An Approach to Spatial Configuration in the Regional Developments Period in the Coranzulí Area (Jujuy Province, Argentina)

María Carolina Rivet

Abstract In this paper, we present the advances of the research that we have been developing in the area of Coranzulí (department of Susques, province of Jujuy). The surveys carried out allowed to identify a series of archaeological sites of different characteristics, ranging from dispersed to semi-conglomerate settlements, corresponding to the Regional Developments Period. Based on this information, we contribute to the discussions on the logics of population settlement in the Puna of Jujuy, during this period and also inscribing these sites in a wider regional context.

Keywords Settlement patterns · Regional Developments Period
Jujuy Puna

1 Introduction

For the Regional Developments Period (RDP) (AD 1200–1450), in what is now the Jujuy Puna, there are records of different sorts of settlement that extend from *pukara* to small towns located in low zones and scattered or dispersed residential spaces. The articulation between these different types of settlement is a topic that bears on the development of pastoral and agro-pastoral activities and the significance of the cult of the ancestors, and their implications for the forms of social organization during this period (Nielsen 2006b, 2008). There have been different ways of approaching this subject in the region, for example in works by Albeck (2001) and Albeck and Ruiz (2003) for the area of Casabindo, those of Angiorama (2011) for Rinconada, Nielsen et al. (2015) for San Juan Mayo and Vaquer et al. (2014) for Cusi Cusi.

The Late Regional Developments Period was characterized by great social changes across the whole area and was accompanied by the rise of new political

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A. Álvarez Larrain and C. Greco (eds.), *Political Landscapes of the Late Intermediate Period in the Southern Andes*, The Latin American Studies Book Series, https://doi.org/10.1007/978-3-319-76729-1_9

forms (Nielsen 2006a). At the same time, there was a process of demographic growth connected to the formation, as a general feature, of population conglomerations which were more or less permanent and stable. Within these, the *pukara* type is inhabited sites located at elevated points, with difficult and controlled access, and at times with defensive architectural features (Ruiz and Albeck 1997). These settlements would have been linked to a determinate territory with the aim of control over agricultural and pastoral resources, and the routes of exchange (Tarragó 2000). The intensification of agricultural practices was another characteristic of the period, based particularly on the development of irrigation technologies (Albeck 1993). Different sources of evidence indicate that the period was marked by a high degree of conflict between groups, connecting this phenomenon with control over resources (Ruiz and Albeck 1997; Nielsen 2002). However, this did not prevent the maintenance of networks of exchange over short and long distances, and these even expanded during this time (Tarragó 2000; Nielsen 2002). Nielsen (2006a) proposed that forms of organization existed within a schema of decentralized power, and with different levels of successive social aggregation. In this sense, there would have been relatively small groups, which in turn could have been integrated into other larger ones, without implying the loss of identity or political autonomy. The ancestors would have acted as a form of depersonalization of power, and, at the same time, as a foundation for it. The common ancestor was constituted as a mark of identity, contributing to the reproduction and maintenance of the social order and the assertion of the rights of the group over demarcated pieces of territory (Nielsen 2006c).

In this article, we discuss the logics of spatial occupation on the basis of the research we have carried out in the area of Coranzulí, focusing in three sites: Yerbaijo, Canalita and Licante. The first two correspond to small semi-conglomerate towns, and the last to one of a dispersed type. Using this research, we are interested in addressing three questions that play out at different scales: firstly, the interrelation of these sites with other areas, on a regional scale, especially Casabindo; secondly, the analysis of the possible relations specifically between these sites, on a local scale; and lastly, we will consider the study we have made of more than a hundred *chullpas* recorded in the area as a way to pose questions about the role that the cult of the ancestors might have played.

Firstly, we will connect the formal characteristics of the settlements, and the construction techniques used and the ceramic types that have been recovered with those described for Casabindo, looking at important similarities (Albeck 2010). Next, the articulation between the two sorts of settlement (semi-conglomerate and dispersed) is a key subject for understanding the logics of spatial occupation, particularly with regard to the strategies of mobility that characterize pastoral societies. For these purposes, we are interested in posing questions about the possibility that they had been used by the same domestic groups within seasonal displacements, in articulation with other productive practices, like those of agriculture. Whilst not proposing a direct parallel, we consider that ethnographic information about pastoral groups in the High Andes can provide a frame of reference for investigating the strategies that these groups might have deployed.

Finally, the large number of *chullpas* recorded in our area raises questions for us about the possible role of these structures within wider social frameworks.

The sites that we will present were identified from archaeological surveys that we have been doing in the area in pursuit of a comprehensive knowledge of this sector of the Puna, which has not been subject to systematic research, at least in relation to the period of time that concerns us. In each of the sites, we conducted a general mapping survey, generating preliminary ground plans, and in turn, there has been a detailed study of the different architectural structures. In each case, we have collected diagnostic materials from the sites.

1.1 State of the Art

One of the pioneering works on settlement patterns in the Jujuy Puna was that of Madrazo and Ottonello (1966) who made a classification of sites based on architectural features, association with cultivated areas and degrees of concentration of built-up space. Later, Ottonello and Krapovickas (1973) developed an ecological model for the endorheic basins (*bolsones*) of the Central Puna, made up of four levels of altitude; within this model, they managed to produce a spatial order for the settlements in relation to ecological levels, identifying an 'optimal strip' which concentrated the conditions that were appropriate for production and human settlement.

Alfaro de Lanzone (1983) analyzed the system of settlement in Doncellas, Sayate and Casabindo, spatially classifying the data on sites and agricultural areas that could be found in the RDP. On the basis of surveys, collections of surface material and deep excavations Albeck (1993) produced a chronological and spatial organization of information about agricultural systems and settlements in the region of Casabindo. In this work, she developed Ottonello and Krapovickas's (1973) ecological model and made a concrete application of it.

Albeck and Ruiz (2003) has proposed that within the Cuenca de Miraflores, the characteristic pattern of settlement of the RDP would have been based on a series of small towns of different features and dimensions. The most common would have corresponded to the type they define as 'semi-conglomerate' or small towns situated in accessible areas, with stone 'dwellings of rectangular floor plan (for example, Doncellas, Pueblo Viejo de Potrero, Ojo de Agua and Calaverioj). However, the same authors have identified another three types of settlement: the 'small town-pucará type' (e.g. Pucará de Rinconada and Pucará de Tucute), 'archaeological mound sites' (Yoscaba and Pozuelos) and 'small towns with dwellings of circular floor plan' (Pueblo Viejo de Tucute and Santa Ana de Abralaite).

