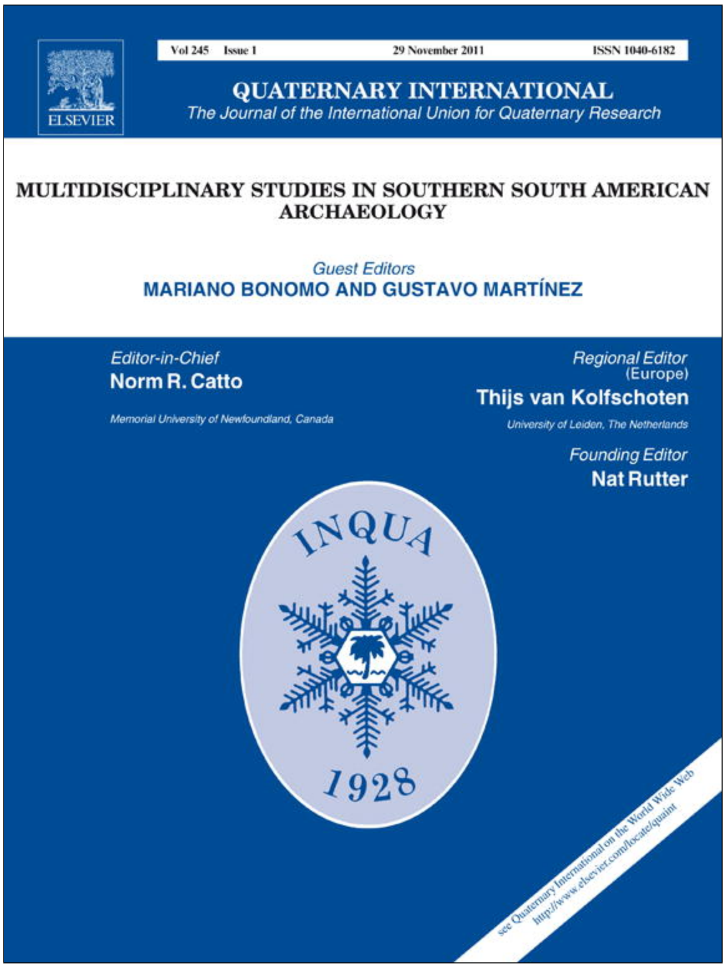
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# *Inka* occupation of enclosure 1- *Kancha II*, at El Shincal de Quimivil (Catamarca, Argentina)

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ABSTRACT

The territory of the *Inka* once covered parts of the present-day countries of Colombia, Ecuador, Peru, Bolivia, Chile, and Argentina, as their political control spread across South America's Andean region. The site of El Shincal de Quimivil, located in the western part of the province of Catamarca in northwestern Argentina, is thought to have served as one of the most important provincial capitals within this territorial range. This article discusses evidence from excavations conducted in Enclosure 1 of the *Kancha II* structure, a typical Inka architectural space located at the foot of one of the site's artificially terraced hills. The enclosure's excavation has yielded abundant assemblages of archaeological evidence, including ceramic, botanical, faunal, and lithic materials, as well as a centrally located mortar elevated on a platform of stones. The ceramic assemblages are notable for their diversity of typological styles and a high proportion of Inka-type pottery. Faunal materials include discarded food remains, especially camelid bones, and bone projectile points. Plant macroremains identified as maize (*Zea mays*) and algarrobo (*Prosopis* sp.) were present in the archaeobotanical assemblages. In terms of architectural analysis, the use of space and the materials excavated notably set this enclosure apart from other areas studied at El Shincal de Quimivil. This unique spatial arrangement is probably directly related to festival events, where El Shincal de Quimivil would have played a central role within the dynamics of the southern Inka provinces. Enclosures such as the one discussed here may have served as lodging for visitors during large gatherings.



## 1. Introduction

During the 15th century, the Andean world witnessed the expansion of the Inka, one of the state-level societies with the greatest territorial range in the pre-Hispanic America (Fig. 1). This extensive political society exercised its influence or control over a diverse set of populations throughout the Andes. A series of social, political, and economic conditions that represented the interests of the state combined with local realities, giving shape to new social and cultural landscapes in each region that became integrated into the *Tawantinsuyu* (Rostworowski de Diez Canseco, 1999). The political strategies proposed to have existed in this period include those coercive in nature as well as more diplomatic ones, with fundamental variations based upon the nature of the relations established with local groups and the particular objectives of the state (Williams, 2002–2005).

The nature of the Inka presence in Northwestern Argentina (NWA) was based upon these same principles. The precise timing of the entry of the Inka into NWA remains a subject of debate between those who favor the radiocarbon evidence and those who rely more upon ethnohistorical information (Bárcena, 2007). The first group believes that the Inka had already become established by the beginning of the 15th century, while the others believe that the first arrival occurred around 1470 A.D. during the reign of Topa Inka. The motive for Inka expansion into the region is also a subject of debate. Some argue that valuable mineral resources (gold, silver, and copper) were the main factor that made control of the region attractive (González, 1980; Raffino, 1981). Another perspective focuses on the attainment of new lands for agricultural expansion as well as the need for the labor sources to support this (Williams, 2000). Factors more ideological in nature also have to be considered, such as those

