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Flies, Mochicas and burial practices: a case study from Huaca de la Luna, Peru

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ABSTRACT

Study of a specific insect fauna from a pre-Columbian Moche grave, on the north coast of Peru, reveals burial practices, notably an estimation of the corpse's exposure time prior to burial, and compares New and Old World beliefs concerning flies and death.

1. Introduction

The use of forensic entomology in archaeological investigations is relatively recent and the literature on this topic remains scarce. Nevertheless, such studies could be especially valuable in the following ways: understanding mortuary practices (Gilbert and Bass, 1967; Faulkner, 1986; Dirrigl and Greenberg, 1995; Bourget, 1998; Nystrom et al., 2005; Huchet, 2010); taphonomy of the cadavers (Wood, 1976; Wylie et al., 1987; Huchet et al., 2009); human parasites in past civilisations (Ewing, 1924; Capasso and Di Tota, 1998; Rick et al., 2002; Reinhard and Buikstra, 2003); and, lastly, as a mode of disease transmission among the ancients (Raoult et al., 2006).

The *post-mortem* interval (PMI) is the time since death. It may be hours, days, months, etc. During that period cultural practices have a direct influence on the way the body is treated; biotic factors play a role as well. Although it is obviously impossible to estimate the PMI in an archaeological context, the faunal combinations associated with a burial, and the biology of the recovered species, might provide valuable information on the "history" of the cadaver. The specificity and possible relevance of the associated specimens and distinct protocols implemented during archaeological investigations (sifting at 300 μm; flotation, etc.) led one of us (Huchet, 1996) to propose a distinct terminology for this specific field of research: "Funerary Archaeoentomology" (l'Archéoentomologie funéraire).

The *Huacas de Moche* site is located on the northern coast of Peru, in the vicinity of Trujillo, 550 km north of Lima. The archaeological complex includes two monumental pyramids built as a series of platforms: *Huaca del Sol* (Temple of the Sun) and *Huaca de la Luna* (Temple of the Moon), separated by a vast urban centre. This site is regarded as the "capital" of the Southern Moche region.

Archaeological excavations carried out by Dr C. Chauchat and his team since 1999 on the Uhle Platform, located at the foot of "Huaca de la Luna" (Fig. 1) have recovered many well-preserved insect remains from graves that were directly associated with human skeletons or from inside ceramic vessels placed as offerings. The presence of necrophagous insects in Moche graves has been reported (Donnan and Mackey, 1978; Verano, 1995; Donnan and McClelland, 1997; Franco et al., 1998; Bourget, 1998, 2001; Millaire, 2004), and archaeologists have suggested that, in some cases, the corpses may have been exposed prior to burial to satisfy an as yet unexplained ritual. The present study of insect remains found in a Moche simple burial (Burial 45) focuses on the possible duration of exposure and the significance of flies in Moche culture.

2. Historical context

The Mochica (or Moche) culture is one of the pre-Columbian civilisations in Peru. It flourished from about AD 100 to 750 (Bawden, 1996) on a narrow desert coastal strip of northern Peru,

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Fig. 1. Pyramid of the Moon. At the base, on the right, is the Uhle platform excavated by the Franco-Peruvian archaeological team. Cerro Blanco mountain in background (photo C. Chauchat, 2004).

between the Andes and the Pacific. The name "Moche" was suggested in the 1920s by the Peruvian archaeologist Julio C. Tello after an ancient language spoken in that region, the *Muchik*. This pre-Inca culture had been characterised previously as proto-Chimú by the German archaeologist Max Uhle, the first to conduct excavations at a Moche site (*Huacas of Moche*) in 1899 (Uhle, 1913). Toward the middle of the XXth century, the Peruvian scholar Rafael Larco Hoyle (1946, 1948), considered the founder of "Mochicology", established the first stylistic chronology based upon the Mochica stirrup-spout vessels (Quilter, 2002). Recent archaeological investigations show that Larco's sequence must be re-examined because Mochica society, during its seven hundred years, was not as homogeneous as he had assumed (Castillo and Uceda, 2008).

