

2007

## The Village of Beringa at the Periphery of the Wari Empire: A Site Overview and New Radiocarbon Dates

Tiffany A. Tung

Vanderbilt University, [t.tung@vanderbilt.edu](mailto:t.tung@vanderbilt.edu)

Follow this and additional works at: [https://digitalcommons.library.umaine.edu/andean\\_past](https://digitalcommons.library.umaine.edu/andean_past)



Part of the [Archaeological Anthropology Commons](#)

---

### Recommended Citation

Tung, Tiffany A. (2007) "The Village of Beringa at the Periphery of the Wari Empire: A Site Overview and New Radiocarbon Dates," *Andean Past*: Vol. 8 , Article 18.

Available at: [https://digitalcommons.library.umaine.edu/andean\\_past/vol8/iss1/18](https://digitalcommons.library.umaine.edu/andean_past/vol8/iss1/18)

This Article is brought to you for free and open access by DigitalCommons@UMaine. It has been accepted for inclusion in Andean Past by an authorized administrator of DigitalCommons@UMaine. For more information, please contact [um.library.technical.services@maine.edu](mailto:um.library.technical.services@maine.edu).

## THE VILLAGE OF BERINGA AT THE PERIPHERY OF THE WARI EMPIRE: A SITE OVERVIEW AND NEW RADIOCARBON DATES

Tiffany A. Tung  
Vanderbilt University

### INTRODUCTION

The Middle Horizon (A.D. 600-1000, abbreviated as MH) marks a significant change in Andean prehistory. The expansive states of Wari<sup>1</sup> and Tiwanaku developed and incorporated vast portions of the Andes for the first time. The Wari Empire expanded beyond the Ayacucho Basin of the central Andes to encompass most of highland and coastal Peru, excluding the area immediately around Lake Titicaca (Menzel 1977; Schreiber 1998). The coalescence of Wari authority and the broad extent of its influence are well established. However, the timing and tempo of this expansion in various regions remain ill-defined. Part of the evidence for Wari influence is the presence of distinctive Wari architecture in various regions both near to and far from the Wari capital. For example, Azangaro (Anders 1991), Aqo Wayqo (Ochatoma and Cabrera 2001), and Jincamocco (Schreiber 1992), all within the Department of Ayacucho, contain Wari architecture. Distant regions also have Wari style buildings. The sites of Viracochapampa and Honcopampa in the north (Isbell 1989; John Topic 1991), Pikillacta in the Lucre Basin near Cusco (McEwan 1991), and Cerro Baúl in the Moquegua Valley (Feldman 1989; Moseley *et al.* 1991; Williams 2001) together illustrate the extent of Wari power (Figure 1). Wari ceramics also have been documented at numerous Andean sites, suggesting that Wari influence was far reaching (Schreiber 1992).

---

<sup>1</sup> Following Isbell (2001:456-458), “Huari” here refers to the urban site in the Department of Ayacucho and features associated with it specifically, while “Wari” refers to the prehistoric culture, polity, and style widely distributed beyond the city.

While many scholars interpret the distribution of Wari sites and material remains as evidence for Wari imperial expansion, others have doubted that the Wari sphere of influence was geographically great or ideologically dominant (Bawden and Conrad 1982; Conrad 1981; Donnan and Mackey 1978; Shady 1989; Shimada 1990). In this perspective, Wari is identified as one of several autonomous states (Czwaro 1989), or as a confederation of kin groups and lineages (John Topic 1991; Topic and Topic 1985, 1992; Theresa Topic 1991). Similarly, others have suggested that Wari was not expansionist, but was involved in long-distance trade with other polities, none of which wielded power over another (Shady 1982, 1988; Shady and Ruíz 1979). While some debate continues regarding the nature of Wari rule and expansion, the evidence for Wari intrusion in the south-central Andes, including valleys such as Moquegua (Williams 2001) and Majes cannot be ignored.

Much of what is known about Wari stems from important studies at major Wari centers in the periphery and core (Anders 1991; Benavides 1991; Cook 1992, 2001; Czwaro *et al.* 1989; Isbell 1989; Isbell and Cook 2002; Isbell *et al.* 1991; Knobloch 1991; McEwan 1996; Schreiber 1992; John Topic 1991; Williams 2001). Several of these studies have established that new construction events and possible imperial reorganization occurred around A.D. 800-900 (Anders 1991; Isbell 1991; Ketteman 2002; Williams 2001). However, relatively less is known about smaller villages in the periphery of the Wari empire during the era of Wari dominance, particularly in terms of the timing and effects of this foreign influence.

New calibrated dates from Conchopata in the Wari core establish the rise of Wari around A.D. 600 (Kettelman 2002). The second largest Wari site, Pikillacta, shows occupation beginning around A.D. 650 (McEwan 1996)<sup>2</sup> and abandonment starting by A.D. 1000 (Glowacki 2005). Radiocarbon dates from the northern site of Honcopampa also show initial occupation in the seventh century A.D., lasting until the end of the tenth century (Isbell 1989). To the far south, the important Wari outpost of Cerro Baúl in the Moquegua Valley was established in the seventh century A.D. and occupied until the end of the first millennium (based on radiocarbon dates; Williams 2001). As I will demonstrate, Wari influence began in the Majes Valley around the same time that Cerro Baúl was established, approximately A.D. 650. This supports the notion of a southward expansion by Wari during the latter part of the seventh century A.D.<sup>3</sup>

About two centuries after the settlement of Cerro Baúl, the site was remodeled (Williams 2001). This coincided with a general reorganization of Wari, as seen through remodeling events at core Wari sites such as Conchopata (Isbell and Cook 2002; Kettelman 2002) and the Moraduchayuc compound at Huari itself (Isbell, *et al.* 1991). Additionally, the site of Azángaro in the Wari core was not constructed until cal. A.D. 685-987 (Anders 1991:185), when imperial reorganization appears to have been in progress. If these remodeling and new construction events are indicative of broader restructuring, then it is important to document how this activity affected village sites at the periphery of the Wari empire.

---

<sup>2</sup> That is A.D. 530-825, calibrated 2 sigma; Curve intercept = A.D. 655; Sample No. Tx 4751 (Glowacki 2005).

<sup>3</sup> Radiocarbon dates presented by Kettelman (2002), Williams (2001), and this author are calibrated at 2 sigma using the probability distribution method with Calib 4.3.2 (Stuiver and Reimer 1993). Dates by Glowacki (2005) are calibrated at 2 sigma using the curve intercept method. Earlier published dates (*e.g.*, from Azángaro and Honcopampa) that were not originally calibrated are calibrated here at 2 sigma using the probability distribution method with Calib 4.4.2 (Stuiver and Reimer 1993).

The habitational and mortuary site of Beringa, in the Majes Valley, is ideal for a study of the effects of Wari imperial expansion and reorganization. The data presented in this article add important details to the growing spatial and temporal map of Wari. The data derive from excavations and surface collections conducted by the Beringa Bioarchaeology and Archaeology Project that I directed from May to July 2001.<sup>4</sup> These excavations have revealed that Beringa was a village with domestic and mortuary contexts dating to the first half of the MH and the first part of the Late Intermediate Period (LIP). Evidence for Wari influence is clearly seen in a variety of artifacts at sites in the Majes Valley and its tributaries (García and Bustamante 1990; Malpass 2001), but the site of Beringa itself does not appear to have been a Wari administrative center. Instead, it was a community of commoners and local elites, not unlike other MH settlements in the valley (García and Bustamante 1990). Therefore, Beringa is an excellent case study of community lifeways at the periphery of the Wari empire. Here we can see how changes documented elsewhere affected a hinterland community within the southern Wari sphere.

## THE MAJES VALLEY

Beringa is in the middle Majes Valley (part of the Colca-Majes-Camaná drainage) in the Department of Arequipa in southern Peru. It stands at 700 masl (Figures 1 and 2). The site is 75 aerial km from the Pacific coast, atop a long alluvial terrace approximately 50 m above the Majes River. The valley is bounded by steep cliffs that rise approximately 800 m above its floor (Figure 3). The arid Majes-Ocoña Pampa and the Majes-Siguas Pampa flank the valley (Figure 4).

---

<sup>4</sup>One of the primary goals of this project was to examine the impact of Wari influence on the health status of the Beringa community, therefore, the focus was on recovery and analysis of human skeletal remains. Those bioarchaeological results are presented elsewhere (Tung 2003).

The Majes Valley is home to an abundance of riverine and agricultural resources. Today, the Majes River provides habitat for large populations of river shrimp (*Cryphiops caementarius*), an indigenous species that was consumed in prehispanic times (see below), and freshwater fish such as *pejerrey* (*Odontesthes bonariensis*), which was introduced to Peru in the 1950s (Welcomme 1988). Marine resources are also available albeit at a distance. Beringa is adjacent to agriculturally rich lands in the *jungas*, the warm, low altitude zone of the Majes Valley. Fruit trees such as pacay (*Inga feuillei*)<sup>5</sup> and molle (*Schinus molle*) are ubiquitous. Remains of these plant species are particularly common at Beringa.

A handful of archaeological studies have documented Wari influence in the Majes Valley. Small-scale excavations by undergraduate students from the Universidad Católica de Santa María (Ratti de Luchi Lomellini 1987) and professors from the Universidad de San Agustín de Arequipa (Vera Cruz 1989) were among the first to document abundant Wari ceramics at Beringa and other Majes Valley sites. A reconnaissance by García and Bustamante (1990) also recovered numerous Wari ceramics in the Majes Valley, particularly at Beringa. In the coastal stretch of the Majes Valley, known as Camaná, Michael Malpass conducted excavations at the site of Sonay, and based on the presence of Wari ceramics and orthogonal architecture, he suggested that it was a Wari center (Malpass 2001). Two radiocarbon assays indicate that it was built around A.D. 950 (Malpass 2001). Other Wari occupations have been documented at nearby sites including Quilca Pampa in the middle Sigwas Valley just south of Majes (Vera Cruz 1996) and at Pampa la Estrella in the Uchumayo Valley on the edge of Arequipa (Cardona 2002). At this site, Augusto Cardona (*ibid*) noted the presence of Ccoscopa sherds, a local, albeit poorly defined, Wari-influenced ceramic style,

and documented a series of agglutinated structures that resemble Wari patio groups.

Wari centers also have been reported for higher altitude areas of the region, but their identification has been questioned. For example, site number 8 in the Chuquibamba Valley (Sciscento 1989) and Achachiwa in the Colca Valley (Vera Cruz 1996; Sciscento 1989) have been identified as possible Wari centers, but Katharina Schreiber (1992:104) doubts the Wari designation for Achachiwa. However, there may be other Wari sites in the lower Colca Valley (the upper stretches of the Majes). Miriam Doutriaux and Erikka Guerra Santander (2003) conducted an archaeological survey in this region and recorded Charasuta, in the district of Lari, as a Middle Horizon site with architectural features that may be reminiscent of Wari. However, while Wari buildings may be present in the lower Colca Valley, they are not present in the upper Colca Valley, where Steve Wernke (2003) recorded only local Middle Horizon settlements and agricultural complexes.

#### SITE CONDITION

The goal of excavations at Beringa was to recover archaeological and skeletal data to determine dates of occupation, type of settlement, and community health status before this looted site underwent further destruction. Thousands of decaying human remains and artifacts were scattered about the surface leading to the recovery of human remains in various states of preservation. Artifacts recovered from Beringa represent, in large part, objects that looters left behind, so there is surely an under-representation of metals, fancy ceramics and textiles, and other goods that looters deemed valuable. Despite the range of preservation and limits on original provenience, looted sites still contain an abundance of data that should be collected and analyzed to illuminate our understanding of past Andean lifeways.

---

<sup>5</sup>The Majes Valley pacay has been clearly identified as *I. feuillei* and is not *I. edulis*, *I. marginata*, or *I. cinnamomea*.

I divided the site into three sectors, denominated A, B, and C. Each sector is on top of an

alluvial terrace and separated from the others by quebradas. The team mapped all sectors, but conducted surface collections and excavations only in Sector A, because this is the largest and most densely occupied area. Sector A is in the southernmost portion of the site (Figures 5 and 6). We assigned all surface collection areas and excavation units within Sector A a Unit Number, and we assigned Locus numbers to smaller areas within the unit. Specifically, tombs, burials, and “special finds” were assigned individual codes. See Appendix 1 for more details on the recovery methods.

## RESULTS AND DISCUSSION

In this section I present the results of the excavations and discuss the significance of the findings. I give an overview of the settlement type, site layout, and architecture and discuss three examples of architectural spaces at Beringa: 1) a domestic area with a tomb; 2) a trapezoidal building with no tombs; and 3) the five Beringa tomb types. I also describe the artifacts and biological remains and discuss what they suggest about site activities. Finally, I report the radiocarbon dates and discuss their significance for establishing the timing of Wari expansion to the south, and for evaluating the possible effects of what may be imperial reorganization during the ninth to tenth centuries AD.

### *Settlement Type*

Excavations and radiocarbon dates indicate that Beringa was a domestic and mortuary village occupied during the first half of the Middle Horizon and the first part of the Late Intermediate Period. The inhabitants engaged in textile production, agriculture, and fishing, probably throughout both occupations. It is one of the largest sites in the middle Majes Valley (García and Bustamante 1990), but in terms of settlement type, it is likely to be representative of other Middle Horizon sites in the Majes Valley.

### *Site Layout and Architecture*

Project members made surface collections of 27 units, and from these selected 14 for excavation. The excavated units totaled 312m<sup>2</sup>, and the 13 units that were only surface collected totaled 453m<sup>2</sup>. See Figure 6 for location of units within Sector A. Sector A is composed of dozens of domestic spaces, a few ritual spaces, tombs, and an open plaza. This area is 3.21 hectares. Sectors B and C are domestic areas, and they are 1.46 ha and 0.33 ha, respectively. Very few ceramics were observed on the surface in Sectors B and C, therefore, it is not known if these sectors had MH, LIP, or both temporal components.

A stone wall, approximately 100m in length, runs along the northern edge of Sector A. No diagnostic elements were readily visible in this structure, and we conducted no excavations in or around the wall. Thus, it is unclear if the wall was constructed in the MH or the LIP. The wall may have been built against possible attack, which seems possible given the defensible location of the site. However, because it runs along a quebrada, it could have served to protect the site by redirecting water flows or alluvial slides. It also could have served both functions.

Despite extensive looting at the site, construction styles and architectural features were still visible in certain cases. Wall foundations were constructed of local, uncut rocks in double faced coursings filled with branches, pebbles, and dirt. In some cases, offerings, such as painted stone tablets (*placas pintadas*) or camelid long bones were placed in the wall fill. On two occasions, a row of vertically protruding wood sticks were found *in situ* within the wall foundations, likely serving as additional wall supports (Figure 7). The completed wall heights are unknown, because only the lower 60cm were preserved in most cases. There were large quantities of cane and incomplete adobes near stone foundations. Thus, it appears that the majority of Beringa structures were of wattle and daub walls resting on stone foundations. However, there were exceptions. There was a room to the north of

Unit 18 that had a wall intact to a height of one meter. Based on the quantity of surrounding rock wall-fall, it may have originally been two meters high. I do not know how many other walls may have been constructed in this way.