For the area of the Cuenca de Pozuelos, Angiorama (2011) studied the 'rural area' surrounding the Pukará de Rinconada, recording different divisions, which were isolated or formed small groups, often associated with agricultural infrastructure. In Cusi Cusi, various forms of spatial analysis are being developed by Vaquer et al. (2014), whose results principally indicate an occupation extending from the RDP to

the Colonial period. The ethno-archaeological work carried out by Yacobaccio et al. (1998) in the area of Susques contributes to our understanding of continuities at the spatial level within the framework of the pastoral economy of camelids. It is also worth mentioning the recent research by Nielsen's team in the valley of the Río Grande de San Juan (Nielsen et al. 2015), which record a dispersed settlement of the population between AD 800 and 1200, and a strong emphasis on conglomerate settlements from the 13th century onwards. However, the dating that has been carried out shows that both types of settlement might have been contemporaneous.

This brief overview offers evidence of certain common characteristics within the logics of occupation for the Puna region during the period. We can observe two important issues for our work. On the one hand, the existence of settlements of different dimensions, and on the other, their coexistence with dispersed residential spaces. In any case, there are still many questions concerning the relations and connections between them.

2 Description of the Area of Study and the Archaeological Sites

The area of study is situated in the surroundings of the present town of Coranzulí (Susques department, province of Jujuy, Argentina), in a *Puna* environment at 3500 m above sea level (Fig. 1). The whole area is framed to the east by the Sierra de Incahuasi and to the north by the Sierra de Quichagua, so that the small town is at the foot of the Cerro Coranzulí. The topography is made up of narrow defiles flanked by rocky outcrops or cliffs (*peñas*) of volcanic origin (ignimbrites), traversed by permanently running rivers. A good part of our area of work is crossed by the Río Coranzulí, which receives water from different minor tributaries, and in turn, to the south runs into the Río de las Burras, coming to be part of the valley of Miraflores-Guayatayoc. Coranzulí belongs to the Puna Phytogeographic Province (Cabrera 1976), with vegetation of various steppe types: shrub, herbaceous, halophile, sammophile and peatland (*vega*). It forms part of what is known as the Dry Puna (Cabrera 1976) which has greater moisture than other parts on the Puna, with the formation of lakes, permanently flowing rivers and relatively continuous vegetation.

The surveys allowed us to detect a number of archaeological sites linked to residential use corresponding to the Regional Developments Period, which present different characteristics in relation to their spatial formation. Firstly, we record two small semi-conglomerate settlements, and others of smaller scale, which could be associated with single domestic units.[1] In turn, we have identified spaces of agricultural use, panels of rock art and a number of *chullpa* structures distributed across the whole area, including on the paths that link the archaeological sites. The surface

[1]In this article, we will only refer to one of them, Licante, which is the one where we conducted detailed research.

Fig. 1 Location of the study area. *Source* Instituto Geográfico Nacional

material we have recovered[2] consists particularly of fragments of pottery of the following styles: Casabindo Negro sobre Rojo (Albeck 2001; Zaburlin 2015), Chicha Rojo Pulido and Chicha Morado Pulido (Raffino et al. 1986; Krapovickas 1958–59), Pulido Interior Negro, Pulido Rojo, Pozuelo con Cuarzo (González 1963); plus a number of ordinary pottery fragments, stone shovels (whole and broken) and material that has been discarded from carvings.

The rock paintings are mostly found inside rock shelters associated with *chullpa* structures. They are complete paintings and are ascribed to the Regional Developments Period, corresponding to the stylistic subgroup C1b, H2b pattern (after Aschero 2000). Within the motives the human figure predominates, forming different scenes, such as coitus, confrontations and alignments, and to a lesser extent, camelids, in general forming groups. In addition, there are *suris* (Rhea), felines, *escutiformes* (anthropomorphic motives with shield form) and *uncus* (andean type of tunic) (Rivet 2016). In addition, in one of the sites, Licante, we have recorded physical evidence that belongs to the colonial period, including paintings and scratched-in images of crosses and chapels (Rivet 2013b).

[2]The ceramic study was done by Zaburlín et al. (2017).

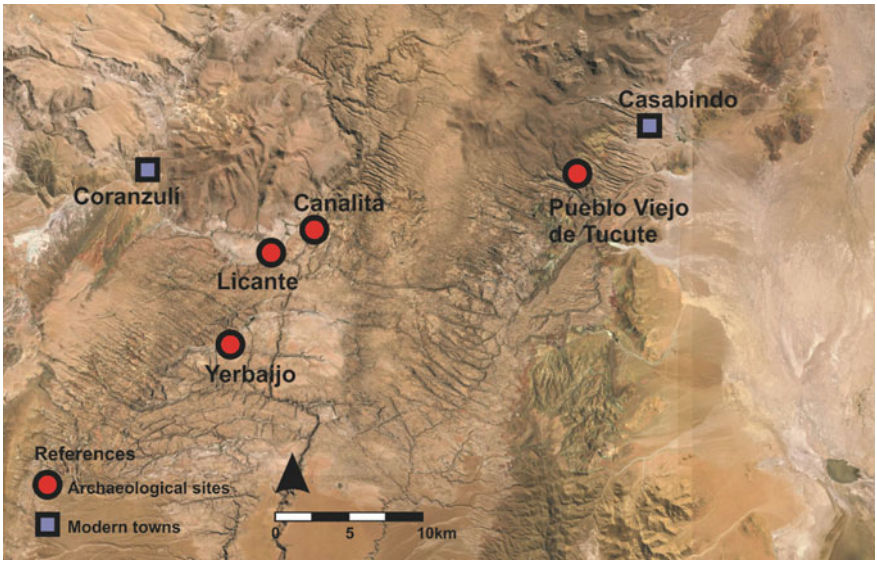

Fig. 2 Location of the archaeological sites. *Source* Author over satellite image from Google Earth

For the purposes of relating these sites, we will describe those of Canalita and Yerbaijo as semi-conglomerate villages and Licante as a dispersed settlement. The area they occupy is relatively small, the three sites being within a radius of 5 km, linked by means of different paths that cross a scarp topography (Fig. 2). For each of the sites, we will consider its situation, its spatial configuration, the architectural construction characteristics and the pottery gathered on the surface. In each of these, we will try to develop a detailed description that will allow to draw comparisons with other examples, contributing for broader discussions in the region.