The Mochica civilisation developed a sophisticated art and technology that did not exist in preceramic times. Peruvian and foreign archaeological teams since the 1980s have broadened our knowledge of Moche contributions revealed in their mastery of metallurgy, fine textiles, technological skill in their irrigation systems, and monumental adobe temples called huacas. Not least are the brilliant painted ceramics and vessels with complex realistic and mythological scenes. The study of fine-drawn Mochica ceramics, mural paintings, and jewellery has revealed a rich corpus of iconographic themes, including scenes of warriors in battle, decapitation, and sacrifice. Recent investigations conducted by the Canadian archaeologist S. Bourget (1997, 1998, 2001, 2006) at Huaca de la Luna, show that some of these horrific scenes are realistic portrayals. His excavations reveal the temple as a very important ceremonial centre which included a funerary platform as well as a huge sacrificial area. The archaeological evidence from this sector indicates that the bodies of the victims were often dismembered or decapitated, and were sacrificed during distinct episodes of torrential rains, possibly coinciding with an El Niño event.

3. Moche burial patterns

In recent decades, archaeological excavations conducted at many Moche sites have provided important data on Moche funeral practices (Donnan and Mackey, 1978; Bourget, 1998; Tello et al., 2003; Millaire, 2004). Undoubtedly, human remains were a central component of the Moche religious system evidenced by complex mortuary practices as delayed burials, grave reopenings, and secondary offerings of human remains (Nelson, 1998; Millaire, 2004; Gutierrez, 2008). Donnan (1995; Donnan and McClelland, 1997) accurately described and illustrated a wide range of funerary treatments and burial patterns of the Mochica, that were generally linked with the social rank of the deceased. The corpse was initially prepared and then placed in a sort of coffin made of canes tied together. The body was traditionally buried lying on its back in a fully extended position, head to the south, the upper limbs extended along either side of the body. In graves of high-ranking persons, copper elements, either simple plates or recycled objects, are usually found in the mouth, hands, and under the feet. Three kinds of funerary structures have been noted: a burial chamber made of adobe; a simple pit burial; or a "boot tomb" that refers to its peculiar shape in cross-section (Nelson, 1998). Grave goods are always present, including personal artifacts, e.g. disc-shaped ear ornaments, headgear with metal elements, copper spatulae, ceramic vessels, gourd containers, and bones of sacrificed animals (mostly llama) (Goepfert, 2008). In some cases, red pigment on the facial bones of the skull indicates that the face of the deceased was painted at the time of burial (Donnan, 1995). Insect remains such as fly puparia have been found in many graves between the mats and textiles, directly associated with buried skeletons, or even inside ceramic vessels placed as offerings (Donnan and Mackey, 1978). In some cases, the cadaver may have been exposed in the open for some time prior to burial, suggested by the state of decomposition (Nelson, 1998), and by the presence of a specific necrophagous entomofauna (Faulkner, 1986).

4. Archaeological context

Since 1999, a Franco-Peruvian team, headed by the French archaeologist Claude Chauchat, has been excavating at the foot of Huaca de la Luna, in a sector approximating the area formerly investigated by Max Uhle at the end of the XIXth century (Chauchat, 2000; Chauchat and Gutierrez, 2007, 2008a,b; Chauchat et al., 2008). Between 1999 and 2009, 57 graves were discovered and excavated on the eastern half of the platform,[1] and at the foot of the Huaca. Depending on their location, the tombs present two distinct patterns: burial chambers, including a variable number of lateral niches on the platform; or pits dug in sand at the foot of the Huaca.

The hyper-arid environment of the north coast of Peru fosters the remarkable preservation of archaeological materials, e.g. organic remains and textiles, which are perishable in other climates. These conditions favoured the recovery of a particularly well-preserved entomofauna intimately connected with the decomposition processes of the individual in grave 45.

5. Material and methods

5.1. Excavation of grave 45

Excavated in 2006, grave 45 was located in the southern part of the northern sector of the Uhle Platform, close to another grave (T47); the grave was in a single pit at the top of a wall of adobe belonging to an adjacent pre-existing funerary chamber. The numerous insect remains were located around the skeleton, somewhat more concentrated at the four cardinal points of the pit.

5.2. Physical anthropology

Grave 45 contains a young adult male (20–30 years old), originally placed in a funerary bundle. The skeleton lies on its back, oriented north-south, head to the south. The skull has distinct spots

[1] Named "Uhle platform" in reference to the German archaeologist.