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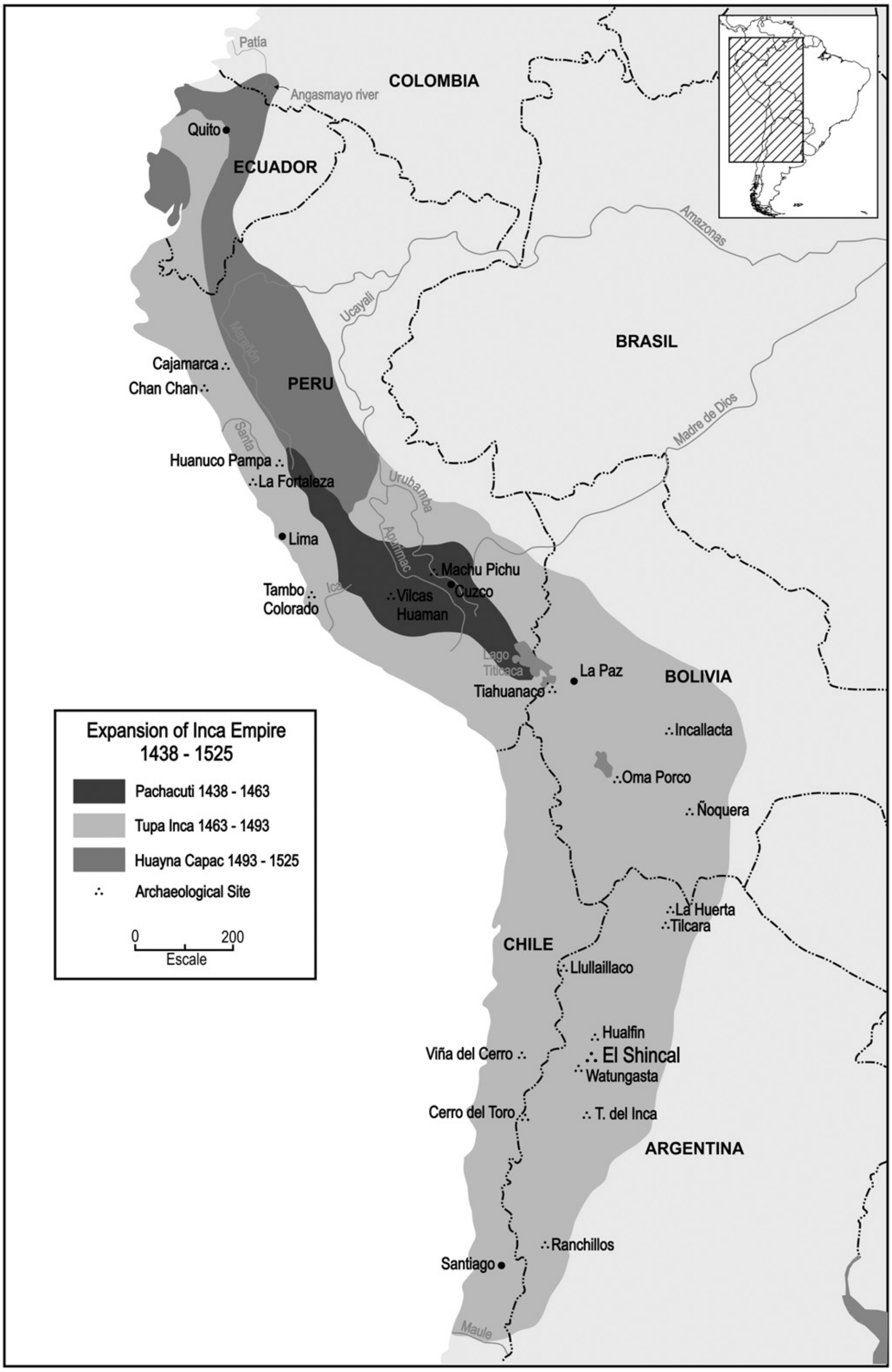


**Fig. 1.** Map of the Tawantisuyu expansion (from Raffino, 2007: 301, Fig. 7.1).

related to the ambition for conquest carried out by an individual Inka to prove his *ataw*, or prowess as a warrior, and to thereby legitimate his power to command (Ziólkowski, 1996). The roles played by factors such as these are still under debate, and the reality may in fact have been a combination of these various motives for Inka expansion. In any case, NWA became annexed into the *Tawantinsuyu* as the most extensive of the four main regions, the *Killasuyu*. This area was in turn subdivided into various provinces, and NWA contained five of these. The one known as *Quiri–Quiri* would correspond to the area where the study site is located.

The Inka attempted to use various means by which to express and impose their cosmology and ideology, including a bold pattern of Inka spatial construction. The emulation of physical characteristics and symbolic meanings related to the landscape of Cusco was one of the ways in which they sought to enforce a strong cultural domination, through the pursuit of common experiences. One of the manifestations of this was the creation of settlements that made symbolic reference to Cusco in terms of both architecture style and spatial patterning. Some historians such as Guaman Poma de Ayala have called such settlements "New Cuscos" (Hyslop, 1990; Farrington, 1998). In this type of settlement many of the main political and religious practices were performed, and such locations were also used for the large, state-sponsored festivals such as, for example, the *Inty Rayme* (D'Altroy, 2003).

El Shincal de Quimivil is one of the locations most representative of this phenomenon, because of its monumental state-level architecture and reproduction of symbolic patterns of Cusco's spatial structure (Farrington, 1999). In this Inka settlement -which was a provincial capital during the time of Huayna Capac, the region's penultimate governor before the arrival of the Spanish- the urban planning, architecture, and ceramic and metal artifacts that survive today represent evidence of an intense political dynamic involving centralized control over a wide territory.

Several specific areas of the site have been excavated and analyzed in the framework of research activities that have taken place since 1992, and which are still ongoing (Capparelli, 1997; Raffino, 2004; Igareta, 2008; Giovannetti, 2009; Yapura Liz, 2009). One of these areas, *Kancha II*, has provided abundant and diverse archaeological evidence that has indicated the important role of El Shincal de Quimivil as a critical site related to Inka control over the southern Andean region.

The term *kancha* has a variety of meanings reflecting the diverse contexts in which it may be applied, but it always makes reference to the Andean organization of space (Matos Mendieta, 1994). Various authors (Gasparini and Margolies, 1977; Hyslop, 1990; Matos Mendieta, 1994; Raffino, 2007) have promoted the characterization of a *kancha* based upon its form, construction plan, and domestic organization of the rooms in relation to a central patio. In this way a *kancha* is described as consisting of a set of rectangular buildings oriented around a central open space. These are enclosed by a rectangular perimeter wall, with one or two access doorways.

These investigations are set within a context oriented towards an understanding of El Shincal de Quimivil's political role at both the local and regional levels, as well as its status as a provincial Inka capital. These perspectives have been developed over the course of the history of research at the site (Raffino et al., 1997; Capparelli, 1997; Raffino, 2004, 2007; Igareta, 2008; Giovannetti, 2009; Yapura Liz, 2009).

The objectives of this paper are contribute to a deeper understanding of the dynamics and functioning of Kancha II through of the evidence from the excavated enclosure that here is discussed (E1). This evidence will be addressed through a multidisciplinary set of analyses focused on archaeobotanical, archaeofaunal, and ceramic remains, as well as the application of sedimentological and architectural studies.

