper shafts that could be from needles, *tupus* (clothing pins), lime spoons, or stages in the manufacture of any of these. This material may represent manufacturing activity, but high proportions of sheet and shaft fragments are found in other Andean contexts that are clearly unrelated to metal manufacturing, including residential areas (Costin et al. 1989, Owen 1986, 2001).

Two individual pieces, both from the same room and level (AQ_5-1, i.e., Artisans Quadrangle room 5, floor 1), suggest that copper was worked into objects in the Artisans Quadrangle. The first is a dumbbell-shaped piece of sheet metal that is clearly a forging blank for a pair of tweezers (Fig. 201a). A similar blank from Machu Picchu was analyzed by Mathewson (1915) and discussed again by Rutledge and Gordon (1987). The other appears to be an unfinished needle of the looped-eye type (Fig. 201b). This piece resembles

		Grams	% of mass	MNI
All slag and copper debris	Slag on sherds and from sherds	3850.6	81%	NA
	Slag not clearly from sherds	223.7	5%	NA
	Mixed possible prill and slag pieces	576.2	12%	NA
	Copper objects and fragments	112.3	2%	NA
	Total debris	4762.8	100%	
Copper by object type	Sheet fragments and pieces	45.1	40%	NA
	Shaft fragments, round section	32.8	29%	57
	Needles, loop eye (one indeterminate)	7.6	7%	5
	Shaft fragments, rectangular section	6.9	6%	6
	Rectangular chunk	5.5	5%	1
	Tweezers	4.7	4%	3
	Star-shaped sheet ornaments	3.6	3%	5
	Miscellaneous fragments	2.3	2%	NA
	Ingot, spatter, or large prill	2.0	2%	1
	Sheet scrap	1.8	2%	1
	Total copper objects	112.3	100%	

Table 1 Summary of metallurgical debris from non-mortuary contexts inside the Artisans Quadrangle at Chotuna. MNI indicates the estimated minimum number of individual objects present. One object may be represented by several fragments. MNI is not given for slag and prill, because the count would depend upon an arbitrary lower limit on size, and because many of the pieces appear to be fragments of larger pieces.

one of the hypothesized stages of manufacture of looped-eye needles illustrated by Baessler (1906). These objects are not likely to have been brought to the site as they are; they are unfinished pieces in the process of manufacture.

Star-shaped sheet ornaments (Fig. 201c) may also have been manufactured in the Artisans Quadrangle. At other sites, these items typically have a central hole, sometimes still containing traces of string used to suspend the ornaments. Of the five examples from inside the Artisans Quadrangle, only one, from AQ 5-2, has a visible hole. Another from AQ 5-2, one from AQ 6-1, and one from AQ 6-2 have no hole, while another from AQ 6-2 is fragmentary and cannot be evaluated. While the apparent lack of holes could be due to fortuitous formations of corrosion, perforating the ornaments may have been a final step that these three pieces had not yet undergone.

A particularly complete suite of metalworking evidence was found in AQ 5-1. In addition to the forging blanks, this room and level also yielded flakes from polished stone tools of the type used in forging, hammering, and sheet metal work (Lothrop 1950); four hearths; pieces of charcoal; slag-wet sherds; and a few loose pieces of slag or prill. Flakes and whole examples of similar tools (Figs. 30, 31) turned up in seventeen excavation units in the quadrangle,

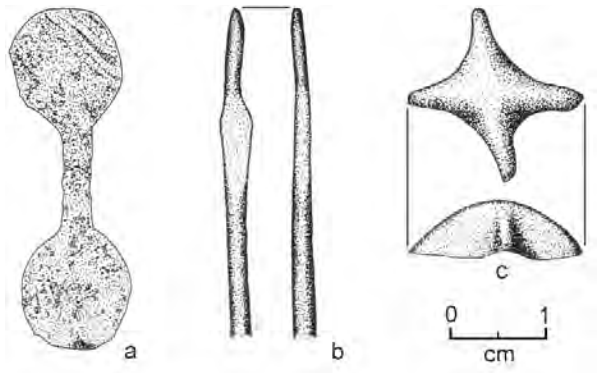


Figure 201 (a) Sheet cutout blank to be made into a pair of tweezers, with textile impressions in the surface corrosion products, AQ 5-1. (b) Probable unfinished looped-eye needle, AQ 5-1. The flat section would probably have been thinned and widened further, the short end bent back over the flattened part, and the outer edges of the flat section folded over the looped end to secure it. (c) Star-shaped sheet ornament, AQ 6-2. No central hole is visible. It may be present but obscured by corrosion products, or it may be absent, suggesting that this example is unfinished .

which averaged almost three times as much slag and over four times as much copper as units without tools. Clearly, at least some of the metallurgical activity in the Artisans Quadrangle, especially in AQ 5-1, involved forging copper into small objects such as tweezers and needles.

TUYERES

Eight tuyeres, or ceramic blow-tube tips, were found inside the Artisans Quadrangle (Fig. 28). (The tuyeres are not included in Table 1 or the mass numbers used for other comparisons.) Tuyeres and the cane blow-tubes that they capped aided in blowing air into a fire to achieve the high temperatures needed for smelting or melting metal. At the nearby site of Cerro de los Cementerios, tuyeres were associated with complexes of distinctive furnaces and grinding stones for crushing ore and slag, in what were clearly shops specializing in smelting copper from ore (Shimada et al. 1982).

At the Artisans Quadrangle, by contrast, no furnaces of any type were found in the portions of the floors that were preserved and excavated, and none of the four rooms in which tuyeres were found even had a hearth. The presence of tuyeres actually correlates negatively with the amount of slag in the room, and with the amount of copper in the room; one of the rooms had no other metalworking debris at all, and another that contained two tuyeres had only 1.4 grams of slag and copper. No grinding stones for ore or slag were found at Chotuna, nor was a single piece of copper ore.

The tuyeres from the Artisans Quadrangle are around 6 centimeters long, and only one of the six is noticeably damaged from high heat (Fig. 28d). The ones from Cerro de los Cementerios, on the other hand, range from a similar size to about 13 centimeters long, and "virtually all of them [are] cracked and discolored by the intense furnace heat" (Shimada et al. 1983:41). The smallest ones came from an area removed from the smelting shops and may have been used in forging operations (Epstein and Shimada 1983). These differences in size, appearance, and associations suggest that the tuyeres at the two sites were used for different purposes, presumably primarily smelting at Cerro de los Cementerios and the lighter tasks of refining, melting, forging, and/or annealing in the Artisans Quadrangle.

SLAG-WET SHERDS

The bulk of the metalworking debris from inside the Artisans Quadrangle (81 percent of the mass) comprises slag encrusted on a variety of ceramic sherds, and angular chunks of slag obviously broken off of slag-wet sherds. The sherds are broken pieces of ordinary ceramic vessels, often with ring bases, paddle-stamped designs, or carinations. The evidence of the metallurgical use of these sherds ranges from small patches of essentially zero thickness that are vitrified and/or stained green (Fig. 202), to layers up to 1.2 centimeters thick of slag and copper corrosion products adhering to the surface. The slag frequently flowed over the sherd's edge, but almost never ran far down the other side. Some sherds were broken before or during metallurgical use, since they have slag on both the original surface and the break. Most of the slag-wet sherds were also broken after the slag cooled, so that breaks run across both the ceramic and the slag. In many cases the slag has broken cleanly off the sherd's surface, preserving its smooth contour and occasionally the line of the rim. The slag-wet sherds range in size up to 8 centimeters in maximum dimension, but most are smaller.

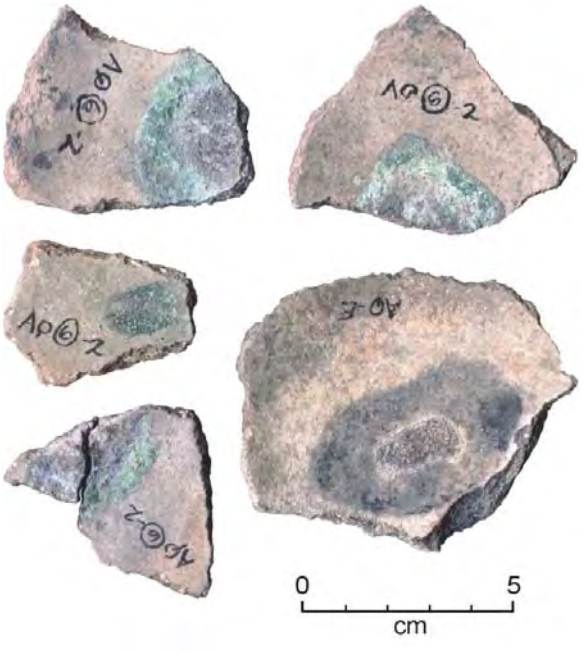


Figure 202 Sherds with patches of copper corrosion products and discoloration.

The slag is generally, but not always, on the inside of the sherd. The slag layer is usually of roughly constant thickness, forming a uniform encrustation rather than a pool in the bottom of the vessel or sherd. A few sherds appear to show water lines of slag or have slag encrustations with clear, horizontal upper borders. Many of the slag crusts are

capped by patches and spots of copper corrosion products that are sharply restricted to the upper surface. X-ray photography and cut sections reveal occasional small beads of copper in the slag, ranging from barely visible specks to droplets 2 to 3 millimeters in diameter (Fig. 203).

These slag layers could have resulted from a skin of very viscous slag floating on a pool of liquid copper in the sherd, such as can form in a remelting or refining operation. When the sherd was tipped, the copper would pour out from under the slag, and a uniform thickness of slag would settle down onto the ceramic. This reconstruction is consistent with the technical analyses of the slag and sherds described below.

One slag-wet sherd from AQ_33-1 was thin-sectioned for petrographic analysis. The boundary between the ceramic and the slag was well defined, suggesting that the slag was not in contact with the sherd as a hot liquid for long enough to attack the surface. The same seems to be true of much or all of the slag associated with sherds, since the ceramic and slag have often parted cleanly. The high-temperature kaolin-derivative mineral mullite, which forms in ceramics at a temperature somewhat below the melting point of copper and slag (Shepard 1980), was not present in the sherd body, suggesting that the ceramic did not experience high temperatures for any significant length of time. Visually, the sherds do not have the vitrified appearance of high-fired ceramics. All these observations indicate that the slag-wet sherds do not represent crucibles in the usual sense, in which high heat is applied to the outside of the crucible in order to melt the charge contained within it.

Instead, the implication is that the liquid slag and/or metal were hotter than the sherds, then came into contact with them and cooled quickly. One way that this could happen would involve building the fire used to melt the metal and slag over, rather than under, the sherd and its contents. This

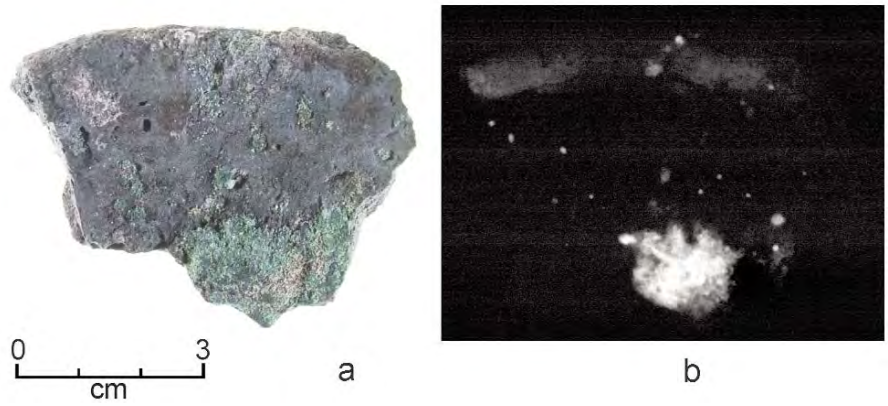


Figure 203 Slag-wet sherd from AQ_102-1. (a) Photograph. (b) X-ray radiograph in the same scale and orientation, showing copper droplets and corrosion products.

arrangement might allow the charge to be melted without the ceramic ever reaching a very high temperature, or perhaps only reaching the temperature of the liquid for a brief time between the successful melting of the charge and its removal from the fire.

A cut section of the same slag-wet sherd from AQ_33-1 (Fig. 204) was examined for its chemical composition at various points by standardless semi-quantitative (SSQ_) energy dispersive spectroscopy (EDS) at the scanning electron microscope (SEM) facility of the Objects Conservation Department of the Metropolitan Museum of Art (Table 2). The metal droplets in this slag sample all contain arsenic. Lechtman (1976) has suggested that the most likely source of arsenical copper is an ore mixture including some sulfarsenide minerals, probably imported from the highlands. The arsenic is very irregularly distributed, however, with several copper-colored droplets containing 1.6 percent to 3.7 percent arsenic, and one silver-gray droplet with over 49 percent arsenic. The low-arsenic alloys are typical of Andean arsenical bronzes. The high arsenic droplet has about the composition of the copper-arsenic eutectic, suggesting that arsenic may have been present in considerable excess in the immediate vicinity of this droplet. Since the slag is so inhomogeneous, however, it is hard to draw conclusions from spot data about the overall composition of the smelting (or melting) charge.

In any case, the inhomogeneity of the slag and of the metal droplets themselves indicates that the slagging process took place at a temperature barely high enough to allow the necessary reactions to take place, and certainly not at a high-enough temperature or for a prolonged-enough time to produce a very liquid slag and allow the components of the charge to mix and reach equilibrium. If this slag represents smelting, the products would have been very variable, although it might have been possible to sort out the high-arsenic prills by color.

Figure 204 Cut section of a slag-wet sherd from AQ_33-1.

SLAG CHUNKS AND PRILL

Most of the rest of the metallurgical debris is in the form of small rounded to angular chunks, ranging in largest dimension from approximately 1 to 20 millimeters. Table 3 shows a typical distribution of the sizes of these loose chunks. Most of these pieces are completely covered with sand cemented to their surfaces and stained green by copper corrosion products.

Provenience	Cu	As	Sn	Fe	Ag	S	Pb	Zn	Si	Ca	Al	Na	Cl	K	Ti	Norm	Comments
AQ 33-1 A	93.1	3.6		0.1					2.6	0.2	0.4					0.972	Cu-colored drop in slag
	96.2	3.7		0.1												1.000	Same data, excluding slag elements
AQ 33-1 B	92.4	3.6		0.2					2.8	0.2	0.8					0.967	Smaller drop, same section
	96.1	3.7		0.2												1.000	Same data, excluding slag elements
AQ 33-1 D	98.0	1.6		0.0					0.3							0.997	Another drop, same section
AQ 33-1 E	48.8	49.5		0.1	0.5	0.2			0.6				0.4			0.720	Silvery drop, same section
	48.9	49.1		0.2	0.5	0.1			0.8				0.4			0.720	Same drop, broader view
AQ 33-1 C	0.6			10.7					57.1	7.7	14.6	7.0		1.6	0.4	0.595	General view of slag, covering most of the section but excluding the ceramic

Table 2 Compositions of slag and metallic droplets in a cut section of the slag-wet sherd from AQ 33-1 that is illustrated in Figure 204. Weight percentages of elements were calculated by standardless semiquantitative (SSQ) energy dispersive spectroscopy (EDS) at the scanning electron microscope (SEM) facility of the Objects Conservation Department of the Metropolitan Museum of Art, New York, October 1985. Weight percentages are relative to the total of the elements that can be detected by EDS, not the full mass of the sample. Because elements lighter than Na (H, He, Li, Be, B, C, N, O, F, Ne) are not detected or included in the percentages, the percentages shown are higher than would be measured by a complete chemical analysis that included these elements. While these elements are usually insignificant in analyses of metals, they can comprise large proportions of rock or slag samples. Fayalite slag (Fe_2SiO_4), for example, contains 54.8% Fe, 13.8% Si, and 31.4% O by mass, but would be measured by EDS as 79.9% Fe and 20.1% Si. Proveniences are in the form AQ <room number>-<floor level> <arbitrary label for a spot on the sample>. Norm indicates the normalizing factor used by the SSQ program; values closer to 1 suggest more reliable analyses. Empty cells indicate that the element was not detected.

	X-ray translucent (slag)		X-ray opaque (metallic copper)	
Max. dimension	Number of pieces	Grams	Number of pieces	Grams
2–7 mm	107	8.9	14	2.3
8–13 mm	83	37.4	8	4.7
14–19 mm	17	36.8	0	0.0
Total	207	83.1	22	7.0

Table 3 Typical distribution of sizes of slag and prill chunks. Sample from AQ 34-1.

Close examination of these pieces reveals that most of them consist of slag, while a few are copper droplets or prills.

X-ray radiographs (Fig. 205) allowed the separation of samples from two room-floor units into X-ray translucent pieces (slag) and X-ray opaque pieces (metallic copper). A few fragments were slag with prills of metallic copper attached to or contained in them. In the sample from AQ 33-1, 18 pieces (6.9 grams) out of 241 (149.9 grams) proved to be metallic copper. From AQ 34-1, 22 pieces (7.0 grams) out of 229 (90.1 grams) were metallic. The metallic pieces tend to be rounded in shape, but are visually indistinguishable from the more rounded chunks of slag. If these samples are representative of all the small fragments recovered, then some 4 to 8 percent of them by mass are copper prills or splatter, averaging about 0.3 grams each. This estimate suggests a total collection of 23 to 46 grams of copper droplets, or between 77 and 153 individual pieces, from all of the excavations inside the Artisans Quadrangle.

Post-deposition weathering may have converted some of the metallic copper entirely to corrosion products that are more X-ray translucent than metallic copper, so these estimates of the copper fraction may be low. In addition, any larger prills may have been picked out prehistorically for remelting, leaving primarily the smaller, less useful ones to be found in excavation.

To check the accuracy of the X-ray technique and to further examine the materials, an X-ray translucent chunk was mounted, sectioned, and polished for study using a metallographic microscope and SEM SSQ EDS (Figure 207). As expected, it proved to be highly inhomogeneous slag, with a variety of glassy, dendritic, and laminar phases (Table 4, AQ 34-1 M, B, H, A, G), the last two laminar phases being very iron rich and probably corresponding to the magnetite and/or the wüstite detected in a different sample by X-ray diffraction, as discussed below.

The section exposed two vesicles containing a soft, bright yellow substance that in one case had apparently solidified from a pool of liquid in the bottom of the vesicle (Figure 207c). Excluding light elements not detectable by EDS, this material appears to be copper chloride with traces of iron, sul-

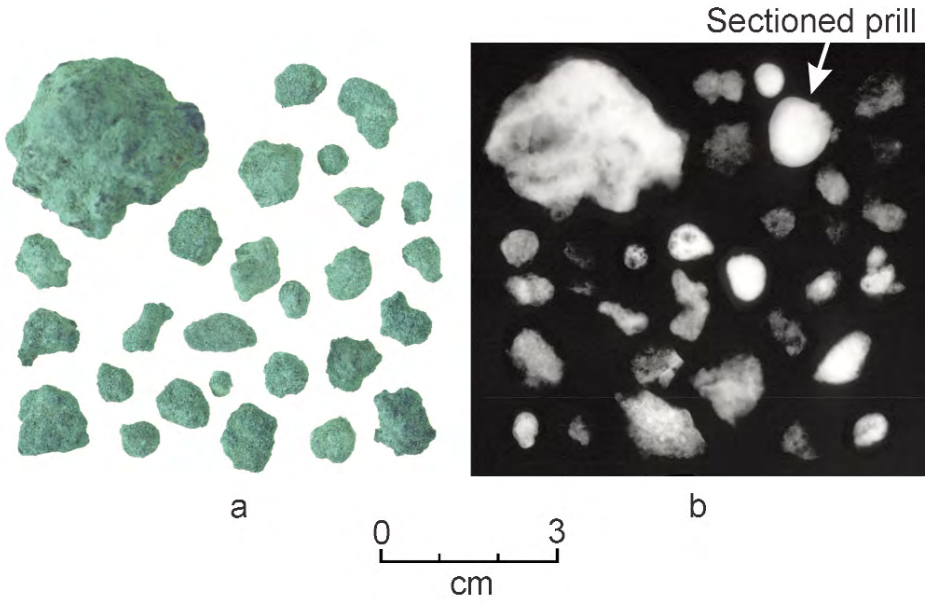


Figure 205 Sample of green lumps from AQ 34-1, including both slag chunks and copper prill. (a) Photograph. (b) X-ray radiograph, mostly the same objects, but not the same configuration. Note the prill that is shown in cross-section in Figure 206.