#### *A Domestic and Mortuary Architectural Space*

One of the buildings at Beringa is a 10m x 7m quadrangular structure that contained domestic and mortuary remains, suggesting that domestic and funerary areas could be shared either simultaneously or within a few generations. A 3m x 4m excavation unit (Unit 21) was placed in the northeast corner of this building where a tomb, an internal dividing wall, three *in situ* ceramic vessels, and part of a platform were located (Figure 8). The external walls were made of double-coursed stone, but internal walls consisted of single rows of rocks. A looted tomb (Tomb 32) with skeletal remains from at least three adults and one child was in the northeast corner of the building, separated from the rest of the room by a short stone wall. Below this wall, excavators encountered two *in situ* cooking pots (HE 196 and HE 197) with carbonized organic remains. One of these carbon pieces produced a <sup>14</sup>C measurement of cal A.D. 651-771 (discussed below), indicating that at least a portion of this space was used in the first half of the Middle Horizon.

Several offerings were found in the construction fill and in pit features inside the building (Unit 21). The fill of the north wall yielded a cache of six *placas pintadas*. Four have geometric designs executed in red, orange, yellow, and green, and two display human figures in red and orange (Figure 9, see HE269). These offerings were likely placed in the wall when construction of the room began. Other offerings were found in two small intact pit features to the south of the looted tomb. The first pit (30 cm wide x 44 cm deep) contained, in descending order, a layer of cane, maize stalks, fragments of utilitarian ceramics, a cotton textile bag, and a child's cotton textile shirt. The second pit was smaller (18 cm wide x 8 cm deep) and contained an offering of

a partially burned skull from a small passerine bird (species unknown), worked olive shell (Gladwell 2002), and an unknown item made of passerine bird bones, small sticks, and cotton string, all of which were tied together and burned on the tips. Perhaps the bird bone offering was for one or all of the deceased in the corner tomb; the cotton shirt may have belonged to the child. The combination of a domestic structure with utilitarian wares, offerings, and a well-built circular tomb with human remains suggests that domestic and mortuary spaces were unified and only separated at the intra-building level. At Beringa, there was no separate cemetery for the deceased, at least during the Middle Horizon. Indeed, the majority of burials are located within domestic areas, suggesting that community members and their ancestors shared quarters during the MH occupation of the site. One exception to this is the large tomb in Unit 1 (discussed below), located in isolation at the northern end of Sector A. In the subsequent LIP, it appears that Sector A may have been used primarily for burials, however, this hypothesis remains to be tested by obtaining additional radiocarbon dates from intact mummy bundles and domestic refuse.

#### *A Trapezoidal Building*

Another building type identified at Beringa was a possible ritual space constructed in a trapezoidal shape (Figure 10). It is the southernmost building of the site and is one of two trapezoidal buildings at Beringa. We placed Units 2 and 3 in the eastern half of the structure, an area that was not badly looted. The trapezoidal structure measures 8m on the east side, 10m on north and south sides. All walls were constructed of a double coursing of stone, 80cm wide. The primary doorway providing external access is along the north wall. An internal double-faced stone wall runs north-south, separating the eastern third of the building. A doorway in its middle connects the smaller east room (Unit 2) with the rest of the structure (Unit 3). Part of a wooden post was found intact near the southeastern corner of the east room (Unit 2) and

probably served as a roof support. This small east room contained three concentrations of ash and botanical remains, including: 1) burned pacay, maize, and cotton; 2) a cache of burned maize cobs; and 3) a small ash concentration with burned pacay leaves and sticks. While these food items might suggest a domestic function, there were no hearths or utilitarian wares. Instead, these clusters appear to represent offerings. This small east room also yielded three *placas pintadas* commingled guinea pig bones, a human hair braid, and a camelid petroglyph on the internal surface of a foundation stone, further supporting the notion that this building had a ritual function. No petroglyphs were observed in other structures, but they were observed on large boulders surrounding the site.

The small east room is connected to the western portion of the trapezoidal building via a door in the internal wall, leading to a platform that is 1.75m wide. A concentration of possible burned roof thatch was present near the southern end of the platform, suggesting that at least a portion of this structure was once covered by thatch. An offering was placed along the edge of the interior wall and consisted of a small carbon concentration with a complete guinea pig. Two *placas pintadas* were recovered from the platform; one depicts wavy red lines and the other a red square. The latter was covered by a smaller undecorated stone. Another *placa pintada* capped by a plain ceramic sherd was found on the west edge of the external doorway and depicted a red sun motif. No tombs were encountered in this structure. The large size and unique form of the building, as well as the *placas pintadas*, maize caches, burned plant remains, human hair braid, an intact guinea pig, and isolated guinea pig bones suggest that it had a ritual purpose. Given the dearth of material remains in this room, perhaps the room was swept after ritual events. Alternatively, its use-life could have been short.

#### *Beringa Tomb Types*

I have identified five tomb types at Beringa based on differences in size and construction

(Figure 11). The five tomb types include: I) one oversized, circular stone-lined tomb with several dozen individuals; II) small circular tombs built of stone from rim to near-base; III) small circular tombs with stone-lined openings; IV) semi-circular tombs constructed by adding a half-circle to a straight stone wall. Tomb types II, III, and IV contained one or more mummy bundles.<sup>6</sup> Type V comprises simple pits that often contained one infant or child with large rocks placed around or on either side of the head. The only example of Tomb Type I comes from the northern area of Sector A, within Unit 1. It is 1.4m deep and 4.5m in diameter. A rectilinear stone wall surrounded the circular tomb, giving the appearance of a circle within a square. Two stone walls are still present in their entireties, but the other two are only partially intact. The smaller tombs (Types II, III, IV, and V) vary in size from 50cm to one meter in diameter and their depths range from 70cm to 1.1m.

All individuals were buried in a seated position with knees to the chest. Each corpse was enveloped in textiles and then wrapped with vegetal cord, creating a mummy bundle. Many individuals were interred with grave goods, such as ceramics, plant remains, and *placas pintadas*.

Tomb Types II, III, IV, and V were located in and around domestic spaces, but the single example of Tomb Type I (Tomb 1) was not within or near domestic architecture. Rather, it was separated from the rest of the village by a large open plaza (Figures 5 and 6). The large tomb in Unit 1 had been looted, but the human remains, textiles, and other fragmentary artifacts were still present in and around the tomb. These included objects such as copper *tupus* (pins used to hold clothing or other textiles together), copper needles, several worked bird and camelid bones (possible whistles), beads made of rock,

---

<sup>6</sup> No intact burials were found in Type IV Tombs, but I presume that one or more mummy bundles were placed in them because human skeletal remains were found in their vicinities. It does not appear that these circular spaces were storage pits because they did not contain any plant remains.

seeds, *Spondylus* and other shells, polychrome textile belts and bags, throwing stones, and several textile production items (spindle whorls, balls of string, and wooden battens). Although numerous diagnostic textile pieces were recovered, very few diagnostic ceramics were collected from this tomb. At the base of the Tomb, 16 nearly intact mummy bundles were encountered: three adults and 13 infants and children. In addition, there were commingled human remains from at least 60 other individuals, so the minimum number of individuals (MNI) in Tomb 1 is 76. The radiocarbon assay for this tomb indicates early Middle Horizon use (cal A.D. 689-879; discussed below). Because textiles, artifacts, and overall mortuary treatment are homogeneous, I argue that the burials are contemporaneous within a few generations and do not represent LIP components.

The variability in tomb construction and the array of material goods across the site (discussed below) hint at differential wealth and social status within the Beringa community. Specifically, the unique construction of Tomb 1 and its great quantity of burials indicate that this subgroup may have been distinct from the rest of the Beringa people. Analyses continue to elucidate these differences.

#### *Material Recovered*

To provide an overview of activities at the site level, I consider material from both the MH and LIP together. At this initial phase of analysis, remains are not separated by time, but are separated by category of material to determine general activity patterns at Beringa during its entire occupation. Below, I provide an account of the biological and archaeological materials and discuss how these data demonstrate that Beringa inhabitants were textile producers, agriculturalists, and fishers.

*Textiles.* At least 467 diagnostic textile pieces were recovered (Quinn 2003), including feathered ponchos, polychrome wool and/or cotton mantas, *unkus* (men's shirts or tunics), bags,

polychrome belts woven from wool and braided human hair (Figures 12 and 13), and several large fragments of Wari polychrome tie-dye mantas or possible tunics (Figure 14). Hundreds of plain textile fragments also were recovered, but those have not yet been analyzed. According to Quinn (2003), some textile design elements resemble Middle Horizon ceramic motifs described by Owen (2007), such as the alternating horizontal S and X motifs observed on vessel rims and textile band fragments.

Textile production was a common activity to judge from the great quantity of textile production implements present. There were seven wood battens, at least 63 whorls, the majority of which were still on the spindle (Figure 15), and 13 balls of string that ranged in size from two to five centimeters. There was no specific area in which these textile implements were found. Indeed, the ubiquity of them across the site suggests that many people at Beringa participated in this activity. Several dozen reed baskets and bags were also recovered.

*Ceramics.* Ceramic production tools were relatively rare, and it appears that no specialized ceramic production occurred at Beringa (Owen 2007). However, project members collected numerous complete ceramic vessels and diagnostic sherds. These include 44 complete vessels and at least 4,030 diagnostic sherds (*ibid*), and one ceramic figurine wrapped in a wool multi-colored textile belt. Ceramic forms and motifs from Beringa clearly reflect Wari styles, such as the Chakipampa, Ocros, Viñaque, and Huamanga styles (Figure 16), as well as a local, Wari-influenced style, sometimes referred to as Ccoscopa (*ibid*). Bowls are the most common fineware form at Beringa, and include shallow bowls with unrestricted openings, deep ovoid bowls, small rounded bowls with slightly restricted orifices, and flaring *escudilla* forms (*ibid*). Other shapes include beakers, *cántaros*, and faceneck jars (*ibid*). Plain ware vessels include small ollas sufficient for food preparation for one to two persons, and large vessels for liquid transport, storage, and/or cooking for multi-family



domestic groups. Mid-size vessels appear to be absent from the sample (*ibid*). Owen (*ibid*) notes that the forms and distribution of sizes of utilitarian pottery at Beringa differ from that among rural communities in the Wari heartland, perhaps suggesting differences between heartland and hinterland groups in domestic organization as it relates to the consumption of food and drink. This is significant because the distinct consumption patterns, which might reflect different forms of domestic organization, could suggest that Beringa inhabitants might derive from the local, indigenous population and not from immigrants from the Ayacucho Basin (*ibid*; see Owen 2007, for detailed discussion of the Beringa ceramics).

*Botanical Remains.* Beringa inhabitants were also agriculturalists as shown by the great quantity of domestic plant remains present at the site and its proximity to agricultural production zones. The botanical sample includes a vast array of seeds, leaves, branches, and fruit from at least 32 different genera. The entire sample weighs 89kg. Of this weight, 31kg can be categorized as non-dietary, such as decorative plants (e.g., leaves used to wrap *placas pintadas*), non-edible burial offerings, and building materials. Fifty-eight kg are potential plant food resources such as maize (*Zea mays*), molle (*Schinus molle*), peanuts (*Arachis hypogea*), pacay (*Inga feuillei*), yuca (*Manihot esculenta*), lucuma (*Pouteria lucuma*), camote (*Ipomoea batatas*), several species of squash (*Cucurbita* sp.), and beans (*Phaseolus* sp.). Coca (*Erythroxylum coca*) leaves were also present. They may have been used as quids, in teas, or as offerings.

Offerings of food for the dead are quite common at Andean sites, and Beringa is no exception. For example, corn cobs with kernels were observed inside mummy bundles, and peanuts, beans, and coca were found inside textile bags associated with burials. These food items were also recovered from disturbed areas and domestic spaces (e.g., in and around cooking vessels).

A basic botanic inventory has been completed, showing that squashes represent 21 percent of the 58kg of potential food resources, while pacay and peanuts constitute 10 percent each, and beans, coca, yucca, lucuma, and camote together make up nine percent. Maize and molle constitute the other half of the potential food resources (14kg each). Of the approximately 14kg of maize, 5 kg were maize stalks and leaves, 9kg were corn cobs (the current analysis does not distinguish between cobs with kernels and those without), and 63 grams of maize kernels. Of the nearly 14kg of molle, branches and twigs (molle berries were attached to these, like grapes on a vine) weighed 6.3kg and the molle berries themselves weighed 7.5kg. Deposits of molle seeds were recovered from every unit except Units 9, 10, 15, and 17, all of which were superficially collected and not excavated. The large deposits of molle and the large ceramic vessels suggest that this berry was used to produce great quantities of fermented drink, like *chicha de molle* (pepper tree/berry beer) that is still produced and consumed in the valley today. Notably, because peduncles from the *S. molle* tree were common, it appears that the Beringa inhabitants brought berries to the site in bunches, rather than individually picking the berries from the trees. These molle berries then would have been stripped off the twigs and processed into a fermented drink at Beringa. This is similar to what Goldstein and colleagues (in press) have observed at the Wari site of Cerro Baúl in the Moquegua Valley, where large quantities of molle seeds and production remains were recovered from a palace structure, palace kitchen, the “Brewery” (see Moseley *et al.*, 2005), and other areas. While there is no specific brewery at Beringa, the apparently similar production and consumption of *chicha de molle* at two southern Wari sites suggests that this beverage may have played an integral and integrating role in the Wari southern hinterland.

One of the major non-food plants at Beringa is cotton. Nearly eight kilos of cotton bolls (excluding the husks) were recovered, supporting the notion that Beringa was home to textile

producers. Interestingly, much of the cotton and many of the cotton seeds were recovered from inside the mummy bundles, underneath the layers of textiles. This practice was particularly common for those individuals from Tomb 1.

*Faunal Remains.* Randi Gladwell (2003) inventoried 13,893 animal bones, shell, and feathers from at least 15 genera, and calculated that 10 percent of dietary animal remains were from fresh water shrimp (*Cryphiops caementarius*), and eight percent were from fish (Class *Osteichthyes*).<sup>7</sup> This suggests that fishing technology must have been part of the local tool repertoire. Indeed, a textile fishing net and two circular wooden objects with a handle were recovered in the same disturbed area. Based on the size, shape, and wear of the wooden objects, I suspect they are fishing net frames.<sup>8</sup> Other water resources include marine bivalves and gastropods, which constitute 32 percent of dietary animal resources at Beringa (*ibid*). Thus, half of the animal-derived Beringa diet came from the river and sea: 10 percent shrimp, eight percent fish, and 32 percent marine shell. The other 50 percent was derived mainly from guinea pig and llama; the latter constituted 42 percent of the sample (*ibid*).