2.1 Yerbaijo

This small town is situated in the Candados area, some 14 km in a straight line from the town of Coranzulí, at a height of 3800 masl. The area has water available all year round in small watercourses, Candados lake (7 ha) and a large *vega* (35 ha). It is connected to the other sites by paths and is located on a plateau some 10 meters above the *vega* that surrounds it. This latter is bordered by cliffs of great height that limit visibility from the plateau noted above. The only way to access the settlement is by means of a ramp constructed towards the NW. This ramp was carved directly in the bedrock and even preserves part of the dry stone wall in the upper part. We have not found walls around the perimeter.

The village occupies an area of around a quarter of a hectare and consists of 27 structures, mostly circular, arranged in relation to a rocky outcrop that opens towards

the SE, leaving a space open up to the edge of the plateau (Figs. 3 and 4). The majority of the structures are found freestanding, and do not share walls, although some are quite close to each other. There is a certain tendency towards spatial organization based on alignments in a N–S direction, that is transversal to the outcrop, which might involve up to four structures (e.g. 20, 19, 18 y 17) (Fig. 3). It might have been thought that this distribution would allow all the enclosures to be oriented towards the E. In fact, the few openings that we have been able to record are oriented towards the N–E quadrant. Because of the gentle gradient of the plateau, some terraces have been built (between 26 and 19, and 23 and 17).

Of the 27 recorded structures, according to the morphology of the plan, 15 are circular, 9 sub-circular and 3 sub-rectangular. We have defined as circular those whose radius is constant, varying by no more than 5%, whilst sub-circular structures have greater variation in radius or do not even complete the circumference (e.g. 21, 9 and 2). The dimensions of the enclosures vary between 2.4 m and

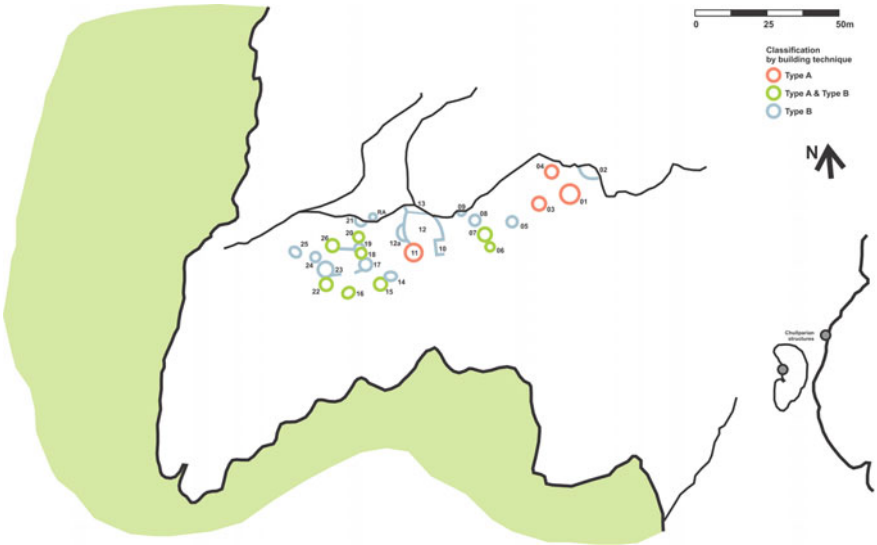

Fig. 3 Yerbaijo. Plan of the site. Green around plateau: *vega*

Fig. 4 Yerbaijo. Panoramic View

5.75 m and are associated with possible residential use. There are also other smaller structures backing on both to the cliff and to enclosures, and large spaces partially closed by walls.

In terms of construction, all of the enclosures are built up with stone held in place by clay mortar. The walls are simple with a width of 0.35 m. Because of the degree of collapse they show, it is complicated to work out the general characteristics of the walls in their elevation and maximum height. However, the sectors that are still upright allow us to recognize 14 (stone) courses. In such cases, there is an inclination of 15% towards the centre, from which we can infer a conical frustum elevation. This type of elevation could be associated with the need to contain the horizontal pressure of the roof.

We recorded two types of bond linked, especially, to the treatment of the stone that has been used. On the one hand, we can define a type (A) where the stones were worked with a prismatic tendency, presenting 5 flat faces with one irregular one, and on the other, type (B), where the stones used all had irregular faces, being only chosen for size (Fig. 5). This difference conditions the way in which the cement in the walls is arranged. Whilst in type (A) blocks were placed in courses, alternating stones for a better fit, in type (B) they did so in a fitted manner. In its turn, in type (A), the irregular face is positioned towards the outside, and in type (B), the flattest side was turned towards the inside. Something similar can be seen in the use of clay mortar, being valid for both types. This has been placed in a recessed way towards the outside and smoothed inside, thus creating a more homogeneous texture.

Type (A) corresponds to the larger sized enclosures whose walls are better preserved than the bonds of type (B). If in the location of the enclosures, we do not see any clear separation between the two, and it is true that the first tend to be grouped towards the E sector, whilst the second are grouped towards the W. However, in some enclosures, we have recorded these two techniques simultaneously: in the first irregular block courses, and in the second prismatic ones. We conjecture that this architectural variation might have implications for chronology.

Away from these 27 structures, there are two *chullpas* situated 77 meters towards the E of the last enclosure. They are made out of stone and clay mortar and their openings are oriented towards the settlement. As to their dimensions, both are above the average for the area (Rivet 2013a, 2015b), one of them reaching 2.30 m. In its interior, it has two small niches modelled in clay, and wood of the *cardón* cactus forms part of the framework of the wall (Fig. 6). In the rocky cliff in the opposite side of this plateau, another 25 *chullpas* have been recorded so far. They offer the same construction technique, the majority being sub-circular, with a frustum elevation, resting on the wall of the *peña*, forming aligned groupings.[3]

[3]By 'aligned' grouping, we are referring to a linear arrangement in which priority is given to a longitudinal axis in the development of the layout. The other two types of grouping that we have proposed are 'cellular', when one or more structures are arranged inside others, without resting on the *peña*, although possibly sharing walls with previous structures, and the 'superimposed' in

Fig. 5 Structures of Yerbaijo. It is possible to distinct the two different types of masonry registered

Fig. 6 Chullpa Structure in Yerbaijo surroundings. Exterior view and interior niches

Fig. 7 Rectangular structure in the rocky cliff. Visual field from the enclosure

Their openings also open towards Yerbaijo. In general, these structures correspond to the other examples we have described in the area (Rivet 2013a, 2015b).