## 2. El Shincal de Quimivil: introduction to the archaeological site and its environmental characteristics

The archaeological site of El Shincal de Quimivil is spread across the northwestern edge of an alluvial cone formed by the actions of two rivers: the Quimivil, which has a permanent flow and is therefore the main agent of formation, and the Hondo, which has intermittent flow. The geographical coordinates, taken at the center of the site, are 27° 41′11″ S and 67° 10′ 44″ W, in the mid-west of the province of Catamarca in NWA. The slopes of the area's Zapata Mountains and Shincal Hill are covered by a thin layer of friable materials formed by eluviation, solifluction, and aeolian deposition. The color of these sediments is gray to light brownish-gray and grain size is that of sand mixed with silt and clay. It is similar to loess but without much differentiation from its lithological components. This main sediment, and other types deposited together with it by river action, covers the surface of the Quimivil alluvial cone, and it also now covers the surface of the archaeological site (González Bonorino, 1972).

The natural landscape in which the site is found is dominated by dense tree and shrub vegetation (Capparelli, 1997). Species known commonly as algarrobos are dominant (*Prosopis flexuosa* and *Prosopis chilensis*). Also present are trees including chañar (*Geoffroea decorticans*) and tala (*Celtis tala*), and shrubs including shinqui (*Mimosa farinosa*). There are also numerous species of annual plants representing primary growth, many of which are used in traditional medicine. The fruits of trees including the algarrobo, chañar, and molle (*Schinus fasciculatus*) were used extensively, and continue to be used today, for production of foods and beverages including *chicha*, flour, and *patay* (bread). Inka agriculture was focused mainly upon maize (*Zea mays*) and potatoes (*Solanum tuberosum*), as well as to a lesser degree on beans (*Phaseolus vulgaris*), squash (*Cucurbita* sp.), quinoa (*Chenopodium quinoa*), cotton (*Gossypium* sp.), and peanuts (*Arachis hypogaea*). In terms of animal foods, the Inka raised llamas (*Lama glama*), alpacas (*Vicugna pacos* – a species not found in Argentina), guinea pigs (*Cavia porcellus*), and ducks (*Cairina moschata*). A wide variety of hunted wild birds and animals were also utilized, such as the ostrich-like rhea (*Pterocnemia pennata*) and forest duck (Anatidae), and mammals including vicuñas (*Vicugna vicugna*) and the North Andean deer, or taruca (*Hippocamelus antisiensis*) (D'Altroy, 2003).

This analysis of the architectural structures and the numerous excavations that have taken place at El Shincal de Quimivil have revealed that the site was an important Inka provincial capital, referred to in the specialized literature as *wamani* or "New Cusco" (Farrington, 1999; Raffino, 2004). The structures that make up the site are indicative of this, which consist of a large, 175 m × 175 m central plaza or *aukaipata*, five *kallanka* or large-sized rectangular public buildings, and a central *ushnu* that is notable for being the largest known from Argentina and Chile.

Excavations in two buildings, the *ushnu* and one of the *kallanka*, have provided evidence of two distinct phases of the site's occupation, a proper Inka phase and a second phase from a later period, which corresponds to the native peoples' battles of resistance against the Spaniards in the 17th century. The *ushnu* contained a large number of Inka offerings such as Pacific Ocean mollusk shells (*Argopecten purpuratus*), ceramics, and metal objects, as well as another type of offerings linked to European objects and other indigenous sites (Raffino et al., 1997; Capparelli et al., 2007). It has also been possible to demonstrate the production of great quantities of food and beverages for serving at massive communal feasts (Giovannetti, 2009). This is based upon thirty-three multiple mortar assemblages with more than three-hundred grinding units dispersed across the alluvial cone, with their presence demonstrating the potential not only for production of a great amount of grinding work – potentially performed by many people at the same time – but also the location of these in the immediate vicinity of production areas for *chicha* and food. All of this evidence has combined to form the basis for the conclusion that El Shincal de Quimivil was one of the most important centers during the installation of the *Tawantinsuyu* in areas far away from Cusco.

## 3. Characterization of *Kancha II*

*Kancha II* at the El Shincal de Quimivil site is located to the west of the Western Terraced Hill (Fig. 2). It takes the form of a rectangle approximately 40 m × 20 m, occupying an area of 800 m$^2$. Three enclosures of various sizes are found in its interior (E1: 3.4 m × 5 m; E2: 5 m × 9.5 m and E3: 2.8 m × 6 m), with doorways providing access to a central patio. Enclosure 2 (E2) is the largest of the group, and is divided into two rooms that do not appear to have, at least on