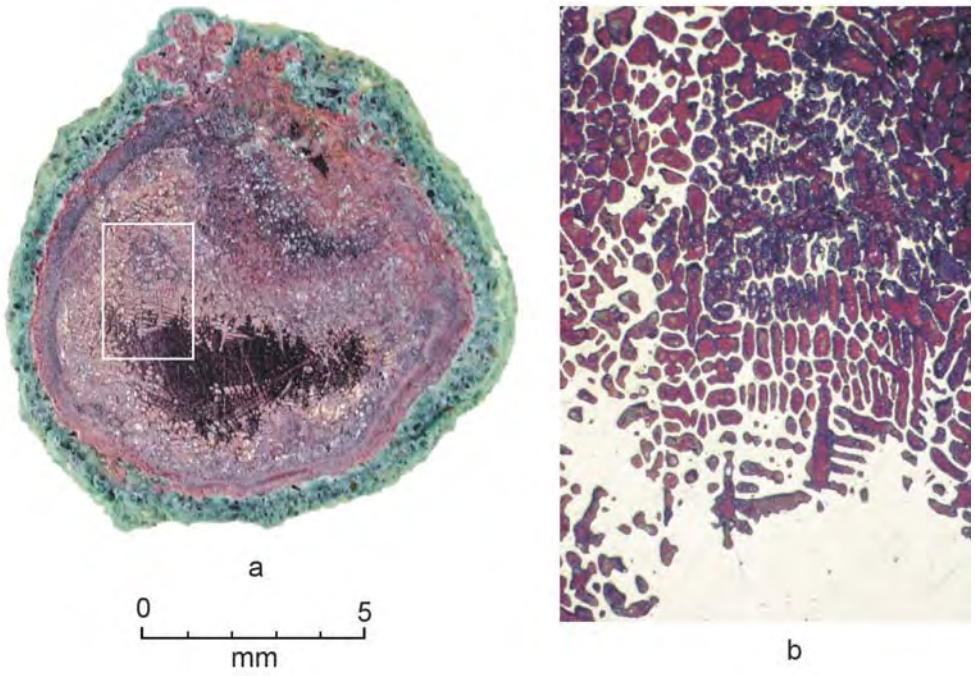


Figure 206 Polished section of a prill from AQ 34-1. This is the same prill that is indicated in the X-ray radiograph in Figure 205b. (a) Whole prill. (b) Detail showing the dendritic structure of red cuprite surrounded by metallic copper.

fur, and silicon (Table 4, AQ_34-1 C, J). It is probably a secondary weathering product of copper mobilized and redeposited by water percolating through the slag.

The metallic droplets in this slag chunk, like those from the slag-wet sherd discussed above, vary widely in arsenic content (Table 4). Three droplets resemble typical to slightly high arsenic examples of Andean arsenical bronzes, with 5 to 8 percent arsenic (Table 4, AQ_34-1 D, F, K, L). These values are substantially higher than those of the low-arsenic droplets in the slag on the sherd (Table 2, AQ_33-1 A, B, D). In addition, there is a very high arsenic droplet (Table 4, AQ_34-1 I) like the one seen in the slag on the sherd (Table 2, AQ_33-1 E). Another droplet of apparently high arsenic content (Table 4, AQ_34-1 E) in reality probably falls closer to the range of the low-arsenic examples. The calculated content of arsenic in this droplet is probably exaggerated due to the high lead content, which has secondary spectrographic peaks at the same energies as the primary arsenic peaks. The other, lower arsenic values are fairly consistent and do not relate systematically to their varying, lower lead contents, so the lower lead concentrations do not appear to have disturbed the other analyses seriously.

An X-ray opaque chunk was also mounted, sectioned, and polished for comparable analysis (Fig. 206). As expected, it proved to be a rounded droplet of metallic copper about 1 centimeter in diameter, containing about 2 percent arsenic (Table 5, AQ_34-1 N). A large portion of the droplet is laced with a dendritic structure of cuprite (Cu_2O) (Fig. 206b and Table 5, AQ_34-1 O). The dendritic form suggests that the cuprite formed on the cooling of a melt

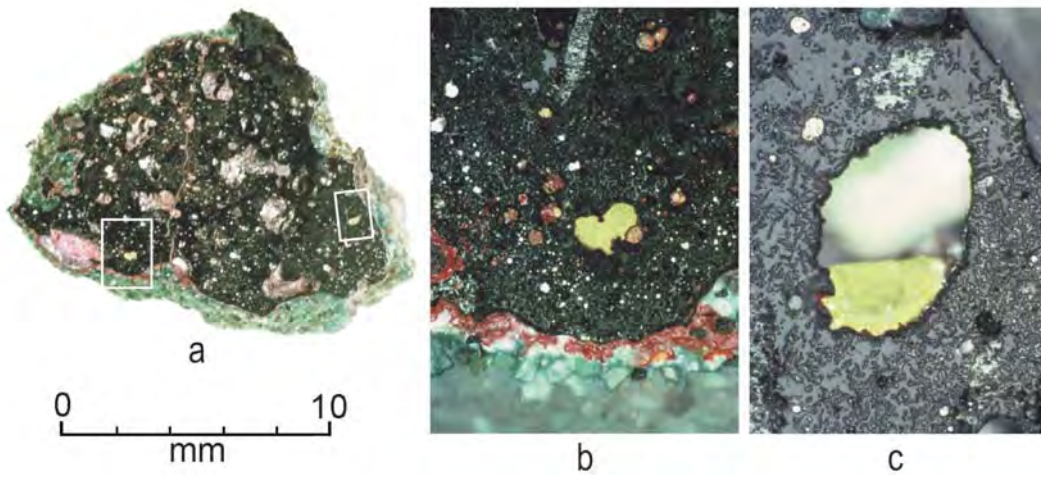


Figure 207 Polished section of a slag lump from AQ_34-1. (a) Whole lump. (b) Detail showing inhomogeneity and variety of inclusions. (c) Detail showing vesicle with yellow deposit and fine dendritic structure of glassy slag.

Provenience	Cu	As	Sn	Fe	Ag	S	Pb	Zn	Si	Ca	Al	Na	Cl	K	Ti	Norm	Comments
AQ 34-1 M	7.3	3.6		58.2			2.5		17.6	6.2	3.4		0.4	0.8	0.1	0.808	General view of slag chunk
AQ 34-1 B				38.2			2.0		33.1	18.9	2.6	3.2		2.0		0.710	Glassy region adjoining A
AQ 34-1 H	0.2			35.9				7.9	30.0	16.3	4.8	3.2		1.7	0.2	0.664	Glassy area near F, actually a mass of very fine dendrites
AQ 34-1 A				99.6					0.4							0.997	Silvery lamina in slag
AQ 34-1 G				99.5					0.5							0.996	Silvery lamina like A
AQ 34-1 C	75.5			0.6		0.4			0.3				23.2			0.888	Yellow vesicle filling near A and B
AQ 34-1 J	73.1			0.7		0.5			0.2		1.5		23.9			0.872	Yellow deposit in a different vesicle
AQ 34-1 D	85.6	8.0					6.4									0.982	Cu-colored drop. Porous with bright spots (Pb regions)
AQ 34-1 F	81.3	5.4		0.1			13.2									0.986	Cu-colored drop with bright spots like D; avoiding spots
AQ 34-1 K	93.0	6.7		0.3												1.000	Cu-colored drop with bright spots like D; avoiding spots
AQ 34-1 L	73.2	7.5		0.1			19.1									0.982	Same drop as K; general view
AQ 34-1 I	47.1	49.6		3.3												0.727	Silvery drop
AQ 34-1 E	54.2	19.4					25.8						0.7			0.933	Porous, grainy gray drop. As probably overestimated at expense of Pb

Table 4 Compositions of slag and metallic droplets in a polished section of a small chunk of slag from AQ 34-1, illustrated in Figure 207. Weight percentages of elements detectable by SSQ EDS. See caption of Table 2 for details.

Provenience	Cu	As	Sn	Fe	Ag	S	Pb	Zn	Si	Ca	Al	Na	Cl	K	Ti	Norm	Comments
AQ 34-1 N	97.9	1.9		0.2												0.988	Cu-colored surface
AQ 34-1 O	89.6	8.5		0.3		0.3				0.9			0.4			0.937	Cuprite surface

Table 5 Composition of two points on a polished section of a prill from AQ 34-1, illustrated in Figure 206. Weight percentages of elements detectable by SSQ EDS. See caption of Table 2 for details.

with a high oxygen content, rather than by later corrosion of the solid metal. That the melt was highly oxidized suggests that the droplet derives from a melting rather than a smelting operation, because while smelting takes place in a reducing environment, metal being remelted in a crucible would be expected to pick up oxygen due to exposure to air. This conclusion is tentative, however, since pre-Columbian smelters may not have been able to maintain a uniformly reducing atmosphere in all parts and stages of the smelt.

Two samples of slag were analyzed by X-ray diffraction. The first, a loose chunk, was cleaned and found to be a rounded droplet of black, vesicular slag, in contrast to some of the other pieces, which appear to be fractured, angular fragments broken from larger masses on sherds. This first slag sample is primarily composed of magnetite (Fe_3O_4), wüstite (FeO), and quartz (SiO_2). This analysis differs from that of a second sample, which was taken from the light gray slag coating on a sherd. The sample from the sherd contained no significant iron minerals, but instead was composed primarily of quartz (SiO_2) and plagioclase feldspar ($Na[AlSi_3O_8]$ to $Ca[Al_2Si_2O_8]$). This analysis may reflect heavy contamination of the sample with sherd material, although the slag-ceramic boundary appeared to be distinct. More probably, it indicates a large fraction of silicate rock suspended in the slag, possibly due to an inadequate addition of iron flux in smelting or an excess of silicate flux in a refining operation. The considerable difference between these two slags may simply reflect the great inhomogeneity within samples that characterizes this material, but it is consistent with the differences observed by SEM/EDS in two other samples of slag, one from a sherd (Table 2, AQ 33-1 C), and the other from a small chunk (Table 4, AQ 34-1 M). Based on just four observations, it appears that the slag crusts on sherds are quite low in iron relative to the loose bits of slag, which approach more closely the composition of ideal low melting point fayalite slag (Fe_2SiO_4) and the copper slags reported from early Near Eastern smelting sites (Bachmann 1980).

SMELTING OR MELTING?

Slag can result not only from smelting, but also from remelting of raw smelted copper to refine it, consolidate smaller pieces, or cast objects or forging blanks. A refining step may involve adding a silicate flux such as sand to the melting charge in order to extract dissolved iron from the copper by drawing the iron into a slag. Such crucible slags typically also pick up a great deal of the copper, more than smelting slags, because they are in intimate contact with a large quantity of copper melt and because melting and refining are usually done in more oxidizing conditions than smelting. To test for the possibility that the Artisans Quadrangle slag could have resulting from refining, six samples of slag were tested for bulk copper content by atomic absorption spectroscopy at the UCLA Department of Earth and Space Sciences.

The results of the bulk copper content analysis (Table 6) are consistent with refining slags. Two analyses, both from samples aggregated from several loose chunks of slag, were in the 9 to 12 percent copper range, definitely suggesting a refining operation. The other three, from slag crusted on sherds, were between 3 and 5 percent copper. These lower values are not inconsistent with refining slags, but they are less compelling. Interestingly, they strengthen the distinction already noted between the slag adhering to sherds and the loose fragments. More work is needed to determine whether or not this difference is real and what it might mean in terms of refining processes.

As an additional test of the refining hypothesis, a mass-balance calculation was carried out based on several slag-wet sherds that could be pieced together sufficiently to indicate the approximate shape and size of a complete crucible sherd and its slag coating (Fig. 208). This reconstruction indicated

Weight percent Cu in slag		
Provenience	Loose chunks of slag	Slag from sherd
AQ 33-1	9.1	4.2
AQ 25-1	NA	4.8
AQ 102-1	11.2	3.2

Table 6 Bulk copper content of slag samples, in weight percent. In order to average out variations between specimens, the sample of loose chunks of slag from AQ 102-1 combines 5 pieces, and the sample of loose chunks from AQ 33-1 combines 6 pieces. No loose chunks of slag were recovered from AQ 25-1. Compare to the loose chunk of slag in Table 4, AQ 34-1 M and the slag from a sherd in Table 2, AQ 33-1 C.

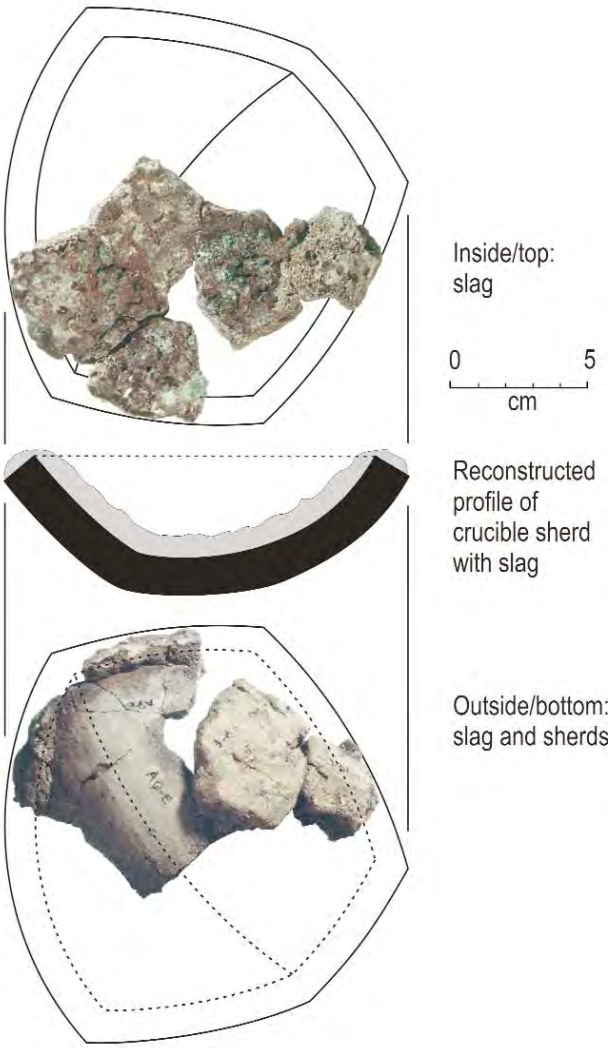


Figure 208. Reconstruction of a complete crucible sherd based on conjoining fragments of slag and sherd from AQ_E.

that the crucible sherd was an irregular body sherd with a slight carination, approximately 12 to 14 centimeters across and about 4 centimeters deep. The question was whether the volume of liquid copper that could have pooled in this crucible sherd could have contained enough dissolved iron to form the amount of slag that was deposited on it.

The volume of the reconstructed crucible sherd was calculated as 266 to 340 milliliters, sufficient to hold 1,862 to 2,794 grams of molten copper. The recovered fragments include both slag and some attached sherds. The mass of slag was estimated by subtracting the mass of a sherd similar in size to the ones attached to the slag, and this mass was extrapolated to the reconstructed area of the complete crucible sherd, giving about 190 grams of slag on the original, complete crucible sherd. If this slag were pure fayalite, the most iron-rich slag mineral, it would contain 54.8 percent iron, or 104 grams. To contain that much dissolved iron, the melt in the full crucible sherd would have to have been 3.7 to 5.6 percent iron. This is a high but reasonable range for preindustrial raw smelted (blister) copper (Craddock 1995:138–139) and one into which several of the analyzed Cerro de los Cementerios prills fall (Epstein 1982). In other words, even assuming the most iron-rich slag possible, a melting charge appropriate in size to fill the crucible sherd with liquid copper could have produced the amount of slag that was actually formed.

The slag attached to Artisans Quadrangle sherds is actually very inhomogenous and must contain much less iron than an ideal fayalite slag. For example, the slag on the sherd from AQ_33-1 (Table 2, AQ_33-1 C) contained only 10.7 percent iron by mass among the elements detectable by EDS. The total mass percentage of iron would be as low as 7.3 percent if the iron were all in the form of fayalite and the mass of oxygen (not detectable by EDS) in fayalite were included. Including the oxygen and other light elements present in the silicates and other minerals in the slag would reduce the percentage of iron even further. If the reconstructed crucible sherd slag contained even that 10.7 percent iron, there would be only 20.3 grams

of iron in it. If the crucible sherd had been filled with molten metal, the melt would have needed to contain only 0.7 to 1.1 percent iron to produce the crust of slag.

In fact, the charge was probably not meant to fill the crucible sherd completely. A more realistic compromise reconstruction based on the slag composition of AQ_33-1 C might involve a charge that was intended to half fill the crucible sherd, starting with roughly a kilogram of raw, smelted prills with about a 2 percent iron content, or a still smaller charge intended to fill only a quarter of the crucible sherd's volume, comprising 500 grams of smelted prills with around a 4 percent iron content. Although these rough calculations do not prove that the slag comes from a refining operation, they do suggest that refining could account for the amount of slag found on the sherds, and they hint at roughly the scale of each refining operation.

The copper from the Artisans Quadrangle does seem to have been refined. None of the analyzed copper droplets or prill from the Artisans Quadrangle contains over 0.3 percent iron, in contrast to the higher concentrations in some of the Cerro de los Cementerios raw smelted product. If copper arrived at the Artisans Quadrangle in an iron-rich, blister copper state, it appears that the iron was indeed largely removed, presumably in a refining step that produced the slag found at the site.

SCALE OF METALLURGICAL ACTIVITY

The amount of refined copper implied by the material recovered from the Artisans Quadrangle can be estimated. The iron in a refining slag comes from the iron in the blister copper input. Given estimates of the iron content of the blister copper, the iron content of the slag, and the amount of slag, the corresponding amounts of blister copper input and refined copper output can be calculated. Some copper dissolves in the slag or is entrapped as droplets in it, so the estimate also takes the copper content of the slag into account.

Some of the slag from the Artisans Quadrangle is attached to sherds, making it difficult to weigh, but the total mass of slag recovered can be grossly estimated at around 2,100 grams. This slag could range in iron content from the 7.3 to 10.7 percent seen in the poor, inhomogeneous slag of AQ_33-1 C (Table 2 and discussion above) to the 54.8 percent of ideal pure fayalite. The incoming blister copper might have contained anywhere from 1 percent to 6 percent iron. Five analyzed samples of Artisans Quadrangle slag (Table 6) suggest that the slag drew off enough copper to comprise 3 percent to 12 percent of its mass.

These parameters suggest that the recovered slag resulted from producing between 3 and 110 kilograms of refined copper. Since both of the sectioned

slag samples were very far from homogenous ideal fayalite, the actual production was probably much less than the theoretical upper limit of 110 kilograms. A reasonable reconstruction might assume that the measured iron and copper contents of the slag on a sherd from AQ_33-1 (Table 2, AQ_33-1 C) are representative of all the slag and that the incoming blister copper contained a moderate 4 percent iron. If so, the slag collected in the Artisans Quadrangle would have been the by-product of making about 5 kilograms of refined copper.

