

**STRANGE HARVEST: A DISCUSSION OF SACRIFICE AND MISSING BODY PARTS
ON THE NORTH COAST OF PERU**

CATHERINE GAITHER
Metropolitan State College of Denver

VÍCTOR VÁSQUEZ SÁNCHEZ
ARQUEOBIOS, Trujillo, Perú

JONATHAN BETHARD
University of Tennessee, Knoxville

TERESA ROSALES THAM
*ARQUEOBIOS, Trujillo, Perú and
Universidad Nacional de Trujillo, Trujillo, Perú*

JONATHAN KENT
Metropolitan State College of Denver

RICHARD BUSCH
Denver Museum of Nature and Science

Numerous researchers have discussed the finds of what they refer to as secondary interments in funerary contexts around the world (Dulanto 2002; Hecker and Hecker 1992; Klaus and Tam 2009; Larson 2001; Millaire 2004; Nelson 1998; Weiss-Krejci 2001; Verano 1997). In the Andean region, the finds range from the “jumbled bones” that Verano (1997) refers to in the tombs at Sipán to ritual re-interment described by Millaire (2004). This pattern has been described for numerous sites in Peru dating to various time periods (Dulanto 2002; Hecker and Hecker 1992; Klaus and Tam 2009; Millaire 2004; Nelson 1998; and Verano 1997) and may, therefore, represent a common feature in mortuary practice, both spatially and temporally, in this region of the world.

Few researchers, however, have described finds of the contexts from which these secondary interments may have been “harvested”. Verano (1997) described the find of complete bodies with the bones in a “jumbled” state at the Moche site of Sipán. He interpreted this as indicating that some decomposition had taken place prior to the inclusion of the body in the secondary context, and suggested that perhaps the bodies had been stored for future inclusion

in a tomb. Nelson (1998) described undisturbed burials containing incomplete skeletons at the Moche site of San José de Moro. He attributes these to an extended funerary rite, whereby the body was protected from external elements (such as insects) that sped decomposition, in order to allow for a transitional component of the mortuary ritual. This may have included long-distance travel and rites of re-incorporation of the individual back into the social order in accordance with rites of passage as described by van Gennep (1960). Nelson (1998) notes that the partial decomposition of the corpse during this interim period might explain lost body parts, particularly if long-distance transport was involved in the ritual. Other researchers (Klaus and Tam 2009; Millaire 2004; Hecker and Hecker 1992) have described parts of bodies included with principal personages in tombs. Klaus and Tam (2009) noted a preference at the colonial Chapel of San Pedro de Mórrope for long bones and skulls. The site of Santa Rita B in the Chao Valley of Peru’s north coast also demonstrates secondary interments in a funerary context. However, there are some notable and intriguing differences seen at this north coast site.

The site of Santa Rita B also appears to demonstrate a pattern of ritual re-interment, which includes isolated body parts interred with principal personages. Notable at this site, however, is the presence of what we are calling a “harvested body”. This individual demonstrates missing elements in combination with little or no evidence for post-interment disturbance, similar to what Nelson (1998) described at San José de Moro. In contrast to what Nelson (1998) found, however, there is evidence that Entierro (Burial) 9 was interred at Santa Rita B shortly after death and with flesh intact. Not only is the skeleton well-articulated, there is no evidence of insect activity, and the bones show crushing injuries consistent with moist bone impacted by the placement of several large rocks on top of the body. Some of the missing skeletal elements were taken from the body prior to the placement of the rocks on top of it. Additionally, this individual appears to be a sacrifice victim rather than an ancestor or another principal personage, based upon the atypical position of the body, including the haphazard manner in which it was interred, evidence of violent injuries on the skeleton, and its association with other sacrifice victims also demonstrating atypical burial positions and traumatic lesions consistent with sacrifice. The skeleton demonstrates missing elements, primarily long bones (which is consistent with Klaus and Tam’s description), and not only is there no evidence of cultural taphonomic disturbance, but there is, in fact, significant evidence that the body was *not* disturbed post-interment given the placement of the rocks. This differs from what Dulanto (2002) describes at Pampa Chica, a Late Initial Period/Early Horizon site (ca. 700-200 B.C.) in the Lurín Valley on the central coast of Peru. He describes tombs containing incomplete skeletons. The tombs at this site, however, show clear evidence of re-opening in order to access the human remains and the remains accessed appear to have been those of principal personages. Dulanto (2002) interprets this in the

context of ancestor worship. This is a different pattern from what is seen at Santa Rita B and thus, the reason for this “strange harvest” is not yet clear.

Secondary burial deposits are often present in numerous Andean archaeological contexts, and scholars frequently frame such features as part of the ancestor cult, or mortuary practices that provide continuity between the living and the dead (Dillehay 1995). Such practices help enhance collective relationships and legitimize which resources a particular community controls (Dillehay 1995; Salomon 1995). As noted by Klaus and Tam (2009), however, the pattern one would expect with ancestor worship includes, at a minimum, successful reproduction and adult age for those “re-interred” individuals. This is not the pattern seen at Santa Rita B with respect to Entierro 9. The purpose of this paper is to present the case of Entierro 9, discuss its possible relevance within the context of Andean mortuary practice and to further discuss the possibilities regarding what behavior inferred from it might mean.

ARCHAEOLOGICAL SETTING

The Santa Rita B archaeological site is on the western slopes of the Andes of Northern Peru (Figure 1), in the lower portion of the middle Chao Valley at an average elevation of 484 m above mean sea level. Its strategic position permitted a certain degree of control over the movement of people, goods, and camelid herds between the coastal and highland regions (Kent *et al.* 1999). See Gaither *et al.* (2008) for a more detailed description of the site and its location.