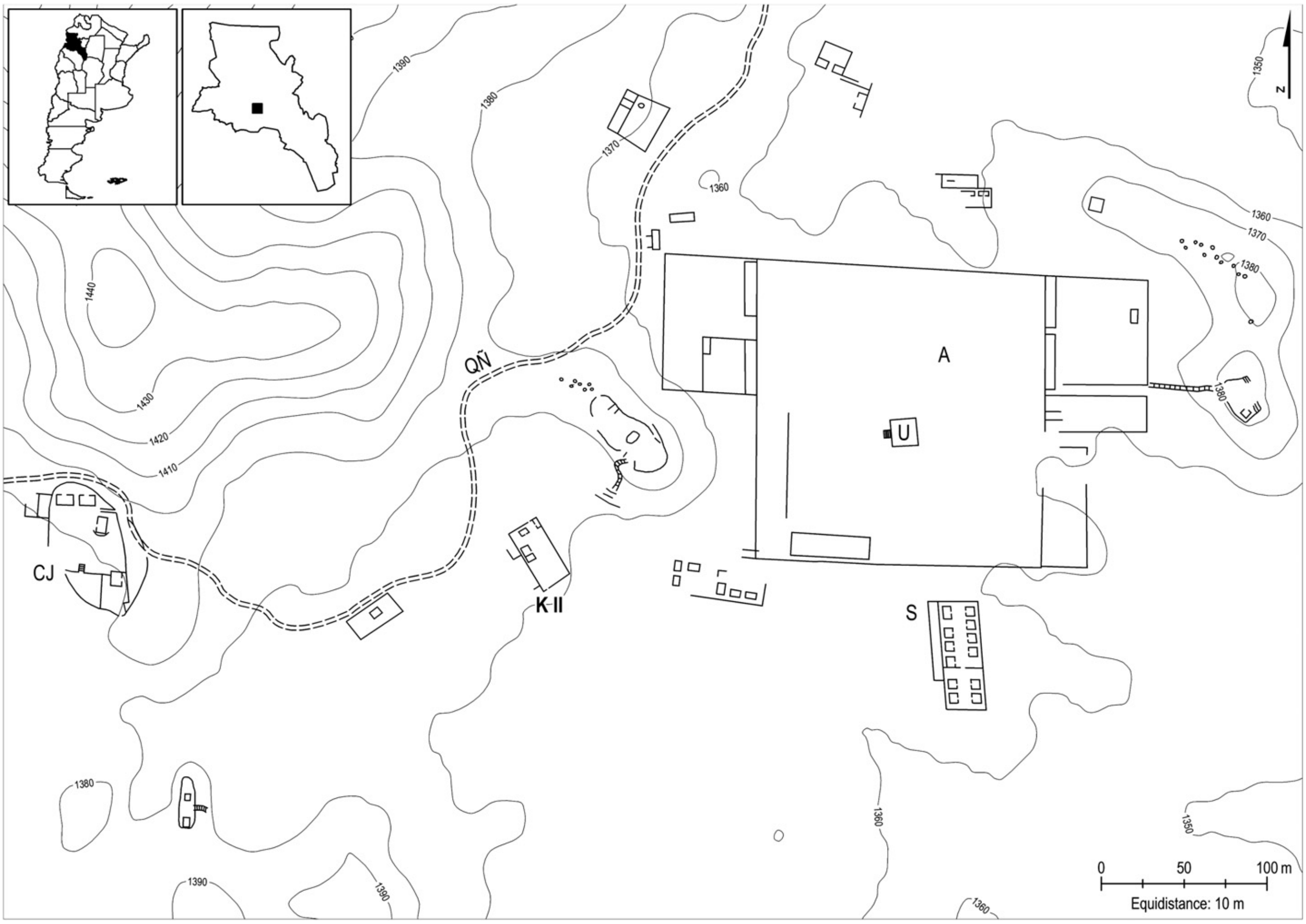


**Fig. 2.** Location of *Kancha II* in relation to the other structures at the El Shincal de Quimivil site: CJ = Casa del Jefe; QÑ = *Qhapaq Ñan*; K II = *Kancha II*; A = *aukaipata*; U = *ushnu*; S = *sinchiwasi*.

the surface, any means of connection with the adjoining room or the central patio.

The construction details of *Kancha II* are similar to those found in other areas of the site such as the *ushnu* and the *kallanka*. The primary construction material is granite blocks that have been extracted from locations close to the site, and which have been partially or fully rounded and carefully selected. In general the width of the walls ranges from 0.60 to 0.80 m. This structure has two access doorways, one to the southwest and the other directly opposite to the northeast.

The interior surface of Enclosure 1 (E1) was completely excavated. A total of 17 $m^2$ were excavated using artificial of 10 cm levels, with various visible changes in the sediment recorded on forms designed for this purpose. The excavations exposed the following sedimentological layers: a) a brown clay sediment to 0.25 m; b) a highly porous sandy gray sediment to 0.75 m; and c) a laminated gray clay sediment to a depth of 1.10 m. In this final sedimentological layer, the presence of one occupation floors could be identified between 0.80 m and 1 m in depth, based upon the greater amount of materials recovered and the sediment compaction.

In the center of the enclosure, a mortar was found elevated 0.54 m above the occupation floor on a pillar constructed of stacked rounded stones, with the mortar mounted in clay (Fig. 3). In the area to the south and south–southeast of the base of the mortar, at the level of the occupation floor, a layer of whitish sediment approximately 4 cm thick was found. From the excavation as a whole a total of 1050 ceramic sherds were recovered, 275 individual archaeofaunal remains (five of which were bone points), fifty plant macroremains, and two chert projectile points.

## 4. Methods and materials

The different classes of objects recovered in E1 (ceramic, bone, botanical remains, and sediment samples) were subjected to specific methods of analysis. Ceramic analysis included macroscopic and binocular loop observations (Hokenn 20X–40X) in order to examine morphological, decorative, and technological features. Special attention was given to classification of the materials according to their decoration, morphology, and chronological origin, as well as by details of the ceramic matrix that could provide information related to production methods (Shepard, 1968; Rye, 1981; Rice, 1987).

The total number of sherds recovered was $N = 1050$, which were cleaned, labeled, classified, and refitted prior to analysis, producing a final sample size of $N = 953$. Materials in this assemblage were not considered if their size (less than 2 cm) or condition prevented analysis of their characteristics. Taxonomic identification was performed for the archaeofaunal remains recovered. Species differentiation for camelids was performed by osteometry aided by multivariate statistical analysis (Principal Components Analysis and Hierarchical Cluster Analysis with Manhattan distance), as well as through dental morphology (Wheeler, 1982; Menegaz et al., 1989; Yacobaccio et al., 1997–98; Izeta, 2007).