The *vega* ground above which the Yerbaijo plateau rises is nowadays an important area of pasturage. In this sense, it must have constituted a strategic productive space for the population that lived in the town. Connected to this, the existence of a rectangular structure is suggestive: this is 2.10 m by 1.45 m located almost at the summit of the rocky cliff, towards its southern extreme. From this structure, one can see different ways to gain access to the marsh and finally the Yerbaijo site. The location of this structure grants high visibility, perhaps having been a point of territorial control over the movements both of people and herds and flocks. This location makes it possible to see widely over the area something that is not possible from the settlement itself, where the topography limits the visual field (Fig. 7).

The recovered pottery fragments yield the following according to the treatment of their surfaces: ordinary pots, polished ones, burnished and painted black on red, three-coloured and monochrome red. As such, the morphological types that could be identified correspond to different types of vessels, cups, bowls and pitchers. These fragments are connected to pieces that are destined for the preparation, serving and consumption of foodstuffs and tied up with behaviours associated with spinning and weaving. Other than a single pot that might be a local version of an Inka ceramic, the rest corresponds to ensemble that belongs to the Regional Developments Period.

2.2 Canalita

Canalita is the name of a site located 11.5 linear km to the southeast of the settlement of Coranzulí, as well as the name given to the gorge where the site is situated. The gorge varies in width between 40 and 60 m and is demarcated by

which structures are placed one on top of the other, where the main development is vertical rather than horizontal (Rivet 2013a).

ignimbrite cliffs that are approximately 30 m high, which considerably limits what can be seen from the town.

Specifically, the archaeological site develops longitudinally along one stretch of the gorge, making use of both the walls of the cliffs as well as the small slopes and the floodplain, reaching an area of 3 ha. The site was discovered in 1994 by Fernández Distel (1999, 2007), who dubbed it 'Agua Delgada' (narrow water), although he did not detail its location on a map. The author described it as a settlement which dated from the 15th to 17th centuries AD.

This semi-conglomerate town is made up of 33 structures distributed along the E margin of the river (Figs. 8 and 9). As in Yerbaijo, the enclosures seem to have no association with each other, that is to say, we do not see material links, beyond the physical proximity of the structures. Nor is there evidence of demarcated external spaces, like patios. One peculiarity of Canalita is that the majority of the enclosures have been constructed over rectangular terraces, to create level surfaces. Towards the extreme south of the village, there are large rectangular structures that could have been used as crop fields or corrals. In the extreme north, 400 m from the last enclosure, there are two *chullpa* towers. At the top of and along both cliffs, there are more than 30 *chullpa* structures built into the *peña* wall. Some of these were constructed in the town itself, in intimate relation to the enclosures.

All of the recorded enclosures have a morphology of circular or sub-circular floor plan, with diameters that vary between 2 and 3.6 m (Fig. 10). At this site, we have also recorded two smaller structures built into the *peña*. In terms of construction, we note characteristics that are similar to those of Yerbaijo. That is to say, the walls are simple made of stone and clay mortar, with an inner inclination of 15% and a thickness of around 0.35 m, with both types (A and B) of rough wall and bond. The containing walls are made out of fitted angular stone, in some cases reaching more than a meter in height. Morphologically, they can be treated as both rectangles closed on three sides and as longitudinal walls of up to 20 m in length. In this way, terracings are produced that allow the structures to be put in place (Fig. 11).

The *chullpas* form groupings that are of linear, cellular or superimposed types. They are constructed out of stone and clay mortar, and for the most part were erected against the rock wall, making use of projections or cavities. That is to say, they follow the same architectural and constructional pattern as the rest of buildings recorded in the area. However, the two *chullpa* towers erected in the extreme N of the settlement do offer certain characteristics that differentiate them from the rest, as regards their location and morphology (Fig. 12). These two towers are arranged symmetrically, with the river as axis. By way of emphasizing their strategic location, both were constructed on blocks of rock that increased their height. Given this location, the structures appear to have had a double role. On the one hand, they organize potential access, and on the other, they act as a delimitation of the space of the settlement. In morphological–constructional terms, they offer a rectangular floor plan and a prismatic elevation, reaching 1.5 m. Their walls are constructed of stones that have been carved in a prismatic form and placed in courses with clay mortar. The best-preserved structure offers a trapezoidal opening oriented to the N. The