Now having completed its tenth season, the Santa Rita B Archaeological Project has been defining the nature of the human occupation of the site and investigating selected aspects of its economic, social, political, and ideological

history. Most recently (since 2001) excavations have focused on areas of apparent domestic architecture, making up complexes of rooms ranging in number from 10-30 enclosures. One of these, known as “Archaeological Complex No. 3” (*Conjunto Arquitectónico 3*, or just CA3) is a rock-walled compound measuring about 29 m N-S x 25 m E-W, subdivided into approximately 19 partly or completely enclosed spaces or “rooms” (Figure 2).

We have determined that the upper strata of the site were deposited sometime between AD 1050 and 1280. During our excavations here, several human skeletons were encountered that produced calibrated C-14 dates of this time period and which are the focus of this paper (Table 1).

Lab. No.	Cat. No.	Material	Taken From	Type of Personage	Conventional Radiocarbon Age (CRA)	$^{13}\text{C}/^{12}\text{C}$	2σ Cal*	<i>p</i>
Beta-217488	SRB-560-1	BONE/ R. RIBS	ENTIERRO #4	PRINCIPAL PERSONAGE	900 ± 40	-18.4	A.D. 1134-1271 A.D. 1046-1084	0.886 0.113
Beta-217489	SRB-561-1	BONE/ L. RIBS	ENTIERRO #3	PROBABLE HUMAN SACRIFICE	890 ± 40	-15.5	A.D. 1145-1272 A.D. 1049-1079	0.928 0.072
Beta-217490	SRB-562-1	BONE/ R. RIBS	ENTIERRO #2	PROBABLE HUMAN SACRIFICE	850 ± 40	-21.6	A.D. 1175-1281 A.D. 1162-1172	0.976 0.024

*2-sigma age ranges calibrated using the CALIB RADIOCARBON PROGRAM “SHcal 04” for the southern hemisphere developed by McCormac *et al.*, 2004 used in conjunction with Stuiver and Reimer, 1993.

p = Probability of actual calibrated date falling within stated range.

Table 1: Calibrated radiocarbon dates for human bones samples.

ENTIERRO 9

Entierro 9 is the partial skeleton of a sub-adult, possibly male, aged $12 \text{ years} \pm 30$ months at time of death. Age estimation is based on epiphyseal union, dental eruption, and long bone lengths using standards developed by both Gaither (2004) and Ubelaker (1999). Both sets of standards are consistent with this age estimate. See Table 2 for details on age indicators in this skeleton. The assignment of sex as possibly male is based on a very masculine mandibular morphology.

Assignment of sex in subadults based on mandibular morphology does have some support in the literature. Sutter (2003) demonstrated an accuracy of 77.6% for sex estimation using mandibular arcade shape in a study utilizing prehistoric known-sex subadult mummies from northern Chile. The glabellar region on the cranium of this skeleton also appeared robust, indicating a possible male; however, there are no studies addressing the accuracy of this morphology for assigning sex in subadults. The rest of the cranium was ambiguous with regard to sexually dimorphic characteristics, and the pelvis was missing.

Skeletal element	Age indication in <i>Entierro</i> Number 9	Age range possibilities	Age estimate
Dental formation and eruption	All permanent teeth erupted and in wear with the exception of the third molar, which has not yet erupted	Gaither (2004) = 12 years $\pm$ 21 months Ubelaker (1999) = 11 years $\pm$ 30 months	12 years $\pm$ 30 months = age range of 9.5-15 years of age
Epiphyseal Union	All major long bone epiphyses unfused including the distal humerus All vertebral arches fused together, and at least partially, to the centra (see L5) L5 body to arch – partial union Cervical and vertebral rims unfused No pelvic elements present All cranial sutures unfused Basilar suture unfused Medial clavicle unfused	Vertebral arches and bodies to centra fuse in early childhood (by 7 years of age) (Scheuer and Black 2000) Pelvic elements fuse between approximately 8-10 years of age (Bass 1995), but all are missing in this individual The earliest epiphyseal union in long bones occurs on the distal humerus, the epiphyses of which can unite as early as 9 years and as late as 13 years of age in females and as early as 11 years and as late as 15 years of age in males (White and Folkens 2005) – the humerus of <i>Entierro</i> Number 9 is not fused Basilar suture union usually occurs between 18 and 21 years of age (Scheuer and Black 2000) Medial clavicle union occurs no later than 31 years of age (Scheuer and Black 2000)	9-15 years of age
Long bone lengths	Due to the fragmentary nature of the skeleton, only one long bone was complete enough to measure. It was the right ulna = 206 mm.	Gaither (2004) = 13 years Ubelaker (1999) = 11 years	12 years

Table 2: Age Indicators in *Entierro* Number 9

Missing elements include the left humerus, radius, ulna, all of the bones of the left hand and some of the bones of the right hand, the entire pelvis, the left femur, patella, tibia, fibula, and all of the bones of the left ankle and foot. The right fibula and the bones of the right ankle and foot are also missing (Figure 3). Pathologies include the presence of cut marks on one right rib, on one left rib fragment, and on one unfused sternebra. See Figures 4-6 for photos of the cut marks on one rib and the sternebra and a drawing of the location of the marks on the two ribs. The superficial nature of these cut marks as well as their location on the superior, internal aspects of the ribs and the posterior aspect of the sternebra support the hypothesis that these marks may have been caused by natural taphonomic processes, which occurred shortly after death, rather than antemortem trauma. It is possible, for example, that as the body decomposed and the rocks settled, the weight of the rocks pressing on the bones caused superficial cut marks on parts of the skeleton. The cut

mark on the sternebra, however, is more substantial and may be the product of violence. Additionally, there is other evidence of trauma on the body, and therefore, it is not possible to rule out violence as the cause of the cut marks. Other evidence of trauma includes a perimortem fracture of the right femur (Figure 7) and possible blunt force trauma to the occipital region of the cranium. Specifically, the occipital bone is fractured and partially missing from the back of the skull. There is also a radiating fracture on the right parietal, running from the posterior to anterior portion and terminating in the coronal suture (Figure 8). This suggests blunt force trauma to the back of the head, which certainly could have been fatal. This trauma, in combination with the body position supports the hypothesis of violent demise. While there was no evidence of the postmortem disarticulation or dismemberment of body parts, it should be noted that the state of preservation of skeletal remains at this site is extremely poor. The bone was extraordinarily fragile, crumbling

at the slightest disturbance. It is quite possible that such evidence was not preserved.