*Metals.* Metal accouterments were recovered from several burials. There is one gold ring and a total of 27 copper items, including *tupus*, needles, discs, and possible bells. This count does not include the tiny pieces of copper and gold that were sometimes placed on *placas pintadas* (discussed below).

*Lithic artifacts.* Lithic tools or weapons were rare at Beringa. Thirty-six pieces of obsidian were collected, but only four of these are complete points. Other lithic objects found include

ground stone artefacts, worked quartz, throwing stones, doughnut-shaped stones (or mace heads), and numerous river cobbles used as *placas pintadas*.

*Placas Pintadas.* We found a total of 224 *placas pintadas*, decorated in monochrome and polychrome geometric patterns and representational images of the sun, llamas, and humans (Figure 9). Forty-three had faded or were completely enveloped by leaves. These latter were not unwrapped. The motifs of 181 *placas* with visible designs are recorded in Table 1, along with the percentages of *placas pintadas* that displayed each motif.

Placa pintada decoration		
Decoration unobservable (faded or not unwrapped)		43
Decoration observed		181
Total <i>placas pintadas</i>		224
Decoration observed	Counts	Percent.
Squares/Rectangles	114	63%
Dots	14	8%
Circles	13	7%
Human	8	4%
Llama	5	3%
Other forms	27	15%
Total observed	181	100%

Table 1. Details of *placas pintadas* decoration

Seven colors were primarily used to decorate the *placas pintadas*: red, green, blue, orange, yellow, black, and white. Some were painted with only one color, while others were painted with up to four colors. I recorded 240 uses of color on the monochrome and polychrome *placas*. The number of uses and their percentages are set out in Table 2.

<sup>7</sup> Percentages of animal remains reported here are based on NISP (Number of Individual Specimens Present), as calculated by Randi Gladwell (2003).

<sup>8</sup> Señor Zuñiga, an elderly man in the valley, informed me that in the 1940s and 1950s he used that kind of object for river fishing.

Color	Counts of uses of color	Percent
Red	154	64%
Green	34	14%
Orange	27	11%
Blue	7	3%
Yellow	6	2.5%
White	6	2.5%
Black	4	2%
Turquoise	1	0.5%
Maroon	1	0.5%
Total	240	100%

Table 2. Color use in the *placas pintadas*

*Placas pintadas* were often wrapped in leaves from a variety of arrow-root plant, called *achira*, (*Canna edulis*), and on occasion, lapis lazuli, spondylus beads, and/or tiny gold and copper pieces were placed on top of them. In total, 36 *placas pintadas* were wrapped with *achira*, and 12 were decorated with spondylus, one with lapis lazuli, eight with tiny copper or gold sheets, and three with other objects. In several cases, these decorative items were used to enhance the image on the *placa*. One exhibited a human figure with a gold piece placed on its eye, and another showed a green llama with gold pieces on the eye and torso.

The Beringa *placas pintadas* are clearly part of a broader offering tradition in the southern Andes. In both style and context, with a few exceptions, they resemble other *placas pintadas* found at Andean archaeological sites. All Beringa designs were drawn on stones, not on ceramic tablets like those from Cueva de Chuco, Condesuyos (Kauffmann 1986) and from other sites in the Department of Arequipa (Cardona 2002; Linares 1970). Specifically, the Beringa *placas pintadas* were made primarily from river cobble stones, like those recovered by Wernke in the upper Colca Valley (2003), not from thin pieces of sedimentary rock, as observed in other collections from the southern Andes (Jennings 2003; Linares 1970). The shapes and sizes of the Beringa *placas* are similar to those from other Andean sites in the south (Cardona 2002; Jennings 2003; Kauffmann 1986; Linares 1970; Sciscento 1989;

Wernke 2003); they are either rectangular or round, though the former is much more common, and range in size from 8cm x 6cm to 22.5cm x 13cm. Cueva de Chuco *placas*, in contrast, were as small as 4cm x 5cm and as large as 30cm x 40cm (Kauffmann 1986:189).

The contexts of the Beringa *placas pintadas* resemble those reported by other archaeologists working in the region (Cardona 2002; Jennings 2003; Kauffmann 1986; Linares 1970; Ratti 1987; Sciscento 1989; Wernke 2003). At Beringa, they were found inside the wall fill, in corners of rooms, and under walls, suggesting they were offerings associated with construction of buildings. They were also placed in tombs, with both adults and juveniles. In one case, a *placa pintada*, a camelid fetus, and a ceramic fragment were stacked as an offering, apparently near the tomb of a young adult male (Burial 59).

*Human remains.* There are 34,328 human bones (excluding dentition), representing at least 236 individuals, plus one trophy head. The age-at-death profile for the entire Beringa population shows that nearly half of the sample (48%) is infants and children under the age of 15 years. Specifically, one-third are fetuses and infants (4 fetuses and 74 infants) and 24 percent are children and adolescents (4 to 19 years old). Young adults between 20 to 34 years old constitute 21 percent, while middle-aged adults and old adults represent 13 and four percent, respectively. Five percent are adults that could not be specifically aged (Figure 17). The sex distribution is evenly divided between males and females. Among the 78 adults whose skeletal sex was determined, 39 are male and 39 are female. For a more detailed analysis of the age-at-death profile, see Tung (2003).

Given the high percentage of infants in the sample, it does not appear that fragile infant and child bones degraded more than adult bones, as is often the case in archaeological settings (Gordon and Buikstra 1981; Walker *et al.* 1988). While looters may have introduced other kinds of biases to the archaeological sample, they may

not have had a significant effect on the skeletal sample because they often target textiles and ceramics, not human bodies. As a result, I suggest that the age-at-death profile may closely approximate the once-living population. If this is an accurate assessment, then it appears that infant deaths were quite common, suggesting that the Beringa community may have experienced high fertility rates (see Milner *et al.* 2000; Paine and Harpending 1996; Sattenspiel and Harpending 1983). That is, while the same *proportion* of infants may have died, the higher birth rate means that greater absolute numbers of infants would have died, leaving more infant burials in the skeletal sample. However, because there are currently no skeletal samples from the pre-Wari time, it is unknown if this percentage of infant deaths represents an increase or decrease from the preceding period. Interestingly, the Beringa age-at-death profile is similar to that of Wari burial populations from the site of Conchopata, where 48% of the burial sample belonged to infants and children (Tung 2003).

*Radiocarbon Dates.* Seven AMS radiocarbon measurements show that Beringa was occupied during the first half of the Middle Horizon and the first part of the Late Intermediate Period. Five samples date to the Middle Horizon and two samples date to the Late Intermediate Period. The dates are summarized in Table 3, and each sample is described in detail below.

The earliest radiocarbon date at the site is  $1406 \pm 53$  BP (AA45791; wood;  $\delta^{13}\text{C} = -28.2$ ; cal A.D. 540-762).<sup>9</sup> The sample is from Unit 14 and appears to date the initial construction of this quadrangular structure (see Figure 6 for the location of Unit 14). One of the 20 *in situ* wood sticks inserted vertically into the wall fill of the north wall was selected for a radiocarbon measurement (Figure 7). Because the wood sticks are

quite small, I argue that there is not an old wood problem with the sample and that the dates reflect the actual time of construction of the room.

Another radiocarbon sample from Beringa yielded a date of  $1353 \pm 32$  BP (AA45790; wood;  $\delta^{13}\text{C} = -22.4$ ; cal A.D. 622-767). It is also from Unit 14 (Locus 1095). The sample is from an *in situ* wood post that was inserted vertically in the floor of an interior space. It was near an internal wall and may have been used as a roof support. It may have been added sometime after the original construction of the room (after the small row of wood sticks was placed in the external north wall). Therefore, it seems that the sample does not date to the original construction, but rather, it dates a remodeling event during the life of the structure.

The third radiocarbon assay comes from Unit 18 (Locus 1018) and provides a date of  $1340 \pm 40$  (Beta-191645; wood;  $\delta^{13}\text{C} = 24.8$ ; cal A.D. 640-774). The sample is from an *in situ* post of *huarango* wood (*Prosopis pallida*). It was approximately 20 cm in diameter and stood near the northern wall of the structure, 1.6m from a similar-sized wood post. A line drawn between these two posts would nearly parallel the north wall so the posts may have served as roof supports. While the wood post may have been used some time after it was cut, the ceramics from this space are also attributed to the Wari style, suggesting that this  $^{14}\text{C}$  sample probably dates use of the structure to the first half of the Middle Horizon (see those ceramics in Owen 2007: figure 10, CID 312, 313; figure 17, CID 323; figure 20, CID 321; figure 22, CID 314, 315; figure 26, CID 317; and figure 28, CID 324).

The fourth sample closely clusters with the first three, yielding a radiocarbon date of  $1330 \pm 31$  BP (AA45789; carbon;  $\delta^{13}\text{C} = -24.4$ ; cal A.D. 651-771). The sample is a sizeable carbon flake taken from the outside of an *in situ* ceramic vessel (HE 197) found under a rock dividing wall in Unit 21 (Figure 8, Locus 1075). The short wall was cut through the eastern third

---

<sup>9</sup> All dates were calculated using the radiocarbon calibration program Calib version 4.3 (Stuiver and Reimer 1993). Calibrated dates reported here are based on the probability distribution method.

of the structure, separating a tomb in the north-east corner from the rest of the room. This radiocarbon assay likely dates the earliest use of the room, because the placement of the vessel under the wall would have been coeval with or earlier than the construction of the interior walls.

The fifth radiocarbon assay also dates to the Middle Horizon, but is slightly later than the previous four:  $1243 \pm 33$  BP (AA45793; textile;  $\delta^{13}\text{C} = -23.3$ ; cal A.D. 689-879). The sample is derived from a wool textile wrapped around a mummy bundle (Burial 44) that was recovered from the large, multi-occupant tomb (Unit 1, Tomb 1) on the northern end of Sector A (Figure 11). Thus, this sample dates the use of this large, circular tomb to the first half of the Middle Horizon.

Beringa was also occupied during the Late Intermediate Period. The sixth sample provides the following radiocarbon date:  $930 \pm 32$  BP (AA45794; textile;  $\delta^{13}\text{C} = -24.1$ ; cal A.D. 1024-1187). The sample is from a wool textile that was wrapped around a mummy bundle (Burial 58) from the southwest corner of Unit 11, Locus 1011. This mortuary area was badly looted; however, the date still documents the late use of this general mortuary space.

The seventh radiocarbon sample also produces an LIP date:  $840 \pm 42$  BP (AA45792; plant;  $840 \pm 42$ ;  $\delta^{13}\text{C} = -8.5$ ; cal A.D. 1044-1278). This sample is from a vegetal cord that was wrapped around an *in situ* mummy bundle (Burial 59) from Unit 16, Locus 1025. The mummy was interred wearing an elaborate feather poncho and feather headdress and was buried with a ceramic vessel depicting the Wari-influenced, but local Chuquibamba eight pointed star motif, inside which the artist had drawn a "smiley-face." This radiocarbon date aids in associating certain ceramic and textile styles with the post-Wari era.

The two periods of occupation, MH and LIP, were confirmed through two independent means. That is, prior to the radiocarbon results,

the project ceramicist had concluded that Beringa had early Middle Horizon and Late Intermediate Period components (see Owen 2007), just as the  $^{14}\text{C}$  measurements revealed. Moreover, the groupings of the radiocarbon dates further indicate that they are reliable and uncontaminated.

The current clusters of dates suggest that site use began around A.D. 650 and that it may have been abandoned or depopulated around A.D. 850, and then re-used in the first part of the LIP. The ceramic data also suggest occupation primarily in the first half of the MH and then again in the LIP (Owen 2007). Conversely, it is possible that excavations thus far have not yet uncovered late Middle Horizon occupations, if any existed.

These results are intriguing because, as discussed above, they coincide with a pattern where, around A.D. 800-900, southern and central Wari sites such as Cerro Baúl (Williams 2001), Sonay (Malpass 2001), Azángaro (Anders 1991; Isbell 1991), Conchopata (Ketteman 2002), and the Moraduchayoq Compound at Huari all undergo new construction events. Additionally, construction at the northern Wari site of Viracochapampa ceased around this time and was never completed (John Topic 1991). Honcopampa, also in the north, appears to have been remodeled in the late MH after the Wari phase at the site (Isbell 1989). However, additional radiocarbon dates from Honcopampa are needed to confirm this construction event. See Table 4 for summary of construction and abandonment events at Wari sites.

If Beringa was depopulated around A.D. 850, this suggests that macro-scale changes in the Wari empire may have had a strong impact on local villages within the southern sphere. Within approximately one century of possible abandonment or depopulation at Beringa, the Wari compound of Sonay was built in Camaná, 70km away (Malpass 2001). While Wari material culture at Beringa appears to have lasted only until A.D. 850, other Wari sites in the south show occupations until at least A.D. 1000

(*ibid*; Williams 2001). Thus, it appears that the overall period of Wari authority in the south lasted from A.D. 650 to A.D. 1000. After the collapse of Wari, Beringa was apparently re-occupied or at least reused as a mortuary area around A.D. 1050-1200.

## CONCLUSIONS

Excavations at Beringa have provided important information on periods of occupation, type of settlement, architectural styles, mortuary styles, site activities, and age-at-death profiles. These data enable improved understandings of Andean lifeways during the period of Wari rule, particularly regarding village life beyond Wari centers. As I have demonstrated, Beringa was a village with mortuary contexts, occupied at least during the first half of the Middle Horizon (A.D. 600-850) and in the first part of the Late Intermediate Period (A.D. 1050-1200).

There are five basic tomb types at Beringa, four of which are circular or semi-circular and either partially or completely lined in stone. The fifth is a simple pit. Individuals were buried in a seated, flexed position and wrapped in layers of textiles. Grave goods included ceramic bowls and pitchers, textile bags with botanical contents, copper *tupus*, bundles of food items, worked *Spondylus*, and *placas pintadas*. There appears to have been no separate burial area during the MH. Instead, tombs are found in or near buildings. However, one large MH tomb (Tomb 1) was separated from the rest of the village by an open plaza and may represent a distinct subgroup within the Beringa community.

The entire burial sample consists of at least 236 persons, nearly half infants and children, possibly indicating a high fertility rate (see Miller, *et al.* 2000; Paine and Harpending 1996; Sattenspiel and Harpending 1983). The material remains also demonstrate that Beringa was home to agriculturalists and fishers, many of whom engaged in textile production. The site may have been abandoned or depopulated around A.D. 850, suggesting reorganization in the Majes

Valley about a century and a half before the end of the Wari reign. This corresponds to a time when other key Wari sites were engaged in construction or renovation events around the ninth to tenth centuries A.D. Perhaps the broader changes in Wari social and political organization at this time were also experienced by peripheral communities living at sites like Beringa.