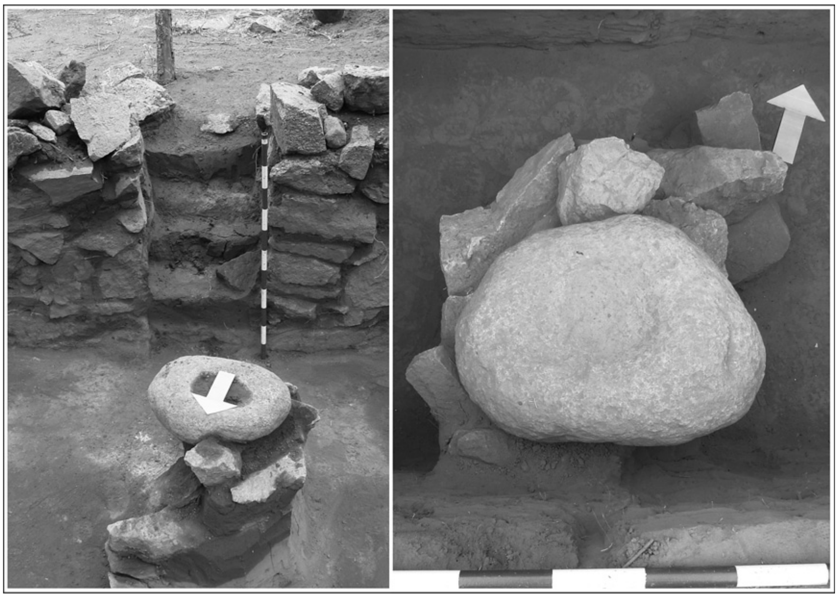

**Fig. 3.** Photographs of the mortar taken in frontal and plan views.

The faunal materials were quantified in terms of NISP (number of identified specimens per taxon), MNI (minimum number of individuals), and MNE (minimum number of elements) (Binford, 1984; Grayson, 1984). For the parts of the camelids represented, the MAU% was calculated (standardized minimum number of animal units) (Binford, 1984). This was done in order to correlate this measurement (using the Spearman coefficient) with the economic utility indices for llamas: MUI (meat utility index) and FUI (food utility index) (Mengoni Goñalons, 1991), as well as with the Mineral Bone Density values (MBD) for camelids (Elkin, 1995). The NISP% was calculated for taxa at the species, genus, or family level, according to the specific case, although this was not done for broader categories (e.g., large mammals), eggshells, and mollusk shell fragments. Bone modifications were analyzed to interpret human uses of the remains, included analysis of cut marks (Blumenschine et al., 1996), breakage attributes (such as chipping voids, grooves, holes, and percussion striations) (Pickering and Egeland, 2006), and thermal alteration (Shipman et al., 1984).

Recovery of archaeobotanical materials was performed using fine-meshed sieves. The carbonized remains were analyzed mainly with the objective of taxonomic identification. For this a binocular loop was used (Hokenn 20X–40X), with the remains compared systematically with the Museo de La Plata's modern plant collections from northwestern Argentina.

A few centimeters below the level of the floor in the enclosure a sedimentological change was detected to the south and south–southeast of the base of the mortar, and a 10 g sample of this sediment was collected for analysis. The sediment was treated with hydrochloric acid (HCl) and its characteristics were observed with a binocular loop (Hokenn 20X–40X), petrographic microscope (Leica 40X–100X), and scanning electron microscope (SEM). This analysis took place at the GEONORTE Institute, Universidad Nacional de Salta.

## 5. Results

### 5.1. Ceramic analysis

Based upon the quantitative/percentage analyses of the identified types, in terms of the artificial levels defined during excavation, a significant increase could be observed in the amount and range of ceramic types recovered between the depths of 0.60 m and the occupation floor detected at 1.10 m. Similar patterns were also seen in other structures analyzed from the site (Raffino, 2004). In these lower levels, and especially in the lowest ones (from 0.90 m to 1.10 m), various ceramic types were found that are considered to have origins in distant regions. The types present included Belén, Yavi, Yocavil, Famabalasto Negro sobre Rojo, Santamariano, Sanagasta, and Sunchitúyoj, among others (Fig. 4).

Ceramic fragments were classified according to their decorative style. Traditionally, the classification of ceramics has been performed based upon decorative motifs and morphology, which may be related to differences in the use of vessels in terms of daily activities, social hierarchies, or different population groups. Certain decorative styles are characteristic of the Regional Development period (Belén, Yavi, Santa María, and Sanagasta) but also continued to be produced during the Inka period (Krapovickas, 1965; Serrano, 1966). Other types first appear with the Inka and can be associated with specialization in production and with greater levels of social complexity, including *Inca Provincial* and *Inca Mixto* (*sensu* Calderari and Williams, 1991), Yocavil, and Famabalasto Negro sobre Rojo (Cigliano, 1958; Williams, 1996). Belén and some other Inka styles may be locally manufactured, but other types are likely to have more distant origins in locations such as the Puna of Jujuy (ca. 600 km), Santa María valley in Catamarca (ca. 160 km) and Chaco-Santiagueña region (ca. 250 km) (Togo, 2004).

It is also important to note the diversity in decoration of Inka sherds such as Cuzco Polychrome, Inka Paya, and Inka Pacajes, as well as the significant frequency of other types of Inka pottery, known as Inka Provincial (Calderari and Williams, 1991) (Fig. 4). The closed forms, arybaloid (high-necked jars) and *ollitas* (jars/pitchers), make up the greatest part of the assemblage, with a clear predominance over plate forms. There are also a significant number of coarse/utilitarian sherds, both with and without the presence of soot, primarily with closed forms (Table 1).

The high percentage of pyroclastic inclusions in the clay matrix is also a feature worth noting, especially when comparison is made with other sites in NWA. Initially identified in the western part of Catamarca province (Cremonte, 1991, 1994), the manufacturing technique used for production of these vessels has been assumed to involve mixing tephra deposits with clay, so that the crystalline mineral fraction has also been incorporated (quartz, mica, feldspar,


**Fig. 4.** Ceramic types present at *Kancha II*, E1: a, b, c, d = Inka; e = Yocavil; f = Famabalasto N/R; g = Yavi; h = Belén; i = Santa María; j = Sunchitúyoj; k = Arybaloid Inka.

etc.). These components are visible during sub-macroscopic and microscopic analyses as part of the non-plastic inclusions (Páez and Arnosio, 2009). The spatial distribution known archaeologically for this practice is becoming considerably wider with more extensive analyses of matrix composition from Inka contexts, and now extends from the modern city of Jujuy in northern Argentina to the city of Mendoza almost 1000 km to the south (Páez and Arnosio, 2009). The effect of this technique in reducing the weight of vessels would have presented a favorable aspect for their medium- and long-distance transport (Páez, 2010).

The frequency by percentage of ceramic matrix containing pyroclastic components in E1 (close to 30%) is significant even in relation to the values obtained in other areas within the site. The analyses performed by Giovannetti (2009) in the areas with multiple mortars and in midden areas, revealed much lower proportions, although there is consistency in the fact that these pyroclastic inclusions are always associated with Inka or Belén pottery.

The overall analysis of this ceramic assemblage suggests, on one hand, a close relationship with state-level practices at the site, as revealed by the stylistic and morphological studies. The abundant presence of shadow plates, as well as arybaloid forms that are highly variable in terms of decoration and morphology, indicates trade between locations linked by archeology and ethnohistory, as part of sustained, state-sponsored congregation practices (Bray, 2003). In this sense, the analysis of morphological parameters indicated the presence of jars have different sizes, especially medium and large, which have been used to liquid storage and serving during the congregation events. The same is inferred about shadow plates that, in the most of cases, have diameters of 15–20 cm, although the height could not be assessed.