The position of the body is not typical of burials involving principal personages, which tend to demonstrate a carefully positioned body and often include grave goods. Burials of principal personages contemporaneous with Entierro 9 are often in an extended supine position (Shimada *et al.* 2004). Entierro 9, however, is prone (face down) with several large, heavy rocks placed on top of the body around the time of death (Figure 9). Given that this is an atypical burial position and that this individual was excavated from a funerary context involving no fewer than two principal personages (Entierros 4 and 8), both of which did demonstrate typical burial positions, it is likely that this is a sacrifice victim. It is also interesting to note that, while there are several missing skeletal elements, there was no visible stratigraphic evidence of looting around the area of this skeleton. Additionally, the missing elements are unusual, particularly given the position of the body and the presence of the large rocks. The placement of the rocks on top of the body around the time of death is indicated by the position of the rocks nestled deep in the body cavity (Figure 10) and the resulting perimortem crushing injuries to the body (Figure 11). In other words, the way the body bends as a result of the weight of the rocks suggests the bone was moist when the rocks were put in place. This, along with an articulated skeleton, as was the case with Entierro 9, indicates a primary interment, which occurred shortly after death. The lack of insect puparia also supports the hypothesis of a rapid burial postmortem. The question becomes, how can we explain the missing skeletal elements?

DISCUSSION

There are at least two possibilities that might explain these findings. The first is the possibility that the remains were disturbed in antiquity by

construction or other cultural transformation processes that occurred during a later occupation of the site. There is no stratigraphic evidence for this, but the human remains are so close to the ground surface that it is possible such evidence may be very subtle and difficult to discern. The large rocks on top of the body, however, appear to have been placed on the individual shortly after death and they do not appear to have been moved, as doing so would most certainly have disturbed the underlying remains. The fact that the skeleton, particularly the portion covered by the rocks, was perfectly articulated indicates this did not happen. A second hypothesis is that body parts were harvested from this skeleton for some ritualistic purpose, *prior to interment*. Once the appropriate parts were removed, the body was placed in a prone position and covered with large rocks. This was all accomplished very shortly after death as there are no insect puparia associated with the body and the crushing injuries resulting from the placement of the rocks suggests the bones were still moist upon interment. Entierro 9 presents the most compelling evidence for “harvesting” at Santa Rita B, however, there are other possible “harvested bodies” at this site.

In addition to Entierro 9, some of the other sacrifice victims found at Santa Rita B demonstrate evidence of “harvesting”. Included among these is Entierro 5. Although there was a modern looter’s pit present near the head of this subadult,¹ the lower body was undisturbed, and yet, all of the bones of the left ankle and both feet were missing. This suggests the possibility that both feet and the left ankle were “harvested”. This individual also demonstrated perimortem cut marks on the ribs, one of which

¹The same aging indicators were used to estimate the age of this individual as were used for Entierro 9, the indicators for which can be seen in Table 1. These are standard aging indicators as per Buikstra and Ubelaker (1994), Ubelaker (1999) and Gaither (2004).

completely severed the tip of the rib. There is also evidence of ritual re-interment at Santa Rita B. This includes the articulated remains of body parts. Entierro 10 is one example. This individual is represented exclusively by the lower legs and there was no evidence for the presence of the upper body, nor was there evidence of any cultural or natural transformation processes that might have disturbed the remains. Additionally, there was an articulated partial left foot with no other associated body parts present. Entierro 1 was also a partial skeleton consisting of the cranium of a subadult. The cranium demonstrated two areas of perimortem blunt force trauma indicating possible sacrifice, but only a few other scattered bones were found and those could not be positively associated with the cranium. Another sacrifice, an adult male, is complete. This individual demonstrates injuries consistent with perimortem trauma and interpersonal violence in the form of superficial cut marks to the sternum and an unhealed parry fracture.

When considering the bigger picture that is emerging at this site, it appears that the area known as CA3 was an important area for ritual activity. There are two principal burials, and there is evidence that these individuals were of a high social status, including *Spondylus* caches found near the body of one of these and associated camelid offerings found with both. Additionally, one of these bodies, Entierro 4, demonstrates symmetrical cranial modification and there is evidence the other one, Entierro 8, also had an intentionally modified cranium. Thus, the overall picture that emerges in this area of Santa Rita B is the presence of two principal personages (Entierros 4 and 8) accompanied by sacrifice victims and re-interred body parts from other contexts. The sacrifice victims are identified by injuries suggestive of perimortem trauma (Entierros 5 and 10), and/or haphazard atypical body positions (Entierros 2, 3, 5, 9 and 10) that are not consistent with any identified funerary

practices from this, or any, time period in the Andean region. In other words, principal personages are not found buried in these positions, which supports our interpretation that these are sacrifice victims.

Verano (1986, 2000) and Bourget (2001) have described similar treatment of sacrifice victims at the sites of Huaca de la Luna and Pacatnamú. Those skeletons also demonstrated atypical body positions and mutilation including missing body parts. What differentiates the Santa Rita B remains, however, is the fact that these sacrifices were excavated from a funerary context that included no fewer than two principal personages. In contrast, the sacrifices of Pacatnamú and those of Huaca de la Luna (Plazas 3A and 3C) involve mass graves of mutilated remains or ceremonial areas where mutilated bodies were left exposed (Verano 1986, 2000). At neither site were the bodies included with principal personages in a funerary context. Verano's (1986, 2000) interpretation of those remains as war prisoners or criminals who faced severe punishment is consistent for those contexts, but does not appear appropriate for the finds at Santa Rita B.