The slag recovered by this project is only an unknown fraction of the total produced in the Artisans Quadrangle. Moreover, the analyzed pieces of slag might be atypical or the incoming blister copper might have contained more or less iron than estimated. Nevertheless, these calculations give a general sense of the modest, but not insignificant, scale of copper production in the Artisans Quadrangle.

Even seemingly small amounts of refined copper may still represent quite a few finished items. Some of the refined copper may have gone into larger items that were used elsewhere, leaving no evidence in the Artisans Quadrangle. Most of the metal objects found in the Artisans Quadrangle, such as needles and tweezers, ranged from 1 to 3 grams when complete, while the star-shaped ornaments averaged around 0.8 grams. If these represent the main copper products, even assuming a high 3 grams per finished item, the lowest estimate of 3 kilograms from the excavated contexts would represent about 1000 small objects, and the reasonable estimate of 5 kilograms would imply over 1,600 objects. Since only a fraction of the Artisans Quadrangle floors were preserved and excavated, the total amount of copper refined, and the total number of objects produced, would have been some multiple of these figures.

CONCLUSIONS AND COMPARISONS

The picture of the metallurgical activity in the Artisans Quadrangle at Chotuna that emerges is one of a small-scale but specialized refining and smithing operation. Raw copper that had been smelted elsewhere was brought to the site, where it was remelted with a sand flux to slag off excess iron left over from the smelting process. Reducing the 3 to 6 percent iron content of many raw smelted prills to a few tenths of a percent would have been necessary in order to produce a workable copper alloy (Craddock 1995:138–140). This operation may have been done by loading raw copper prill, sand, and fuel over one or more sherds placed on the floor and firing the pile. Blow-tubes tipped with ceramic tuyeres would have been used to intensify the heat. Once the charge melted, the pile would be scraped off, scattering ash, charcoal, and bits of slag around the firing spot. The sherd

would be tipped to dump out the liquid copper, perhaps into a mold or onto a flat stone, leaving the crucible slag adhering to the sherd and often spattering drops of copper and slag onto the floor. The operation was not always successful, sometimes melting only enough of the charge to stain a small spot toward the center of the crucible sherd.

The refined copper was forged into tweezers, needles, star-shaped sheet ornaments, and probably other objects, using polished stone tools and anvils like those found elsewhere on the north coast. Like the other smithing sites at Pampa Grande (Shimada 1978) and Chan Chan (Topic 1977, 1982), and unlike the smelting site of Cerro de los Cementerios (Shimada et al. 1982), the work areas in the Artisans Quadrangle were kept comparatively clean, and little of value was left behind when they were remodeled or abandoned. While the scale of production was modest, a limited number of possibly part-time metalworkers at the Artisans Quadrangle probably produced many thousands of items such as needles, tweezers, and small sheet ornaments over the period of its use, or their equivalent in fewer, larger objects.

The location of the smelting site that supplied the Artisans Quadrangle is not known. The few analyses of metal droplets presented here do not agree well with comparable ones from Cerro de los Cementerios (Epstein 1982), which is located only a few tens of kilometers away. Metal from that well-studied smelting site has traces of magnesium, zinc, nickel, and silver at levels that would have been detected in the Artisans Quadrangle material had they been present, while the Artisans Quadrangle metal tends to contain substantially more arsenic and lead. This disagreement may be due to the small numbers of analyses and the high variability of Andean copper production, but it may mean that the artisans of Chotuna went elsewhere for their raw copper. Compared to the other two documented north coast smithing sites mentioned above, the Artisans Quadrangle was unusual in its concentration on refining. Scatters of slag and slag-wet sherds were found in dozens of rooms in the quadrangle, often in association with charcoal, ash, hearths, and burnt spots on floors and walls, as well as forging debris such as flakes from polished stone tools and unfinished copper objects. By contrast, Shimada reported no tuyeres or slag from Pampa Grande (Shimada 1978). One tuyere and a few pieces of slag turned up in Topic's (1977, 1982) extensive work at Chan Chan, but the tuyere and all but one piece of slag were found in administrative and elite contexts, not metal shops. Topic (1977) reported just seven crucible fragments, found in a setting of burnt patches on the floor and scattered small green lumps, which suggests a single operation or a small number of operations similar to those practiced much more intensively at the Artisans Quadrangle.

The evidence so far suggests that production stages in the copper industry on the north coast were well differentiated, with different centers or shops

having different emphases. Cerro de los Cementerios, the largest-scale center studied, apparently specialized in the whole range of processes from smelting through remelting, possibly refining, and forging, with discrete shops for different production stages. Among the smaller-scale smithing centers, the Artisans Quadrangle had the greatest emphasis on refining or remelting operations in addition to forging, while the shops at Pampa Grande and Chan Chan were primarily limited to forging operations. Whether these apparent differences are due to sampling error, the temporal and cultural differences between the sites, differing types or qualities of smelted metal, unimportant local variations in emphasis, or a real and structured division of production stages or specialties among sites is a subject for further research.

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Appendix 3

HUMAN SKELETAL REMAINS FROM CHOTUNA

John W. Verano

Nineteen human burials were excavated at Chotuna during the 1980–82 field seasons. All can be assigned to the Late Phase (AD 1370–1600).

Skeletal preservation at Chotuna is variable. Of the 19 burials found, 4 contained skeletal remains in such poor condition that they could not be recovered. The remaining 15 vary considerably in the quality of bone preservation, ranging from relatively complete skeletons to highly fragmentary remains. The specific causes of these preservation differences are unknown, but likely factors include interment in sandy soil and depth of burial relative to the water table.

Laboratory analysis of the Chotuna skeletal remains included determination of age and sex, estimation of living stature, and visual examination for evidence of skeletal or dental pathology. The initial analysis was conducted by the present author in the summer of 1983, with a follow-up study and additional photographic work in 2007, in collaboration with bioarchaeologist Mellisa Lund Valle of the National Museum of Archaeology, Anthropology, and History of Peru.

Estimation of age at death for juvenile remains was based on tooth calcification, eruption, and root closure, long bone length, appearance of ossification centers, and epiphyseal closure. Adults were aged on the basis of pubic symphysis morphology, dental attrition, and cranial suture closure, as well as on degenerative changes such as vertebral osteophytosis and osteoarthritis (Bass 1971; Buikstra and Ubelaker 1994; White and Folkens 2000).

As clearly defined sex differences in the human skeleton do not become manifest until after puberty, no attempt was made to assign sex to the infant and child burials. For the adults, sex was determined on the basis of pelvic

morphology, supplemented by observations on the general size and robusticity of the skeleton (Buikstra and Ubelaker 1994; White and Folkens 2000).

Estimation of living stature for adults was calculated using regression formulas developed by Santiago Genovés (Genovés 1967), generally considered to be the best available formulas for estimating living stature for Andean skeletal remains (Verano 1997). Only two adults had long bones sufficiently preserved to permit stature estimation.

HUACA GLORIA BURIALS

The Huaca Gloria burials (A2 T1–A2 T9) were found on the east side of the huaca, and all date to the Late Phase (ca. AD 1370–1600).

BURIAL A2 T1

Tomb 1 contained the fragmentary remains of a 25–35 year-old male. Although young, he suffered from multiple dental pathologies, including carious lesions on two premolars and the antemortem loss of three molars. No skeletal pathology was observed, and no measurements could be taken due to the fragmentary nature of the remains.

BURIAL A2 T2

The occupant of Tomb 2 was an adult male over 50 years of age. Advanced age is suggested by morphology of the pubic symphysis, which shows marginal lipping and degenerative changes to its surface (Fig. 209), and by degenerative changes to the vertebral bodies (Fig. 210), hip (Fig. 211), and the shoulder joints. Muscle attachment areas show pronounced enthesophyte development (Figs. 212, 213), another feature commonly seen only in older adults. The frontal bone has several irregularly shaped lesions that may mark an old injury or soft tissue infection (Fig. 214). Their margins are rounded, indicating that they had healed. Another healed injury was noted on a right rib, which shows a well-healed fracture of the shaft (Fig. 215). Dental problems included the antemortem loss of many teeth and an active abscess of the upper right canine.

Figure 209 Right pubic symphysis, A2 T2.

Figure 210 Vertebral osteophytosis on lumbar vertebrae, A2 T2.

Figure 212 Anterior view of the proximal ends of the femora of A2 T2, showing enthesophytes on the greater trochanters.

Figure 211 Degenerative changes on the superior rim of the acetabulum, A2 T2.

Figure 213 Ischia of A2T2, showing enthesophyte development on the ischial tuberosities.

Figure 214 Lesion on frontal bone of A2 T2.

Figure 215 Healed fracture of right rib, A2 T2.

Figure 216 Lower canine of A2 T3 with multiple linear enamel hypoplasias.

BURIAL A2 T3

Tomb 3 contained the well-preserved skeleton of a young adult male, approximately 25–35 years of age. Measurement of the maximum length of the right femur produced an estimated living stature of 161 +/- 3.4 centimeters, or approximately 5 feet 4 inches, which is within the normal range for males in prehistoric northern coastal Peruvian populations (Verano 1997). Dental pathologies include the premature loss of three molars and enamel hypoplasia on the upper and lower canines (Fig. 216).

A developmental anomaly is present on the eleventh thoracic vertebra (Figs. 217, 218). An oval defect in the vertebral body, approximately 1 centimeter in maximum diameter, marks where the fetal notochord failed to be absorbed during ossification of the centrum. Known as a cleft or "butterfly" vertebra, this defect can range from a small opening (as in this case) to a large cleft. Other cases have been described in prehistoric Peruvian skeletons, although the defect is relatively rare (Barnes 1994; Mann and Verano 1990). In modern clinical cases, the defect is clinically silent and is normally an incidental finding in radiographs. Severe cases, however, can lead to scoliosis. In the case of the skeleton in Tomb 3, the body of the affected vertebra is only mildly abnormal in shape, as seen in anterior view (Fig. 219), and probably would not have presented any difficulties to its owner.

Figure 217 Eleventh thoracic vertebra of A2 T3, superior view.

Figure 218 Eleventh thoracic vertebra of A2 T3, inferior view.

Figure 219 Anterior view of thoracic vertebrae T10–T12 of A2 T3.

BURIAL A2 T4

Tomb 4 contained the fragmentary remains of a male of approximately 20–22 years of age. All long bone epiphyses are fused, but the iliac crest epiphysis shows incomplete union (Fig. 220), and the sternal end of the clavicle shows no epiphysis present (Fig. 221). The upper third molars are in occlusion, but the lowers are unerupted. Thus, skeletal and dental development were still incomplete in this individual at the time of death. All four canine teeth show pitting and linear defects, indicating bouts of childhood illness or malnutrition (Fig. 222). No other pathologies are present, although the fifth metatarsal bones of both feet are bowed outward (Fig. 223).

Figure 220 Right ilium of A2 T4, showing incomplete fusion of iliac crest epiphysis.

Figure 221 Medial end of clavicle of A2 T4, showing no epiphyseal development.

Figure 222 Lower (to the left) and upper canines of A2 T4, showing enamel hypoplasias.

Figure 223 Fifth metatarsals of A2 T4, showing lateral bowing of the distal ends.

BURIAL A2 T5

Tomb 5 contained the very fragmentary remains of an infant. The crowns of the second deciduous molars are fully calcified, which suggests an age of at least ten months, but the roots of the deciduous incisors are still incomplete, which places an upper age limit at around 18 months. No visible pathology is present.

BURIAL A2 T6

Tomb 6 contained the relatively complete remains of an 11–13 year-old child. This burial was of particular interest when first discovered, because it showed extensive eroded areas on the skull that had an appearance suggestive of cranial syphilis. When examined in the laboratory, the skull indeed looked pathological (Fig. 224). However, close inspection demonstrated that the lesions are strictly erosive in character, with no evidence of bone reaction or healing, as would be expected in treponemal infection (Hackett 1976; Ortner 2003). Further evidence inconsistent with syphilis included the fact that the lateral aspect of the maxillae and mandible also had erosive damage (Fig. 225), and these are not areas typically involved in syphilis. No lesions were present on the postcranial skeleton, where they are commonly found in the case of syphilis. We noted also that the eroded areas of the skull are darkly stained, which is consistent with postmortem taphonomic change. Why the skull and mandible are more affected than the rest of the skeleton is not clear. Perhaps textiles wrapping the head retained more moisture, or perhaps there was some localized soil difference in the head area. Since first examining this skull in 1983, I have seen similar erosive defects in Moche burials at Pacatnamu in the Jequetepeque Valley and at the Pyramid of the Moon in the Moche Valley, so this specimen is not unique.

Figure 224 Erosive defects on the skull vault of A2 T6.

Figure 225 Eroded areas on the left maxilla and mandible of A2 T6.

BURIAL A2 T7

Tomb 7 contained the relatively complete remains of an infant. The first deciduous molar crowns are fully calcified, but not the second molars, and the lower incisors were just beginning to erupt, which indicates an age at death of between 6–8 months. Maximum length of the left femur without epiphyses is 105 millimeters, consistent with the dental age estimate (Johnston 1962; Ubelaker 1989). No pathology was observed.

BURIAL A2 T8

Tomb 8 contained the fragmentary skeleton of a male, approximately 35–45 years of age. Living stature is estimated to have been relatively short, 146 centimeters, or 4 feet 11 inches, based on the length of the left femur. He suffered from a large carious lesion on the lower left third molar and had periodontal disease, as indicated by a loss of alveolar bone around the roots of the teeth. Vertebral osteophytosis is present on the lumbar vertebrae and on several thoracic vertebrae, but otherwise no skeletal pathology was observed.

BURIAL A2 T9

Tomb 9 contained the fragmentary skeleton of a child 11–13 years of age. Enamel hypoplasias are visible on all four permanent canines.

ARTISANS QUADRANGLE BURIALS

The Artisans Quadrangle burials (AQ T1–AQ T6) all date to the Late Phase. Three of the burials (AQ T1–AQ T3) had such poor bone preservation that they could not be recovered. Only AQ T4–AQ T6 will be described here.

BURIAL AQ T4

Tomb 4 contained the very fragmentary remains of a 7–11 year-old child. Preservation was very poor, but age could be estimated on the basis of dental development. Hypoplastic lines are present on the canines and upper central incisors.

BURIAL AQ T5

Tomb 5 contained the fragmentary remains of a 12–15 year-old adolescent of undetermined sex. Enamel hypoplasias are visible on the permanent canines.

BURIAL AQ_T6

Tomb 6 contained the highly fragmentary remains of a 7–11 year-old child. Only bone fragments and teeth were recovered from this burial, but the following observations could be used to estimate age: the first permanent molars show little occlusal wear and have open roots; the second permanent molars have not erupted; and the third molar crowns are only partially calcified. No pathology was observed.

DISCUSSION

As was noted in the introduction, all the burials found at Chotuna can be assigned to the Late Phase. On the basis of associated grave goods, they can be subdivided into the following groups:

Chimu Late Phase AQ_T1–AQ_T6
Chimu-Inca Late Phase A2 T1–A2 T4
Colonial Late Phase A2 T5–A2 T9

Given the small number of burials recovered from Chotuna, statements about differences in pathology and general health through time must be made with caution. However, some general observations can be made. There is no skeletal evidence for the introduction of any new diseases during the Colonial Late Phase, as was originally suspected in the case of Burial A2 T6. Of course, this does not rule out the arrival of infectious diseases such as smallpox, bubonic plague, measles, or influenza, which do not leave evidence in bone, but are known to have ravaged coastal Peru after European contact (Cook 1981; 1998). The most common pathological conditions seen at Chotuna (dental caries, periodontal disease, tooth loss, enamel hypoplasia) do not appear to show changes in frequency through time. Dental disease, in the form of caries, peridontal disease, and antemortem tooth loss, was a common problem for adults at Chotuna and is most likely due to a diet rich in carbohydrates such as maize. Similar frequencies of dental disease have been reported for other prehistoric coastal Peruvian populations (Verano 1997).

Also common at Chotuna was enamel hypoplasia, a condition where normal enamel development in a developing tooth crown is disrupted, leading to pits or linear defects on the lingual or buccal surface of the tooth crown. Hypoplastic defects have been linked to childhood illnesses and episodic dietary stress (Goodman and Rose 1990; Skinner and Goodman 1992). They are most frequently seen on the permanent canine teeth and provide a visible record of metabolic stress suffered in the roughly 2–5 year age range, when the canine tooth crowns are developing.

In the 10 Chotuna burials that could be examined for enamel hypoplasia, half had visible enamel defects. This high frequency suggests that childhood diseases or periodic food shortages put children at Chotuna under significant stress during the growing years. Moreover, multiple hypoplastic lines are present in most cases, indicating repeated bouts of illness or nutritional stress.

There are very few other examples of pathology at Chotuna. Only one individual (A2 T2) shows evidence of osteoarthritis. This low incidence of such a universally common affliction of old age is no doubt due to the fact that A2 T2 was the only individual over age 45 found at Chotuna. Vertebral osteophytosis (degenerative changes on the bodies of the vertebrae) was common in adults, although not strongly developed in any one individual. The only examples of traumatic lesions were seen in Burial A2 T2: a healed wound on the frontal bone, and a healed rib fracture.

In total, the skeletal remains of three infants, five children, two adolescents, and five adults were recovered in excavations at Chotuna. Although these remains are for the most part fragmentary and must represent a very small sample of the total number of individuals who were buried at this site over the centuries, they nonetheless provide some information about health and disease at Chotuna. Ongoing study of human skeletal remains from other north coast sites in Peru should soon provide a background against which the pathologies seen at Chotuna can be better interpreted.

APPENDIX 4

TEXTILES FROM CHOTUNA

SUSAN BRUCE

Twenty-eight textiles and three sets of tassels were recovered at Chotuna; none were found at Chornancap. In general, conditions did not favor textile preservation. Although the following discussion is based on only a few incomplete textiles, the Chotuna collection represents an important contribution to Andean textile research since it is one of the few groups of systematically excavated textiles to be reported from the Lambayeque Valley.

Textiles were excavated from both burial and non-burial contexts in four locations at the site. Five textiles were recovered from one of the six burials located in the Artisans Quadrangle (AQ_T1). Twenty textiles and six tassels were found in eight burials located on the east side of Huaca Gloria (A2 T2–A2 T9). Four of these textiles were so decomposed that all that remained was a mass of camelid yarns (presumed to be wefts) without any original textile structure apparent. Textiles from another burial (A2 T4) were too decomposed to analyze in any way. Only one burial at Huaca Gloria (A2 T1) showed no evidence of textiles, but this burial had been exposed to the elements for some time (see pages 71, 72), and the textiles may have completely disintegrated. Three textiles were excavated in refuse at the summit of Huaca Susy (A32), and one textile was associated with a curandero kit buried in windblown sand near the northwest corner of Huaca Gloria (A53-f). The number assigned to each textile includes a prefix, which designates its specific provenience.

TEMPORAL RELATIONSHIP OF THE TEXTILES

Textiles are associated with Middle Phase, Chimu Late Phase, Chimu-Inca Late Phase, and Colonial Late Phase occupations at the site (Table 7).