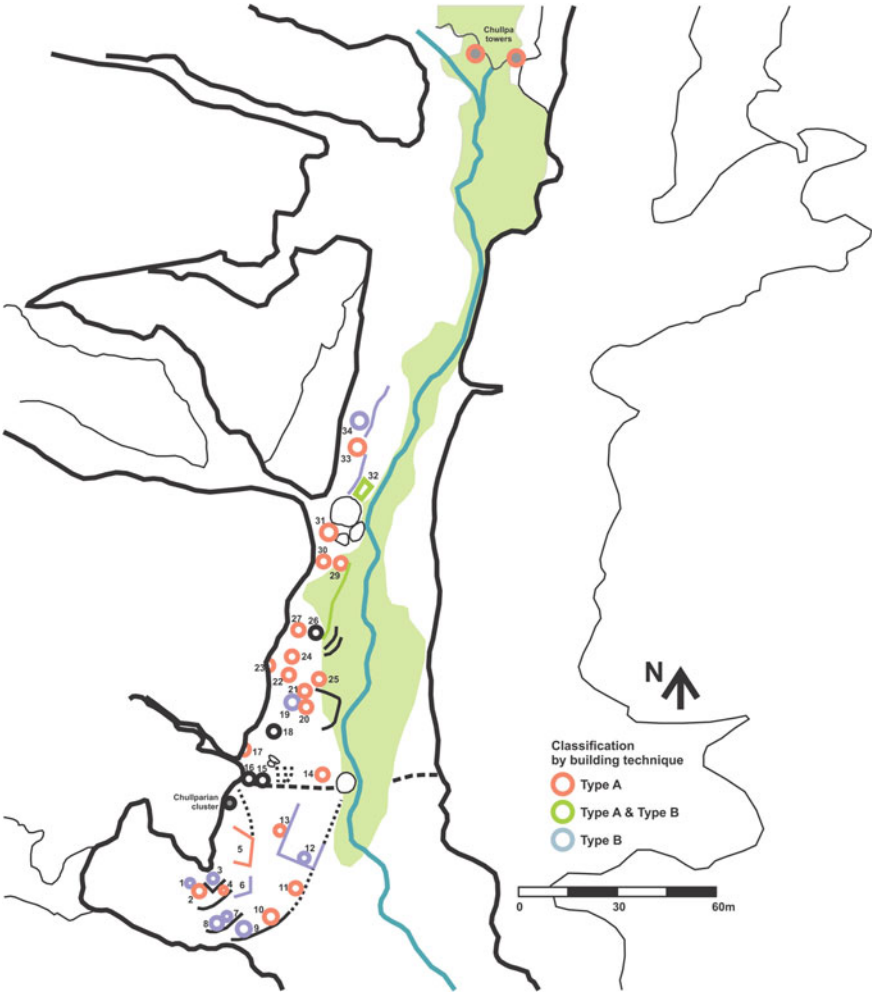

Fig. 8 Canalita. Plan of the site

other structure is in a greater state of delapidation, but it is possible that its opening was oriented towards the E.[4]

The array of pottery recovered in surface collections is made up of ordinary, smooth, polished and painted pots: black on red, three-coloured and monochrome red. In addition, six Chicha pottery fragments have been identified, as well as one Pozuelo with Quartz. Among the morphological types that have been identified, there are different types of vessels, cups, pitchers, bowls, spindle whorls and flat vases (or spinning mill ones). As in Yerbaijo, these pots form part of pieces

[4]Just where there a small gorge through which one can also gain access to the gorge of Canalita.

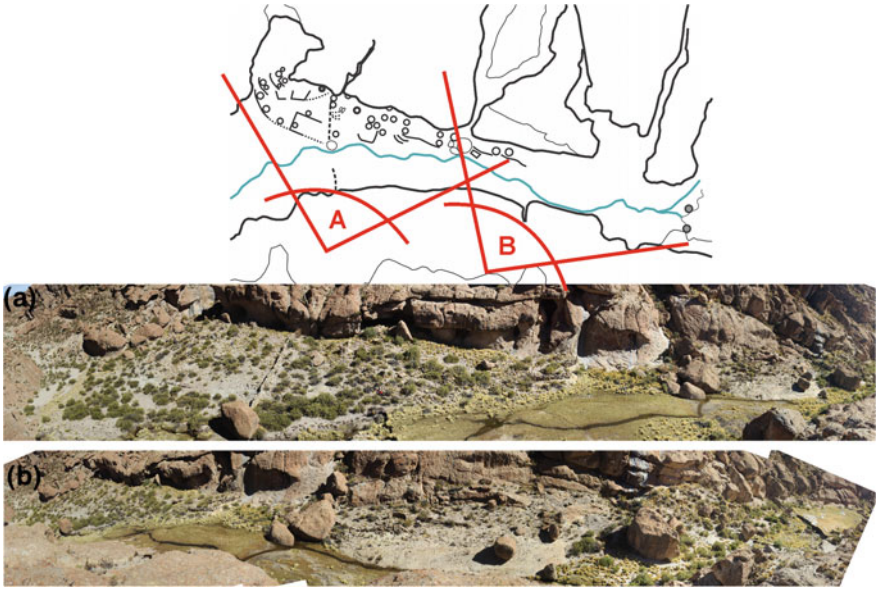

Fig. 9 Canalita. Panoramic View

Fig. 10 Structures of Canalita

Fig. 11 Canalita. Detail of one of the terraces in which the structures are placed

associated with the preparation and consumption of foodstuffs. The spindle whorls and the spinning mill vases were linked with spinning and weaving. In addition, fragments of stone shovels and mortars have been recorded.

2.3 Licante

This site is located some 10 linear km from the town of Coranzulí, unfolding along a narrow gorge, flanked by rocky cliffs, in a 3.5 km strip. It occupies the middle–low sector of the slope on the right margin of a permanently running watercourse. The gorge is crossed by the path that leads to Canalita. At the point where this road meets the river, there are a number of enclosures, principally for residential use. Some of them were dismantled to construct a barrier and a space for pasturage with a corral. The sector that makes use of the lowest part of the slope (Complex C) shows the least contemporary or near-contemporary intervention (Fig. 13). Towards the NE of this grouping, we have the area that was used for agricultural activities.

This example differs from Canalita and Yerbaijo in being smaller but also more fundamentally because of the organization of the enclosures in space. This complex

Fig. 12 Canalita. Chullpa towers and its orientation

was constructed in direct relation to the *peña*. It is made up of six structures of rectangular and sub-rectangular floor plan, constructed with flat edged or at least selected stones, and clay mortar, with a simple wall, whose width varies around the 0.35 m mark. The enclosures are situated to make use of a slope of 6 m from the side, with an arrangement that would tend to delimit an external space that was protected and organized on at least three areas in distinct terraced levels (a, b and c).

Enclosures 1 and 2 abut and are built on to the wall of the *peña*, making use of the rock projection. Enclosures 3 and 4 were constructed 2 m below enclosure 2, leaning on the latter, although with an independent wall resulting in a double wall with a load of earth in the middle. The enclosure 5 was built next to 3 and 4. All that is preserved of its E and N walls is the foundation that creates the terrace at this