It is important in understanding the behavior of sacrifice to distinguish between the types of sacrifice illustrated by the examples above. Benson and Cook (2001:ix) define sacrifice as either "giving without receiving or giving up something valuable that may benefit others." Of course, the most valuable thing that can be given up is human life. The distinction between the sacrifices found in contexts similar to those of Huaca de la Luna or Pacatnamú as compared to contexts such as that at Santa Rita B lies in the reasons behind the behavior. While the behaviors seen at ceremonial centers like Huaca de la Luna may have played a role in establishing the authority of one group over another, or had symbolic meaning beyond warfare, such as the possibility of ritual cannibalism in the Plaza

3B materials at Huaca de la Luna (Verano 2001), we argue the sacrifices at Santa Rita B are more likely to have either been offerings in and of themselves as part of a funeral rite, or what we, and others, have referred to as retainer sacrifices (Gaither *et al.* 2008; Verano 2001). These are individuals who were to serve the dead in the afterlife. In both cases, an offering in and of itself, and a retainer sacrifice, the individuals sacrificed can be seen as something valuable that is given up in order to benefit others, in this case the deceased principal personages. The “harvesting” of body parts, however, suggests a level of ritual that goes beyond the idea of a retainer sacrifice.

Also present at the site of Santa Rita B are isolated, and often articulated body parts, including a skull demonstrating perimortem blunt force trauma (Entierro 1), articulated limbs (Entierro 10), an articulated foot (SRB-05 -24 - FS 4), and several other isolated bones. These finds support the hypothesis of ritual re-interment of body parts from other contexts, and Entierro 9 is consistent with a body that has been “harvested” for parts, the location and purpose of these parts being unknown. The dating of these finds and the funerary pattern seen at Santa Rita B and at other sites (Dulanto 2002; Klaus and Tam 2009; Millaire 2004; Nelson 1998; Verano 1997) support the hypothesis that ritual re-interment is another pan-Andean mortuary practice. We have argued before that child sacrifice, retainer sacrifice, and the practice of including elements or sacrifice victims that are metaphorically similar to the deceased are funerary practices evident at Santa Rita B and other sites throughout the Andes, both geographically and temporally (Gaither *et al.* 2008). We believe, given the evidence emerging here and in other contexts (Dulanto 2002; Hecker and Hecker 1992; Klaus and Tam 2009; Millaire 2004; Nelson 1998; Verano 1997), that ritual re-interment is another of those funerary practices that occurred in numerous areas in the

Andean region and persisted throughout time in this part of the world. The practice is certainly well described for the Moche culture (Hecker and Hecker 1992; Millaire 2004; Nelson 1998; Verano 1997), but the finds at Santa Rita B in conjunction with the finds from other sites (Dulanto 2002; Klaus and Tam 2009) extend the practice temporally as well. Describing the patterns seen, and defining the temporal and spatial parameters, is but the first step in the process of understanding the behavior.

There are at least two hypotheses that may explain the behavior. Ancestor worship is the first possibility. While the role of the ancestor cult is not heavily described in all mortuary analyses, numerous workers indicate that secondary deposits of disarticulated and incomplete skeletal remains are quite common in the Andes (Buikstra 1995; Carmichael 1995; Dulanto 2002; Klaus and Tam 2009; Millaire 2004; Nelson 1998; Verano 1995, 1997). Although such deposits are sometimes only loosely connected with the importance of ancestors, Brown (1995) argues that such inferences are entirely probable. For example, Larson (2001) notes that secondary burials and the presence of incomplete skeletal remains in primary interments in Highland Madagascar are the result of multiple intrusions into a family tomb. Newly deceased individuals are placed in the tomb and “wound together” with previously deceased family members in order to combine them into one “great ancestor” (*razambe*). Thus, it is entirely possible, and indeed probable, that one might find the remains of individuals wound together as part of the “great ancestor” who were not, in fact, anyone’s ancestor in life. Salomon (1995) notes that the physical manifestation of the ancestors’ remains are often critical in rituals where living relatives called upon the ancestors to provide various kinds of favors for typical day-to-day tasks. Such practices help enhance collective relationships and legitimize which resources a particular community controls

(Dillehay 1995; Salomon 1995). Given this, it might not be a requirement that an individual was an actual ancestor in life; rather simply that he or she lived and died before other members of the community.

The pattern seen at Santa Rita B, however, is not entirely consistent with ancestor worship. The harvested remains are subadults, as are most of the secondary interments, and thus, these individuals would not have been the ancestors of anyone. Additionally, unlike the situation in Highland Madagascar, they also appear to have been sacrifice victims, or to have come from sacrifice victims, rather than the exhumed remains of ancestors or family members. Klaus and Tam (2009) also had numerous subadult interments and rejected the hypothesis of ancestor worship at San Pedro de Mórrope. They argue instead that the secondary burials are associated with pervasive and persistent Andean metaphors of fertility, whereby mummies and bones are likened to dried seeds and tubers from which new life can spring forth (Salomon 1995). Similarly, Arriaza (1995) hypothesized that the preserved remains of the Chinchorro, which also included subadults, some of which were fetuses, could be likened to a dried fish in a marine society. Though dead, the preserved remains could still nourish the living. Within the context of this metaphor, the dead need not be anyone's ancestor. This hypothesis is more consistent with the use of subadult remains, and would also not preclude sacrifice. As for other possible interpretations, such as punishment for criminals or war prisoners, the funerary context of these sacrifices makes those possibilities seem less likely. Clearly, more work is necessary, both in identifying the specific patterns involved and then in associating those patterns with an underlying belief system. As more sites, such as Santa Rita B, add to our understanding of when, where, and who was involved in these practices, a

clearer picture of *why* these behaviors occurred should emerge.

