

TEXTILE PRODUCTION DURING THE INKA OCCUPATION (1.450-1.536 A.D.) IN MAURO VALLEY (SEMI-ARID NORTH, CHILE, 31°S): FROM THE STUDY OF CAMELID REMAINS AND BONE TOOLS

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INTRODUCTION AND BACKGROUND

Knowledge about textile production in environments where this type of evidence is not preserved is limited, for example in the Andes Mountains in the Semi-arid North of Chile. This biases discussion of production in a context where the local population was subject to the influence of the Tawantinsuyu. The present work discusses textile production during the Inka period in the Mauro Valley (IV Region, Chile). The valley is located on the southern fringe of the Semi-arid North, Chile. Two of its sites are analyzed in this work: MAU094 and MAU067 (Figure 1). The sites records include occupations in the Late Intermediate Period (LIP: 1000-1450 A.D.), characterized by the presence of Diaguita communities; and the Late Period (LP: 1450-1536 A.D.), when the area fell under Inka influence (Pavlovic *et al.*, 2011).

METHODOLOGY

Osteometric analysis was carried out on 279 bone specimens of adult camelids from MAU067 and MAU094 (complete first and second phalanges, astragalus). The standards of Von den Driesch (1999) were used. The measurements were compared with current skeletons of *Lama guanicoe* and *Lama glama* from the area.

Bone tool analysis followed morphological criteria, defined by their active or distal end (Buc 2011, Scheinsohn 1997). Three categories were identified: (1) blunt pointed, (2) pointed and (3) tools with no active end. A group of artifacts was selected for analysis of microscopic wear patterns using the Scanning Electron Microscope (SEM).

RESULTS

For the LIP, the measurements suggest wide dispersal and the presence of 2 groups. The first is represented by measurements similar to and larger than those of current and Late Archaic (LA: 4000-2000 BP) camelids, which come from guanaco, i.e. smaller than the equivalent bones of current llamas and guanacos. These bones could have come from llama-like animals of a small domestic morphotype, since they do not coincide morphologically with alpacas or vicuñas (Figure 2)

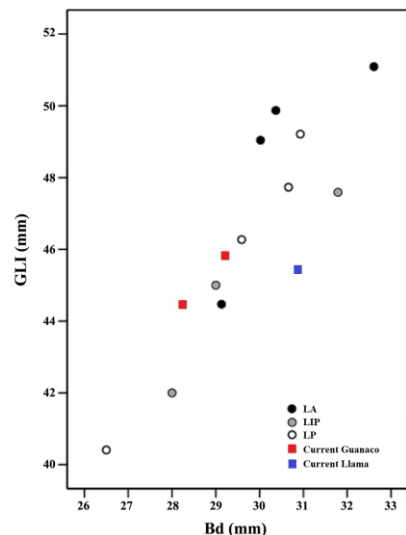


Figure 2: Greatest length lateral (GLI sensu von den Driesch 1999) and breadth distal (Bd sensu von den Driesch 1999) for the astragalus.

For the LP, a third and larger morphological type is superimposed on the previous situation, which could come from larger llamas, coinciding with the irruption of the Inka into the area (Troncoso *et al.*, 2009).

The bone tools are mainly blunt pointed (169) and pointed (45), as well as tools with no active end (n=140).

Some of the blunt pointed tools are morphologically similar to the beaters used for

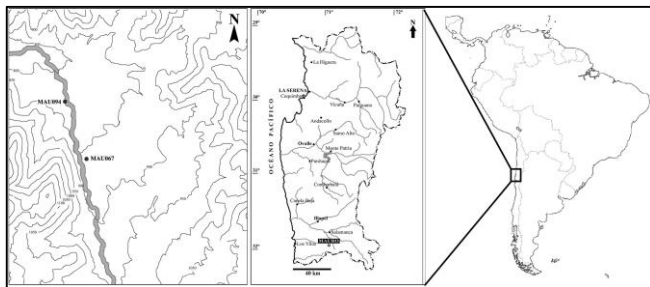


Figure 1: Location of the MAU067 and MAU094 sites.

tightening the weft of the cloth, and shuttles used in textile production by current Andean populations (Arnold and Espejo, 2013). Pointed tools with flat sections show similar morphological characteristics to needles.

The presence of 13 bone whorls, 9 lithic whorls; 105 ceramic preforms and 13 ceramic circular whorls have been recorded.

DISCUSSION AND CONCLUSIONS

During the LP, the Diaguita underwent significant social, political and economic transformations, reflected in their material culture such as ceramics, rock art and the zooarchaeological record (Rivera *et al.*, 2014; Troncoso and Pavlovic, 2015; Troncoso *et al.* 2016). One such transformation is the evident introduction of larger llamas, which were used as cargo animals to transport resources over long distances (Troncoso 2004, López *et al.*, 2015a).

It is in this scenario, where there is a greater quantity of bone tools related to textile production, that we can identify the existence of complete textile operative chains in both study sites (*sensu* López Campeny, 2016). The high frequency of tools destined for textile production reflects an intensification in the elaboration of yarns, wefts and weaves, facilitated by the constant presence of animal fiber sources, like the small domestic camelids present.

Textile production during the LP, inserted in the Inca logic of reciprocity and redistribution (Murra, 1975), could have been part of exchange networks between communities. Intensification may be linked to tribute payments, for example under the *mita* system, with goods transported on cargo llamas, present in both sites.

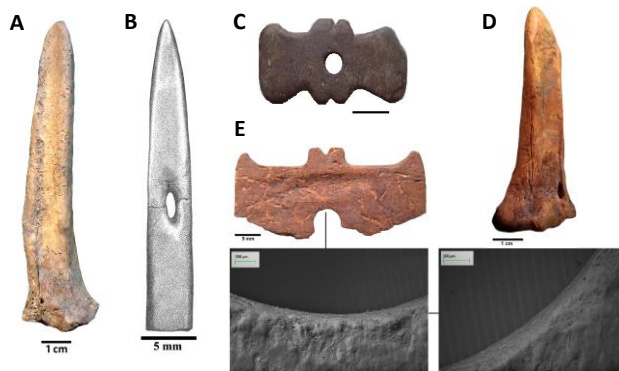


Figure 3: A: Beater. B: Needle. C: Combarbalite whorl; D: Beater; E: Bone whorl: 500x. Polish obliterating manufacture traces. Figure 3b drawn by Elvira Latorre.

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