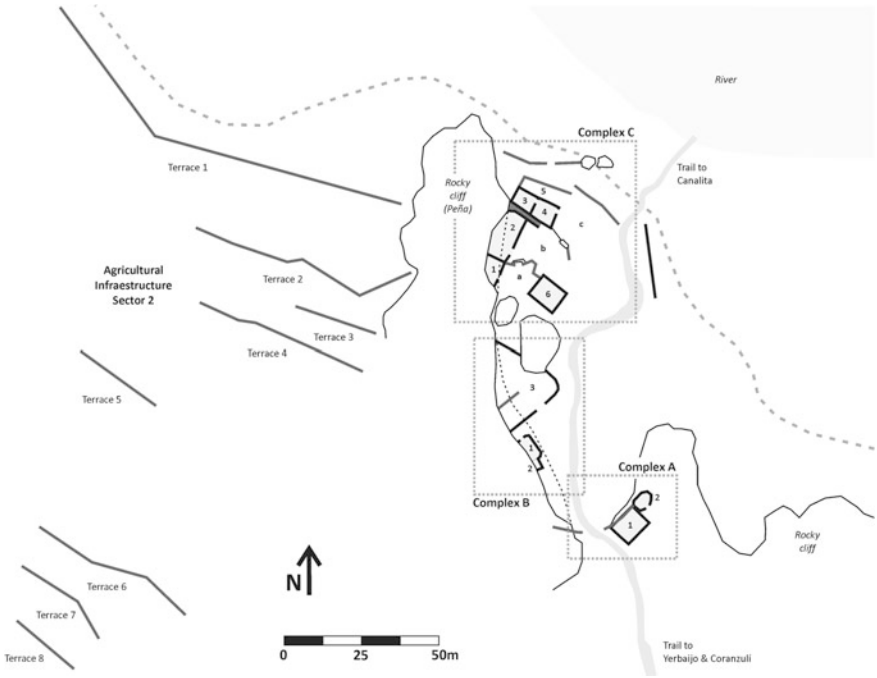

Fig. 13 Licante. Plan of the enclosures complex and agricultural sector 2. Black: enclosure's walls. Grey: platforms

point, and a course on top, which eventually would have produced an external space. Finally, enclosure 6 differs from the rest because it is the only one that is completely independent of the rest and offers a rectangular floor plan. The foundation and lower part of the wall are of rounded stones. The remains of this enclosure are a corner at practically 90° and nearly 2 m in height. It has a width of 3.8 m and a depth of 4.7 m (Figs. 14 and 15).

For the chronology, we can rely on AMS datings for this complex. One sample consisted of carbon recovered from a fire below the front wall of enclosure 1[5] with a result of 612 ± 41 BP. On the basis of the building sequence and the superimposition of the walls, this would have been the first in this sector. The other sample consisted of bits of grass recovered from the mortar of enclosure 6, producing a date of 566 ± 36 BP (Table 1). Both the dates and the construction sequences allow us to infer that enclosure 6 would have been one of the last to be built within this settlement. This is suggestive as in turn it presents important constructional and morphological variations, particularly with regard to its rectangular form.

In the whole area of the gorge of Licante, we have recorded 60 *chullpas*, the majority of them forming groupings of different types, but following the same

[5]This fire was recorded at a stratigraphic depth (Rivet 2013a).

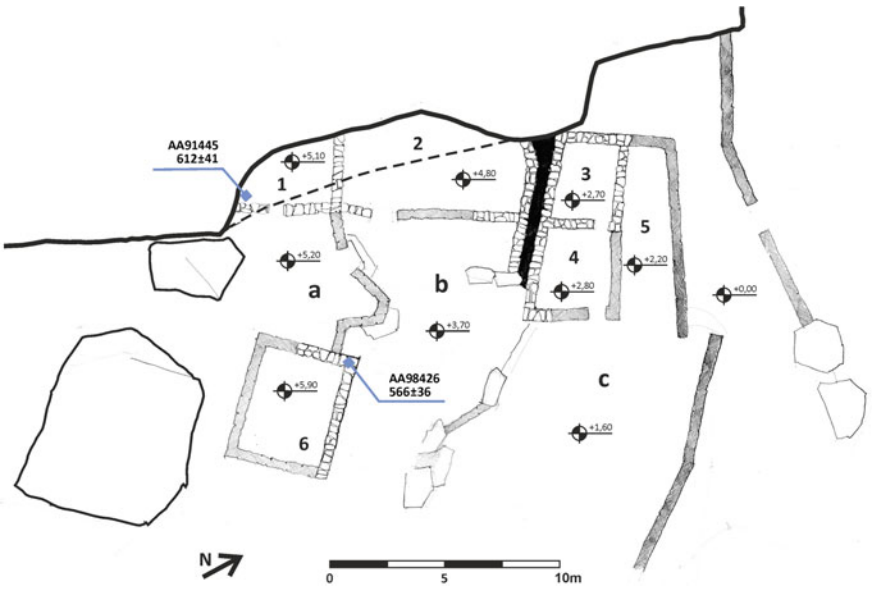

Fig. 14 Complex C, Licante. Plan of the site. Grey: collapsed walls and platforms

Fig. 15 Complex C, Licante. Photographs of the site

Table 1 Radiocarbon dates of Licante

Provenance	Laboratory code	$d^{13}C$	^{14}C BP	Calibrated years AD 68.2% probability	Calibrated years AD 95.4% probability	Material
Enclosure 1	AA91445	−22.4	612 ± 41	1320 (31.1%) 1350 1386 (37.1%) 1418	1302 (44.9%) 1365 1376 (50.5%) 1435	Charcoal
Enclosure 6	AA98426	−23.1	566 ± 36	1400 (68.2%) 1434	1325 (5.1%) 1342 1390 (90.3%) 1448	Grass

construction pattern already referred to. They are dispersedly located at the base of the *peñas* or inside the rock shelters associated with rock art, in the vicinity of agricultural spaces, the spaces of habitation and at the side of the paths that link these area, and also leads to other sites like Canalita.

As for the pottery fragments, these correspond to the following types: ordinary, smoothed, polished and monochrome painted and black on red. The activities represented are similar to the ensembles recovered in Canalita and Yerbaijo. In turn, fragments of stone shovels have been recovered.

So far in Licante, we have identified three sectors with agricultural infrastructure that cover 3 ha in total. As in Canalita, the surface is strewn with a great quantity of fragments of stone shovels. Given the environmental and topographical characteristics of the area, use is made of the sides and bottom of the gorges, which tend to be better protected from a climatic point of view, and has a greater availability of water and better quality soils. In any case, the area investigated up to now is small; hence, we think that agriculture was complementary to grazing, as happens in other sectors of the Puna (Albeck 2007). Each of the three groups recorded presents different characteristics as to the sector of location and building techniques (Fig. 16).

Sector 1: This is made up of four platforms located in the middle part of the mountainside, whose lengths vary between 2 and 5 m. The containing walls, preserved to a height of one meter, were constructed with small to medium stones, which were flat, arranged in oblique form, and with inverse inclinations in each course.