ACKNOWLEDGEMENTS

We acknowledge the following people and institutions for their invaluable assistance in helping us to produce this paper: The students of the 2004, 2005, and 2006 field seasons; Metropolitan State College of Denver; The University of Tennessee at Knoxville, Cartographic Services Laboratory; Haagen Klaus; the California Institute for Peruvian Studies; and the Institute for Andean Studies.

REFERENCES CITED

- Arriaza, Bernardo T.
1995 *Beyond Death: The Chinchorro Mummies of Ancient Chile*. Washington, D.C.: Smithsonian Institution Press.
- Bass, William M.
1995 *Human Osteology: A Laboratory and Field Manual*, 4th edition. Columbia: Missouri Archaeological Society.
- Benson, Elizabeth P. and Anita G. Cook
2001 Preface. In *Ritual Sacrifice in Ancient Peru*, edited by Elizabeth P. Benson and Anita G. Cook, pp. ix - xii. Austin: University of Texas Press.
- Bourget, Steve
2001 Children and Ancestors: Ritual Practices at the Moche Site of Huaca de la Luna, North Coast of Peru. In *Ritual Sacrifice in Ancient Peru*, edited by Elizabeth P. Benson and Anita G. Cook, pp. 93-118. Austin: University of Texas Press.
- Brown, James A.
1995 Andean Mortuary Practices in Perspective. In *Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 391-406. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Buikstra, Jane E.
1995 Tombs for the Living . . . or . . . For the Dead: The Osmore Ancestors. In *Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 229-280. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Buikstra, Jane E. and Douglas Ubelaker, editors
1994 *Standards for Data Collection from Human Skeletal Remains*. Fayetteville: Arkansas Archeological Survey Research Series 44.

- Carmichael, Patrick H.
1995 Nasca Burial Patterns: Social Structure and Mortuary Ideology. In *Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 161-188. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Dillehay, Tom D.
1995 Introduction. In *Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 1-26. Washington, D. C.: Dumbarton Oaks Research Library and Collection.
- Dulanto, Jalh
2002 The Archaeological Study of Ancestor Cult Practices: The Case of Pampa Chica, a Late Initial Period and Early Horizon Site on the Central Coast of Peru. *Archaeological Papers of the American Anthropological Association* 11 (1):97-117.
- Gaither, Catherine
2004 *A Growth and Development Study of Coastal Prehistoric Peruvian Populations*. Ph.D. dissertation, Tulane University.
- Gaither, Catherine, Jonathan D. Kent, Victor Vásquez Sánchez, and Teresa Rosales Tham
2008 Mortuary Practices and Human Sacrifice in the Middle Chao Valley of Peru: Their Interpretation in the Context of Andean Mortuary Patterning. *Latin American Antiquity* 19(2): 109-123.
- Gennep, Arnold van
1960 *The Rites of Passage*, translated by Monika B. Vizedom and Gabrielle L. Caffee. London: Routledge and Kegan Paul.
- Hecker, Gisela and Wolfgang Hecker
1992 Ofrendas de huesos humanos y uso repetido de vasijas en el culto funerario de la costa norperuana. *Gaceta Arqueológica Andina* 6:33-53.
- Kent, Jonathan D., Teresa Rosales Tham, and Victor Vásquez Sánchez
1999 Informe final, temporada 1998: Manejo eco-sustentable y desarrollo cultural del complejo arqueológico Santa Rita "B". Informe sometido a la Comisión Técnica de Arqueología, Instituto Nacional de Cultura, Lima, Perú.
- Klaus, Haagen D. and Manuel Tam
2009 Surviving Contact: Biological Transformation, Burial, and Ethnogenesis in the Colonial Lambayeque Valley, Peru. In *Bioarchaeology and Identity in the Americas*, edited by Kelly J. Knudson and Christopher M. Stojanowski, pp. 126-152. Gainesville: University of Florida Press.
- Larson, Pier M.
2001 Austronesian Mortuary Ritual in History: Transformations of Secondary Burial (Famadihana) in Highland Madagascar. *Ethnohistory* 48:123-155.
- McCormac, F.G., A.G. Hogg, P.G. Blackwell, C. E. Buck, T. F. G. Higham, and P. J. Reimer
2004 SHCa 104 Southern Hemisphere Calibration 0-11.0 cal kyr BP. *Radiocarbon* 46(3):1087-1092.
- Millaire, Jean-François
2004 The Manipulation of Human Remains in Moche Society: Delayed Burials, Grave Reopening, and Secondary Offerings of Human Bones on the Peruvian North Coast. *Latin American Antiquity* 15(4):371-389.
- Nelson, Andrew
1998 Wandering Bones: Archaeology, Forensic Science and Moche Burial Practices. *International Journal of Osteoarchaeology* 8:192-212.
- Salomon, Frank
1995 "The Beautiful Grandparents"; Andean Ancestor Shrines and Mortuary Ritual as Seen Through Colonial Records. In *Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 315-354. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Scheuer, Louise and Sue Black
2000 *Developmental Juvenile Osteology*. New York: Academic Press.
- Shimada, Izumi, Ken-ichi Shinoda, Julie Farnum, Robert Corruccini, and Hirokatsu Watanabe
2004 An Integrated Analysis of Pre-Hispanic Mortuary Practices: A Middle Sicán Case Study. *Current Anthropology* 45 (3):369-402.
- Stuiver, M. and Reimer, P. J.
1993 Extended ¹⁴C Data Base and Revised Calib 3.0 ¹⁴C Age Calibration Program. *Radiocarbon* 35 (1):215-230.
- Sutter, Richard C.
2003 Nonmetric Subadult Sexing Traits: A Blind Test of the Accuracy of Eight Previously Proposed Methods Using Prehistoric Known-Sex Mummies from Northern Chile. *Journal of Forensic Sciences* 48 (5):927-935.
- Ubelaker, Douglas H.
1999 *Human Skeletal Remains; Excavation, Analysis, Interpretation*. 3rd edition. Washington, D.C.: Taraxacum.
- Verano, John W.
1986 A Mass Burial of Mutilated Individuals at Pacatnamu. In *The Pacatnamu Papers*, Volume 1, edited by Christopher B. Donnan and Guillermo A. Cock, pp 117-138. Los Angeles: Museum of Cultural History, University of California.
- 1995 Where Do They Rest? The Treatment of Human Offerings and Trophies in Ancient Peru. In