		Textile number	Warp x weft count					Spin-ply						Notes
			Plain weaves			Slit tapestry	Supplementary warp-faced weave	Warp		Weft		Other		
			1/1	2/1	2/2			Cotton	Camelid	Cotton	Camelid	Cotton sewing yarn	Vegetal fiber tassels	
Middle Phase		A32-3 Tex 1				10 x 26		S-2Z		S-2Z	Z-2S			Fig. 227
		sewing yarn										S-2Z		
		A32-3 Tex 2			9p x 6p			S		S				
		A32-3 Tex 3			16p x 6p			S		S				
Late Phase	Chimu	AQ T1 Tex 1	14 x 14					S		S				
		AQ T1 Tex 2		12p x 12				S		S				
		AQ T1 Tex 3	10 x 10					S		S				Fig. 229, ornaments
		AQ T1 Tex 4		10p x 10				S		S				Copper ornaments
		sewing yarn										S-2Z		
		AQ T1 Tex 5				10 x 60		S-2Z		Z-2S				Copper ornaments
		sewing yarn										Z-2S		
	Chimu or Chimu-Inca	A53-f Tex 1		8p x 8				S		S				Curandero kit wrapping
		sewing yarn										S-2Z		
	Chimu-Inca	A2 T2 Tex 1				?		------			Z-2S			Loose yarn
		A2 T2 Tex 2				6 x 40		?			Z-2S			
		A2 T3 Tex 1		7p x 11				S		S				
		A2 T3 Tex 2		11p x 14				S		S				
		A2 T3 Tex 3				7 x 7p		S			Z pairs			Paired wefts
		A2-T4												Decomposed
	Colonial	A2 T5 Tex 1				6 x 28		?			Z-2S			
		A2 T6 Tex 1				?		------			Z-2S			Loose yarn
		A2 T6 Tex 2	10 x 10					x		x				Fiber only
		A2 T7 Tex 1				8 x 32		?			S-2Z			
		A2 T7 Tex 2											Z	1 tassel
		A2 T8 Tex 1a				8 x 24		?			Z-2S			
		A2 T8 Tex 1b				8 x 36		?			Z-2S			
		A2 T8 Tex 2				6 x 36		?			S-2Z			
		A2 T8 Tex 3				8 x 28			S		Z-2S			Fig. 226
		A2 T8 Tex 4				8 x 24		?			Z-2S			
		A2 T8 Tex 5				7 x 20		?			Z-2S			
		A2 T8 Tex 6											Z	Fig. 230, 2 tassels
		A2 T8 Tex 7					20–30 x 10		Z-2S		Z-2S			Fig. 228
		A2 T8 Tex 8				?		------			Z-2S			Loose yarn
		A2 T9 Tex 1				?		------			Z-2S			Loose yarn
		A2 T9 Tex 2				6 x 40		?			Z-2S			
		A2 T9 Tex 3											Z	3 tassels

? - warps disintegrated (presumed cotton) x- spin and ply not visible --- loose yarn, probably wefts

Table 7 Summary of textile characteristics by phase.

Cultural attributions for all but four of the textiles were derived from ceramics or European glass beads that were associated with them.

The earliest textiles from the site, excavated from refuse at the summit of Huaca Susy, are identified as Middle Phase. Even though Colonial Late Phase ceramic sherds were found in the same refuse deposit, stylistic and technical features of the textiles suggest that they are much earlier (A32-3 Tex 1–Tex 3). It is believed that all three textiles were removed from their original context(s) and then discarded during the Colonial Period in the occupation refuse at Huaca Susy.

A textile (A53-f Tex 1) found wrapped around the outside of a basketry curandero kit (see pages 86–90) had no associated ceramics or European glass beads. The textile was radiocarbon dated to AD 1445–1495, a date range that overlaps the Chimu Late Phase and Chimu-Inca Late Phase.

Textiles from Burial AQ_T1 in the Artisans Quadrangle were associated with Chimu Late Phase ceramics. Of the nine burials on the east side of Huaca Gloria, four (A2 T1–A2 T4), contained ceramics identified as Chimu-Inca Late Phase. Five other burials at Huaca Gloria (A2 T5–A2 T9), located in backfill caused by looting on the summit, contained ceramics or European glass beads and are identified as Colonial Late Phase.

TERMINOLOGY

Table 7 summarizes major features of each textile in the sample.[1] The direction of twist is either in the Z direction (slanting up to the right as in the center of the letter Z) or in the S direction (slanting up to the left as in the center of the letter S). When a yarn is plied, the direction of plying is always opposite to that of the spin. A two-ply yarn composed of two S-spun yarns plied in the Z direction is abbreviated S-2Z. Conversely, a two-ply yarn composed of two Z-spun yarns plied in the S direction is abbreviated Z-2S.

The degree of twist follows the spin-ply description and is indicated by (l) loose, (m) medium, (h) hard, and (os) overspun (or crepe). Yarn diameters, given in millimeters, represent the average diameter of the finished yarn, not the individual ply. Even though most hand-spun yarn (especially cotton) varies somewhat in thickness, yarns are considered to be evenly spun unless noted otherwise. Characteristics of the sewing yarns are listed separately under the textile in which they are used and are not assigned individual numbers.

With structural descriptions, numbers separated by a slash indicate paired or unpaired warps and wefts, with the warp given first. For example, 2/1 refers to a fabric with paired warps and unpaired wefts. Thread counts are given "warp x weft," ends per centimeter (the number of threads in a 1

centimeter length). Yarns used as pairs are followed by a p, so 12p x 12 indicates that 12 pairs of warp yarns and 12 individual weft yarns were used in a 1 centimeter length.

FIBERS

Cotton or camelid fibers are used for the fabrics, and an unidentified non-cotton vegetal fiber is used for tassels.[2] White or, more rarely, tan cotton is used for both warps and wefts; none of the cotton yarns are dyed.[3] Camelid fibers absorb dyes more readily than cotton, and a wide range of bright colors is possible. Thus, most color-patterned textiles in the Andes employ dyed camelid yarns to create designs. In our sample, warp-patterned and slit tapestry designs are woven with gold, red, and pink camelid yarn. Natural camelid colors range from medium to dark brown. Even though most of the camelid yarns appear to be an undyed dark brown shade, it is likely that many of the colors originally present have been obscured by burial decomposition.

Cotton is nearly always used for warps: unplied in plain weaves or plied in slit tapestries. Only two textiles from a Colonial Late Phase burial employ camelid warps (one plied, one unplied) and are the only all-camelid textiles excavated (A2 T8 Tex 3, A2 T8 Tex 7). Normally, the dyed camelid yarns comprise the visible elements on the textile, and the hidden elements are undyed cotton. Therefore, it is not surprising that camelid yarns were chosen for warps in the warp-patterned textile, since the warp yarns are the visible elements and carry the patterning in this technique, but it is unusual that the warps (the non-visible element) are also camelid (A2 T8 Tex 7). In one slit tapestry (A2 T8 Tex 3) the weft (the visible element) is the usual camelid fiber, but the warp (the hidden element) is uncharacteristically camelid rather than cotton.

A Chimu Late Phase burial from the Artisans Quadrangle (AQ_T1) contains only cotton textiles, including an unusual all-cotton slit tapestry (AQ_T1 Tex 5). The remaining burials include both camelid and cotton textiles, although in some cases the warp fiber can only be inferred.

Warp elements had completely disintegrated in 13 textiles from six burials at Huaca Gloria: A2 T2 (Chimu-Inca Late Phase) and A2 T5–A2 T9 (Colonial Late Phase). In four instances the textiles have decomposed into a jumbled mass of camelid yarns (which may have been used as wefts), and no textile structure remains (marked as "----" in Table 7). In nine other textiles, the original textile structure is intact and, despite the missing warps, an accurate warp count can be made (marked "cotton (?)" in Table 7). The disintegrated warps from this group of textiles are presumed to be cotton for several reasons: the differential preservation between the warp and weft elements

within the same textile, research that records distinctly different effects of high pH on cotton and animal fibers (Matthews 1947: 74; Timár-Balásky and Eastop 1998; Strilic and Kolar 2004: 33–34), and the overwhelming preference for cotton warps by coastal weavers.

The Colonial Late Phase burials are located in backfill produced by looting on the summit of Huaca Gloria and were interred near the surface. These burials were likely exposed to episodic rainfall that occurred at the site—a condition that would increase the acidic level within the burial, resulting in the nearly uniform disintegration of the cotton warps.[4] These burials may also have contained all-cotton burial wrappings, but these fabrics, like the cotton warps in the slit tapestries, have completely disintegrated. The burials with preserved cotton fabrics (from Chimu Late Phase and Chimu-Inca Late Phase) were buried far deeper and were presumably more protected from moisture.

SPIN AND PLY

Most yarns are evenly spun with a medium to fine diameter (0.3–0.7 millimeter). Warp yarns are hard or over spun, while loose or medium twists are more common in the weft yarns. Extra stress placed on warp yarns during the weaving process is compensated for by giving the yarn a harder twist or by twisting two strands together (plying), and weavers intentionally produced harder spun or plied yarns for that purpose. Spinners also produced unevenly spun cotton yarn to create a distinctive textural effect in an open plain-weave textile (AQ_T1 Tex 3).

Preferences in spin direction are noted for cotton and camelid yarns (Table 8). Camelid yarns are almost always Z-spun and S-plied (Z-2S) and have a uniform appearance. Cotton yarns are nearly always S-spun and, although they can be fine, they are not as uniform in spin. Cotton yarns used in the plain-weave textiles are without exception S-spun and never plied, although they are sometimes used as pairs (A32 Tex 2, A32 Tex 3). Cotton is plied only when used as warps in slit tapestry, as wefts in slit tapestry, or as a sewing yarn. There are four exceptions to these conventions in spin and ply, and they all occur in slit tapestry textiles.

The first exception is an unusual all-camelid slit tapestry from a Colonial Late Phase burial (A2 T8 Tex 3, Fig. 226). One of only three slit tapestries with extant warps, it is unusual for three reasons: 1) the warps are camelid (one of two all-camelid textiles); 2) the camelid warps are S-spun (the direction of spin normally used for cotton); and 3) the warps are not plied. The spinner/weaver who produced this textile did not have to ply the warp yarns, owing to the greater tensile strength of camelid fibers, but it is not clear what led to the choice of camelid fiber as the warp nor why it was spun like cotton (in the S direction) while the camelid warps follow the usual Z-spin.

Yarn type		Spin-ply direction			
		S	Z	S-2Z	Z-2S
Cotton (24)	Warps	10	0	2	0
	Wefts	10	0	1	1
Camelid (19)	Warps	1	0	0	1
	Wefts	0	1*	2	14
Loose camelid yarn (4)		0	0	0	4
Cotton sewing yarn (4)		0	0	3	1
Total		21	1	8	21
*Used as pairs					

Table 8 Spin and ply direction of textiles by fiber type and usage.

The second exception occurs in a unique all-cotton slit tapestry from the Artisans Quadrangle (AQ_T1 Tex 5). The spin of the cotton warps follows the normal S-2Z conventions, but the weft yarns are cotton and are spun Z-2S, mimicking the spin-ply of camelid weft yarns, which are more commonly used for slit tapestry. Notably, all the textiles in this well-furnished burial were cotton, and the weavers maximized the decorative possibilities of cotton through yarn texture (as in AQ_T1 Tex 3), weaving structure, and the addition of shell beads and miniature copper ornaments (AQ_T1 Tex 3–AQ_T1 Tex 5, Fig. 229), rather than by using color.

The third exception is noted in the use of unplied Z-spun camelid wefts that are used as pairs instead of the usual single plied yarns (A2 T3 Tex 3). The fourth exception is A2 T7 Tex 1, in which the camelid wefts are S-spun and Z-plied (S-2Z), as if they were cotton. The warps in this textile, presumed to be cotton, have disintegrated.

There are four examples of sewing yarns used to sew ornaments to textiles in burial AQ_T1 or to join two separate cloths at the edges (Table 8).[5] Sewing yarns are always hard-spun cotton. In three cases, the sewing yarns appear to be the same as that used for the warps, but they were plied if the original warps were unplied (S-2Z). In the fourth instance (AQ_T1 Tex 5), the sewing yarn is a weft yarn rather than a warp yarn and is spun Z-2S, an atypical spin direction matching the atypical weft yarns in this textile.

STRUCTURE

The textiles can be divided into three groups according to their structures: plain weaves, slit tapestries, and supplementary warp-faced weaves.[6] Although slit tapestries are most common in the present sample (Table 9), the original frequency of textile techniques may have been quite different, since

Weaving technique		Spin-ply direction				Total frequency
		Middle Phase	Late Phase			
			Chimu	Chimu-Inca	Colonial	
Plain weaves	2/2	2				2
	2/1		2	3		5
	1/1		2		1	3
Subtotal		2	4	3	1	10
Slit tapestries*		1	1**	2	9 ***	13
Supplementary warp-faced					1	1
Total		5	9	9	14	28

* Does not include 4 sets of unstructured yarn which may be slit tapestry wefts
** All-cotton
*** One all-camelid

Table 9 Frequency and temporal distribution of various weaving techniques.

some textiles were too decomposed to ascertain any structure, and many of the all-cotton plain-weave fabrics may have completely disintegrated.[7]

PLAIN WEAVES

Ten all-cotton plain-weave fragments were excavated; seven were recovered from burials (Table 9). Variations in plain-weave structure include two textiles with paired warps and paired wefts (2/2), five with paired warps and single wefts (2/1), and three with single warps and single wefts (1/1). Both the 2/2 and 2/1 plain weaves are warp predominant: the warp yarns outnumber but do not completely cover the weft yarns. The three 1/1 plain weaves are balanced: there are an equal number of warps and wefts per centimeter (see Table 7 for individual textile thread counts).

Plain weaves with paired warps and wefts (A32-3 Tex 2, A32-3 Tex 3) are found only in the Middle Phase. During the Chimu Late Phase, an equal number of 2/1 and 1/1 plain weaves are recorded. The Chimu-Inca Late Phase includes only 2/1 plain weaves, and the Colonial Late Phase yielded a single 1/1 plain weave (Table 9). Because of poor cotton preservation and the small sample size at Chotuna, we cannot state with any certainty that the distribution of plain-weave textile types accurately reflects the original frequency in each phase. While there are preferences in structure recorded for Moche plain weaves (2/2, unplied S-spun yarns) and Chimu plain weaves (predominately 2/1, unplied S-spun yarns) from sites elsewhere on the north coast, we do not know whether weavers at Chotuna or the greater Lambayeque Valley followed the same conventions.

SLIT TAPESTRIES

Thirteen textiles are classified as slit tapestries (Tables 7, 9).[8] In Burial A2 T8, where six fragments without warps were located, the range of both warp and weft counts is so small that several of the fragments could be from a single textile, so it is likely that fewer than six individual textiles are represented.

Warps are present in only four slit tapestries; warp yarns in the remaining nine have decomposed completely but are presumed to be cotton (see FIBERS). Even though these warp yarns are missing, the structure remains intact, and it is possible to record both warp and weft counts.

Warp counts of the 13 slit tapestries range from 6 to 10 ends per centimeter, and weft counts range from 14 to 60 ends per centimeter. Slit tapestries are usually woven on plied cotton warps (unpaired), and the wefts are plied camelid yarns (unpaired). At Chotuna, however, several slit tapestries do not follow these norms. A textile recovered from a Colonial Late Phase burial is unique in its use of both camelid warps and camelid wefts (A2 T8 Tex 3, Fig. 226). An all-cotton slit tapestry from a Chimu Late Phase burial uses eccentric wefts to outline some design contours (AQ_T1 Tex 5). Only one slit tapestry employs pairs of yarns as wefts; it is the coarsest slit tapestry, with only 14 ends (or seven pairs) per centimeter (A2 T3 Tex 3, Table 7). The spin direction of these unplied wefts is the same direction (Z) as the Z-spun, S-plied camelid wefts used in the other slit tapestries but here was left unplied. The low weft count may result from the use of unplied cotton warps. Unplied cotton probably did not have the necessary tensile strength to withstand the hard beating required to densely pack the wefts.

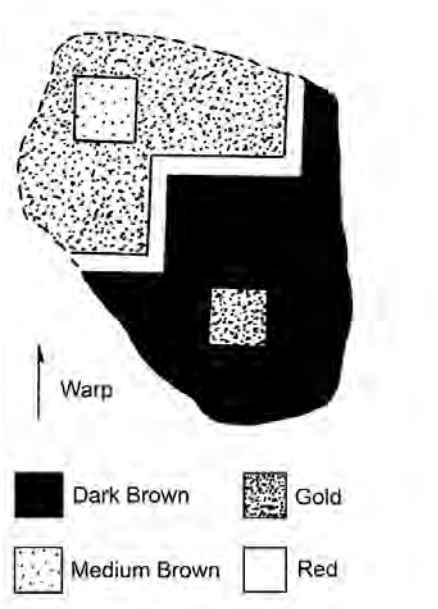

Figure 226 Stepped and square design in slit tapestry; camelid warps and wefts (A2 T8 Tex 3).

While most of the slit tapestry textiles are too decomposed to show evidence of designs, geometric and figurative motifs remain visible on two examples. The all-camelid specimen from the Colonial Late Phase depicts a stepped and square design executed in gold, red, and brown yarns (A2 T8 Tex 3, Fig. 226).

The second textile, the most elaborate and best preserved slit tapestry, measures 13 by 8 centimeters and consists of two pieces joined along the selvages. The tapestry depicts a frontal standing figure wearing a feathered headdress and flared garment (A32-3 Tex 1, Fig. 227). The figure's hands gesture upwards, the feet point to either side, and each appendage terminates in three widely spaced digits. Parts of other hands and feet, above and to the sides, suggest that at least three figures were aligned horizontally and at least two vertically.[9] A second section was attached below and may have contained additional figures. The eyes are woven in the shape of an elongated oval,[10] and triangular elements with horizontal stripes and an unidentified eye-like design float between the figures.

The figure is similar to the frontal standing figure from the Middle Phase mural excavated at Chornancap (Fig. 150, #25) in wearing a flared garment and having the feet pointing outwards, the hands raised, and the fingers and toes clearly delineated. The triangular tassel-like forms found emanating from the mouths of animal heads and the waist belts of secondary figures on the mural (Fig. 154) are reminiscent of the striped triangles flanking the textile figure. The headdress on the mural figure (Fig. 150, #25) is no longer visible, but other characters in the mural wear feathered headdresses shown in profile (Fig. 153). In both the painted and woven contexts, each feather is separated from the others, and the headdress floats slightly above the head.

This figure is clearly related to the "Toothed Crescent Headdress Style" described by Ann Rowe and attributed to the Chimu culture (1984: 68–69, Fig. 45). Given the early date of the Chornancap mural (ca. AD 900–1300), it seems likely that this iconography originated in the Lambayeque Valley and that Chimu weavers adapted this iconography. A later version of this style is called "Plain Crescent Headdress" (A. Rowe 1984).

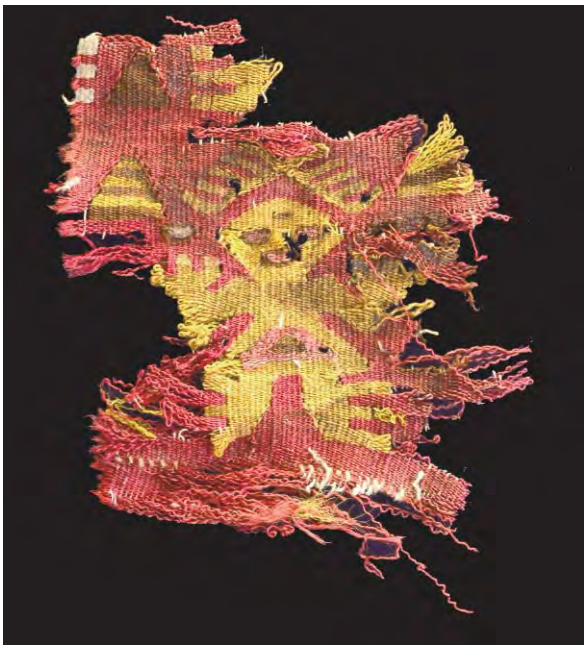

Figure 227 The iconography of this slit tapestry shows similarities to figures painted on the mural at Chornancap (A32-3 Tex 1).

WARP-PATTERNED TEXTILE

A single warp-faced textile fragment was found in a Colonial Late Phase burial (A2 T8 Tex 7, Fig. 228). The fabric employs dark brown camelid yarn as the weft and as one set of warp elements. A second supplementary set of warp elements in brown, gold, and red camelid serve as floats to create the nested diamond design.