Sector 2: This group is located close to ensemble C of enclosures (Fig. 13). It is made up of eight platforms whose lengths vary between 7 and 40 m. The containing walls were constructed of medium size stones, that were angular and arranged in a fitted bond, whose height varies between 1 and 1.80 m. Supported against the *peña*, two enclosures can be distinguished which have a rectangular floor plan, of which only the foundation and lower part of the wall have been recorded.

Sector 3: This sector is located in the middle to lower part of a mountainside that begins as a slope from the base of the *peñas*, amounting to a length of 650 m. It

Fig. 16 Licante. Agricultural sectors

includes a series of discontinuous platforms and two living enclosures associated with them. They amount to between two and five platforms with a length of about 250 m. In some, we can observe internal subdivisions with a height of 1 m. In one of the platforms located at the upper level, we have found a trace of a possible irrigation canal. There are also holes cut into the base of the containing walls, acting as a form of drainage from the upper to lower level.

3 Discussion

3.1 The Connection with Casabindo

The spatial formations of the two small towns of Yerbaijo and Canalita allow to sketch out the relationships with other examples that have been described in the bibliography on a regional scale. Within the two different types of small town that they describe, Albeck and Ruiz (2003) noted the existence of sites with a pattern of circular enclosures that are somewhat apart from what is usual in the area, placing special emphasis among these on Pueblo Viejo de Tucute.[6] Whilst this site, with hundreds of structures, is built on a noticeably larger scale than Yerbaijo or Canalita, there are important similarities in spatial organization. Both Pueblo Viejo de Tucute and the examples in Coranzulí are formed on the basis of freestanding circular enclosures, whose diameters vary between 2 and 4 m, in many cases constructed on terraced surfaces, and no delimited external spaces in the form of patios[7] have been identified. The enclosures, particularly in Yerbaijo, tend to form alignments, which might imply the existence of associations between some of them, something which can be seen in Pueblo Viejo de Tucute.

In terms of construction, there is a significant parallel between these examples in the use of blocks that have been worked prismatically and laid out with bonded clay courses (which we define as Type A). If we look at the detail of the construction, it is possible to see a similar treatment of the stone blocks, which have rounded edges with only one completely flat face, which is found towards the inside of the enclosures. Type B, on the other hand, shows some similarities with that described in Santa Ana de Abralaite, another town within the area that is also formed of circular structures (Krapovickas et al. 1979).

As for the pottery, studies by Zaburlín (2012, 2015) and Zaburlín et al. (2017) both in the area of Casabindo and Coranzulí show that the forms, functions and treatment of the surfaces are similar. Concretely, the bulk of the ceramic types recorded corresponds the Casabindo ceramic tradition, which chronologically corresponds to the Regional Developments Period II and to the Inka period. In turn, a few non-local fragments would correspond to late components from the Chicha region and the Quebrada de Humahuaca.

Altogether, the forms of the settlements, their construction techniques and the characteristics of the pottery allow us to affirm the existence of some kind of link during the Regional Developments Period II between these sites in Coranzulí and the area of Casabindo. This implies a widening of the area in relation to what was known at this time. Nevertheless, new sets of questions arise about what sort of relationships are involved. For instance, we might pose questions, within the framework of Nielsen's (2006a) proposal about the existence of a schema of

[6]Pueblo Viejo de Tucute has datings that place its occupation between the 12th and 15th centuries (Albeck 2010).

[7]On the other hand, in three sites, there is a smaller proportion of rectangular enclosures.

decentralized power based on small groups that were integrated with other larger ones, but maintaining degrees of autonomy.

3.2 Relations Between Settlements

As we have noted, different studies on the regions have emphasized the coexistence of conglomerate and dispersed settlements, linked to pastoral and agro-pastoral activities (Ruiz and Albeck 1997; Zaburlín 1998; 2003; Angiorama 2011; Nielsen et al. 2015). This description of the logics of occupation of the space of the Puna gives us a framework for the analysis of the sites that we have been working on. The comparison of the spatial forms between semi-conglomerate towns like Yerbaijo y Canalita, and a dispersed one like Licante, offers the chance of making advances on the different roles they might have had within a network of linked places, relating with the types of pastoral mobility.

In this sense, Licante is comprised of a series of enclosures articulated with each other around an external space that would mark out a patio. By contrast, in the small towns, we can see tens of enclosures with a limited connection between them. This perhaps was associated with dynamics of more or less independent use.[8] In order to acquire a deeper understanding of the functioning of these different types of settlement, we need briefly to deal with some of the characteristics that have been defined as universal for pastoral societies. In his discussion of social organization, Khazanov (1994) has maintained that there are two fundamental institutions: the family and the community. The first organizes the whole of pastoral activity, particularly the management and exploitation of the herds. The second, the community, by contrast, is associated with the management of certain resources like the pastures and water.

Within this framework, it is worth asking if the villages might not have been associated with the presence of numerous domestic groups, perhaps in relationship to the second institution proposed by Khazanov (1994). By contrast, following this analysis, Licante would be associated with a pastoral domestic group and then would be directly linked with the everyday management of the herds. This settlement, on the other hand, is associated with agricultural structures; hence, it might have corresponded to an agricultural–pastoral settlement, possibly of seasonal use. A deep understanding needs further research and study. In any case, we might allow ourselves to note that if the enclosures and at least some part of the platforms were contemporaneous, these agricultural practices might have had implications for the pattern of mobility and the time when people became established in the area.[9]

[8]It is worth remembering that in Yerbaijo we have noted the existence of certain alignments of enclosures that could suggest lesser independence.

[9]In this respect, Zaburlín (2003) calls attention to the survey of dispersed or non-conglomerate structures associated—or not—with cultivated fields that could be interpreted as *puestos*.

The articulation between these semi-conglomerate settlements and the dispersed ones that we have recorded in a relatively small area is a key subject for thinking through territorialities during this period. Ethnographic and ethno-archaeological works on pastoral and agro-pastoral societies in the Andes offer significant data for us to continue to raise questions. On the one hand, for the Puna area, there are numerous references on how different pastoral domestic units controlled a certain number of dispersed settlements, between which there developed a seasonal mobility (Göbel 2002; Yacobaccio et al. 1998; Delfino 2001; Tomasi 2013).