- Tombs for the Living: Andean Mortuary Practices*, edited by Tom D. Dillehay, pp. 189-228. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- 1997 Human Skeletal Remains from Tomb 1, Sipan (Lambayeque River Valley, Peru); and their Social Implications. *Antiquity* 71(273):670-683.
- 2000 Paleontological Analysis of Sacrificial Victims at the Pyramid of the Moon, Moche River Valley, Northern Peru. *Chungará* 32(1):61-70.
- 2001 The Physical Evidence of Human Sacrifice in Ancient Peru. In *Ritual Sacrifice in Ancient Peru*, edited by Elizabeth P. Benson and Anita G. Cook, pp. 165-184. Austin: University of Texas Press.
- Weiss-Krejci, Estella
- 2001 Excarnation, Evisceration, and Exhumation in Medieval and Post Medieval Europe. In *Interacting with the Dead: Perspectives on Mortuary Archaeology for the New Millennium*, edited by Gordon F.M. Rakita, Jane E. Buikstra, Lane A. Beck, and Sloan R. Williams, pp. 155-172. Gainesville: University of Florida Press.
- White, Tim D. and Pieter Folkens
- 2005 *The Human Bone Manual*. San Diego: Elsevier Academic Press.

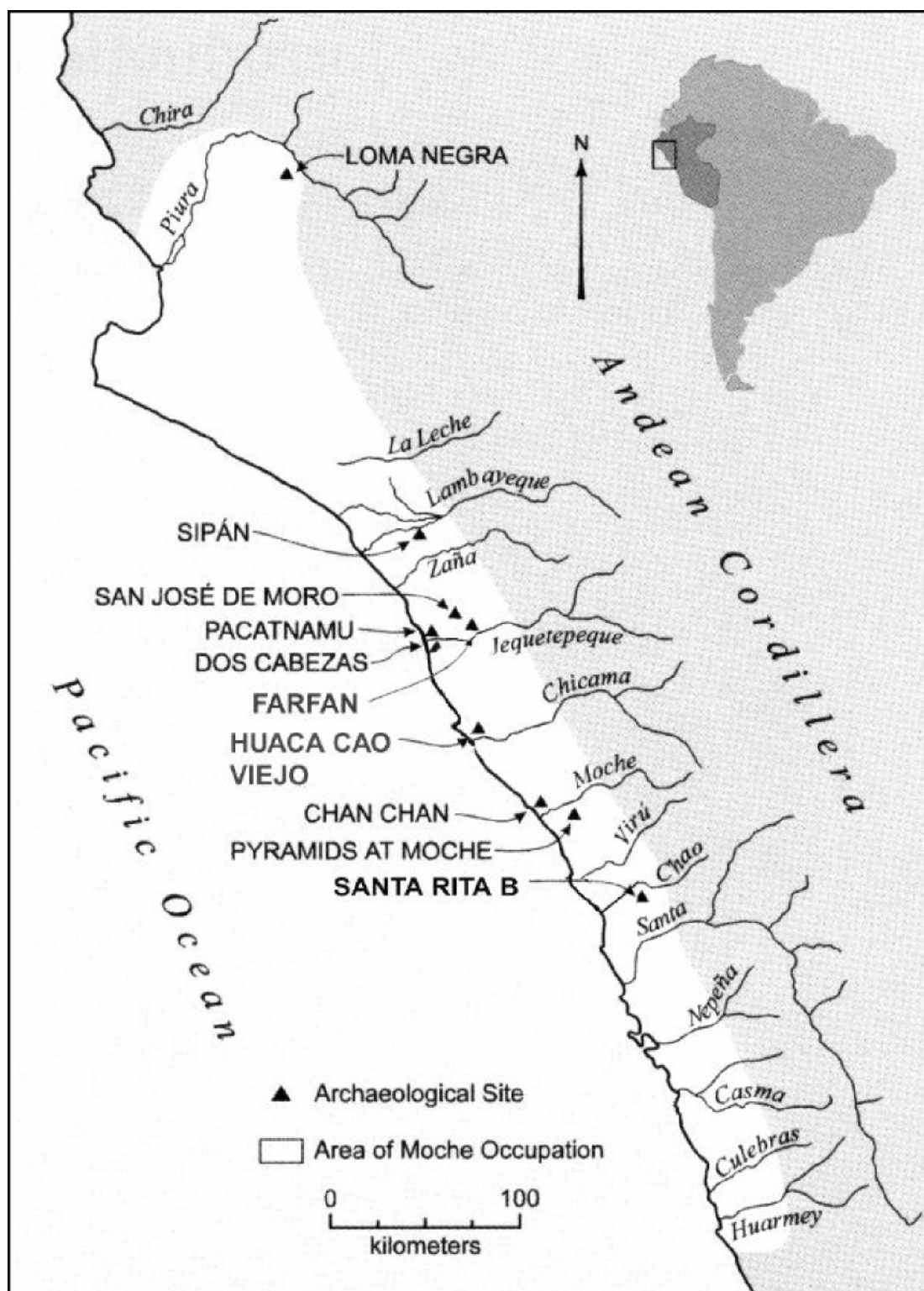


Figure 1: Map showing the location of Santa Rita B (after Donnan 1997, figure 1).