## ACKNOWLEDGEMENTS

This project would not have been possible without financial support from the following: The National Science Foundation (Grant BCS-0118751), The Wenner-Gren Foundation for Anthropological Research (Grant 6680), The Fulbright Commission, Sigma Xi Grants in Aid of Research, and the University of North Carolina-Latané Summer Research Grant. Numerous people worked very hard on this excavation and lab project, and I'd like to extend my gratitude to all of them: Aubrey Cockrill, Dave Crowley, Mirza Del Castillo, Diana Durand, Brian Finucane, Randi Gladwell, Joe Griffin, Yenny Ihue Umire, Kelly Knudson, Samantha Lawrence, Evelin López Sosa, Andres, Augusto, Percy and Ricardo Marin, Virginia Mayurí Valencia, Cara Monroe, Bruce and Merryl Owen, Andy Peterson, Gina Quinn, Arnaldo Ramos Cuba, Karen Reed, Gino Rosas, Bill Ross, Abi Schuler, Erika Simborth-Lozada, Jose Tito, Adan Umire, Steve Wernke, and Alvino and Aurelio Zúñiga. Special thanks go to Ana Miranda Quispe (project co-director), Mirza Del Castillo (project co-osteologist), Randi Gladwell (project zooarchaeologist), Bruce Owen (project ceramicist), and Gina Quinn (project textile specialist). This project could not have been completed without the assistance and logistical support of the Center for Archaeological Research of Arequipa (CIARQ), directed by Augusto Cardona and Karen Wise. I extend heartfelt thanks to Julio Zúñiga and his family for housing and feeding all of us, and allowing us to use their vehicles and rafts to access the site of Beringa. Finally, I want to acknowledge the *Andean Past* reviewers for their insightful comments and suggestions. I also thank Steve Wernke for his assistance with the maps and images.

## REFERENCES CITED

- Anders, Martha B.  
1991 Structure and Function at the Planned Site of Azangaro: Cautionary Notes for the Model of Huari as a Centralized Secular State. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 165-197. Washington, D.C.: Dumbarton Oaks.
- Bawden, Garth and Geoffrey W. Conrad  
1982 *The Andean Heritage: Masterpieces of Peruvian Art from the Collections of the Peabody Museum*. Cam-

- bridge, Massachusetts: Peabody Museum Press, distributed by Harvard University Press.
- Benavides C., Mario  
1991 Cheqo Wasi, Huari. *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 55-69. Washington, D.C.: Dumbarton Oaks.
- Cardona Rosas, Augusto  
2002 *Arqueología de Arequipa: De sus albores a los Incas*. Arequipa: CIARQ.
- Conrad, Geoffrey W.  
1981 Reply to Paulsen and Isbell. *American Antiquity* 46(1):38-42.
- Cook, Anita G.  
1992 Stone Ancestors: Idioms of Imperial Attire and Rank among Huari Figurines. *Latin American Antiquity* 3(4):341-364.  
2001 Huari D-Shaped Structures, Sacrificial Offerings, and Divine Rulership. In *Ritual Sacrifice in Ancient Peru*, edited by Elizabeth P. Benson and Anita G. Cook, pp. 137-163. Austin: University of Texas Press.
- Czwarno, R. Michael, Frank M. Meddens, and Alexandra Morgan, editors  
1989 *The Nature of Wari: A Reappraisal of the Middle Horizon Period in Peru*. Oxford: B.A.R. International Series 525.
- Czwarno, R. Michael  
1989 Social Patterning and the Investigation of Political Control: The Case from the Moche/ Chimu Area. In *The Nature of Wari: A Reappraisal of the Middle Horizon Period in Peru*, edited by Michael R. Czwarno, Frank M. Meddens, and Alexandra Morgan, pp. 115-145. Oxford: B.A.R. International Series 525.
- Donnan, Christopher B. and Carol J. Mackey  
1978 *Ancient Burial Patterns of the Moche Valley, Peru*. Austin: University of Texas Press.
- Doutriaux, Miriam and Erikka Guerra Santander  
2003 Proyecto de investigación arqueológica: Prospección regional, valle del Colca, Arequipa. Report submitted to the Instituto Nacional de Cultura, Perú. Copy on file in the archives of *Andean Past*.
- Feldman, Robert A.  
1989 Speculative Hypothesis of Wari Southern Expansion. In *The Nature of Wari: A Reappraisal of the Middle Horizon Period in Peru*, edited by R. Michael Czwarno, Frank M. Meddens, and Alexandra Morgan, pp. 72-97. Oxford: BAR International Series no. 525.
- García Márquez, Manuel and Rosa Bustamante Montoro  
1990 Arqueología del valle de Majes. *Gaceta Arqueológica Andina* 6(18/19):25-40.
- Gladwell, Randi R.  
2002 The Beringa Bioarchaeology and Archaeology Project, 2001: Faunal Report presented to director Tiffany A. Tung. Copy on file in the archives of *Andean Past*.
- 2003 Animals among the Dead: The Zooarchaeology of the Wari Middle Horizon Site of Beringa, Majes Valley, Peru. Poster presented at the 68th Annual Meeting, Society for American Archaeology, Milwaukee, Wisconsin. Copy on file in the archives of *Andean Past*.
- Glowacki, Mary  
2005 Dating Pikillacta. In *Pikillacta: The Wari Empire in Cuzco*, edited by Gordon F. McEwan, pp. 115-124. Iowa City: University of Iowa Press.
- Goldstein, David J., Robin C. Coleman, and Patrick Ryan Williams  
in press You Are What You Drink: A Socio-cultural Reconstruction of Prehispanic Fermented Beverage Use at Cerro Baúl, Moquegua, Peru. In *Drink, Power, and Society in the Andes*, edited by Justin J. Jennings and Brenda Bowser. Gainesville: University Press of Florida.
- Gordon, Claire C. and Jane E. Buikstra  
1981 Soil pH, Bone Preservation, and Sampling Bias at Mortuary Sites. *American Antiquity* 48:566-571.
- Isbell, William Harris  
1989 Honcopampa: Was It a Huari Administrative Centre? In *The Nature of Wari: a Reappraisal of the Middle Horizon Period in Peru*, edited by R. Michael Czwarno, Frank M. Meddens, and Alexandra Morgan, pp. 98-114. Oxford: B.A.R. International Series 525.  
1991 Conclusion: Huari Administration and the Orthogonal Cellular Architecture Horizon. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 293-315. Washington, D.C.: Dumbarton Oaks.  
2001 Reflexiones finales. In *Huari y Tiwanaku: Modelos vs. evidencias, segunda parte*, edited by Peter Kaulicke and William H. Isbell, pp. 455-479. Boletín de Arqueología 5, Pontificia Universidad Católica del Perú, Lima.
- Isbell, William Harris and Anita G. Cook  
2002 A New Perspective on Conchopata and the Andean Middle Horizon. In *Andean Archaeology II: Art, Landscape, and Society*, edited by Helaine Silverman and William H. Isbell, pp. 249-305. New York: Kluwer Academic Press.
- Isbell, William Harris, Lynda E. Spickard and Christine Brewster-Wray  
1991 Architecture and Spatial Organization at Huari. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 19-53. Washington, D.C.: Dumbarton Oaks.

- Jennings, Justin  
2003 The Fragility of Imperialist Ideology and the End of Local Traditions: An Inca Example. *Cambridge Archaeological Journal* 13(1):107-120.
- Kauffmann Doig, Federico  
1986 Placas cerámicas de la Cueva de Chucu, Condesuyos. *Revista del Museo Nacional* 48:187-194.
- Ketteman, W. Gregory  
2002 *New Dates from the Huari Empire: Chronometric Dating of the Prehistoric Occupation of Conchopata, Ayacucho, Peru*. Masters Dissertation, Binghamton University, State University of New York.
- Knobloch, Patricia J.  
1991 Stylistic Date of Ceramics from the Huari Centers. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 247-258. Washington, D.C.: Dumbarton Oaks.
- Linares Málaga, Eloy  
1970 El arte rupestre mobiliario en el sur del Perú. *Revista Española de Antropología Americana (trabajos y conferencias)* 5:77-98.
- Malpass, Michael A.  
2001 Sonay: Un centro Wari celular ortogonal en el valle de Camaná, Perú. *Boletín de Arqueología PUCP* 5:51-68.
- McEwan, Gordon F.  
1991 Investigations at the Pikillacta Site: A Provincial Huari Center in the Valley of Cuzco. *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 93-119. Washington, D.C.: Dumbarton Oaks.  
1996 Archaeological Investigations at Pikillacta, a Wari Site in Peru. *Journal of Field Archaeology* 23(2):169-186.
- Menzel, Dorothy  
1977 *The Archaeology of Ancient Peru and the Work of Max Uhle*. Berkeley, California: R.H. Lowie Museum of Anthropology.
- Milner, George R., James W. Wood, and Jesper L. Boldsen  
2000 Paleodemography. In *Biological Anthropology of the Human Skeleton*, edited by M. Anne Katzenberg and Shelley R. Saunders, pp. 467-497. New York: Wiley-Liss.
- Moseley, Michael E., Robert A. Feldman, Paul S. Goldstein and Luis Watanabe  
1991 Colonies and Conquest: Tiahuanaco and Huari in Moquegua. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 121-140. Washington, D.C.: Dumbarton Oaks.
- Moseley, Michael E., Donna Nash, Patrick Ryan Williams, Susan D. deFrance, Ana Miranda, and Mario Ruales  
2005 Burning down the Brewery: Establishing and Evacuating an Ancient Imperial Colony at Cerro Baúl, Peru. *Proceedings of the National Academy of Science* 102(48):17,264-17,271.
- Ochatoma, José Paravicino and Martha Romero Cabrera  
2001 *Poblados rurales Huari: Una visión desde Aqo Wayqo*. Lima: CANO Asociados SAC.
- Owen, Bruce  
2007 The Wari Heartland on the Arequipa Coast: Huamanga Ceramics from Beringa, Majes. *Andean Past* 8:287-373.
- Paine, Richard R. and Henry C. Harpending  
1996 Assessing the Reliability of Paleodemographic Fertility Estimators Using Simulated Skeletal Distributions. *American Journal of Physical Anthropology* 101:151-159.
- Quinn, Gina M.  
2003 Report on the Textiles from Beringa. The Beringa Bioarchaeology and Archaeology Project. Unpublished report presented to Tiffany A. Tung on file in the archives of *Andean Past*.
- Ratti de Luchi Lomellini, Milagros  
1987 *Reconocimiento del yacimiento arqueológico de Beringa*. Bachelor's thesis, Universidad Católica de Santa María, Arequipa, Peru.
- Sattenspiel, Lisa R. and Henry C. Harpending  
1983 Stable Populations and Skeletal Age. *American Antiquity* 48:489-498.
- Schreiber, Katharina Jeanne  
1992 *Wari Imperialism in Middle Horizon Peru*. Museum of Anthropology, University of Michigan, Anthropological Papers 87.  
1998 Nasca Research Since 1926. In *The Archaeology and Pottery of Nazca, Peru*, edited by Patrick H. Carmichael, pp. 261-270. Walnut Creek, California: Altamira Press.
- Scisciento, Margaret Mary  
1989 *Imperialism in the High Andes: Inka and Wari Involvement in the Chuquibamba Valley, Peru*. Ph.D. Dissertation, University of California, Santa Barbara.
- Shady Solís, Ruth  
1982 Cultura Nievería y la interacción social en el mundo andino en la época Huari. *Arqueológicas* (19):5-108.  
1988 Época Huari como interacción de las sociedades regionales. *Revista Andina* 6(1):67-99.  
1989 Cambios significativos ocurridos en el mundo andino durante el horizonte medio. In *The Nature of Wari: A Reappraisal of the Middle Horizon Period in Peru*, edited by R. Michael Czwarno, Frank M. Meddens, and Alexandra Morgan, pp. 1-22. Oxford: B.A.R. International Series 525.
- Shady Solís, Ruth and Arturo Ruíz  
1979 Evidence for Interregional Relationships During the Middle Horizon on the North-Central Coast of Peru. *American Antiquity*. 44( 4):676-684.
- Shimada, Izumi  
1990 Cultural Continuities and Discontinuities on the Northern North Coast of Peru, Middle-Late



- Horizons. In *Northern Dynasties: Kingship and Statecraft in Chimor*, A Symposium at Dumbarton Oaks, 12<sup>th</sup> and 13<sup>th</sup> October 1985, edited by Michael E. Moseley and Alana Cordy-Collins, pp. 297-392. Washington, D.C.: Dumbarton Oaks.
- Stone-Miller, Rebecca  
1992 *To Weave for the Sun: Andean Textiles in the Museum of Fine Arts, Boston*. Boston: Museum of Fine Arts.
- Stuiver, Minze and Paula J. Reimer  
1993 Radiocarbon Calibration Program Rev 3.0.3c. *Radiocarbon* 35:215-230.
- Topic, John R.  
1991 Huari and Huamachuco. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 141-164. Washington, D.C.: Dumbarton Oaks.
- Topic, John R. and Theresa Lange  
1985 Horizonte Medio en Huamachuco. *Revista del Museo Nacional* 47:13-52.
- 1992 The Rise and Decline of Cerro Amaru: An Andean Shrine During the Early Intermediate Period and Middle Horizon. In *Ancient Images, Ancient Thought: The Archaeology of Ideology: Proceedings of the XXII Annual Chacmool Conference*, edited by A.S. Goldsmith, S. Garvie, D. Selin, and J. Smith, pp. 167-180. Calgary, Alberta, Canada: The University of Calgary Archaeological Association.
- Topic, Theresa Lange  
1991 Middle Horizon in Northern Peru. *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by William H. Isbell and Gordon F. McEwan, pp. 233-246. Washington, D.C.: Dumbarton Oaks.
- Tung, Tiffany A.  
2003 *A Bioarchaeological Perspective on Wari Imperialism in the Andes of Peru: A View from Heartland and Hinterland Skeletal Populations*. Ph.D. Dissertation, University of North Carolina.
- Vera Cruz Chávez, Pablo de la  
1989 *Cronología y corología de la cuenca del río Camaná - Majes - Colca - Arequipa*. Licenciatura Thesis, Universidad Católica de Santa María, Arequipa.
- 1996 El papel de la subregión norte de los valles occidentales en la articulación entre los Andes centrales y los Andes centro sur. In *Integración surandina: Cinco siglos después*, edited by Xavier Albó, María Inés Arratia, Jorge Hidalgo, Lautaro Núñez, Agustín Llagostera, María Isabel Remy, and Bruno Revesz. pp. 135-157. Cusco: Centro de Estudios Regionales Andinos Bartolomé de Las Casas; Arica, Chile: Corporación Norte Grande Taller de Estudios Andinos; and Antofagasta, Chile: Universidad Católica del Norte de Antofagasta.
- Walker, Philip L., John Johnson and Patricia M. Lambert  
1988 Age and Sex Biases in the Preservation of Human Skeletal Remains. *American Journal of Physical Anthropology* 76:183-188.
- Welcomme, R.L.  
1988 *International Introductions of Inland Aquatic Species*. FAO Fisheries Technical Paper 294. Rome: Food and Agriculture Organization of the United Nations.
- Wernke, Steven, A.  
2003 *An Archaeo-History of Andean Community and Landscape: The Late Prehispanic and Early Colonial Colca Valley, Peru*. Ph.D. Dissertation, University of Wisconsin.
- Williams, Patrick Ryan  
2001 Cerro Baúl: A Wari Center on the Tiwanaku Frontier. *Latin American Antiquity* 12(1):67-83.