Similarly, evidence of styles integrated regionally through the Inka dynamic, and originating in distant territories, could be interpreted in a similar way. Such trade would have been influenced by the development of production technologies that had a material impact on the objects, as is proposed in the case of using high amounts of pyroclastic inclusions in ceramic vessels to reduce weight and create resistance to breakage.

### 5.2. Archaeofaunal analysis

A total of 275 individual remains were analyzed (bones, teeth, mollusk shells, and eggshells), 38 of which could not be taxonomically identified. In the rest of the cases varying levels of taxonomic assignment were possible (Table 2). A large number of specimens (151) were assigned to broad categories (e.g., large or medium mammals, ungulates, artiodactyles), as they did not possess enough diagnostic features to allow more precise identification. The specimen of *Vicugna vicugna* was identified by the dental morphology of the incisors (Wheeler, 1982).

The most abundant remains were those of camelids, which represented 72.15% of the sample (Table 2). The most abundant element for this taxon was the proximal tibia (MAU% = 100), and the next most represented were cranial elements (neurocranial and mandibles) and proximal radio-ulnas (MAU% = 66.66). Next in abundance were limb elements (humeri, scapulas, femurs, distal tibias, metapodials, and phalanges; MAU% = 33.33–50) while the rest of the skeletal elements were found in low frequencies or not at all. The correlations between the MAU% and the variables MBD, FUI, and MUI, showed low correlation values and were not statistically significant: between MAU% and MBD, $r_s = -0.086$ ($p > 0.05$, $N = 31$); MAU% and MUI, $r_s = 0.038$ ($p > 0.05$, $N = 26$); and MAU% and FUI, $r_s = -0.069$ ($p > 0.05$, $N = 26$). Because of this, the camelid skeletal parts were not analyzed in terms of these variables. However, a general predominance of appendicular skeletal parts was observed as compared to parts from the axial skeleton.

Cut marks were present on 21.15% of the camelid bone specimens. The greatest proportion of these were seen on the axial skeletal elements (72.72% on ribs, cervical and thoracic vertebrae, and cranial elements) and were seen in lower proportions on appendicular elements (one humerus and two phalanges). Fractured elements from *Lama* sp. included 40% of the tibias, followed by 20% of the humeri, with levels of fracturing in the others in

**Table 1**
Typological and morphological characteristics of the ceramic sample analyzed. * Early period = pottery assigned to the Early Period (*ca.* 700 BC-650 AD).

| Typological classification | Proportion | Open forms | Closed forms | Indeterminate forms | Pyroclastic inclusions |
|---|---|---|---|---|---|
| Belén | *N* = 46 (4.82%) | 2 | 37 | 7 | *N* = 16 (13.11%) |
| Santa Maria | *N* = 3 (0.31%) | 1 | 1 | 1 | *N* = 1 (0.81%) |
| Sanagasta | *N* = 2 (0.20%) | – | 2 | – | *N* = 2 (1.63%) |
| Inka | *N* = 453 (47.53%) | 63 | 334 | 56 | *N* = 99 (81.14%) |
| Famabalasto N/R | *N* = 8 (0.83%) | 5 | – | 3 | *N* = 0 |
| Sunchitúyoj | *N* = 1 (0.10%) | – | 1 | – | *N* = 0 |
| Yavi | *N* = 2 (0.20%) | 2 | – | – | *N* = 0 |
| Yocavil | *N* = 1 (0.10%) | 1 | – | – | *N* = 0 |
| Coarse/utilitarian | *N* = 3 94 (41.34%) | – | 382 | 12 | *N* = 0 |
| Early period* | *N* = 2 (0.20%) | – | – | 2 | *N* = 0 |
| Indeterminate | *N* = 41 (4.30%) | – | 20 | 21 | *N* = 4 (3.27%) |
| Total | *N* = 953 (99.93%) | 74 | 777 | 102 | *N* = 122 (99.96%) |

relatively equal proportions (metatarsals, femurs, and proximal phalanges; 10%). Evidence of intentional fracturing was seen on one specimen of radio-ulna and one tibia, which had chipping voids, and one phalange specimen, which was grooved. Three specimens with thermal alteration were also observed.

Aves class (10.12% of the sample) were represented by cranial elements, coracoids, sternums, and anterior and posterior members. One of the *Pterocnemia pennata* egg shell fragments (*sensu* Apolinaire and Turnes, 2010) was burned. The canids (5.06%) were represented by autopod elements (calcaneum, astragalus and metapodials). The first of these may show signs of disarticulation, but because the specimen was highly weathered this feature could not be securely determined.

For smaller mammals, both *Lagostomus maximus* (3.79%) and *Ctenomys* sp. (1.26%) are represented by cranial elements. For *Dolichotis patagonum* (1.26%), only a single tibia specimen was found, which had been thermally altered. *Chaetophractus vellerosus* (6.32%) was represented by skeletal bony plates.

Five bone points were found in the sample. Four of these were made from the shaft of an artiodactyl metapodial (Fig. 5: 1, 2, 4, 5), while the type of bone used to make the fifth could not be determined (Fig. 5: 3). These projectile points have no stem and the base and lateral edge are variable in the degree of concavity. One of these has a suspension hole through to the center (Fig. 5: 5). Also, the distal epiphysis of a proximal camelid phalange and a bivalve specimen both had holes, probably made for the purpose of using these as pendants (Fig. 5).

**Table 2**
Taxonomic abundances.

| Taxon | NISP | NISP% | MNI |
|---|---|---|---|
| Mollusca | 2 | – | 2 |
| Aves indeterminate | 7 | – | 2 |
| *Pterocnemia pennata* (eggshels) | 2 | 10.12[b] | 1 |
| Anatidae | 1 | – | 1 |
| Mammalia indeterminate | 18 | – | – |
| Large mammals | 114 | – | – |
| Ungulata | 3 | – | 1 |
| Artiodactyla | 4 | – | 1 |
| *Lama* sp. | 52 | – | 2 |
| *Lama* cf. *glama* | 4 | 72.15 | 1 |
| *Vicugna vicugna* | 1 | – | 1 |
| Medium mammals | 15 | – | – |
| *Chaetophractus vellerosus*[a] | 5 | 6.32 | 1 |
| Canidae | 4 | 5.06 | 1 |
| *Dolichotis patagonum* | 1 | 1.26 | 1 |
| *Lagostomus maximus* | 3 | 3.79 | 1 |
| *Ctenomys* sp. | 1 | 1.26 | 1 |
| Total | 237 | 100 | – |

Large mammals: more 50 kg; Medium mammals: between 1 and 20 kg.
[a] skeletal bony plates.
[b] Eggshells were not included in calculations.