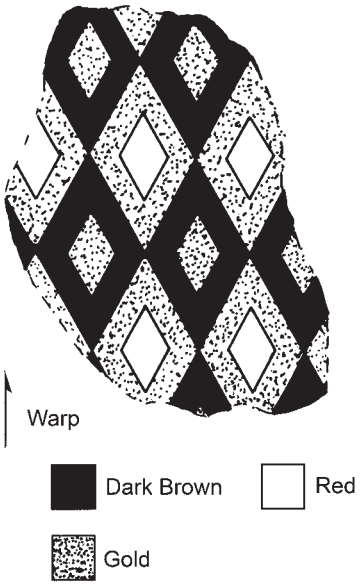

Figure 228 Nested diamond design in compound warp-faced weave with supplementary warps; woven with camelid warps and wefts (A2 T8 Tex 7).

EMBELLISHMENTS

A textile bundle located under the head in Burial AQ_T1 (Chimu Late Phase) was made up of two textiles, each with ornamental objects sewn to the surface. The outer cotton plain–weave cloth forming the bundle was originally decorated with

Figure 229 Plain-weave cotton textile forming the outside wrapping of a bundle in AQ_T1 and embellished with shell beads and miniature copper tumis. Copper stains show that the miniatures were sewn to the fabric at regular intervals (AQ_T1 Tex 3).

shell beads and miniature copper ornaments in the shape of tumis and geometric shapes (AQ_T1 Tex 3, Fig. 229). Enclosed in the bundle was a second cotton plain-weave cloth ornamented with miniature copper headdresses (AQ_T1 Tex 4). An all-cotton slit tapestry band, also embellished with miniature copper headdresses, was folded and placed next to the bundle (AQ_T1 Tex 5). Although most of the copper ornaments were no longer attached to the fabrics, yarns still threaded some of the perforations, and copper stains indicate that they were placed at regular intervals[11] (also see pages 40–43, Fig. 43).

Tassels were noted in three Colonial Late Phase burials (Fig. 230, Table 7). Burial A2 T7 contained one tassel (A2 T7 Tex 2), burial A2 T8 contained two tassels (A2 T8 Tex 6), and burial A2 T9 contained three tassels (A2 T9 Tex 3). In each burial they were found near the head or upper torso, but none were found attached to cloth. It is not clear whether they were used as ornaments on the burial wrappings, as ornamentation of another textile, or in some other manner.

The tassels are composed of a non-cotton vegetal fiber Z-spun into coarse yarns. Two tassels are made with half-hitch knots, and four tassels are constructed in the "tubular braid technique" (see Bird 1954: Plates CXX, CXXVI, Chart 5). Both types of finished tassels are Y-shaped: a short length forming one side of the "Y" is attached to a longer segment forming the stem and the other side of the "Y" (Fig. 230).

TEXTILE PRODUCTION

No weaving implements and very few spindle whorls were found at Chotuna; none were associated with the burials or textiles. The poor preservation at the site contributed to the lack of textile-production tools recovered, even though textiles were undoubtedly being produced at Chotuna.

Several copper needles were recovered from the Artisans Quadrangle, and another was included in the curandero kit (Fig. 130). One needle was placed beneath the shoulder of the individual in Burial AQ_T1 (Fig. 43). Needles could have been used for sewing textiles, attaching copper ornaments and shell beads to fabrics, and weaving intricate slit tapestries.

A coastal origin is suggested for most textiles due to the use of cotton and adherence to north coast spinning and weaving conventions. Most camelid weft yarns spun in the Z direction were probably traded from the highlands

already spun and dyed. However, S-spun camelid yarns in three textiles (A2 T7 Tex 1, A2 T8 Tex 2, A2 T8 Tex 3) suggest that coastal spinners also may have had access to unspun camelid fiber, which they spun according to local practices. The unique warp-patterned textile (A2 T8 Tex 7, Fig. 228) may have been spun and woven in the highlands; the fiber type (camelid warps and wefts), spin direction, technique, and design do not suggest a coastal origin. Given that all of these textiles were found in Colonial Late Phase burials, the anomalies may reflect the cultural disruption that occurred after the Spanish conquest.

There are a variety of structures among the plain-weave textiles. The earliest plain weaves, from the Middle Phase, have paired warps and paired wefts. Among those from the Chimu Late Phase, two combine paired warps and single wefts, and two others use single warps and wefts. In the Chimu-Inca Late Phase we find only plain weaves with paired warps and single wefts. The single example of plain weave from the Colonial Late Phase has single warps and wefts.

The highest frequency of slit tapestries and the only example of a warp-patterned weave occur in the Colonial Late Phase burials. Burials from every phase include slit tapestries.[12]

Variation in weaving and spinning skill is apparent if the textiles from different periods are compared. The earliest slit tapestry, from the Middle Phase, exhibits the most complex iconography (A32 3 Tex 1). A slit tapestry from the Chimu Late Phase (AQ T1 Tex 5), with high weft count and very fine weft yarns, demonstrates very skilled spinning. The Chimu-Inca Late Phase and Colonial Late Phase textiles also reveal skillful execution and abundant use of the slit tapestry technique.

Figure 230 Tassels (A2 T8 Tex 6). Top: Half-hitch construction. Bottom: Tubular braid technique.

FUNCTION

Given that the textiles generally consist of very small fragments, we could not reconstruct their original forms or dimensions, or even how many were originally included in each burial. Textiles were recovered from nine of the sixteen burials at Chotuna. Textile shrouds, sometimes in layers, were present in at least eight of the burials. These burials include skeletal remains of infants, adolescents, and adults (both male and female) and suggest that cloth was an important element of the burial furnishings no matter the age or sex of the individual. Many of these textiles, especially those with decorative weaves and those ornamented with shells and metal bangles, may have originally functioned as garments (such as tunics, loincloths, or mantles) or accessories (such as belts, bags, or headgear).

Only one of the six burials from the Artisans Quadrangle (AQ_T1), dated to the Chimu Late Phase, contained textiles. The difference in structure indicates that there were two different fabrics seamed together or used as two separate layers of wrapping cloths.

Among the nine Chimu-Inca Late Phase and Colonial Late Phase burials on the east side of Huaca Gloria, seven showed evidence of having been wrapped in shrouds. Remains of textiles were found wrapped around the head in three of the burials (A2 T2–A2 T4), and a fourth (A2 T9) was wrapped with at least two textile layers; the outer layer (A2 T9 Tex 1) had decomposed, leaving a mass of camelid yarns, but the inner layer (A2 T9 Tex 2) was better preserved and could be identified as a slit tapestry. There was not enough evidence to determine whether the textile in burial A2 T6 was used as a shroud. Only burial A2 T1 yielded no textiles, but this burial was exposed to the elements for a long period, and textiles originally present would have disintegrated.

Several textiles are identified as grave offerings in Burial AQ_T1. One with small copper ornaments and shell beads sewn to the surface was rolled into a bundle and placed under the head. This bundle contained miniature copper artifacts along with another textile also ornamented with copper miniatures. A third textile was folded and placed near the bundle as a separate offering.

COMPARISONS AND CONCLUSIONS

The attributes of the Chotuna textiles are generally consistent with previously reported north coast textiles of the Late Intermediate Period through the Colonial Period (cf. O'Neale 1946, Conrad 1974, Topic 1977, Mefford n.d., Rowe 1980, Rowe 1984, Hyer 1981). Cotton was the primary fiber used in north coast textiles. Cotton warps and wefts were usually used in the plain weaves. Most slit tapestry and warp-faced fabrics had cotton warps and camelid fiber wefts.

At Chotuna, the earliest burial (AQ_T1), from the Chimu Late Phase, included only cotton textiles. In contrast, textiles from the Chimu-Inca Late Phase and Colonial Late Phase burials contained many camelid tapestries, while all-cotton fabrics, if originally present, have disintegrated.

The intended use for yarns often took precedence over the kind of fiber in deciding the direction of spin and ply. Although camelid yarns were generally spun Z-2S when they were used as wefts, they were S-spun as singles, like cotton, when they were used as warps. Similar variations (or imitations)

are noted for cotton weft yarns used where camelid yarns would normally be employed.

It is believed that camelid yarn was not produced on the coast but traded already spun and dyed from highland sources due to its uniformity, the difference in spin direction, and the lack of unspun camelid fiber from coastal sites (e.g., see Rowe 1984: 25). However, the exceptions to these conventions noted in the Chotuna textiles indicate that coastal spinners may have, at times, spun camelid fibers for their own use.

Plain weaves account for less than half of the textiles in the sample. The presence of plain weaves with paired warps and single wefts is typical of textiles beginning with the Chimu.[13] The small number of textiles in the sample allows us to offer some possible, but not conclusive, identification of trends at Chotuna. Given that 2/2 plain weaves are rare among Chimu or Chimu-Inca textiles and that they are associated with a textile considered to be Middle Phase (A32-3 Tex 1), it is possible that 2/2 plain weaves predominated in the Lambayeque Valley prior to the Chimu occupation of the area, when 2/1 and 1/1 plain weaves came into fashion.

A clear contrast is noted between the Artisans Quadrangle Chimu Late Phase burial and burials from the later periods. Textiles from Burial AQ_T1, woven exclusively of cotton, emphasize texture over color when using a monochromatic fiber. Decorative qualities are achieved through the crinkly texture of overspun yarns, the subtle designs of an all-white slit tapestry, and the addition of a non-woven texture layer made up of copper and shell ornaments. In contrast, textiles from the Chimu-Inca Late Phase and Colonial Late Phase emphasize elaborate slit tapestry and warp-pattern designs, woven with an array of dyed camelid fibers, in which color trumps texture.

The greatest variation in textiles occurs in the Colonial Late Phase. Four of the five anomalously spun yarns occur in these textiles; one textile may have been woven in the highlands. Furthermore, tassels and the warp-patterned textile are found only among the Colonial Late Phase burials. These textile anomalies may reflect the new influences or disruptions in the native textile tradition during the period after the Spanish conquest. Irrespective of the possible decomposition of cotton fabrics in Colonial Late Phase burials, a disproportionately high quantity of camelid yarns is noted. This suggests that there were local elites who could still command the production of textiles using non-local yarns and complex weaving techniques.

TEXTILE CATALOGUE

The following is a description of all textiles found at Chotuna. Refer to Terminology (above) for a description of abbreviations.

UNIT A32

Location: Summit of Huaca Susy, refuse

Period: Possible Middle Phase (Lambayeque style)

A32-3 Tex 1 (see Fig. 227)

Slit tapestry fragment with Lambayeque-style figures in gold, pink, and brown on a red background, two pieces whipstitched together along heading selvages

Dimensions: approximately 13 centimeters (W) x 8 centimeters (H)

Thread count: 10 x 26

Warp: White cotton, S-2Z(h), 0.3 millimeter

Weft: Red, pink, gold, and dark brown camelid, Z-2S(m), 0.5 millimeter

Sewing yarn: White cotton, S-2Z(m), 0.8 millimeter

A32-3 Tex 2

Warp-predominant 2/2 plain-weave fragment

Thread count: 9 pairs x 6 pairs

Warp: White cotton, S(h), 0.5 millimeter

Weft: Same

A32-3 Tex 3

Warp-predominant 2/2 plain-weave fragment with one selvage

Thread count: 16 pairs x 6 pairs

Warp: Tan cotton, S(h-os), 0.3–0.7 millimeter

Weft: Same

FEATURE A53-F (CURANDERO KIT)

A53-f Tex 1

Textile wrapping

Location: Northwest corner of Huaca Gloria (see pages 86–88)

Period: Chimu Late Phase/Chimu-Inca Late Phase (Carbon 14 date: AD 1445–1495)

A single textile wrapped around the outside of a woven basket, 2/1 warp-predominant plain weave originally consisting of two loom widths sewn together at side selvages with a whipstitch

Thread count: 8 pairs x 8

Warp: White cotton, S(h-os), 0.5–0.8 millimeter

Weft: White cotton, S(h), 0.5 millimeter

Sewing yarn: White cotton, S-2Z(h), 1.7 millimeters

Burial AQ_T1

Location: Artisans Quadrangle

Period: Chimu Late Phase

AQ_T1 Tex 1

Balanced 1/1 plain weave wrapped around the body; shroud

Thread count: 14 x 14

Warp: White cotton, S(h), 0.4 millimeter

Weft: Same

AQ_T1 Tex 2

Warp-predominant 2/1 plain weave adhered to ear ornaments; shroud

Thread count: 12 pairs x 12 singles

Warp: White cotton, S(h), 0.4 millimeter

Weft: Same

AQ_T1 Tex 3 (see Fig. 229)

Balanced 1/1 loosely woven plain weave of unevenly spun yarns, formed a bundle located near the head, shell beads and miniature copper tumis and geometric ornaments were originally sewn onto the fabric

Thread count: 10 x 10

Warp: White cotton S(l-h), 0.3-0.7 millimeter

Weft: Same

AQ_T1 Tex 4

Narrow band of warp-predominant 2/1 plain weave, wrapped inside AQ_T1 Tex 3. Both selvages intact, one selvage reinforced with a whipstitch, fabric folded and warps broken along these folds, miniature copper headdresses sewn onto the fabric

Dimensions: Length incomplete x 4.6 centimeters

Thread count: 10 pairs x 10 singles

Warp: White cotton, S(h), 0.5 millimeter

Weft: Same

Sewing yarn (along selvage): White cotton, S-2Z(h), 1 millimeter

AQ_T1 Tex 5

Slit tapestry textile fragment adjacent to AQ_T1 Tex 3; two shots of eccentric cotton weft outline slit tapestry designs; miniature copper headdresses sewn onto the fabric; copper stains

Thread count: 10 x 60

Warp: White cotton, S-2Z(h), 0.5 millimeter

Weft: White cotton, Z-2S(1), 0.7 millimeter, diagonal (eccentric) weft, white cotton, Z-2S (1), 0.3 millimeter

Sewing yarn (for ornaments): White cotton Z-2S(h), 0.3 millimeter

Burial A2 T2

Location: East side of Huaca Gloria
Period: Chimu-Inca Late Phase

A2 T2 Tex 1
Mass of yarn without woven structure; possible slit tapestry weft yarn
Yarn: Brown camelid, Z-2S(m), 0.5 millimeter

A2 T2 Tex 2
Slit tapestry (?) fragment with decomposed warps
Thread count: 6 x 40
Warp: Cotton (?), disintegrated
Weft: Brown camelid, Z-2S(m), 0.5 millimeter

Burial A2 T3

Location: East side of Huaca Gloria
Period: Chimu-Inca Late Phase

A2 T3 Tex 1
Warp-predominant 2/1 plain-weave fragment
Thread count: 7 pairs x 11
Warp: White cotton, S(h), 0.5 millimeter
Weft: Same

A2 T3 Tex 2
Warp-predominant 2/1 plain weave
Thread count: 11 pairs x 14
Warp: White cotton, S(h), 0.5 millimeter
Weft: Same

A2 T3 Tex 3
Slit tapestry with single warps and paired wefts
Thread count: 7 x 7 pairs
Warp: Brown cotton, S(h), 0.5 millimeter
Weft: Brown, red, and gold camelid, Z(h), 0.5 millimeter

Burial A2 T4

Location: East side of Huaca Gloria, in backfill
Period: Chimu-Inca Late Phase
Contained several textile fragments that were decomposed and could not be analyzed.

Burial A2 T5

Location: East side of Huaca Gloria, in backfill
Period: Colonial Late Phase

A2 T5 Tex 1

Decomposed weft-faced 1/1 slit tapestry (?) fragments, appears to have wrapped the body

Thread count: 6 x 28

Warp: Cotton (?), disintegrated

Weft: Brown camelid, Z-2S (m), 0.6 millimeter

Burial A2 T6

Location: East side of Huaca Gloria, in backfill

Period: Colonial Late Phase

A2 T6 Tex 1

Mass of yarn without any structure found near head, possible slit tapestry weft yarn

Dark brown camelid, Z-2S(m), 0.7 millimeter

A2 T6 Tex 2

Decomposed 1/1 balanced plain weave found near head, cotton yarns were too degraded to determine spin direction

Thread count: 10 x 10

Warp: Cotton, spin unknown, 0.5 millimeter

Weft: Cotton, spin unknown, 0.5 millimeter

Burial A2 T7

Location: East side of Huaca Gloria, in backfill

Period: Colonial Late Phase

A2 T7 Tex 1

Weft-faced 1/1 slit tapestry (?) found near head, appears to have wrapped the body

Thread count: 8 x 32

Warp: Cotton (?), disintegrated

Weft: Dark brown camelid, S-2Z(m), 0.5 millimeter

A2 T7 Tex 2

Single tassel found near head

Constructed in tubular braid technique (see Bird 1954: Plates CXX, CXXVI, Chart 5)

Yarn: Non-cotton vegetal fiber, Z-spun

Burial A2 T8

Location: East side of Huaca Gloria

Period: Colonial Late Phase

A2 T8 Tex la

Fragments of weft-faced 1/1 plain weave (slit tapestry?) found

adhering to various parts of the skeleton, appears to have been part of a burial shroud encircling the body

Thread count: 8 x 24

Warp: Cotton (?), disintegrated

Weft: Dark brown camelid, Z-2S(m), 0.6 millimeter

A2 T8 Tex lb

Fragments of weft-faced 1/1 plain weave (slit tapestry?), may have originally been a part of A2 T8 Tex la, but with a slightly higher weft count

Thread count: 8 x 36

Warp: Cotton (?), disintegrated

Weft: Dark brown and medium brown camelid, Z-2S(m), 0.5 millimeter

A2 T8 Tex 2

Weft-faced 1/1 plain weave (slit tapestry?) with copper stains

Thread count: 6 x 36

Warp: Cotton (?), disintegrated

Weft: Dark brown and gold camelid, S-2Z(m), 0.5 millimeter

A2 T8 Tex 3 (see Fig. 226)

Slit tapestry fragments found near legs, portion of a stepped and square design still visible (see Fig. 226)

Thread count: 8 x 28

Warp: Tan camelid, S(h), 0.3 millimeter

Weft: Dark brown, medium brown, gold, and red camelid, Z-2S(m), 0.5 millimeter

A2 T8 Tex 4

Narrow band of slit tapestry found near feet

Dimensions: 5 centimeters (incomplete length) x 2 centimeters

Thread count: 8 x 24

Warp: Cotton (?), disintegrated

Weft: Dark brown camelid, Z-2S(m), 0.5 millimeter

A2 T8 Tex 5

Weft-faced 1/1 plain weave (slit tapestry?) fragments located near feet

Thread count: 7 x 20

Warp: Cotton (?), disintegrated

Weft: Dark brown camelid, Z-2S(m), 0.5 millimeter

A2 T8 Tex 6 (see Fig. 230)

Two tassels, one constructed in tubular braid technique, and the other constructed in half-hitch knot technique (see Bird 1954: Plates CXX, CXXVI, Chart 5)

Dimensions: 3.5 centimeters (L) x 0.5 millimeter (DIAM)

Yarn: Non-cotton vegetal fiber, Z(m), 0.9 millimeter

A2 T8 Tex 7 (see Fig. 228)

Supplementary warp-faced fragment with warp floats, nested diamond design

Thread count: 20–30 x 10

Warp: Dark brown camelid, Z-2S(m), 0.5 millimeter; red and gold camelid, Z-2S(m), 0.4 millimeter

Weft: Dark brown camelid, Z-2S(m), 0.4 millimeter

A2 T8 Tex 8

Loose yarns found near feet; possible slit tapestry weft yarn

Yarn 1: Dark brown camelid, Z-2S(l), 1 millimeter

Yarn 2: Medium brown camelid, Z-2S(h), 0.7 millimeter

Burial A2 T9

Location: East side of Huaca Gloria

Period: Colonial Late Phase

Two layers of textile fragments (Tex 1, Tex 2) may have formed a burial shroud encircling the body, the most complete pieces located near the legs, but fragments also adhered to other parts of the skeleton

A2 T9 Tex 1

Outer layer of very decomposed textile with only one set of elements remaining and without any structure intact, possible slit tapestry weft yarn

Yarn: Dark brown camelid, Z-2S(m), 0.6 millimeter; gold camelid, Z-2S(m), 1 millimeter

A2 T9 Tex 2

Inner layer of slit tapestry fragments forming a shroud

Thread count: 6 x 40

Warp: Cotton (?), disintegrated

Weft: Dark brown camelid, Z-2S(m), 0.5 millimeter

A2 T9 Tex 3

Three tassels found near head; two constructed in tubular braid technique, one constructed in half-hitch knot technique

Yarn: Non-cotton vegetal fiber, Z(m), 0.9 millimeter

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I would like to thank Chris Donnan for providing funding for me to participate in excavations at Chotuna and Chornancap. Additional funding was provided by the UCLA Department of Anthropology and the UCLA Institute of Archaeology. Because of my strong interest in pre-Columbian Andean textiles, I was pleased to have the opportunity to analyze the textiles from Chotuna, few and fragmented as they are. The initial textile manuscript was completed more than twenty-seven years ago, and I have not had the benefit of reexamining the textiles firsthand since fieldwork was completed in 1982. I have relied on the original text, personal and collective memory, and original field notes and have incorporated more recent Andean textile research to revise the article for final publication. Chris Donnan has been invaluable in helping me prepare the article, but any errors are mine alone. I am most grateful to have had this opportunity to revisit the research and the memories provided by Chotuna and Chornancap.