#### APPENDIX – METHODS: THE CODING SYSTEM

Provenience of archaeological and skeletal material was based on a hierarchy of locational codes (in descending order of specificity): Site Sector, Unit Number, Locus Number, Tomb Number, and Special Find Number (for objects), Carbon Number (for *in situ* radiocarbon samples), and Burial Number (for skeletons).

Beringa is divided into three discrete sectors: A, B, and C. Each sector was mapped, but surface collections and excavations focused on Sector A. All surface collection areas and excavation units were assigned a Unit Number. Within a unit, a Locus Number or multiple Locus Numbers were assigned. For example, a feature, a change in soil, or quadrants within a unit could be divided into several loci depending on the excavator's judgment. Within a particular locus, tomb features were assigned Tomb Numbers. If burials were present within a tomb feature, each was assigned a Burial Number. Within a tomb additional Locus Numbers could be assigned. Finally, artifacts that were deemed "special finds" were assigned a *Hallazgo Especial* code (HE code, or Special Find code), as a means of flagging them on the map and in the laboratory. During the inventory and laboratory analyses, additional codes were assigned for each class of material recovered including, botanical remains, carbon, ceramics, faunal remains, human remains, lithic objects, metals, soils, and textiles.

Maps, Locus Forms, Special Find Forms, and Bone Inventory Forms were filled out by the excavation teams. Photographs (slide, print, and digital) were taken at the opening and closing of a unit, and numerous photos were taken throughout the process of surface collection and excavation. Even though numerous elements were not in situ, photographs of looted mummy bundles associated with textiles, for example, were documented. Additionally, a "video diary" was made of the excavations. After excavations ceased, various specialists (botanist, bioarchaeologist, ceramicists, textile specialist, and zooarchaeologist,) analyzed the material remains at the laboratory at the Center for Archaeological Research in Arequipa (CIARQ).

#### **METHODS: MAPPING**

The first phase of the project included mapping the three sectors of the site. Using a theodolite, the mapping team documented all visible architectural features, trash berms, tomb openings, looters' pits, petroglyphs, surface collection units, excavation units, and the edge of the site as demarcated by a steep escarpment along its western edge. The 611 points recorded by the mapping team were then used to create the site map (Fig. 5). Within each unit, excavators drew several maps to document the location of finds and the relationship between various loci.

A handheld Geographical Positioning System (GPS) unit was also used to mark the perimeter of each of the three sectors within the site. These GPS data points were then used to calculate site area and locate the site in global coordinate space.

#### **METHODS: SURFACE COLLECTIONS AND EXCAVATIONS**

The second phase of the project focused on surface collections, particularly in areas that were densely covered with human skeletal remains and associated goods. These densely concentrated areas were flagged, placed on the site map, and assigned a unit number. Because looters often tossed human remains and unwanted artifacts near the edge of a tomb, skeletal elements and associated goods could be collected together. These biological and material remains were not individually piece-plotted, because the secondary context would have yielded little or no additional information. Instead, the remains were sketched on unit maps and tagged and bagged for transport to the laboratory. All human bones associated with a complete (or near-complete) skeleton on the surface were assigned to a single Burial Number. Given the priority for recovery of human skeletal remains, every unit had at least one archaeologist with basic knowledge in osteology (i.e., at least one university course in human osteology).

Excavators took special care to document, whenever possible, from which tomb the looters' backdirt pile was derived. When a large accumulation of backdirt containing human bones and artifacts was encountered near the opening of a tomb, it was noted that the remains were in general association and likely derived from that particular tomb. This methodology was confirmed reliable when laboratory inventory found numerous mends between proximal and distal ends of long bones that came from from the same backdirt pile.

Excavations generally focused on areas where surface collections revealed numerous human remains and artifacts in relatively undisturbed contexts. All backdirt from excavation units was sifted in 1/4" screens, and dirt from intact domestic areas was sifted again with 1/8" screens to capture domestic refuse such as small seeds or fish bones. Flotation methods were not used because the dry, desert conditions preserved botanical remains very well and floating would have damaged the samples.

Site Sample	Lab Code	Unit & Locus	Material	$\delta^{13}\text{C}$	$^{14}\text{C}$ Age (Years BP)	1 sigma range (AD)	2 sigma range (AD)
015	AA45791	U14L1050	wood	-28.2	1406+-53	600-674	540-762
013	AA45790	U14L1095	wood	-22.4	1353+-32	651-688	622-767
024	Beta-191645	U18L1018	wood	-24.8	1340+-40	654-762	640-774
007	AA45789	U21L1075	carbon	-24.4	1330+-31	659-711	651-771
021	AA45793	U01L1001	textile	-23.3	1243+-33	692-858	689-879
023	AA45794	U11L1011	textile	-24.1	930+-32	1037-158	1024-1187
020	AA45792	U16L1025	vegetal cord	-8.5	840+-42	1163-1256	1044-1278

Table 3. Radiocarbon measurements from Sector A, Beringa.

Site	Andean Region	A.D. 550-750	A.D. 800-900	ca. AD 1000	References
Moraduchayoq compound at Wari	Central		Remodeling		Isbell <i>et al.</i> , 1991
Conchopata	Central		Remodeling	Abandonment	Isbell and Cook 2002; Ketteman 2001
Azangaro	Central		Initial	Abandonment	Anders 1991
Jincamocco	Central	Initial	Remodeling	Abandonment	Schreiber 1992
Pikillacta	Southeast	Initial		Abandonment	Glowacki, 2005
Viracochapampa	North	Initial	Never completed		Topic 1991
Honcopampa	North	Initial	Remodeling		Isbell 1989
Cerro Baúl	Southwest	Initial	Remodeling	Abandonment	Williams 2001
Sonay	Southwest		Initial (ca. AD 950)		Malpass 1998
Beringa	Southwest	Initial	Abandonment or depopulation		Tung (this study)

*Initial* = known initial building events at the site.

Table 4. Summary of Wari sites and their associated building events and abandonment.

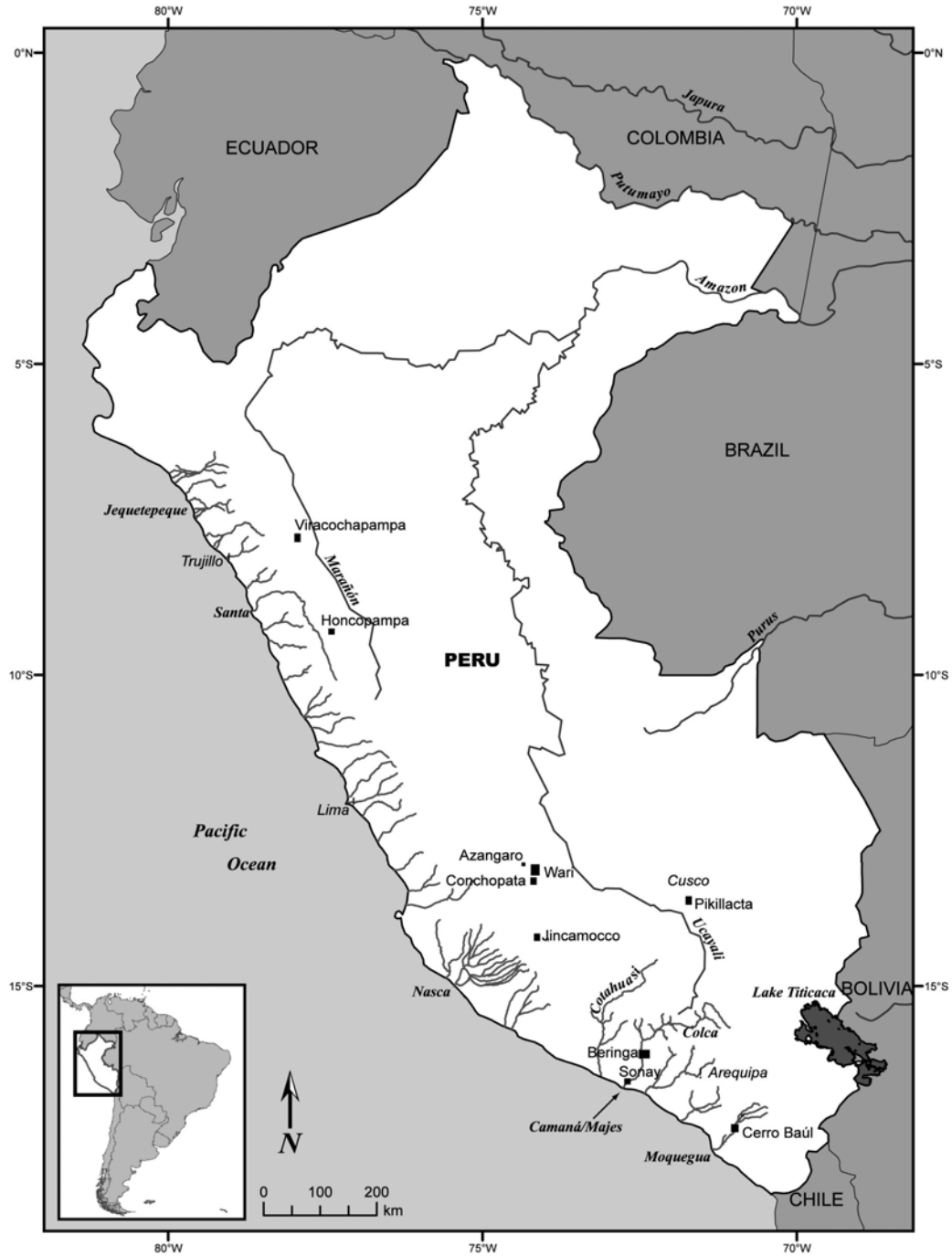


Figure 1. Map of Peru showing sites discussed in the text (after Tung 2003).

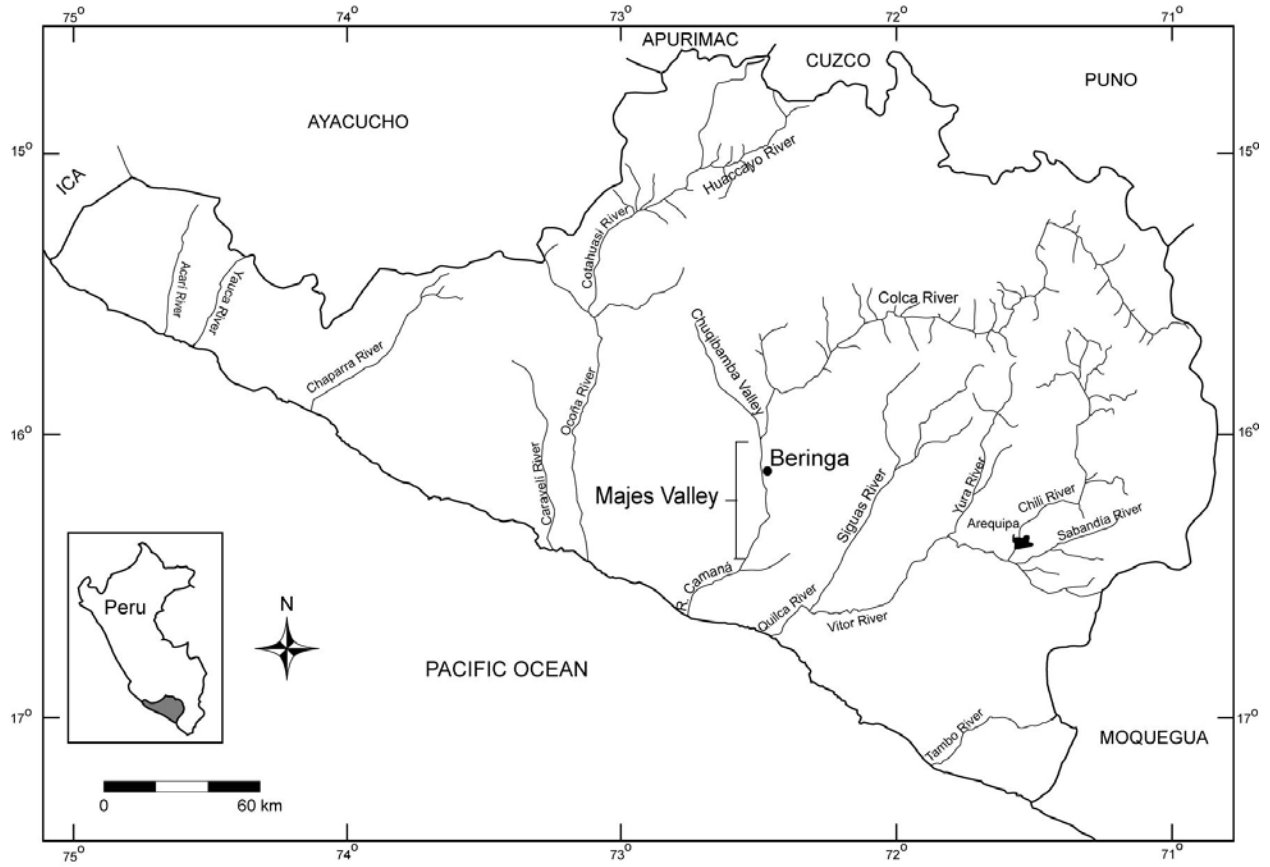


Figure 2. Map of the Department of Arequipa and the site of Beringa (after Tung 2003).