Fifty percent of the large mammal ribs showed signs of heating action on parts of them, but this did not cause a high degree of alteration, which suggests cooking by roasting (Gifford-Gonzalez, 1989; Kent, 1993). However, the majority of thermally altered remains (whether medium mammal, large mammal, camelids, *D. patagonum*, or indeterminate) probably reflect the result of discarding bones into combustion features or their use as a supplement to wood or plant fuels, given the large percentage of materials with a high degree of alteration (84% of the burned remains are carbonized or calcined) (*sensu* Kent, 1993). We must clarify that not found other evidence of burning in E1.

### 5.3. Analysis of the calcareous accumulation

On the floor of the enclosure, in the area to the south and southeast of the base of the mortar, a sediment anthropogenic accumulation covering an area of approximately 1 m × 0.75 m was found, with medium compaction and well-defined limits. At the macroscopic level this sediment is whitish in color, fine-grained, and chalky in texture. There are also flattened, sub-rounded, white-colored fragments present, which have a maximum size of 3 mm and an average size less than 1 mm, with a percentage that does not exceed 10–15%. The sediment also contains a very low proportion (2%) of sub-rounded lithic fragments 1 mm in size, as well as small grains of quartz and biotite, although in much smaller proportions than the finer sediment that makes up the predominant fraction of the sample.

Using microscopic analysis with polarized light, a large carbonaceous component could be identified in the sample. A concretion of micritic (calcareous mud) and microsparitic (very fine-grained calcite) composition was identified, which could be related to calcareous concretions that occur in the local soils (*caliche*). With the electron microscope, the calcite crystals that make up the concretion could be observed.

One possible explanation for this sediment's presence is based on anthropogenic deposition in the area where it was found, having been removed from its original location and transported to E1. Its restricted location in a specific area of the enclosure, its location in relation to the mortar, and the presence of clear boundaries in relation to the surrounding earth, suggest an origin external to the enclosure. With this perspective, the possible uses of this material in view of its context in the excavated enclosure can be considered, as well as the likelihood of a relationship with the central grinding feature (see discussion).

### 5.4. Analysis of archaeobotanical remains

A variety of carbonized seed pod remains were recovered as part of a broader assemblage of carbonized remains from woody species


**Fig. 5.** Modified faunal elements. 1 to 5: bone projectile points; 6: distal epiphysis of a proximal camelid phalange with hole; 7: bivalve with hole.

(Table 3). This demonstrates that some kind of fireplace must have existed within the enclosure. Plant macroremains identified included algarrobo (*Prosopis* sp.) and maize (*Zea mays*). The former consisted of endocarps, the inner portion of the fruit pods that surround the seeds. This reflects usage of the algarrobo pods, which are the only edible part of the plant. The maize remains consisted of very well-preserved kernels, found almost whole. They correspond to species with higher proportions of soft endosperm, which are those more suited for production of flour through grinding. Small cob fragments were also identified, consisting specifically of the cupules that contain each kernel.

## 6. Discussion and conclusions

In order to put the evidence presented here in its proper context, it is necessary to first make a few general clarifications. The topic of festival gatherings in the Inka state has been addressed in recent years from an archaeological point of view (Moore, 1996). But beyond this, these gatherings were also a phenomenon with an importance that researchers of Andean ethnohistory make insistently clear (Murra, 1978). It must be remembered that the open spaces – plazas or *aukaipata* Inka, are known to have been areas fundamentally oriented towards the festival gatherings sponsored by the state (Moore, 1996), and this is why they are commonly occurring elements in important Inka sites. Ethnohistoric and ethnographic information related to the central Andean region provides some insightful perspectives in regard to social gathering practices. Bray (2003) carried out a highly detailed analysis regarding the culinary practices and material culture associated with festival occasions. This author points out that foods such as maize, which were typically consumed by members of all social strata, did play an important role in certain special events, above all in the form of consumption of *chicha*. However, the role of consumption of meat also had its own significance. Typically, meat was a food that was limited and strictly controlled, and if the "common" people had access to meat, it was largely restricted to consumption of certain wild animals such as deer, rabbits, and partridges. In the case of camelids, greater restrictions on consumption existed for those with lower economic status during ordinary times. For Bray (2003), therefore, the most remarkable aspect of the study of foods used during festival gathering events is the presence of a high proportion of products obtained from domestic animals, especially camelids, which provide higher levels of caloric yield, and which tend to play a fundamental role.

**Table 3**
Archaeobotanical remains recovered in E1.

| Taxa | *Prosopis* sp. | | *Zea Mays* | | | Total |
|---|---|---|---|---|---|---|
| Plant parts | Seed | Endocarp | Grain | | Cupules | |
| Varieties | | | soft endosperm | hard endosperm | | |
| N | 11 | 7 | 19 | 5 | 8 | 50 |

From the same perspective of analyzing festive gatherings, Bray highlights among the material culture elements the use of jars for the transport and service of *chicha*, and shadow plates mainly for serving meat. A variety of other types of vessels such as pots and pedestal-based pots, which would also be expected to develop signs of exposure to fire, would also be involved in these scenarios (Murra, 1978; Bray, 2003; D'Altroy, 2003).

By this point at El Shincal de Quimivil, a substantial body of evidence related to the phenomenon of large social gatherings has been accumulated, beyond simply the site's architectural details, which allows a deeper consideration of this topic. The multiple large mortars found distributed widely across Quimivil's alluvial cone must have played a central role, and not just for processing products such as maize and algarroba by grinding. It has also been demonstrated that the areas immediately adjacent to the mortars were spaces where various steps in the production of *chicha* – at least the cooking steps for certain – were carried out. The more than three-hundred grinding units could accommodate an estimated 150 workers, who could potentially use them simultaneously, demonstrating that great quantities of foods and beverages were processed at El Shincal de Quimivil. This consideration makes it possible to conclude that great numbers of people converged at certain times at the site. This is also supported by the relatively high percentage of Inka-style jars recorded among the ceramic assemblages from the site (Raffino, 2004; Giovannetti, 2009).

