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Wrap the Dead : The funerary textile tradition from the Osmore Valley, South Peru, and its social-political implications

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5.1 Introduction

Before moving on to the description of the textiles, the geography of the Osmore valley and its cultural history will be presented in this and the following chapter, to allow better understanding of the objectives of this research.

The five archaeological sites from which the textile specimens have been derived for this study, are located in the Osmore valley in the Department of Moquegua in the extreme south of Peru (see *fig. 1.2*). The sites La Cruz, El Descanso, Algodonal Ladera, and Boca del Río are located in the lower coastal section, in the district of El Algarrobal, province of Ilo, whereas the site Chen Chen was established in the middle section, just above modern Moquegua, district of Moquegua, province of Mariscal Nieto. In this chapter, the geography of the Osmore drainage and its wider region will be dealt with, followed by a short description of Chen Chen, La Cruz, El Descanso, and Algodonal Ladera. As only one textile specimen was taken from Boca del Río, this site is only shortly introduced in Paragraph 8.7. First, the larger cultural zone in which the Osmore valley is situated, the South Central Andes Region, will be described.

5.2 South Central Andes Region

The Osmore drainage lies in a region referred to as ‘South Central Andes’. This region is concentrated around the Titicaca Basin and is characterized by longstanding cultural, economic, and political connections. Its boundaries cut through four modern political subdivisions: southern Peru, northern Chile, western Bolivia and northwestern Argentina (see *fig. 1.1*). Along the coast, it reaches from the Majes drainage near modern Arequipa to the Chilean port of Antofagasta in the south, while inland it reaches from Sicuani in the highlands near Cuzco, through Cochabamba at the eastern slopes of the Bolivian Andes, ending in Chañaral in Argentina. As a consequence, this region comprises a

variety of ecological sub-regions, mainly defined by its altitudinal location and matching resources. The Osmore drainage is one of the small rivers that run straight down the western flanks of the Andes, more or less in southwestern direction. It is separated from other narrow valleys by vast expanses of extreme dry desert. The first valley to the north is the Tambo valley at some 60 kilometres distance and to the south the Locumba valley at about 40 kilometres distance. The presence of a vast desert, stretching from the north coast of Peru to the Atacama desert that covers northern Chile, despite the proximity of the huge Pacific Ocean, is the result of the unique geomorphology of the South American western coastline. Moisture from the Pacific and Atlantic Ocean does not turn into rain due to the presence of the Cordillera de Los Andes and the Humboldt Current. Due to tectonic energy, the westward-moving continental plate converges on the eastward-moving oceanic floor of the Nazca Plate. The Nazca Plate slides under the land mass at rates of 9 to 15 cm a year. As a consequence, a narrow but deep oceanic trench and parallel ranges of mountains outline this zone. The seismic instability expresses itself in a large number of active volcanoes and frequent earthquakes (Bruhns 1994, 23-26).^[1]

The Cordillera de Los Andes stretches from the Caribbean Colombian coast to the southernmost tip of the South American continent at Tierra del Fuego, covering a distance of about 7000 kilometres. The mountain range rises up abruptly from a narrow coastal plain while to the east it falls away in progressively lowering hills. In the Peruvian part of the mountain range, the *cordillera* is split into two ranges: the coastal and lower range called the Cordillera Negra and the eastern range called the Cordillera Blanca because of its many snow capped mountains above 5700 metres above sea level (masl). This mountain range buffers the westwards moving clouds from the Atlantic Ocean and Amazon forests from which the Andes receives about all its rainfall. About 90% of this precipitation descends on the eastern flanks, thus eventually returning to the Atlantic Ocean. Only the remaining 10% flows down

the Pacific side and forms the main source of fresh water along the whole Pacific coast (Bruhns 1994, 23; Moseley 1997, 25-26).

The Humboldt Current comes from Antarctica and flows only 50 to 100 kilometres wide along the Chilean and Peruvian coast, before flowing oceanwards again at north Peru. This cold, superficial current dictates the ecology and human economy of the South American continent: the cold Humboldt Current chills the moist air arriving from the Pacific. Once the winds blow over the coastal plains, they are warmed up by the warmer temperature above the landmass, expanding its capacity to hold moisture so that as a result, no rain will fall. Higher up the western Andean flanks, the moisture condenses into thick fog. However, during the winter months, this moist air cannot warm up sufficiently and is trapped beneath a layer of warmer air, preventing the humid air to rise and turn to rain. This phenomenon is known as “temperature inversion layer”. Where fog is trapped against the coastal hills between 400 and 800 masl, seasonal xerophytic vegetation is supported, called *lomas*. Before the recent over-exploitation of this micro-climate, *lomas* extended nearly 1000 km along the Peruvian and north Chilean coast (Rostworowski 1981). Only above 2500 masl, the clouds have cooled down enough to drop their moisture (Bruhns, 1994, 29-30; Burger 1995, 13-15).

The coastal desert is interrupted by dozens of short rivers flowing down the Andean watershed. The rivers of northern Peru contain most water while many rivers of the south do not even reach the coast. The Atacama Desert in northern Chile is even entirely arid except for several small oases and the Loa river valley. As all agriculture in the coastal desert is dependent upon flood-plains and irrigation works, the available amount of water is dictating the intensity of the agricultural exploitation (Moseley 1997, 30, 47; Bruhns 1994, 33).