*Figure 3. The site of Beringa is in the foreground with the river and valley floor in the background (from Tung 2003).*

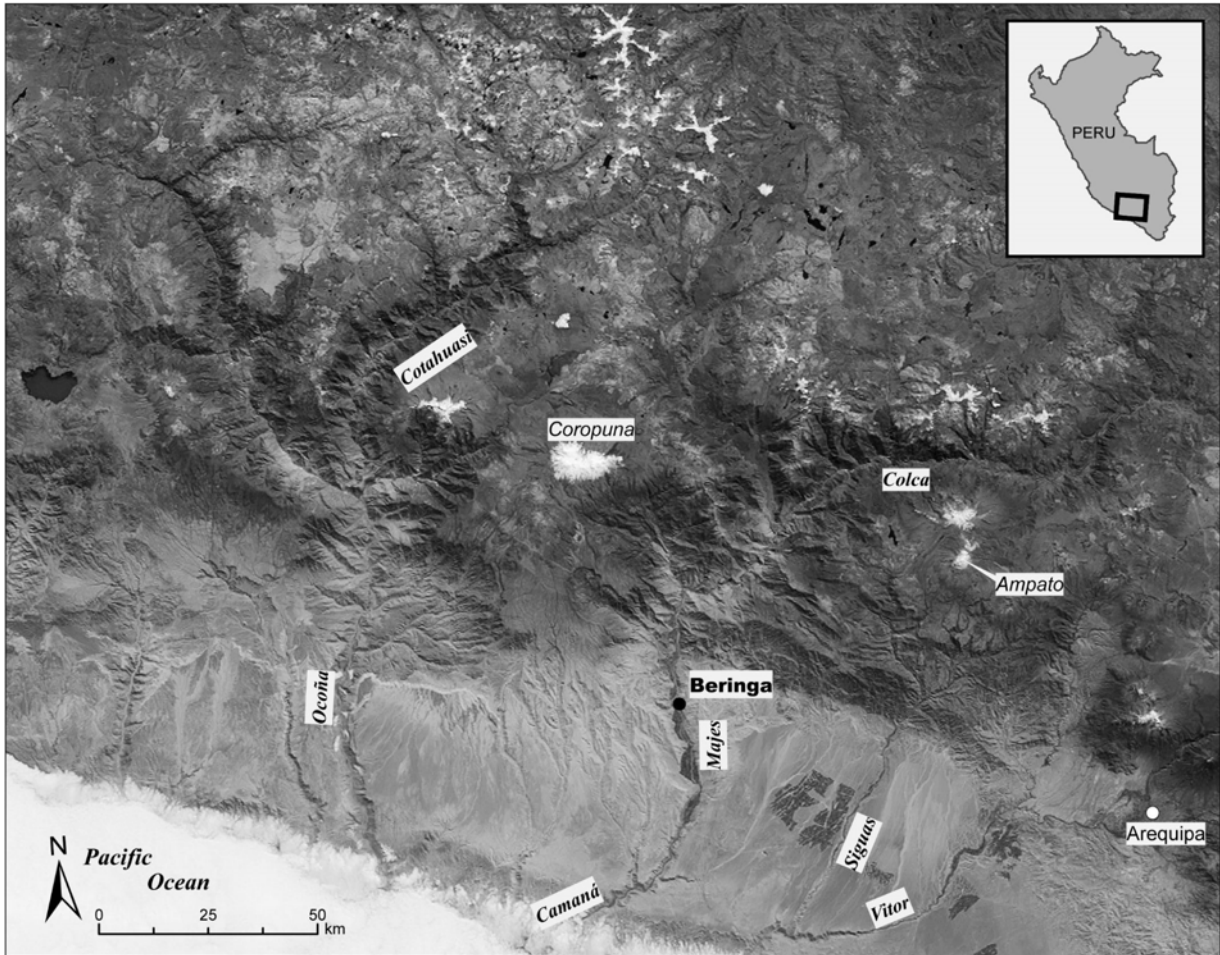


Figure 4. Satellite image of the Majes Valley and surrounding region (photograph courtesy of NASA/GSFC/LaRC/JPL, MISR Team).

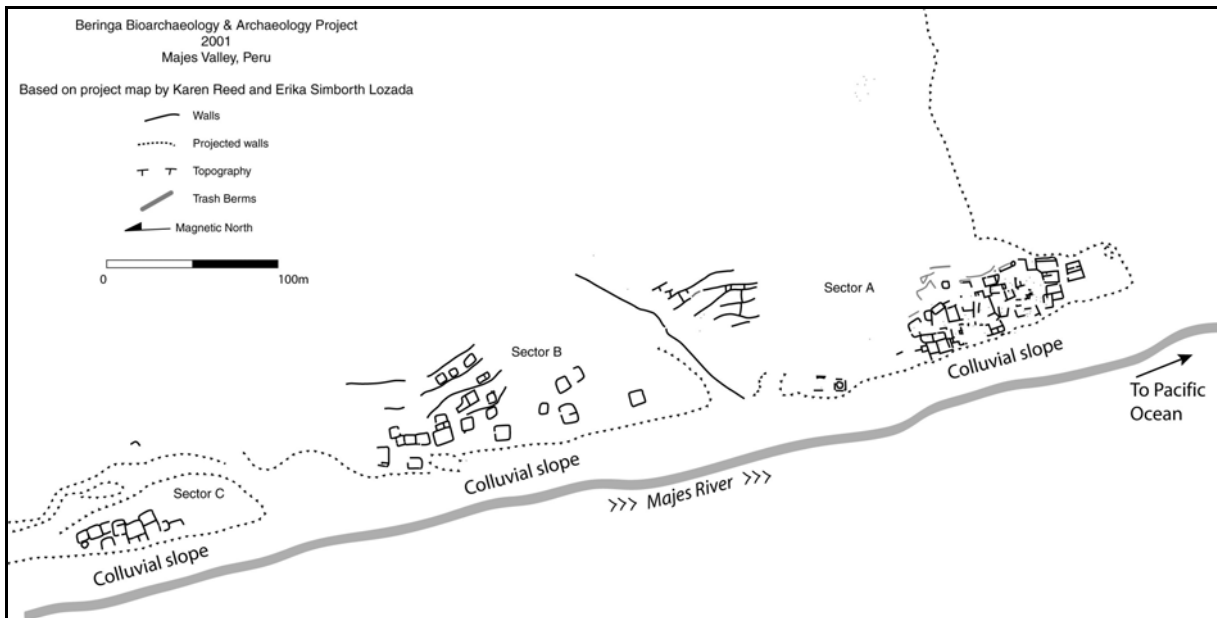


Figure 5. Site map of Sectors A, B, and C (from Tung 2003).

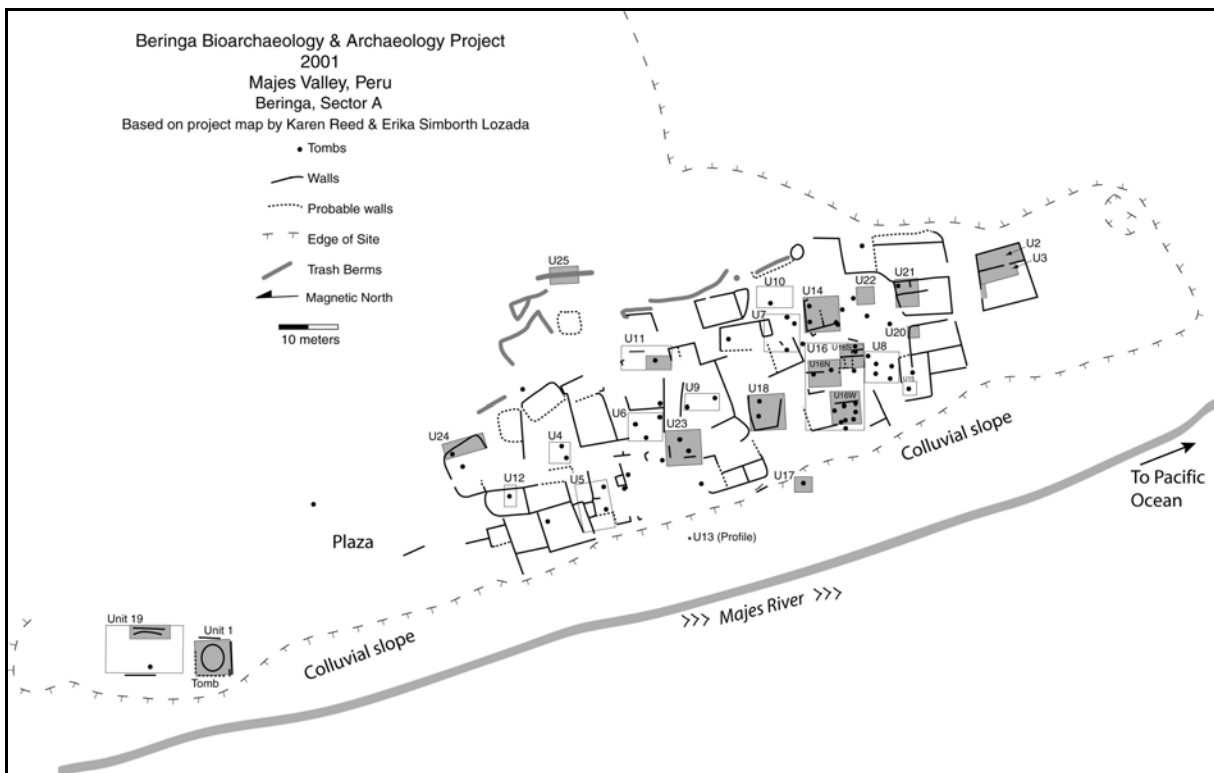


Figure 6. Site map of Sector A with excavation units highlighted (from Tung 2003).





Figure 7. Row of wood sticks in wall fill within Unit 14. One was used for a  $^{14}\text{C}$  measurement.

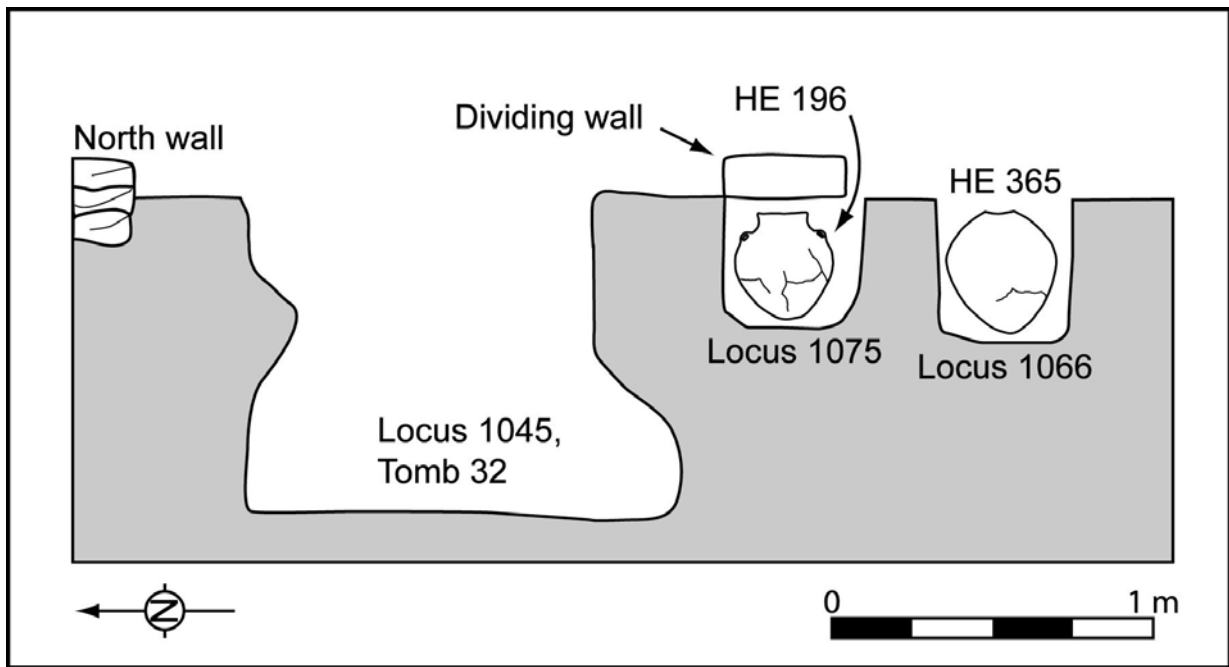


Figure 8. Profile of Unit 21, showing the looted tomb (tomb 32) with four individuals and two in situ ceramic vessels. Another in situ ceramic vessel was behind HE 196, but is not shown in this stylized profile. An external layer of carbon on HE 196 yielded a radiocarbon date of A.D. 651-771 calibrated at 2 sigma.

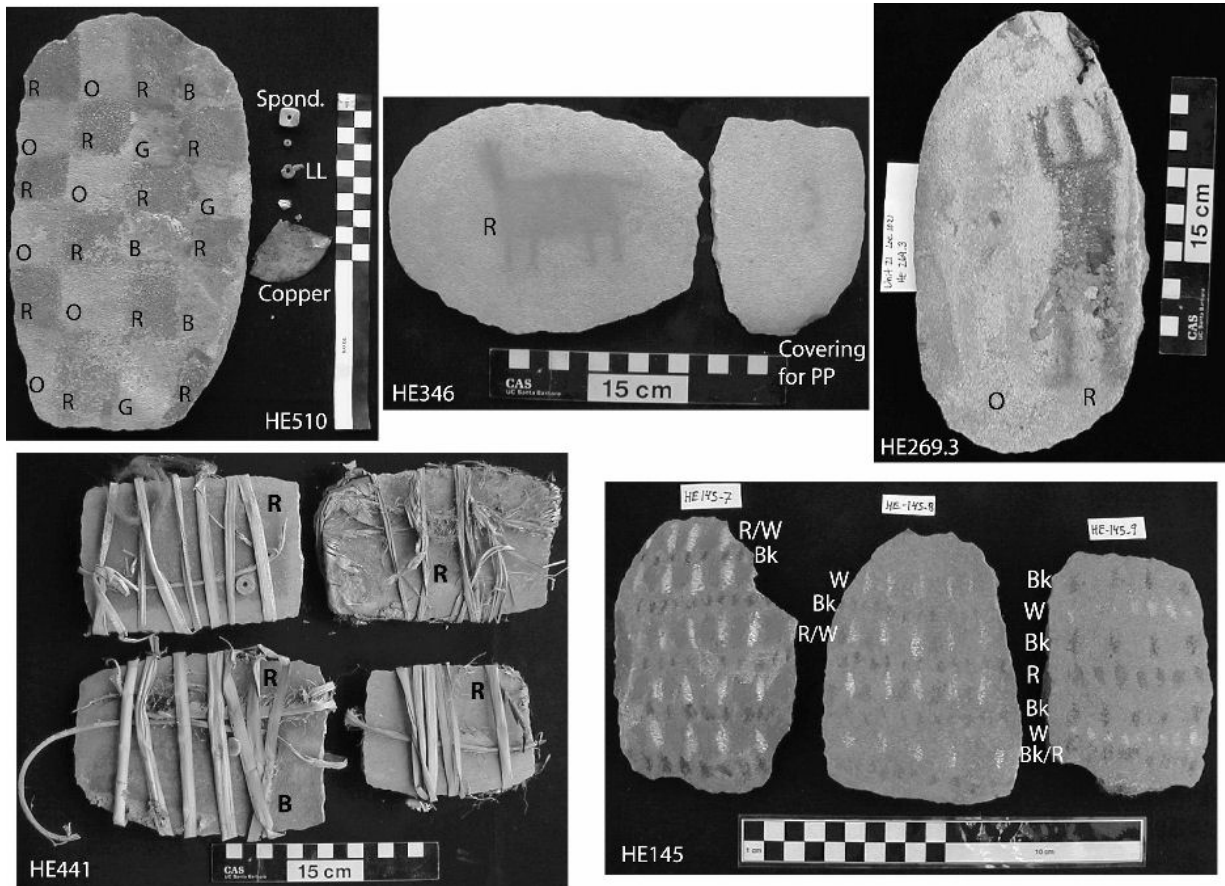


Figure 9. Sample of placas pintadas recovered from Beringa (B=blue; Bk=black; G=green; O=orange; R=red; W=white; LL=lapis lazuli).