Appendix 5

COLONIAL PERIOD BEADS

Christopher B. Donnan and Jill Silton

Five Colonial Period burials were excavated at Chotuna, on the east side of Huaca Gloria (Fig. 86). Included in the contents of these burials were glass, shell, and stone beads (Figs. 231–233). This material provides an unusual opportunity to study sixteenth-century bead assemblages and to observe the different areas of the body on which beads were placed, the relative importance of these areas, and the ways in which different types of beads were combined.

In pre-Columbian Peru, beads were made from shell, stone, metal, bone, and seed. Glass beads did not appear in Peru until they were introduced by Europeans in the sixteenth century. The first arrival of glass beads in Peru is difficult to document. Even before European arrival, some glass beads could have come to Peru through aboriginal trade from Spanish settlements along the Caribbean coast of Colombia or from the Spanish settlement on the Pacific coast of Panama (Smith and Good 1982: 10–11). Of particular interest in relation to Chotuna, however, is the third expedition of Pizarro in 1532. On his march from Piura to Cajamarca he passed through Cinto, located in the Lambayeque Valley approximately 33 kilometers from Chotuna (Trujillo [1571] 1953: 134). Before Pizarro reached Cajamarca, the Inca ruler Atahualpa sent a messenger to him bearing gifts. Pizarro, in turn, presented the Inca envoy and his men with gifts that included glass beads (Estete [1535] 1968: 368, Trujillo [1571] 1953: 136).

The Spanish brought glass beads to Peru in the form of necklaces, strings of beads, and unstrung beads. Beads were given as gifts and also played an important role in the Spanish system of trade. There is, however, little evidence of how the glass beads either replaced or combined with native beads

Figure 231 Burial A2 T5, with beads at wrists.

Figure 232 Beads at right wrist of Burial A2 T5.

Figure 233 Beads at left wrist of Burial A2 T5.

or how they were used in burials as either offerings or body ornamentation. Thus the bead assemblages from the Colonial Period burials at Chotuna are of particular importance.

BEAD SAMPLE

The five Colonial Period burials contained a total of 2,917 beads. Of these, 771 (26 percent) are glass, 2,143 (73 percent) are shell, and three (0.1 percent) are stone. The varieties are illustrated in Figures 234–236. Brief descriptions are provided below, with the numbers in parentheses indicating the number of beads of each variety that were recovered.[1]

GLASS BEADS

1 (2) Clear glass, drawn, square cross section, 7 millimeter length and 8 millimeter diameter

2 (3) Green glass, drawn, square cross section, 3–8 millimeter length and 4 millimeter diameter

3A (13) Dark blue glass, drawn, round cross section, 6–8 millimeter length and 2–3 millimeter diameter

3B (4) Dark blue glass, drawn, round cross section, 4–5 millimeter length and 3–4 millimeter diameter

4A (9) Dark blue glass, drawn, square cross section, 6–14 millimeter length and 0.5–2 millimeter diameter

4B (54) Dark blue glass, drawn, square cross section, 3–10 millimeter length and 2–4 millimeter diameter

4C (10) Dark blue glass, drawn, square cross section, 15–59 millimeter length and 4–6 millimeter diameter

4D (3) Dark blue glass, drawn, square cross section, 21–46 millimeter length and 6–8 millimeter diameter

5A (12) Multilayered glass (turquoise blue exterior/white/colorless core), drawn, straight, square cross section, 9–32 millimeter length and 4–6 millimeter diameter

5B (2) Multilayered glass (turquoise blue exterior/white/colorless core), drawn, straight, square cross section, 16–36 millimeter length and 6–8 millimeter diameter

6A (69) Multilayered glass (turquoise blue exterior/white/dark core), drawn, straight, square cross section, 4–62 millimeter length and 4–6 millimeter diameter

6B (3) Multilayered glass (turquoise blue exterior/white/dark core), drawn, straight, square cross section, 45–50 millimeter length and 6–8 millimeter diameter

Figure 234 Glass beads from Chotuna.

7 (39) Multilayered glass (dark blue exterior/white/colorless core), drawn, square cross section, 3.5–6 millimeter length and 4–5 millimeter diameter

8A (113) Multilayered glass (dark blue exterior/white/dark core), drawn, square cross section, 3–10 millimeter length and 2–4 millimeter diameter

8B (22) Multilayered glass (dark blue exterior/white/dark core), drawn, square cross section, 5–7 millimeter length and 4–5 millimeter diameter

8C (3) Multilayered glass (dark blue exterior/white/dark core), drawn, square cross section, exterior heavily patinated, 12–21 millimeter length and 8–9 millimeter diameter

9A (18) Multilayered glass (turquoise blue exterior/white/colorless core), drawn, twisted, square cross section, 8–50 millimeter length and 4–6 millimeter diameter

9B (2) Multilayered glass (turquoise blue exterior/white/colorless core), drawn, twisted, square cross section, 33–53 millimeter length and 7–8 millimeter diameter

9C (1) Multilayered glass (turquoise blue exterior/white/colorless core), drawn, twisted, square cross section, one accidental corner stripe (see Fig. 236), 47 millimeter length and 8 millimeter diameter

10A (52) Multilayered glass (turquoise blue exterior/white/dark core), drawn, twisted, square cross section, 10–28 millimeter length and 4–6 millimeter diameter

10B (13) Multilayered glass (turquoise blue exterior/white/dark core), drawn, twisted, square cross section, 9–61 millimeter length and 6–8 millimeter diameter

10C (1) Multilayered glass (turquoise blue exterior/white/dark core), drawn, twisted, square cross section, one accidental corner stripe (see Fig. 236), 46 millimeter length and 7 millimeter diameter

11 (1) Multilayered glass (brown exterior/white/dark core), drawn, twisted, square cross section, 21 millimeter length and 8 millimeter diameter

12 (1) Multilayered glass (dark blue exterior/white/dark core), with two red and two white stripes at alternating corners (see Fig. 236), drawn, twisted, square cross section, 14 millimeter length and 5 millimeter diameter

13 (1) Multilayered glass (dark blue exterior/white/dark core), with two red and two white alternating stripes (see Fig.

Figure 235 Glass, shell, and stone beads from Chotuna.

236), drawn, twisted, tumbled, 6 millimeter length and 6 millimeter diameter

14 (1) Multilayered glass (transparent light blue exterior/dark blue stripes inlaid between ten teeth of white layer/colorless core (see Fig. 236), drawn, straight, 17 millimeter length and 3 millimeter diameter

15A (100) Multilayered glass (dark blue exterior/white/red/white/translucent green/white/translucent green core), drawn with 12 teeth in all inner layers, faceted, 5–9 millimeter length and 5–8 millimeter diameter

15B (2) Multilayered glass (dark blue exterior/white/red/white/translucent green/white/translucent green core), drawn with 12 teeth in all inner layers, faceted, 7–12 millimeter length and 9–10 millimeter diameter

16A (77) Multilayered glass (dark blue exterior/white/red/white/translucent green/white/translucent green core), drawn with 18 teeth in all inner layers, faceted, 3–9 millimeter length and 5–8 millimeter diameter

16B (1) Multilayered glass (dark blue exterior/white/red/white/translucent green/white/translucent green core), drawn with 18 teeth in outer white layer and 12 teeth in all inner layers, faceted, 9 millimeter length and 10 millimeter diameter

16C (1) Multilayered glass (dark blue exterior/white/red/white/translucent green/white/translucent green core), drawn with 18 teeth in outer white layer and 12 teeth in all inner layers, faceted, 13 millimeter length and 16 millimeter diameter

17 (1) Multilayered glass (dark blue exterior/white/red/white/blue/white/translucent green core), drawn with 10 teeth in outer white layer and 12 teeth in all inner layers (see Fig. 236), four-sided faceting, 10 millimeter length and 10 millimeter diameter

18 (1) Multilayered glass (dark blue exterior/white/red/white/blue/white/translucent green core), blue, red, and translucent green stripes inlaid between teeth of outer white layer (see Fig. 236), drawn with 12 teeth in all inner layers, faceted, 10 millimeter length and 10 millimeter diameter[2]

19 (2) Green glass, drawn, tumbled, 7 millimeter length and 7 millimeter diameter

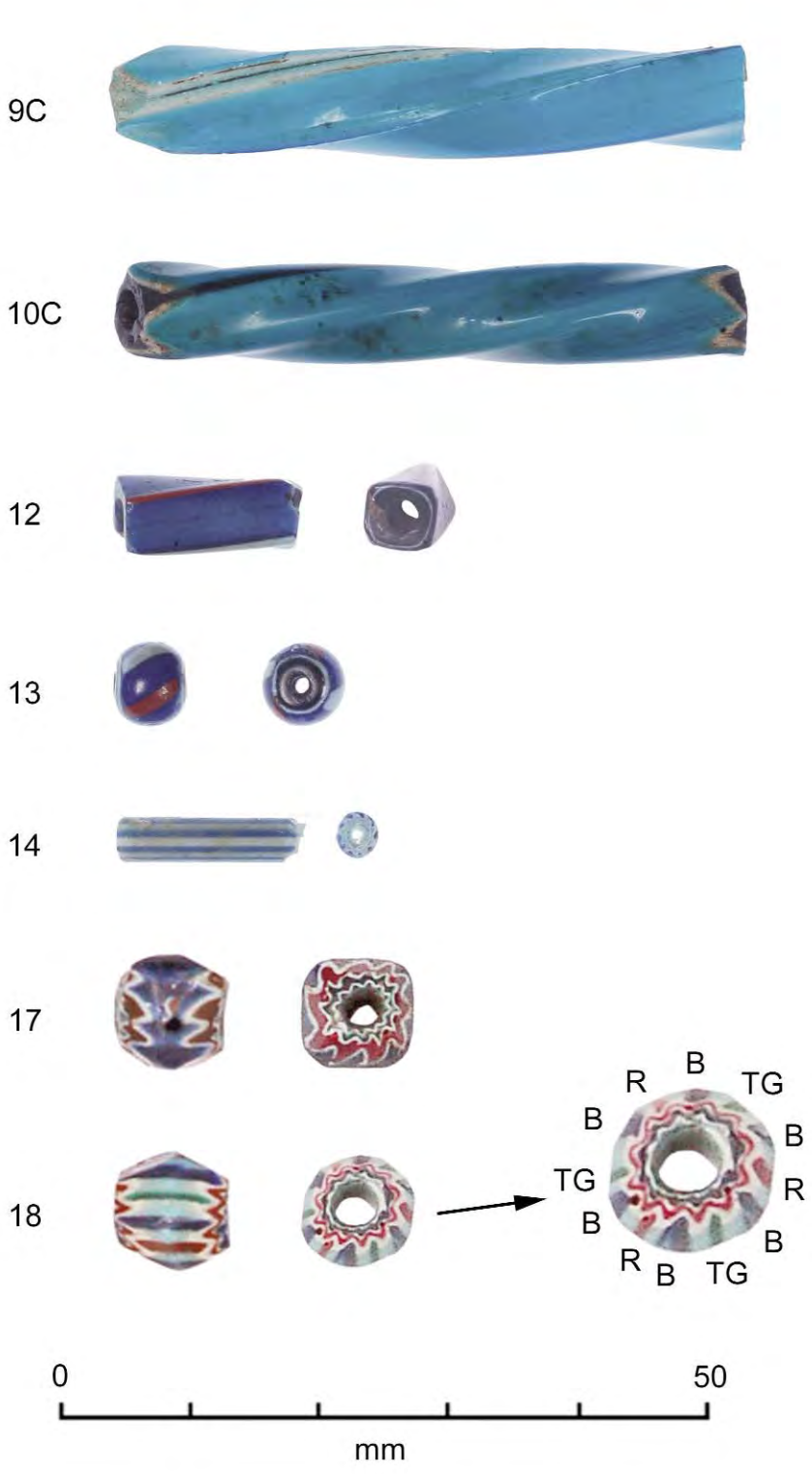

Figure 236 Enlarged view of select bead types. Diagram to the right of Type 18 indicates the colors of inlaid stripes (B= blue, TG= translucent green, R=red).

20A (114) Green glass, wound, single loop, 1–2 millimeter length and 4 millimeter diameter

20B (10) Green glass, wound, double loop, 2–4 millimeter length and 4 millimeter diameter

21 (6) Yellow glass, wound, 1–2 millimeter length and 3–4 millimeter diameter

22 (1) Black glass, wound, patinated, 5 millimeter length and 7 millimeter diameter

23 (1) Black glass, wound, patinated, 6 millimeter length and 10 millimeter diameter

24 (2) Black glass, wound, thirteen pressed flutes, patinated, 7–8 millimeter length and 9 millimeter diameter

SHELL BEADS

25 (1,119) Disc shape, 1–2 millimeter length and 3–4 millimeter diameter

26 (988) Short cylinder shape, 2–6 millimeter length and 4–6 millimeter diameter

27 (24) Rounded disc shape, 3 millimeter length and 6 millimeter diameter

28 (8) Long cylinder shape, 7 millimeter length and 4 millimeter diameter

29 (2) Small barrel shape, 7 millimeter length and 3 millimeter diameter

30 (1) Large barrel shape, 8 millimeter length and 6 millimeter diameter

31 (1) Flat square shape with green stone inlay, 9 millimeter length and 4 millimeter depth

STONE BEADS

32 (3) Disc shape (shale?), 2 millimeter length and 7 millimeter diameter

OBSERVATIONS REGARDING BEAD TYPES

Most of the beads found in the burials were in good condition, although some of the shell beads had started to decompose and a few glass beads, such as Variety 8C, were patinated.

About 75 percent of the drawn, multilayered glass beads with square cross sections (Varieties 5A through 10C) have a dark core, but the core color

does not appear to correlate with the outside color. When the bead is three-layered, the second layer is always thin and white. More than half of the straight beads with a light core have one or both ends modified by faceting. Those that are twisted with a light core and those with a dark core have few faceted ends. Those with a dark blue exterior (Varieties 7 through 8C) are usually short (between 3 and 10 millimeters), while those with a turquoise exterior (Varieties 5A through 6B) are usually longer (between 4 and 62 millimeters, with 88 percent over 10 millimeters).

Two of the drawn tubular beads (Varieties 9C and 10C) have a stripe along one corner. The stripes are due to glass from the interior or the interior and the white layer being exposed at one corner when they were drawn. In both cases this appears to have been accidental.

Chevron beads (Varieties 15A through 18) are either truncated bicones (40 percent) or double chamfered cylinders (60 percent). All are faceted on six sides except Variety 17, which is faceted on four sides, and all have seven layers. The outer layer is always dark blue. Most of the chevron beads (Varieties 15A and 15B) have 12 teeth forming a star in all layers. Varieties 16B and 16C have 18 teeth forming a star in their outer white layer and 12 teeth forming stars in all inner layers. Variety 16A has 18 teeth in all inner layers. One bead (Variety 17) is unique in having 10 teeth forming stars.

The shell beads vary in shape and size. Nearly all are disc shaped, cylinder shaped, or barrel shaped, and have round cross sections. The exception (Variety 31), which is carved and inlaid, is almost certainly a Moche bead dating sometime between AD 100 and 800—centuries earlier than the other beads in the sample.

DESCRIPTION OF BEADS IN SITU

The position of the beads when they were excavated sometimes indicated how they had been strung; the centers of the beads were still aligned, and the beads still encircled the neck and/or wrists. With the exception of Burial A2 T7, we were able to determine the original location of most of the beads in each burial. Some beads were displaced because the stringing material had decomposed and the burial had shifted due to decomposition. These are included in the bead inventories but are referred to as having "No Position." Some of these may represent scatterings of unstrung beads used as offerings.

BURIAL A2 T5 (Table 10)

This burial was of an infant, between 10 and 18 months old, lying on its back in an extended position (Figs. 113, 231). The infant had a rectangular shell object near the neck (Fig. 114), a bone tube over the left shoulder (Fig.

114), and small chunks of oxidized iron near the center of the chest (Fig. 113).

There were only four beads in the neck area: three small shell beads and one glass bead—the largest chevron bead in the sample (Variety 16C). These may have been strung as a necklace, along with the rectangular shell object.

The right wrist (Fig. 232) was surrounded by beads extending from the wrist midway to the elbow, including 39 shell beads, one of which was elaborately carved (Variety 31). However, most of the beads were glass. They included both single and multilayered drawn beads, all three of the drawn green glass beads (Variety 2), and a unique bead (Variety 14). Wound glass beads included green (Varieties 20A and 20B), yellow (Variety 21), and black (Variety 22).

The left wrist (Fig. 233) had approximately the same number of beads as the right wrist, and the beads were divided about equally between glass and shell. They included fewer unique and unusual glass beads than were found

Material	Variety	Neck	R wrist	L wrist	Ankles	No position	Total
Glass	2		3				3
	3A		2	6			8
	4A		8				8
	4B		3	8		1	12
	4C		1				1
	5A		1				1
	6A		7			2	9
	8A		22	38			60
	10A		5				5
	14		1				1
	16A		4				4
	16C	1					1
	20A		29	19		66	114
	20B		3			7	10
	21		6				6
	22		1				1
	Total	1	96	71	0	76	244
Shell	25		14	31	11		56
	26	3	19	33		4	59
	27		4	4			8
	29		1				1
	30					1	1
	31		1				1
	Total	3	39	68	11	5	126
Total beads		4	135	139	11	81	370

Table 10 Burial A2 T5 bead inventory.

at the right wrist. All of the drawn glass beads at the left wrist were short and dark blue, and all of the small wound beads were green. The wound beads at the right and left wrists of this burial constitute nearly half of all the wound beads in the collection. There were a few shell beads at the ankles but no glass beads.

BURIAL A2 T6 (Table 11)

This burial was of an adolescent, between 11 and 13 years old, lying on its back in an extended position (Fig. 115). The individual had a copper ring around the fourth finger of the right hand (Fig. 116). The neck was adorned with a double strand of tubular glass beads, most of which were turquoise. At the front of the neck was a small cluster of pink shell beads. Circling the right wrist were 19 rows of beads consisting of 56 tubular glass beads and 513 shell beads. At the left wrist were numerous drawn tubular beads combined with shell beads. There were a few shell beads at the ankles but no glass beads.