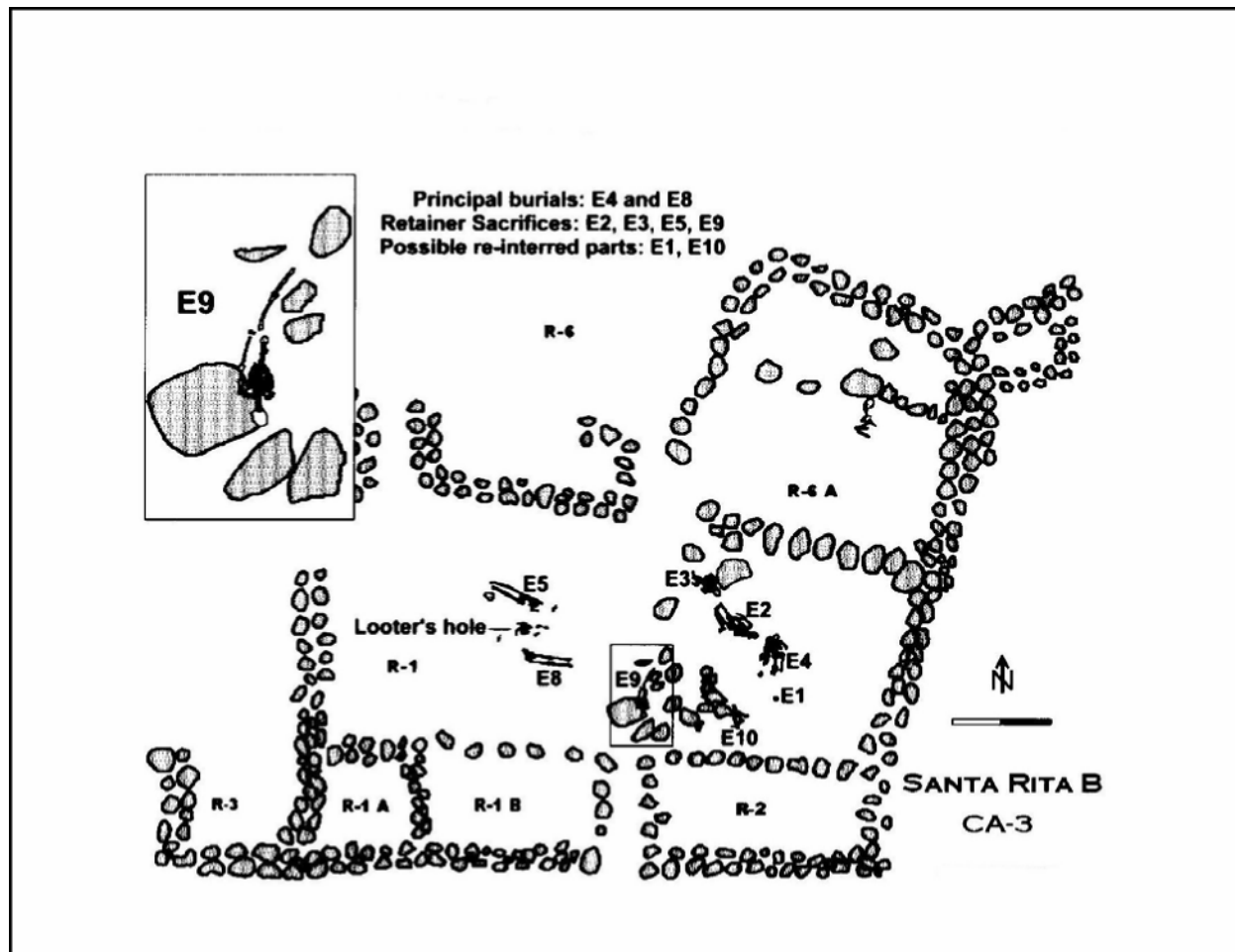


Figure 2: Plan view of CA3 showing the locations of the sacrifices and burials.