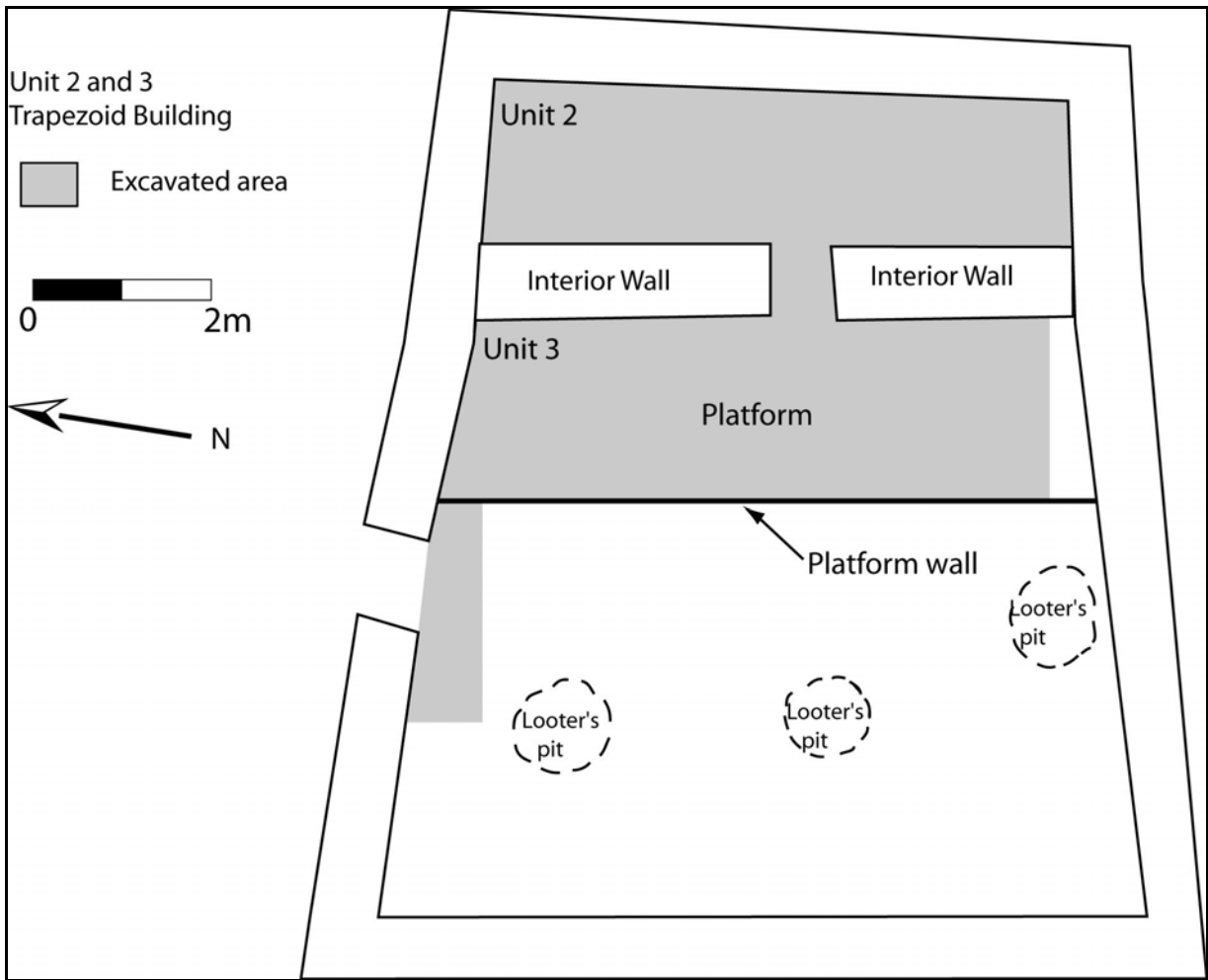
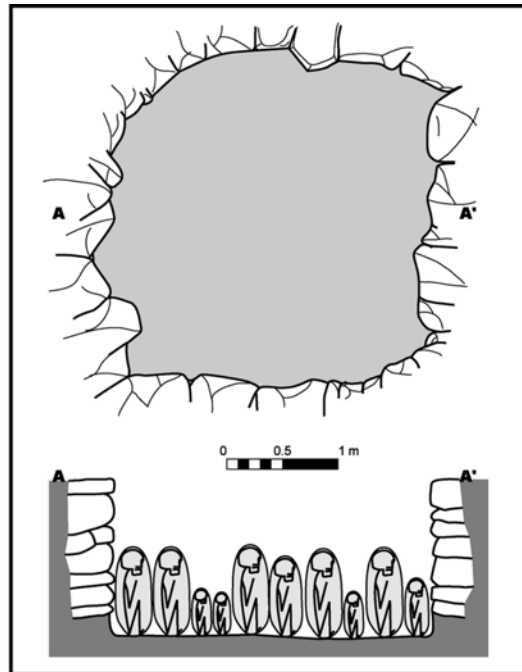
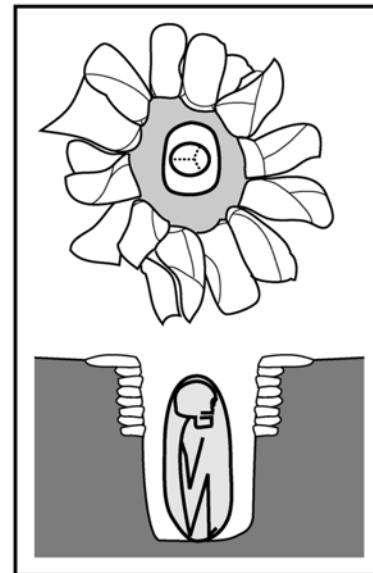


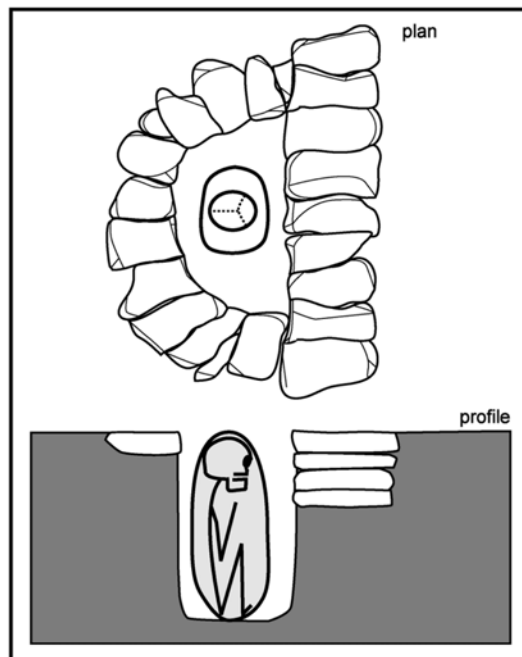
Figure 10. Plan of Units 2 and 3 in the trapezoidal structure.



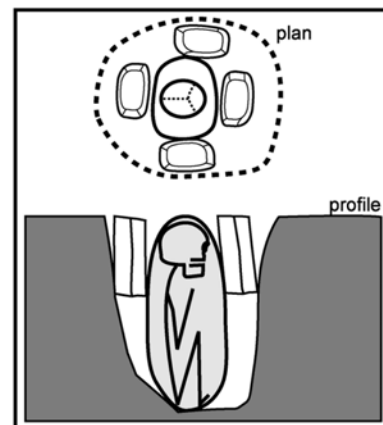
Tomb Type I. Drawing of Tomb 1 from Unit 1.



Tomb Type II & III. Type II is stone lined to a greater depth, while Type III is stone lined at the opening only.



Tomb Type IV. A circular wall is added to the wall of a building to create a tomb.



Tomb Type V. A mummy bundle is placed in a pit tomb and rocks are placed around the head.

Figure 11. Beringa tomb types.

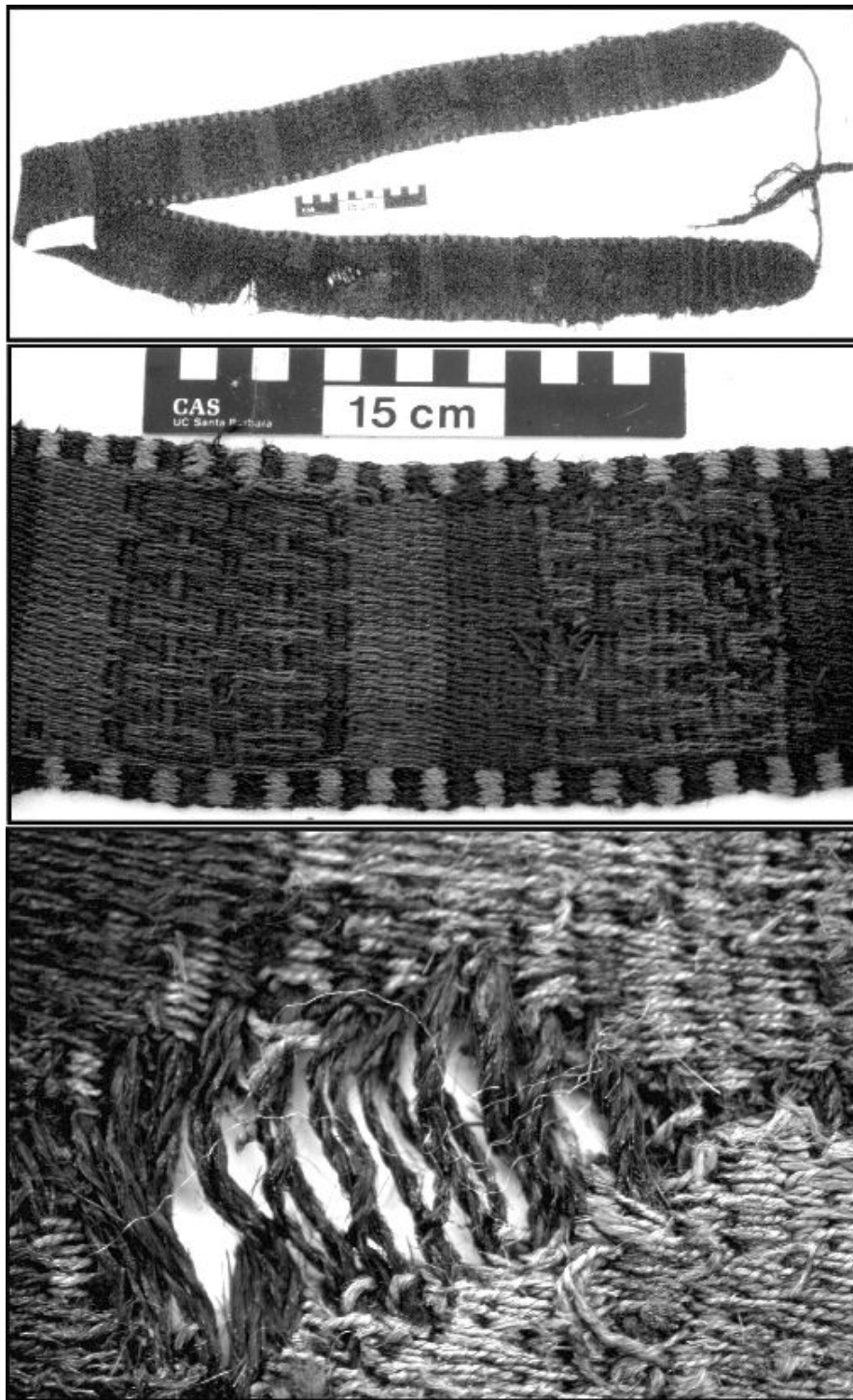


Figure 12. Wool and human hair textile belt (HE 490) recovered from a looted tomb. The photographs show increasing detail of the textile. Human hair, which was used as the warp is visible in the bottom photo.

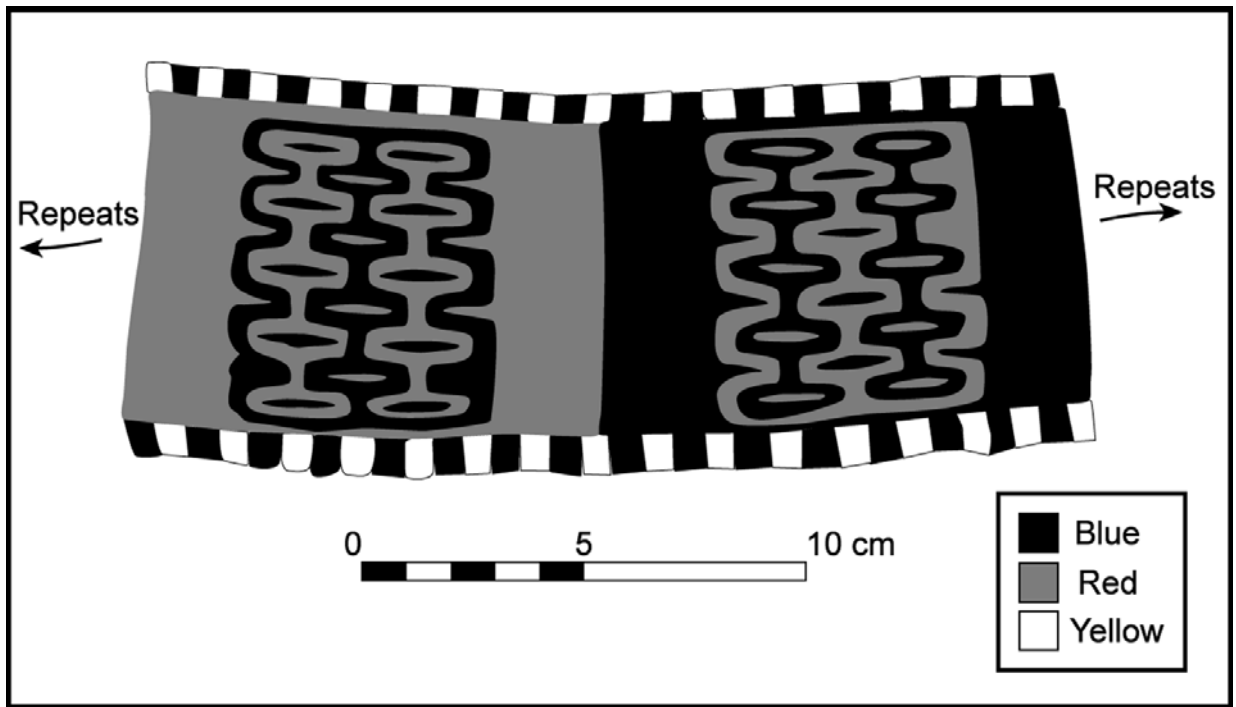


Figure 13. Sketch of the textile (HE 490) shown in Figure 13.