Some ethnographies have shown how a particular resource leads domestic units to come together at certain times of the year in a conglomerated settlement, whilst the rest of the time they use houses or small pastoral settlements (*puestos*) that are dispersed. This is the case in Santa Rosa de los Pastos Grandes in Salta province, Argentina (Abeledo 2008), or Chichillapi in Peru (Palacios Ríos 1977), where the *vega* is crucial for pastoral strategies. In both examples, it can be observed the coexistence of small towns and dispersed settlements which are used by the same domestic units that are directly related to pastoral practices and mobilities. Similar references could be considered in cases where herding is articulated with agricultural practices on different scales (Flannery et al. 1989; Malengreau 2009). There the characteristic cycles of agriculture could see domestic groups gathering together in certain settlements at specific times of the year, or at least some of their members doing so. All these examples offer characteristics that are very different to those of Coranzulí and correspond with contemporary realities; hence, we are not posing a direct parallel. However, they are significant for allowing us to glimpse possible social dynamics that raise questions about the relationship between the archaeological sites we are working on.

Along these lines, we can raise the possibility that a dispersed settlement like Licante was used by a specific domestic group that at some time of the year also stayed in a town like Yerbaijo or Canalita. Within this framework, the existence of a *vega* like the one linked to the first, or the permanent presence of water in the second, suggests the sorts of resources that could be offered to agro-pastoral dynamics. In this case, these small towns might not have been inhabited throughout the year.

3.3 The Place of the Ancestors

As can be seen, in the three sites, the *chullpas* are located in connection with residential, agricultural and rock art areas. These buildings are not only present in the area of Coranzulí but also have been recorded in other sectors of the Puna,[10] as,

[10]A glance at the extant bibliography shows a wide, albeit heterogeneous, spatial distribution of these structures, from the Central Andes, to the north of Argentina and Chile. These structures show a notable variation especially in morphological and construction terms. In this work, we only refer to the Puna area.

for example, in Casabindo itself (Ambrosetti 1901–1902; Casanova 1938; Krapovickas 1958–59; Albeck and Ruiz 2003), in the Cuenca de Pozuelos (Ruiz and Chorolque 2007), in Cusi Cusi (Vaquer et al. 2014), and in the area of the Río San Juan Mayo (Debenedetti 1930; Vignati 1938; Nielsen et al. 2015).

Different interpretations have been offered about the significance of these structures in the Andean area, the most common that they are connected with burials. They have been considered as open tombs (Isbell 1997), funerary structures (Hyslop 1977; Kesseli and Pärssinen 2005), territorial markers (Hyslop 1977; Gil García 2001, 2002; Kesseli and Pärssinen 2005), places of worship or altars (Aldunate and Castro 1981) and storehouse structures.[11] Finally, though this does not exhaust the repertoires of extant interpretations, Nielsen's proposal allows us to go beyond the interpretation of the *chullpa* as simply a grave to consider the semantic importance of the structure in itself. As he proposed, the structures would be 'monumental embodiments of the ancestors in themselves, able to do what the ancestor does' (2008: 220). This last approach, which does not simply ignore other interpretations, is what we try to take up in our work. We think that this allows us to recognize the co-presence of the living and the dead, within social life, transcending the ontological breach that belongs to contemporary Western thought (Isbell 1997; Nielsen 2010).

Taking up our case of study, on the basis of architectural analysis, we have been able to observe building sequences within the groupings, and maintenance operations on the same structures such as repairs and modifications carried out after the original erection (Rivet 2015a, b). The chronology was established between the 14th and 15th centuries out of five AMS datings from grass in the clay mortar,[12] with the exception of one dating to late colonial times (Rivet 2013b, 2015a). This allows us to make two observations: on the one hand, that these structures would be contemporary with the residential sites, and on the other, that occupation was continuous and lasted a long time.

As regards to construction technique, their analysis reveals two types of bond, one in courses, similar to type (A) described above, and the other fitted, corresponding to type (B). In the first example, it should be noted that the stone does not appear as worked as the prismatic blocks of the residential enclosures. In the case of the *chullpas*, the building sequences show a certain chronology regarding these

[11]On the basis of the different characteristics of the possible contents of these structures, a sort of debate has been set up about whether they are examples of funerary architecture or constructions for the storage of foodstuffs. The truth is that both seeds and the dead were associated, at least in colonial times, with the same word: *mallqui* (Cruz and Joffre 2015; Sherbondy 1986, among others). On the basis of these Andean conceptions, the funerary or storage uses associated with these structures should not be seen as radically distinct, as both would be working within the same semantic field of ancestrality.

[12]Arkush (2008) used this strategy to date the construction of different structures in the Titicaca valley, finding no significant differences in the dating of grasses taken from mortars and samples of burned wood. We are conscious that we are dating a specific building episode and not occupation in the strict sense. Nevertheless, it continues to be a valid tool in producing a chronology of the sites.

techniques, such that the arrangement in courses appears to be later than the fitted bond. If extrapolation to the residential enclosures cannot be definite, nevertheless at the base of some enclosures one can observe fitted, angular stones, whilst in the upper segments there are flat stones laid out in courses.

As to location, we have already noted that the *chullpas* in our area are found distributed in space, along paths and even in the vicinity both of residential enclosures as well as agricultural structures. The two *chullpas* towers in Canalita constitute a particular example. Their position at one extreme of the settlement and their symmetrical positioning prompt us to think about their role in the demarcation of the settlement, something linked with the condition of being a territorial marker that has been associated with these structures, as we have noted above. Based on the quotations referred to above, we could wonder whether these structures, as ancestors, might not have been standing watch over the well-being of the inhabitants, the fertility of their crops and herds, and the legitimation of the rights of the populations over their territories, whilst at the same time offering protection. All in all, it is a question of thinking how the ancestors, embodied in the *chullpas*, were integrated materially into a social network.

In summary, in this paper, we presented recent advances in the research that have allowed us to identify three new sites that were not known in the archaeological literature. Two of these, Canalita and Yerbaijo, correspond to semi-conglomerate settlements and the third, Licante, is a dispersed settlement. As we have proposed, these three would have been linked to each other by the mobility strategies of pastoral or agro-pastoral groups. In turn, the evidence (especially architecture) has shown the existence of links with Casabindo sites, such as Pueblo Viejo de Tucute. Based on the study of ceramic and architectural features, along with the AMS datings, these sites are particularly related to the Regional Developments Period II, reaching probably Inka and even colonial times. Based on the continuity of the investigations, we will be able to reach a more complete knowledge of the settlement logics in the area and a more accurate chronological definition.

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