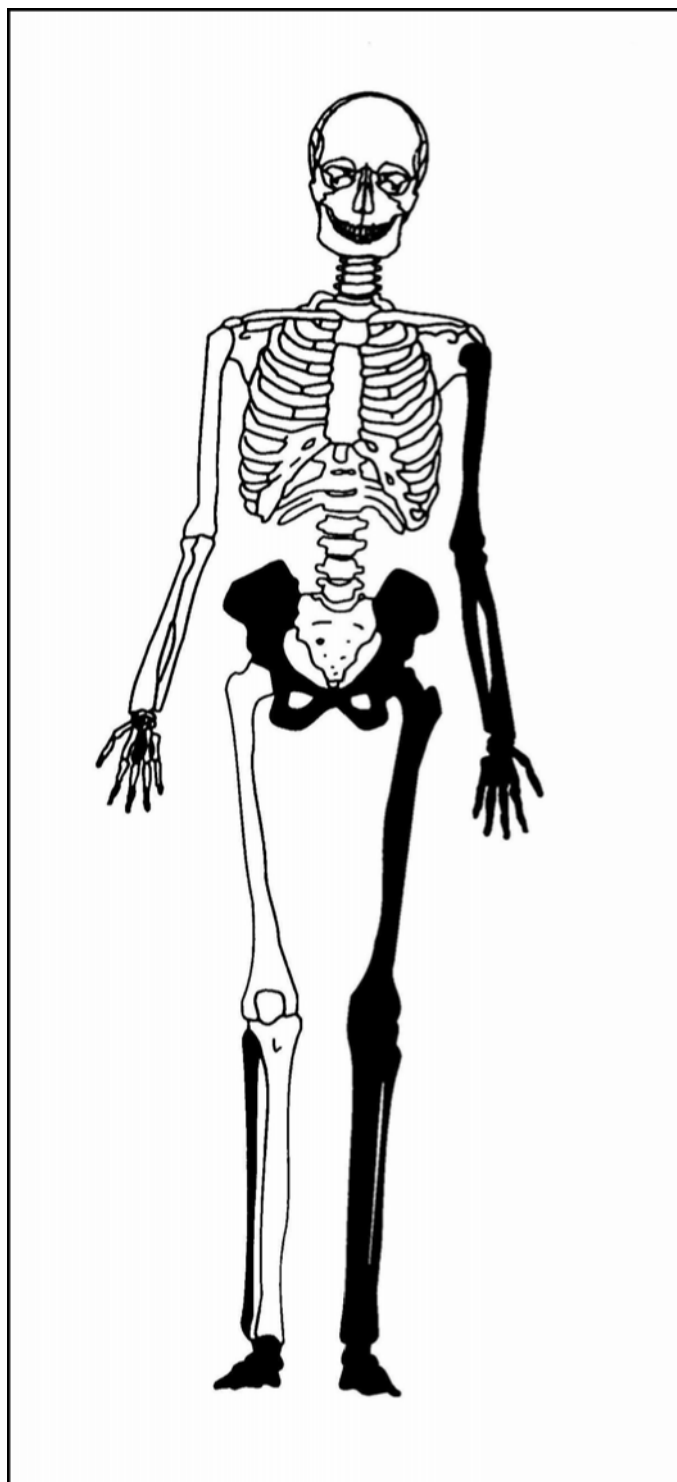


Figure 3: Drawing demonstrating missing bones (in black) from Entierro 9.

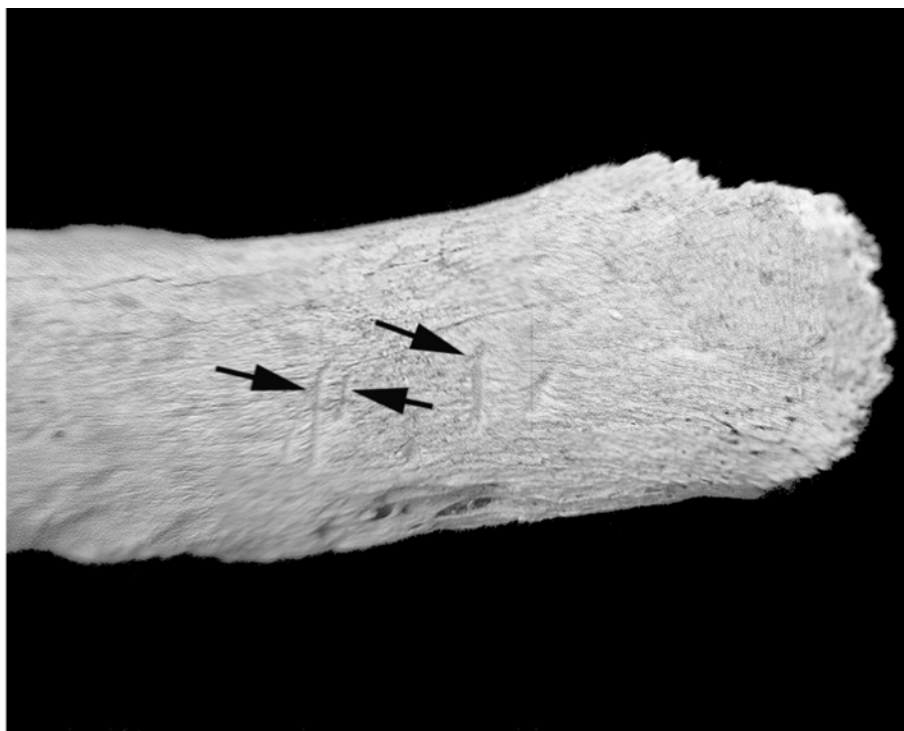


Figure 4: Cut marks on rib, Entierro 9 (arrows).



Figure 5: Cut mark on sternebra, Entierro 9 (arrow).

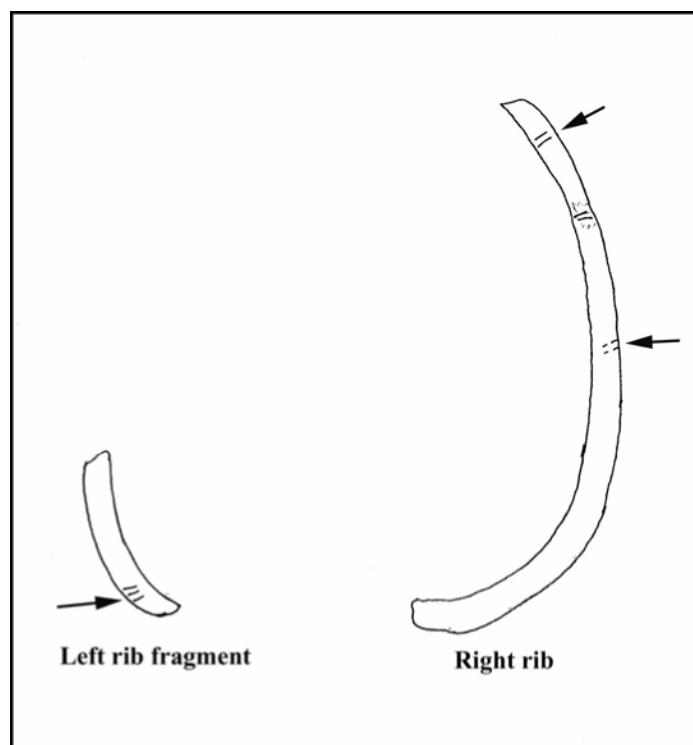


Figure 6: Drawing showing the location of cut marks on the ribs (arrows).



Figure 7: Photo of perimortem fracture of the femur, Entierro 9.



Figure 8: Photo of radiating fracture on the cranium, Entierro 9 (arrow).



Figure 9: Photo of the rocks covering the body of Entierro 9.



Figure 10: Photo of large rock "nestled" into the body cavity of Entierro 9.



Figure 11: photo of Entierro 9 after the rocks have been removed. Note the crushing injuries to the thorax as demonstrated by the depression of the rib cage relative to the neck and head.