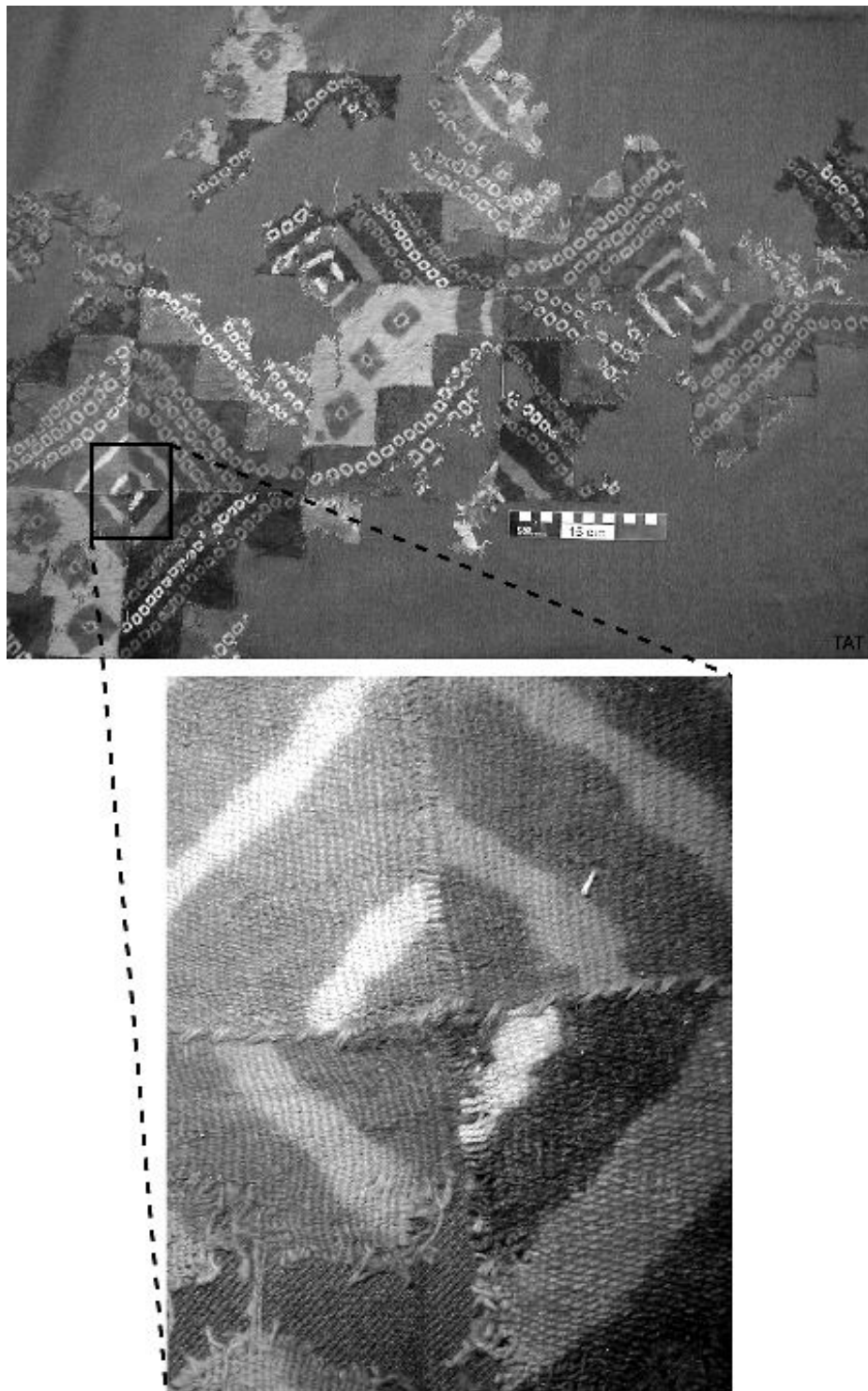


Figure 14. Textile recovered from disturbed area near human burials. It shows resist patterning with both tie-dyeing and linear resist patterning (Personal Communication, William J Conklin, 13 September, 2006). This textile is like that described by Stone-Miller (1992: plate 21a, b, “sleeveless tunic [?] With tie-dyed stepped triangles”).



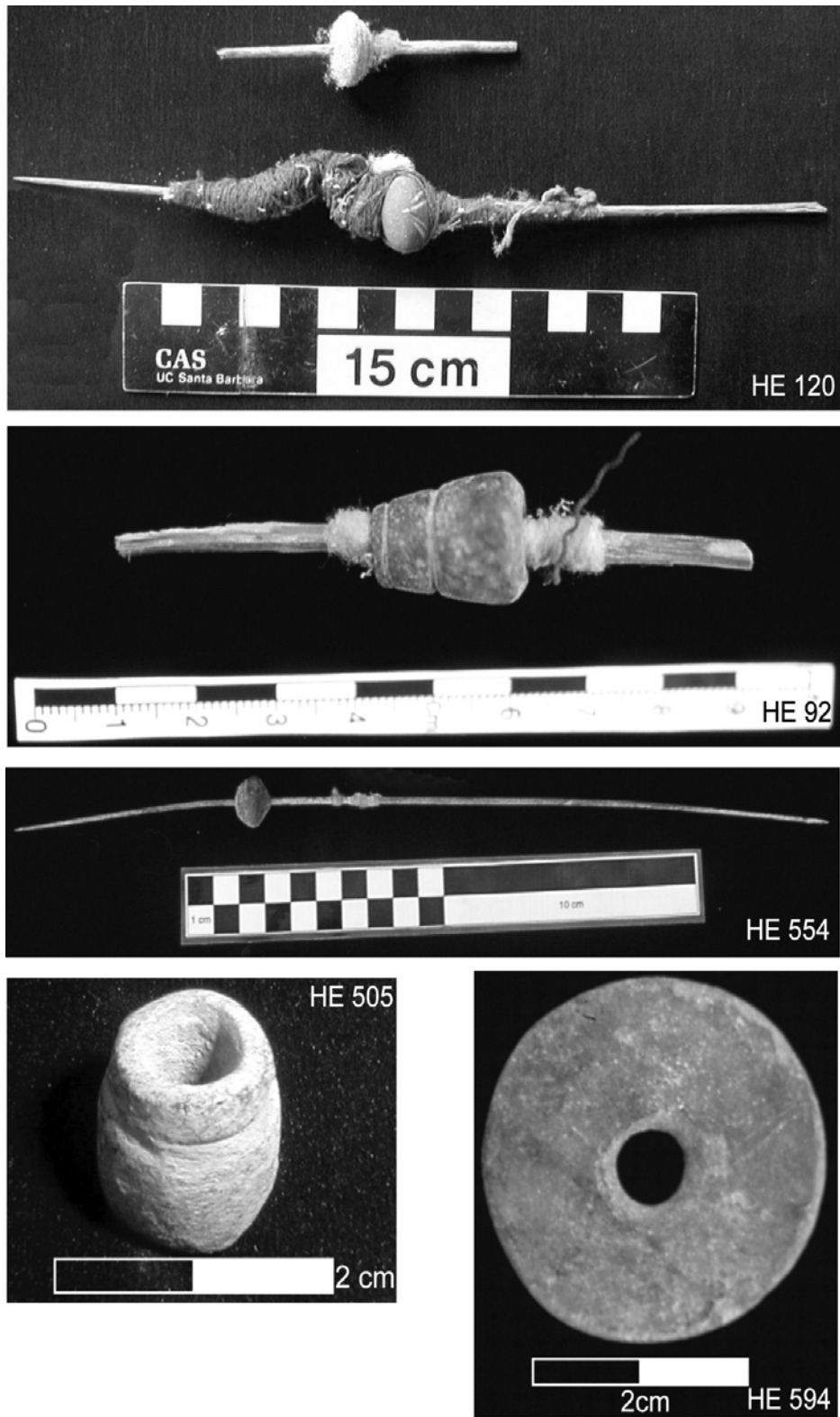


Figure 15. Examples of spindle whorls from Beringa.

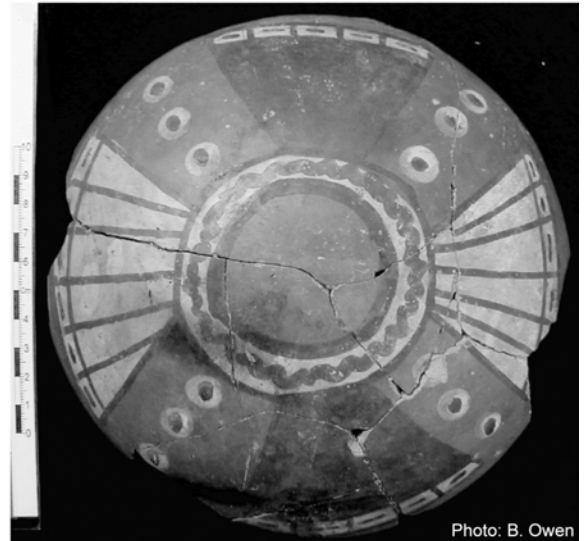
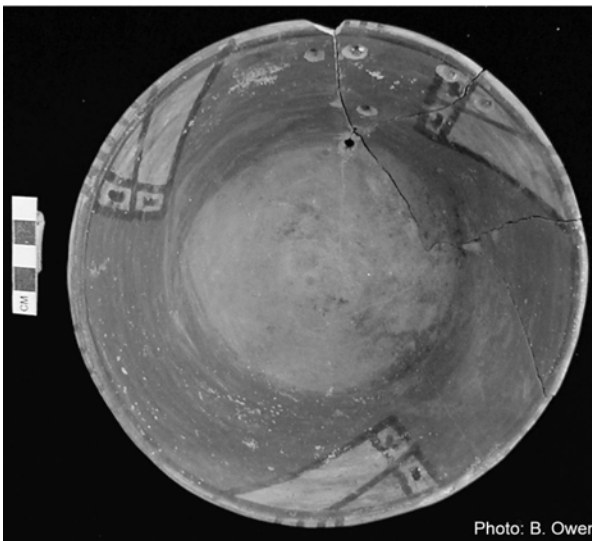
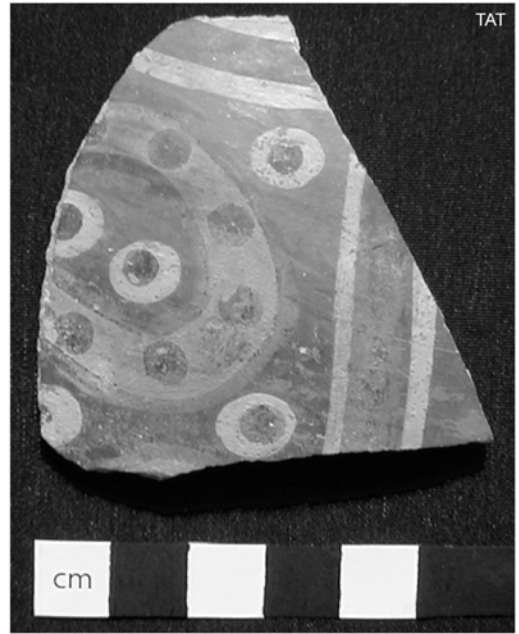
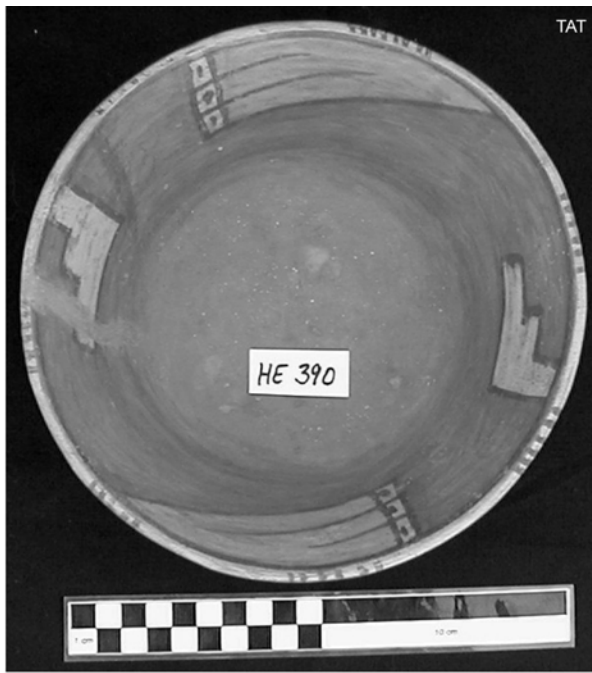


Figure 16. Examples of Wari-influenced ceramics from the site of Beringa (from Tung 2003).

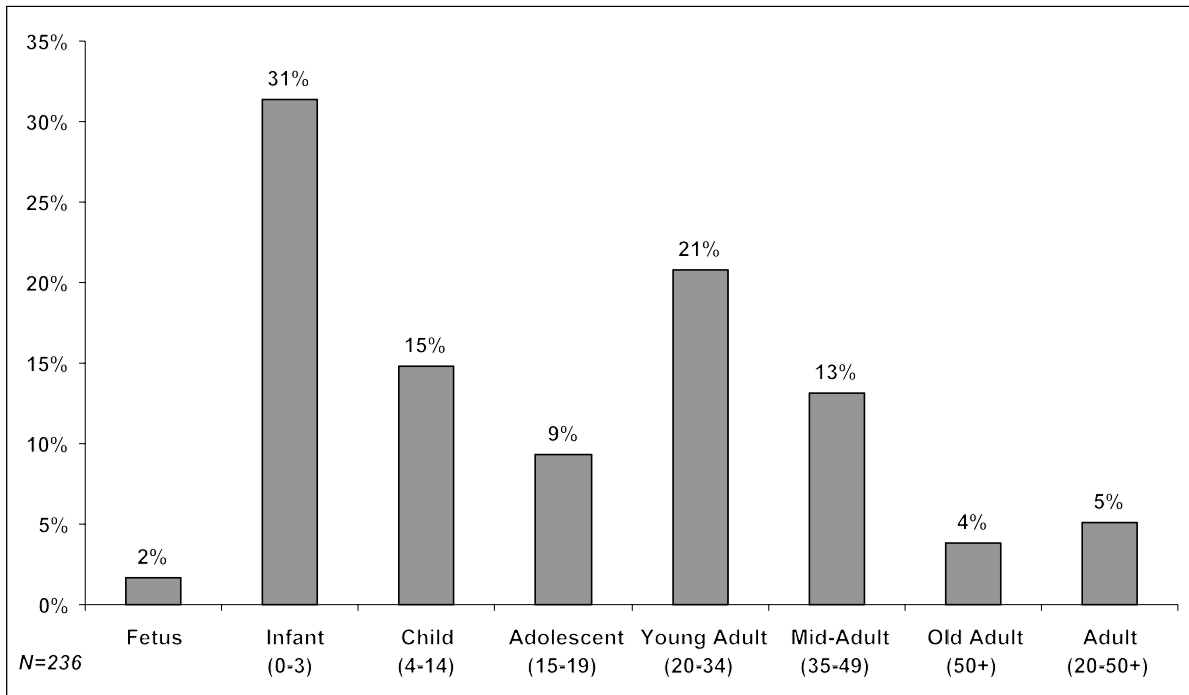


Figure 17. Age-at-death profile for the Beringa skeletal sample (N=236).