Material	Variety	Neck	R wrist	L wrist	Ankles	No position	Total
Glass	3A		3	1			4
	3B		3				3
	4A		1				1
	4B		16	4			20
	4C	5					5
	4D	1					1
	5A		1				1
	6A	13	5	1			19
	7			6			6
	8A		20				20
	9A		1	2			3
	10A	2	6				8
	15A					3	3
	16A					11	11
	Total	21	56	14	0	14	105
Shell	25	11	241	56	12	36	356
	26		272	42		6	320
	27					3	3
	Total	11	513	98	12	45	679
Total beads		32	569	112	12	59	784

Table 11 Burial A2 T6 bead inventory.

Material	Variety	Neck	R wrist	L wrist	Ankles	No position	Total
Glass	2					1	1
	3A					1	1
	4A					9	9
	4B					2	2
	4C					2	2
	5A					9	9
	6A					2	2
	8A					4	4
	10A					5	5
	14					11	11
	16A					3	3
	Glass total	0	0	0	0	49	49
Total beads		0	0	0	0	49	49

Table 12 Burial A2 T7 bead inventory.

BURIAL A2 T7 (Table 12)

This burial was of an infant, between 6 and 8 months old, lying in a fetal position. Other than beads, there were no objects associated with the burial. Because the body was small and tightly flexed, the original placement of the beads could not be determined, but the largest concentration appeared to be in the neck area. The beads were more homogeneous in this burial than in the other four; all the beads were glass, and all were drawn tubular types. There were no wound beads or chevron beads.

BURIAL A2 T8 (Table 13)

This burial was of a male between 35 and 45 years old, sitting in a tightly flexed position (Fig. 117). He was buried with four pairs of copper tweezers (Fig. 120) and two ceramic vessels (Figs. 118, 119, 121). The copper tweezers were found in the area of the neck and chest, but it was not possible to determine whether they were part of a necklace.

Most of the beads at the individual's neck were glass, including 163 chevron beads, 74 drawn tubular beads, and two wound beads. These include all three of the drawn beads modified by tumbling (Varieties 13 and 19), the only two colorless drawn beads (Variety 1), one accidentally striped drawn bead (Variety 10C), and the only striped chevron bead (Variety 18). In the neck area there were only two shell beads.

Material	Variety	Neck	R wrist	L wrist	Ankles	No position	Total
Glass	1	2					2
	4B	3		10			13
	4C	1					1
	5A	5					5
	6A	3		1		1	5
	6B	2					2
	7	23		8			31
	8A			1			1
	8B	11		2		4	17
	9A	8					8
	9B	1					1
	10A	14		4			18
	10B					10	10
	10C	1					1
	13	1					1
	15A	97					97
	15B	2					2
	16A	62					62
	18	1					1
	19	2					2
	Glass total	239	0	26	0	15	280
Shell	25	2	61	155		470	688
	26		146	315		147	608
	27			5		7	12
	28		1	7			8
	29					1	1
	Shell total	2	208	482	0	625	1317
Total beads		241	208	508	0	640	1597

Table 13 Burial A2 T8 bead inventory.

At the right wrist there were 208 shell beads but no glass beads. At the left wrist there were 482 shell beads and 26 drawn glass beads. There were no beads at the ankles.

BURIAL A2 T9 (Table 14)

This burial was of an adolescent between 11 and 13 years old, seated in a tightly flexed position (Fig. 122). The individual was buried with one pair of silver tweezers (Fig. 124) and one ceramic vessel (Fig. 123).

At the neck were the remains of six strands of beads: 77 drawn tubular beads; two chevron beads, including the only square cross section chevron

Material	Variety	Neck	R wrist	L wrist	Ankles	No position	Total
Glass	4C	1					1
	4D	2					2
	5A	3					3
	5B	2					2
	6A	16				11	27
	6B	1					1
	8A	32					32
	8B	1					1
	8C	3					3
	9A	2					2
	9B	1					1
	9C	1					1
	10A	10					10
	11	1					1
	12	1					1
	16B	1					1
	17	1					1
	23	1					1
	24	2					2
	Glass total	82	0	0	0	11	93
Shell	25	2		6	11		19
	26				1		1
	27				1		1
	Shell total	2	0	6	13	0	21
Stone	32	3					3
	Stone total	3	0	0	0	0	3
Total beads		87	0	6	13	11	117

Table 14 Burial A2 T9 bead inventory.

(Variety 17); three wound glass beads; two shell beads; and the only three stone beads in the sample (Variety 32). One tubular glass bead (Variety 12) was unique in being deliberately striped, another (Variety 11) was unique in having a brown exterior, and a third (Variety 9C) was accidentally striped. The silver tweezers found in the area of the neck appear to have served as a central pendant on the necklace. The only two wound beads with flutes (Variety 24) were found adjacent to the tweezers and appear to have flanked it on the necklace.

The right wrist had no beads, and there were only six shell beads at the left wrist. There were 13 shell beads at the ankles but no glass beads.

PLACEMENT AND COMBINATION OF BEADS

There is no evidence that any of the beads in the burials were sewn to garments, bags, or headdresses. All appear to have been strung for necklaces, bracelets, and anklets. In considering the areas of the body on which the beads were placed and the way in which beads of different materials were combined, it should be kept in mind that the location of 840 beads (29 percent of the collection) could not be determined. Of the remaining sample, 912 (31 percent) were at the right wrist, 765 (26 percent) were at the left wrist, 364 (12 percent) were at the neck, and only 36 (.1 percent) were at the ankles. This might suggest that the wrists were the most important locations for beads. But at the wrists, 84 percent of the beads were shell, 16 percent were glass, and there were no stone beads, while at the neck, 94 percent of the beads were glass, 5 percent were shell, and less than 1 percent were stone. At the ankles, 100 percent of the beads were shell. Since the highest frequency of glass beads was at the neck, one could argue that it was the most important location for embellishment, followed by the wrists, and then the ankles.

There is no evidence that the beads at the right and left wrists were intended to create similar bracelets. Burial A2 T5 had almost the same number of beads on the right and left wrists, but on the right wrist there were nearly three times as many glass beads as shell beads, while on the left wrist there were about the same number of glass beads and shell beads. Burial A2 T6 had more than five times as many beads at the right wrist as at the left wrist. Burial A2 T8 had more than twice as many beads at the left wrist as at the right wrist, and only the left wrist had glass beads. Burial A2 T9 had six beads at the left wrist but none at the right wrist.

The combination of glass bead varieties in the burials appears to be random. In Burial A2 T7, where the bead position could not be determined, the entire assemblage consisted of drawn tubular beads. In the other burials, long tubular beads were often used in necklaces.

The composition of the central ornament, if any, varied. In Burial A2 T6 the central ornament consisted of long tubular beads with a few pink shell beads. In Burial A2 T9 it appears to have been silver tweezers flanked by wound beads. In Burial A2 T5 a large chevron bead surrounded by a cluster of pink shell beads probably formed the central feature. There does not appear to have been a central feature on the necklace of Burial A2 T8.

The beads used in bracelets also varied greatly. The bracelet on the right wrist of Burial A2 T5 was the only one that combined long tubular beads, chevron beads, wound beads, and a carved shell bead. At the left wrist in Burial A2 T5 there were only long tubular beads, wound beads, and shell

beads. In Burial A2 T6 both the right and left wrists had long tubular glass beads combined with shell beads, but the right wrist had 569 beads, while the left wrist had only 112 beads. In Burial A2 T8 only the left wrist had glass beads, and in Burial A2 T9 neither wrist had any glass beads.

With only five burials in the sample, the age or sex of an individual could not be correlated with the number or types of beads in the grave. The largest number of beads (1,597) was found with an adult male in Burial A2 T8. However, 82 percent of these were shell beads, which were probably considered less valuable than glass beads. Nevertheless, his burial also had the largest number of glass beads. Of the adolescent burials, Burial A2 T6 had 784 beads, while Burial A2 T9 had only 117. And of the infant burials, Burial A2 T5 had 370 beads, while Burial A2 T7 had only 49.

ESTIMATING THE DATE OF THE GLASS BEADS

The glass beads in the Chotuna collection are varieties that are generally attributed to the sixteenth century (Deagan 1987; Smith and Good 1982). Although more precise dating is difficult, there are some indications that the collection relates to the early part of the century. Chevron beads like those found at Chotuna, which usually have seven layers of glass and sharply cut facets, are generally dated between 1500 and 1590 (Smith 1977, 1982; Smith and Good 1982; Smith, Graham, and Pendergast 1994:36). They are distinguishable from chevron beads made near the end of the sixteenth century, which tend to have only four or five layers of glass and are usually finished by heat rounding rather than faceting (Deagan 1987:65; Smith 1977:148, 1983:33; Smith and Good 1982:53; Smith, Graham, and Pendergast 1994:37).

Large drawn tubular beads that are square in cross section and composed of one or three layers of glass are thought to date between 1500 and 1560 (Deagan 1987:63; Mitchem and Leader 1988; Smith and Good 1982:10–11; Smith, Graham, and Pendergast 1994:36). After 1560, these beads appear to have been replaced by heat-rounded spherical beads. Therefore, the high frequency of large tubular beads and the extremely low frequency of spherical beads in the Chotuna collection suggest that it dates prior to 1560.

In addition, the varieties of glass beads in the Chotuna collection are nearly identical to varieties excavated at the Tatham Mound in Florida, which has been dated to between 1528 and 1539 (Mitchem and Leader 1988:55–58). The similar varieties include long tubular beads, faceted chevron beads, and various wound beads. The close similarity in glass bead varieties at these two sites strongly implies that the Chotuna beads date to the

early part of the sixteenth century, probably between 1530 and 1560, when these beads were widely circulated by the Spaniards.

Some support of this time period can be seen in the body position of the individuals in the burials. For centuries prior to European contact the people on the north coast of Peru customarily buried their dead in a tightly flexed seated position. But soon after their arrival in 1532, Europeans began to convert the native people to Christianity and encouraged the practice of burying individuals in an extended position, lying on their backs. One of the five Chotuna burials (Burial A2 T7) was of an infant buried in a fetal position. Two of the others (Burials A2 T8, A2 T9) were in a tightly flexed seated position while the remaining two (Burials A2 T5, A2 T6) were in an extended position, lying on their backs. Although this combination of flexed and extended burials possibly could have occurred at any time during the Colonial Period, it seems more likely that it was in the first three decades after contact, when traditional practices of the local people were still being followed alongside practices introduced by Europeans.

It is also worth noting that although each of the five burials contained European glass beads, only Burials A2 T5 and A2 T8 contained anything else of European origin. The chunks of oxidized iron in Burial A2 T5 (Fig. 113) are clearly the remains of a European iron object, and one of the ceramic vessels in Burial A2 T8 (Fig. 121) has distinctive European features. The scarcity of European objects may reflect a more limited access to European goods in the first part of the sixteenth century than later.

The pre-Hispanic Andean custom of using beads for body ornamentation and as burial offerings clearly was continued in the Colonial Period. The glass beads introduced by the Europeans did not immediately replace beads made from native materials but were used in combination with them. The stone and shell beads found at Chotuna represent the antecedents in the Andean tradition, and the comingling of these earlier forms with the European glass beads reflects the interface between the two cultures.

ACKNOWLEDGMENTS

We thank Geraldine Ford for her involvement in the early stages of this research, and Marvin Smith, Jamey Allen, Robert Liu, Kathleen Deagan, and Karlis Karklins for bringing important bibliographical references to our attention.

Appendix 6

HUACA GLORIA FRIEZES AND THE CHOTUNA-DRAGÓN CONNECTION

Christopher B. Donnan

In 1941 grave robbers uncovered two walls in Courtyard A of Huaca Gloria that were decorated with elaborate low-relief friezes. Because the friezes appeared to be remarkably similar to those at the site of Dragón, located in the Moche Valley approximately 180 kilometers to the south (Fig. 1), the relationship between Chotuna and Dragón has been the subject of much speculation during the past seven decades (cf. Helsley 1985; Iriarte Brenner 1969; Kosok 1965; Schaedel 1966).

When we excavated Courtyard A, we found the friezes discovered in 1941 and revealed additional friezes, as well as the form of the architectural complex on which the friezes appeared (see pages 53–60). Thus, we can now assess the similarities of the Chotuna and Dragón friezes and better understand their relationship to the prehistory of northern Peru.

Our excavations at Chotuna and Chornancap indicate that friezes are not common at either site, and only the friezes in Courtyard A exhibit any

similarity to those at Dragón. In Courtyard A the friezes decorate the walls that formed the southern end of a large open courtyard. The friezes in the southwest corner were those uncovered by grave robbers in 1941. Fortunately, shortly after their discovery they were photographed by Julio Rondón, an amateur archaeologist living in the nearby city of Chiclayo. In 1944 two of Rondón's photographs were published by Alfred Kroeber (1944: pl. 33A, B). That same year Hans Horkheimer published two others (1944: figs. 5, 6). The photographs are extremely important because the friezes were largely destroyed by exposure to the elements after their original discovery.

A section of the friezes originally uncovered in 1941 was photographed by Richard Schaedel when he visited Chotuna sometime between 1948 and 1950 (Schaedel 1966: 456, pl. 28A). This same section, immediately west of the doorway in the south wall, was re-excavated and photographed by Hermann Trimborn in 1972 (1979:78-79, figs. 56–58). It was still relatively well preserved when we excavated the courtyard in 1980 (Fig. 69).

We also found friezes in the southeast corner of the courtyard that had not been excavated previously. They had been covered with mud plaster by the ancient inhabitants of Chotuna and were subsequently buried by wind-blown sand. Once the sand was excavated, careful removal of the later plaster revealed the original friezes (Figs. 67, 68, 70).

Our excavation of Courtyard A also revealed two friezed columns (Figs. 63–66) and a panel that decorated the front of the raised platform (Fig. 71). By combining the information derived from our excavation of the courtyard with photographs taken of it in 1941, we were able to make a plausible reconstruction of the courtyard's original appearance (Fig. 61).

COMPARISONS WITH DRAGÓN

It is clear that the plan of Courtyard A at Chotuna is not at all similar to the architecture of Dragón, the site in the Moche Valley with similar friezes. Dragón consists of a large rectangular enclosure surrounding a truncated pyramid with an elaborate ramp that provides access to its summit (Fig. 237). On three sides of the pyramid there are large cell-like rooms. The friezes at Dragón cover the exterior of the walls enclosing the truncated pyramid, as well as the sides of the pyramid and its ramp (Figs. 238, 239). Thus, one could view some of the friezes from outside the compound without entering it. At Chotuna, on the other hand, the friezes were visible only to those who gained access to Courtyard A, and within this Courtyard they appear exclusively at the southern end. The other parts of the courtyard show no evidence of frieze decoration.

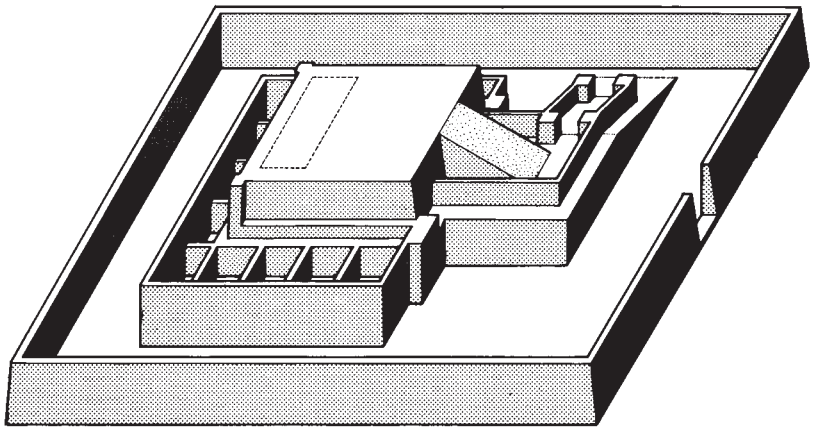

Figure 237 Isometric view of Dragón.

Figure 238 Frieze decoration on the walls of Dragón.

Furthermore, although most of the friezes on the walls of Courtyard A at Chotuna are similar to those at Dragón, there are some important differences. The friezes at Dragón consist of individual panels with arched double-headed serpents, each of which is framed by vertical panels depicting other figures (Fig. 239). In contrast, at Chotuna the arched double-headed serpents are repeated along the length of the wall without being separated by framing panels (Fig. 240).

Figure 239 Dragón friezes of arched double-headed serpents, separated by framing panels.

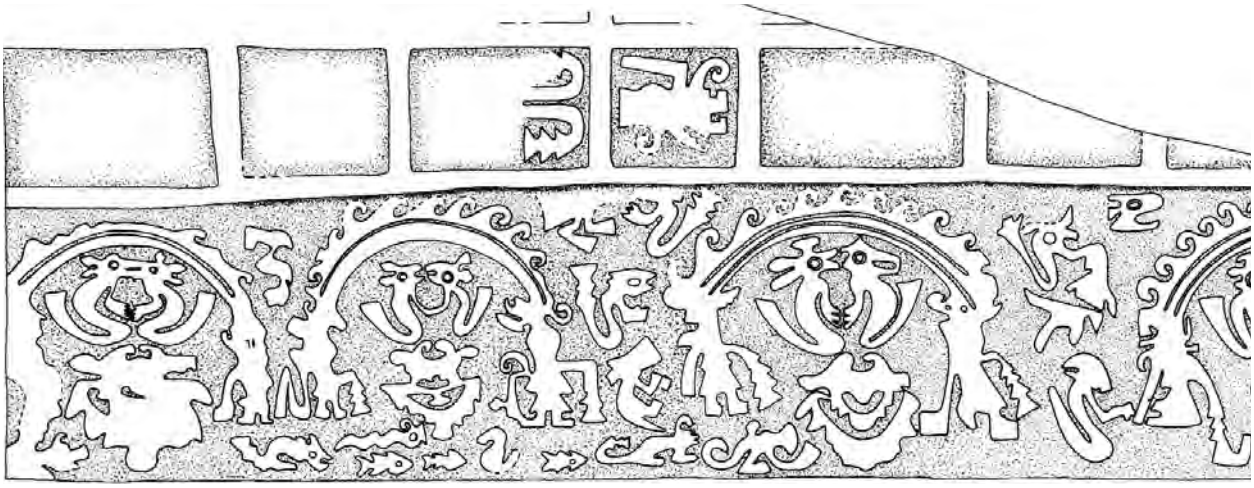

Figure 240 Chotuna friezes of arched double-headed serpents, not separated by framing panels.

Although many of the same figures are shown at Chotuna and Dragón, the ones at Dragón are clearer and more consistent; those at Chotuna are often amorphous and exhibit considerable variation in the way they are depicted. For example, at Dragón the double-headed serpent arch can be easily recognized—each of the two heads has its mouth open and appears to be biting a conical hat worn by an anthropomorphic figure standing below (Fig. 241). At Chotuna, the heads of the double-headed serpents are unclear and tend to blend into an amorphous form that in only a few cases resembles a standing figure (Fig. 242). Similarly, the paired animals beneath the serpent arches at Chotuna resemble their Dragón counterparts, but again, important details have been omitted or left unclear. Under these animals on the Dragón friezes is a design element consisting of a crescent-shaped figure with two facing heads. This motif has been so simplified and abstracted in the Chotuna friezes that it no longer retains any animal characteristics.

Realizing that the Chotuna friezes are often simplified and abstracted versions of elements depicted in the Dragón friezes, we can identify some of the other elements as derivations from Dragón prototypes. The amorphous shapes in the upper corners of the double-headed serpent panels at Chotuna (Fig. 242) are probably derived from the double-headed animal forms in the same location on the Dragón friezes (Fig. 241).