In terms of architecture, the large central plaza and the ceremonial buildings reflect an obvious effort to structure the space to support the development of the festival practices fundamental for maintenance of the state's political vision. From this perspective then, *Kancha II* must have been created in relation to the great gathering practices that took place there because of the site's status as the region's Inka capital. The evidence presented here carries forward this line of reasoning.

In this way, the richness and diversity of the material record at Enclosure 1 is remarkable, and consists of a great quantity of objects that can be associated with non-local sources and activities. This is the case, for example, for the bone points with morphological features traditionally associated with groups from other regions (Lafón, 1956-1957). One of these presented in this work (Fig. 5: 3) is similar to others found at the archaeological site of La Paya in the province of Salta (ca. 260 km) (Boman, 1908; Pl. VI, Fig. 13 i, *j*; González and Díaz, 1992:61, lam. XIa); while the others (Fig. 5: 1, 2, 4, and 5) are similar to one from a Sunchitúyoj context at the site of Coroespina (Beltrán, province of Santiago del Estero; ca. 250 km), found today in the collection of the Museo de Ciencias Antropológicas y Naturales "Emilio y Duncan Wagner", located in Santiago del Estero.

The distinctive ceramic types and the abundance of typical Inka forms such as shadow plates and arybaloid, which according to ethnohistorical and archaeological information are associated with state-sponsored festival practices, indicate that Enclosure 1 was a place with a unique type of social value and political significance. The convergence in the same enclosure of such a diversity of decorative styles (some of which can be associated with locations outside of northwest Argentina), re-emphasizes the site's extra-regional component, above all when compared to other areas of the site more closely connected with production practices.

The discovery of the mortar in the enclosure, in addition to its morphological characteristics and its central, elevated location, is an unprecedented element of the archaeological record found at El Shincal de Quimivil, and it may be connected with some type of practice distinct from those typically assigned to this type of artifact. If its use is in fact associated with the calcareous sediment deposit, it is possible to consider the idea of another class of specialized activity, perhaps related to the production of pigments. On this subject, archaeological studies emphasize the use of carbonates in the production of pigments for application to ceramics (Cremonte et al., 2003). However, even if information is not at hand regarding their similar use as body paints, inquiry into this topic in the ethnohistoric literature may be worthwhile to determine whether such usage may have existed and could in fact be indicative of a ceremonial context (Puente and Quiroga, 2007).

The archaeofaunal remains show a predominance of camelids (more than 70% of the sample), and with clear evidence of human use. Within this family both domesticated (llamas) and wild (vicuña) species were identified, with the habitat of the latter being the Puna region, an ecological zone distinct from that of El Shincal de Quimivil's location. This reflects the fact that the use of these camelid species was subject to various restrictions and other criteria, not only in terms of appropriation and management of resources, but also in the symbolic manner in which they were integrated into the Inka world. Father Bernabé Cobo ([1553] 1892) described certain regulations for their use, making clear the fact that the products derived from wild resources were restricted to certain social segments, and that their procurement was invested with a type of symbolism based upon a desire to control over-exploitation. These practices known as *chaku*, which still take place today, were in part characterized by collective hunting of vicuña with the goal of obtaining wool. The dominance of camelids in the remains from Enclosure 1, the faunal resource with the highest caloric yield, may be related to the higher levels of meat consumption associated with this type of gathering event (Bray, 2003). As the representation of parts does not show a significant correlation with regard to economic utility, the high quantity of remains from the appendicular skeleton as compared to the axial skeleton may be related to practices focused not just on obtaining meat, but also extraction of bone marrow.

In the case of burrowing mammals such as *Ctenomys* sp., *L. maximus*, and *C. vellerosus*, interpretation is more difficult, because of the fact that remains were scarce. Also, attributes indicative of human use were not observed, so the entry of these remains into the archaeological record could in fact be due to the natural presence of these taxa. It must be kept in mind that the first two of these taxa are represented only by cranial elements and the third by skeletal bony plates. However, their remains have also repeatedly been excavated across the site as a whole, and these remains tend to show thermal alteration (Lema et al., 2009; Giovannetti, 2009). These taxa probably represented valued resources for their meat, with the presence of their remains indicating that local wild animals were hunted. Finally, some of the archaeofaunal remains from the enclosure reflect cooking activities, while others seem to represent discarding of bones in combustion features or even their use as a supplementary fuel.

Also worth noting are the bone points, as well as objects that were possibly used for adornment, such as the camelid phalanx and the bivalve specimen. The presence of these, taken in conjunction with the predominance of camelid remains in E1 – *Kancha II* (more than 70%), when compared to other areas of the site such as area 5f – *sinchiwasi* – (58%) and *Kallanka* 1 (50%), may also reflect practices related to the festive gathering context.

From the botanical record, the presence of maize identifiable as belonging to the broad "floury" category (varieties with greater amounts of soft endosperm more useful for flour production) can be highlighted, in contrast to types used for other food preparation methods such as *pororó* (varieties with a higher amount of hard endosperm used mainly for production of popcorn). This pattern represents evidence for the production of foods based upon maize flour. The presence of fireplace features was also indicated by the presence of carbonized woody plant remains.

The E1 seems to have existed as an articulated unit oriented towards specific types of practices at El Shincal de Quimivil. Even if more common, everyday activities also took place there, such as preparation and consumption of food, grinding, etc., a distinctive set of elements also seems to indicate activities of another kind entirely, linked to congregational practices and festive gatherings of great importance, as discussed above. The diversity of ceramic types, many decorated and with origins in distant locations, along with the presence of particular vessel forms oriented towards food transport and service, such as jars and shadow plates, reflect the uniqueness of the setting, also supported by the presence of the projectile points and bone ornaments. This pattern contrasts with discoveries from other areas of the site such as area 5f or *sinchiwasi*, where evidence points to permanent occupation by non-local groups in settlements oriented towards the provision of tributary labor (Raffino, 2004). An example of this type of evidence from the 5f location is the predominance of ordinary ceramic types (more than 80%) and the greatest amount of evidence for consumption of wild species from the region (Lema et al., 2009).

Little is known for northwestern Argentina regarding spaces specifically meant to house people participating in the festivals and ceremonies sponsored by the Inka state. The same is true for the activities specifically involved with preparation of the range of material goods needed for these types of gatherings. It seems likely, however, that the enclosures such as E1 would have played an important role in these events, and these ideas will hopefully be further substantiated by the continuing research taking place at the site.

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