Similarly, most of the figures in framing panels at Chotuna (Figs. 240, 243b, 244b) almost certainly are derived from the figures in framing panels at Dragón (Figs. 239, 243a, 244a). Repeatedly, motifs that are clearly depicted and instantly recognizable in the Dragón friezes are garbled at Chotuna and become undecipherable forms, as though the Chotuna artists did not truly understand what

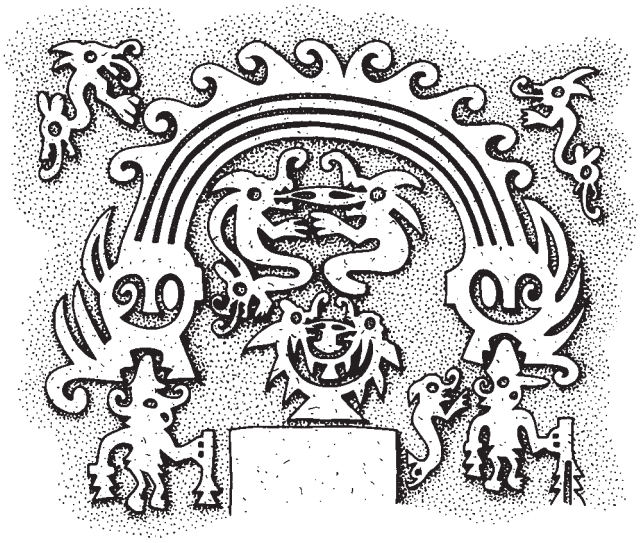

Figure 241 A double-headed serpent arch at Dragón.

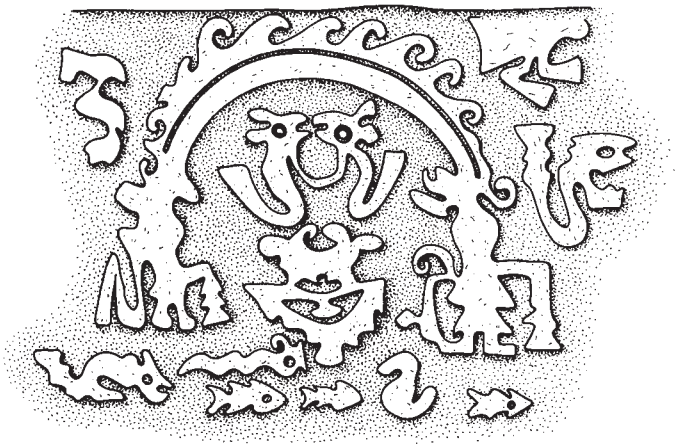

Figure 242 A double-headed serpent arch at Chotuna.

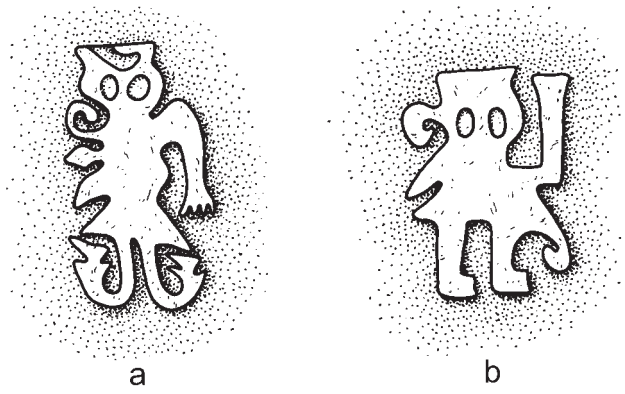

Figure 243 Framing panel figures: Dragón (a), Chotuna (b).

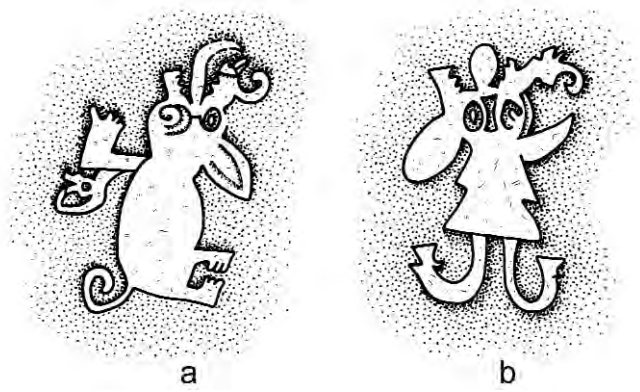

Figure 244 Framing panel figures: Dragón (a), Chotuna (b).

they were depicting. The inconsistency with which these Chotuna friezes are rendered underscores the impression that these motifs simply were not familiar to the artists.

In contrast, the design elements at Chotuna that have no counterpart at Dragón are quite clear and intelligible. These include all the friezes that decorate the columns: birds with fish in their beaks, a person in a reed boat, a sash-like object, and various anthropomorphic and zoomorphic figures (Figs. 63–66). The same is true of the fish, bird, and animal forms scattered among the arched serpent motifs on the walls (Fig. 245). In almost every case, if the object is not depicted at Dragón, its depiction at Chotuna is clear, intelligible, and executed with confidence. If it is similar to an object depicted at Dragón, it is garbled. This indicates that the garbling of the Dragón motifs is not the work of inept craftsmen who were unable to render designs clearly, but rather the work of skilled craftsmen who simply were not familiar with what they were illustrating. It also implies that they were copying from a pattern or model. The nature of this pattern or model will be discussed below. It should be noted at this point, however, that since the friezes at Dragón are so much clearer and more consistent than those at Chotuna, it seems virtually impossible that the Dragón friezes were copied from those at Chotuna. If the friezes at one site were derived from the other, those at Chotuna would have to have been derived from the ones at Dragón.

DATING OF THE FRIEZES

Our excavations at Chotuna indicate that the friezes in Courtyard A pertain to the Middle Phase occupation (approximately AD 1100–1370) on the basis of the adobes used to construct the walls on which the friezes occur. These adobes are loaf shaped and have a relatively low profile, a type that is characteristic of the Middle Phase.

Five radiocarbon determinations from Huaca Gloria help assess the absolute dating of the friezes. Four of these are from two wood beams inside the columns at the south end of the courtyard:

First beam:

I. Wood from inside the column with seabird designs: UCR-1482 = AD 1200 ± 80 years (750 ± 80 BP)

2. Wood from inside the column with seabird designs: UCLA 23 = AD 1250 ± 100 years (700 ± 100 BP)

Second beam:

3. Wood from inside the undecorated column located second from the east side of the courtyard: Beta-12281 = AD 720 ± 60 years (1230 ± 60 BP)

4. Wood from inside the undecorated column located second from the east side of the courtyard: Beta-14736 = AD 1090 ± 60 years (860 ± 60 BP)

5. Wood from a beam on the north side of Huaca Gloria. This face of the huaca formed a corridor along the south side of the frieze-decorated courtyard and no doubt would have been contemporary with it: Beta-12280 = AD 1230 ± 50 years (720 ± 50 BP)

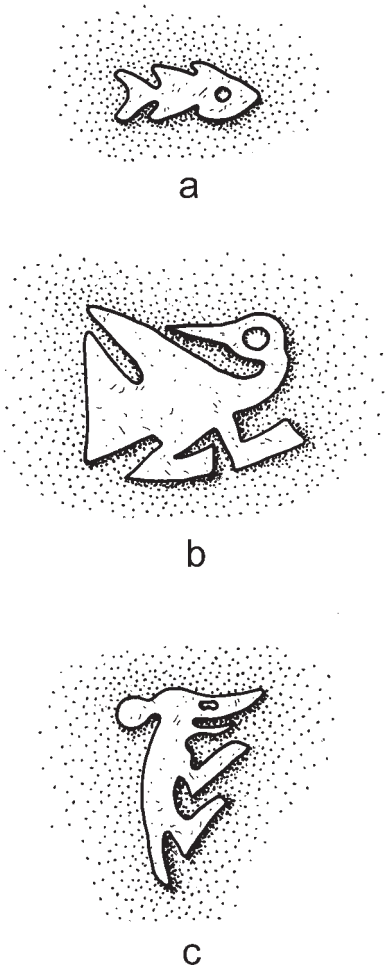

Figure 245 Frieze motifs at Chotuna that do not have a counterpart at Dragón.

It is likely that the third determination, Beta-12281, is aberrant and that the other four dates are reasonable assessments of when the frieze-decorated courtyard was constructed, sometime between AD 1100 and 1250.

It is interesting to compare the iconography of the Chotuna friezes with similar representations in the art of northern Peru. A motif with a long tradition in the local iconography is the double-headed serpent that forms an arch framing other motifs. It is found as early as Moche III, ca. AD 400 (Fig. 246). One Moche IV example from approximately AD 600 shows the double-headed serpent in a manner remarkably similar to the way it is depicted in the Chotuna friezes—it even has a human head in the jaws of each serpent (Fig. 247). In Moche representations, however, the serpent consistently frames one or more human figures shown in profile. It was not until the Late Middle Horizon (ca. AD 1100) that the double-headed serpent arch was used to frame a frontally depicted anthropormorphized figure and paired animals like those seen in the Chotuna and Dragón friezes. These were popular motifs at this time and often were depicted together in press-molded ceramics (Figs. 248, 249).

Figure 246 Moche III fineline painting of a double-headed serpent forming an arch over a human figure.

Figure 247 Moche IV fineline painting of a double-headed serpent forming an arch over a human figure.

Figure 248 Front and back views of a Late Middle Horizon jar with press-molded designs. One side (left) depicts the double-headed serpent forming an arch over a human figure, while the other (right) shows the same serpent arched over a pair of animals.

Figure 249 Press-molded design from a Late Middle Horizon ceramic vessel. Note the similarity between these motifs and those on the Chotuna and Dragón friezes.

INTERPRETING THE CHOTUNA-DRAGON CONNECTION

When Kroeber and Horkheimer published Rondón's photographs of the Chotuna friezes in 1944, both noted that the designs were similar to the friezes at the site of Dragón. Other scholars have also commented on this similarity (Kubler 1962; Schaedel 1966; Iriarte Brenner 1969; Trimborn 1979; Helsley 1985). In 1959 Paul Kosok suggested that the Chotuna friezes date to his Middle Period, and that they might correspond to the reign of Naymlap and his followers (1959:63). He also argued that their similarity to the friezes at Dragón "may well indicate cultural interrelationships that must have been strong during the Middle Period" (1965:91). Kosok did not, however, suggest what the nature of that interrelationship might have been.

Schaedel, who conducted the most thorough excavation at Dragón, felt that the friezes dated to what he called Tiahuanacoid III/Moche (1966:455). Presumably this would be roughly equivalent to Kosok's Middle Period. Schaedel felt that on the basis of architecture alone, "arguments are equally good for deriving the Chotuna temple from Dragón as vice versa" (ibid:456).

The ceramic evidence, however, suggested to Schaedel that the primary direction of influence was north to south rather than south to north. This direction was particularly evident with the increasing popularity of blackware and the introduction of paddle-marked ceramics in the Moche, Virú, and Chicama Valleys at this time—ceramic traits that are thought to have originated in the north and spread south. Although Schaedel alluded to the possibility that the Chotuna friezes relate to the Naymlap dynasty and those at Dragón relate to the later Taycanamo dynasty, he did not argue strongly for such a correlation.

More recently, Michael Moseley and Alan Kolata have suggested that the similarity between the Chotuna and Dragón friezes might have resulted from "huaca capture" by the people of Chan Chan, who conquered the Lambayeque Valley around AD 1370. They argue that the frieze-decorated structure at Chotuna "was the shrine of the Naymlap dynastic lineage at the time of Chimor's conquest of Lambayeque, and that the primary cult object from the shrine was removed to Chan Chan where it was housed in the Huaca Dragón, a platform mound built explicitly for this purpose" (Moseley and Kolata 1985:17–18).

Dragón is thus thought to

reflect a policy of "huaca hostage," or compulsory curation, in the imperial capital of sacred objects captured in the course of territorial conquest and held hostage for pur-

poses of political coercion. . . . (This) implies that conquest was not simply a matter of acquiring land, labor, and artisans, but also entailed the acquisition of the sacred objects that were emblematic of and symbolically unified the subject nations and their ruling lineages. By physically holding such huacas hostage, the descendant corporate bodies were symbolically held hostage and thereby ritually and politically bound to the conquering nation. (Moseley and Kolata 1985:14–15).

Although this is a reasonable scenario in the absence of detailed information about the Chotuna friezes, the evidence recovered during our excavations makes such an explanation untenable. As demonstrated above, many of the friezes at Chotuna are garbled and nearly undecipherable, while the same motifs at Dragón are depicted clearly and are instantly recognizable. Thus it would have been impossible to derive the Dragón friezes from those at Chotuna. Furthermore, the Chotuna friezes were created during the Middle Phase of the site's occupation, estimated to date between AD 1100 and 1370. Iconographically they relate to the Late Middle Horizon. Since it seems likely that Dragón is contemporary with the Chotuna friezes, they would both predate the conquest of the Lambayeque Valley by the Kingdom of Chimor, which took place approximately AD 1370.

The press-molded ceramics of the Late Middle Horizon that are similar to the iconography of the Dragón and Chotuna friezes are most commonly found in the area between Supe and Nepeña. Therefore, it may be that the stylistic influence moved from south to north along the coast. If so, this might partially account for the motifs being depicted clearly at Dragón but garbled further north, and further from the source, at Chotuna.

The Late Middle Horizon was a time when painted textiles were very popular on the central and northern coasts of Peru. Many of these textiles have complex iconography, including the depiction of double-headed serpent arches framing frontal human figures (Fig. 250). In the Andean area of South America, textiles often served as the medium by which complex iconography was diffused over great distances. A speculative possibility is that the Dragón motifs were copied on painted textiles that were transported to Lambayeque and used as models from which the Chotuna friezes were copied. The blurring of detail that generally characterizes painted textiles may well have been the cause for the distortion of the friezes. Local artists, not understanding what they were depicting, slavishly copied the blurred images.

Whatever the means of diffusion might have been, the inept rendering of the friezes at Chotuna suggests that the motifs were unfamiliar to the craftsmen who created them and that they were intrusive to the lower Lambayeque Valley.

Figure 250 A Late Middle Horizon painted textile showing a double-headed serpent forming an arch.

NOTES

PREFACE

1. We used Kodachrome, since it was the highest quality film available at that time. Unfortunately, Kodachrome could not be developed in Peru, so I took it back to the United States at the end of each field season. I was always concerned that the film would be damaged or that my photographs would not be of high quality. There was, of course, no opportunity to reshoot after the field seasons ended and the excavations were backfilled. How wonderful it is now to have digital cameras. Archaeologists can see their images immediately and have the opportunity to reshoot while the excavation is still ongoing.

CHAPTER 212

1. The yellow pigment was identified as goethite (Fe+3O (OH).

2. These designs are not found on the north coast of Peru until after the Inca conquest, approximately AD 1470 (Carol Mackey, personal communication, 2010).

3. The vessel is typical of the sort of two-handled ceramic, glass, or silver cup popular throughout the Iberian Peninsula during the sixteenth century. They often have a raised point, or boss, in the center, presumably in order to see the clarity of the contents (generally thought to be wine), but the exact function of these cups is not fully understood. Some of the silver examples have the central boss set with an emerald or a bezoar stone in order to detect poison (Hartop 1990).

4. UCIAMS-37493 Radiocarbon age= 395+/-15 BP Calibrated age (Calib. 5.0.2 = AD 1445–1495 (2 sigma criteria). This range represents 94% of the relative area under the probability distribution of the intercepts. There is also a small (6%) probability intercept at the equvalent of AD 1600–1615. The chemical pretreatment involved acid (2N HCl), base (2N NaOH), acid (2N HCl) extractions.

CHAPTER 3

1. Another wall with stepped niches has been reported from the site of Farfan, located in the lower Jequetepeque Valley (Keatinge and Conrad 1983: 271–273). This wall was thought to pertain to the Chimu occupation of the site, but subsequent excavation indicates that it pertains to the Chimu-Inca occupation (Carol Mackey, personal communication, 2009).

APPENDIX 4

1. Terminology follows the system defined by Emery (1966).

2. Some texts use the term *wool* to describe camelid yarns, but camelid fiber is morphologically distinct from wool. Camelid fibers in the Andes derive from one of several species, usually alpaca, but also llama or vicuña. Without further analysis it is impossible to know which species provided this fiber, so the generic term *camelid* is used here.

3. Naturally pigmented cotton can be tan, reddish brown, or gray in addition to white (Vreeland 1986: 364–365). Cotton was sometimes dyed (commonly pinks and blues), but these are pale versions of dyed camelid fibers. No yarns were analyzed for dyes.

4. Among the 17 Colonial Late Phase burial textiles, only one has cotton yarns remaining, and the yarns are so degraded that no spin can be determined (A2 T6 Tex 2).

5. A cotton yarn (S-2Z) from AQ_T1 was used in the ear ornaments and is not included in Table 7 (see Fig. 41).

6. See Emery (1966) and A. Rowe (1984) for more detailed descriptions of these techniques.

7. This is especially true for some Colonial Late Phase burials and the Artisan Quadrangle burials, where all textiles have presumably disintegrated.

8. Four other textiles may also have been slit tapestries (or another type of weft-faced decorative weave), but only a structureless mass of camelid yarns remains.

9. The arrangement of the figures in columns and rows is similar to that found on Chimu loincloth flaps in the "Tooth Crescent Headdress Style" described by A. Rowe (1984: Fig. 45).

10. This eye shape may represent the classic Lambayeque-style eye seen on ceramic figures (Fig. 156) and is distinct from the square or round eyes depicted on this figure in related Chimu tapestries (see A. Rowe 1984 for examples).

11. Similar copper ornaments were noted in two other burials from the Artisans Quadrangle (AQ_T2, AQ_T3; see pages 45–47, Figs. 47, 51) believed to be contemporary with AQ_T1. Even though no textiles survived from these two graves, copper ornaments may have been similarly sewn onto textiles that have completely decomposed.

12. A Colonial Late Phase burial (AQ_T8) contains the most textiles: six tapestries, two tassles, and one warp-patterned weave.

13. During the Late Intermediate Period, 2/1 plain weaves from the north coast valleys of Jequetepeque and Moche are the most common (Mefford n.d., Hyer 1981: 140; A. Rowe 1980). Chimu-Inca Period 2/1 plain weaves were by far the most common at Chiquitoy Viejo, Chicama

Valley, and only a small fraction (3 percent) were 2/2 plain weaves (Conrad 1974: Table 27).

APPENDIX 5

1. The classification system devised by Smith and Good (1982) for their analysis of sixteenth-century glass beads in the Spanish Colonial trade, mainly from Peru, has been modified for use with the Chotuna beads.

2. A similar bead, with stripes inlaid between the teeth of the outer white layer, is reported by Smith and Good (1982: 32, bead #76). That bead, however, has a colorless layer of glass on its exterior and was tumbled rather than faceted. Thus it has an oblate spheroid shape. The bead from Chotuna originally may have had a colorless layer of glass on its exterior, but if so, it was removed when the bead was faceted.

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Although the ancient Peruvians had no writing system, they kept oral histories that were passed down from generation to generation. Many of these stories were still being told at the time the Spanish first came to Peru around 1530. One of the most intriguing of the oral histories is the legend of a ruler named Naymlap, who founded a dynasty that ruled the Lambayeque Valley of northern Peru centuries before European contact.

Naymlap is said to have built his palace at place called Chot. The archaeological site of Chotuna, in the lower part of the Lambayeque Valley, has often been considered the location of Chot, and the nearby site of Chornancap may have been part of the Chotuna complex.

In an effort to test the validity of the Naymlap legend, archaeological excavations were conducted at Chotuna and Chornancap. Plans of the monumental architecture were completed, most of the major structures were mapped and excavated, and a good chronology for the sites was developed.

This study presents the results of the excavations at Chotuna and Chornancap and demonstrates the extent to which the archaeological evidence correlates with the sequence of events described in the Naymlap legend.

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