Another effect of the upwelling cold water of the Humboldt Current is to be found in its low salinity and richness in nutrients. As these nutrients move up into the sunlight, an enormous growth of microscopic phytoplankton is encouraged, the basis of the food chain that feeds vast schools of anchovies and other fish, that are eaten by sea birds and sea lions.^[2] The ecosystem is stable except for the phenomenon called ‘Southern Oscillation Event’ (ENSO), nicknamed ‘El Niño’, that occurs roughly every 25 to 40 years.^[3] The causes of El

Niño lie in south Pacific Ocean currents and wind patterns. During the year of a Niño event, major disturbances occur when the southwards flowing current from the Ecuadorian coast unites with an eastwards flowing equatorial current that originates from Indonesia. This rare event warms the sea by as much as 6.6 degrees Celsius, killing the phytoplankton, which disrupts the entire food chain: anchovies may decline by 87%, causing the majority of the birds and sea mammals to die. The dead plankton marine plants and animals.

In two weeks more rain may fall than in previous the 20 to 30 years combined. Such torrential rains usually cause catastrophic flooding, disrupting the coastal ecosystem and cultural systems for years and even decades. Signs of catastrophic floodings have also been noticed in the Osmore drainage (see Paragraph 6.6.7) (Bruhns 1994, 30-32; Burger 1995, 14-15; Moseley *et al.* 1991b).

5.2.1 CIRCUM-LACUSTRINE AND PUNA REGION

The Circum-lacustrine Area is also referred to as the Titicaca Basin and comprises the high plateau between 3,850 and 5,200 masl surrounding the Titicaca Lake (fig. 5.1). The highland plateau is usually referred to by its Spanish name ‘*altiplano*’. During the formation of the Andes in the Miocene, the high plateau contained a large lake, but during the Pleistocene the water level dropped with a hundred metres, resulting in the present Lake Titicaca (about 8,600 km²) and Lake Poopó to its southeast (James 1971; Lavenu 1981). This area is characterized by a dry and wet season. The rain falls between December and March, with an annual average rainfall of about 700 mm. The mean temperature fluctuates between 12 degrees Celsius during the rain season, to 7 degrees Celsius during the wet season (Kolata 1993, 44). The Titicaca Lake is a rich source of fresh water fish, aquatic birds such as ducks, and *titora* reed (*Scirpus* sp.) that is used for the construction of houses, boats and even floating islands. The highland plateau south of the Basin is called ‘*puna*’, which is covered by bunch grasses known as ‘*ichu*’ (*Gramineae* and *Scropulariaceae*) that is eaten by camelids and used for roof thatching. No trees grew here prior to the recent introduction of eucalyptus trees, other than shrubs of the *Polylepis* species. This is the natural habitat of the Andean camelids: the llama (*Lama glama glama*), the alpaca (*Lama glama pacos*), guanaco (*Lama guanicoe*),



Fig. 5.1 Location of various geo-physical zones in South Central Andes Region

and vicuña (*Vicugna vicugna*), and rodents such as guinea pigs (*Cavia porcellus*), chinchillas and vizcachas (*Lagidium peruanum*). Cultivated plants grow during the wet season, mainly tubers such as potatoes (*Solanum tuberosum*) but also grains such as quinoa (*Chenopodium quinoa*). Further to the south, the precipitation drops off quickly, with annual rainfall varying between 300 mm to virtually none, so that this part of the highland plateau is called the dry puna. Here, the day and night temperatures can fluctuate as much as 40 degrees Celsius. As a result, the biomass is limited (Kolata 1993, 43-45; Sutter 1997, 13-15).

5.2.2 CORDILLERA

The Cordillera is the zone between 3000 and 1500 masl on both sides of the altiplano, while the western flank is also referred to as 'sierra'. The Cordillera is characterized by 'quebradas', steep, river-cut valleys, where human habitation is concentrated. The highest reaches receive most precipitation of about 100 mm average per year, while the temperature fluctuates between 18 to 15 degrees Celsius in the summer and winter. In the lower reaches of the sierra, maize (*Zea mays*), coca (*Erythroxylum coca*), and *aji* peppers (*Capsicum* sp.) can be grown (Sutter 1997, 15-16). The three tributaries of the Osmore valley lie in this zone.

5.2.3 WESTERN VALLEYS

Rivers run down the western slopes of the Andes and cut through the coastal mountains that rise up to 1300 masl, until they reach the coastal desert plain at about five kilometres from the coastline. The further south, the smaller the rivers, and some of them often run (seasonally) dry before reaching the Pacific Ocean. The Osmore River, for instance, only has seasonal flows.

The temperature in the western valleys fluctuates between 21 and 15 degrees Celsius in summer and winter months and precipitation is practically limited to fog, resulting in little more than 5 mm per year. These valleys form the interconnecting routes between the coast, the highlands and the eastern valleys, but are separated by vast stretches of desert. Most human habitation is concentrated just up hill from the fertile river plains, where maize, peppers, coca, as well as beans (*Phaseolus vulgaris*) and yuca (*Manihot esculenta*) are cultivated. Here too, native trees such as molle (*Schinus molle*), algarroba (*Prosopis* sp.), pacay (*Inga feuillei*), and willow (*Salix*

chilensis) are concentrated, together with shrubs such as chilca (*Baccharis* sp.) and reeds such as junco (*Scirpus* sp.) and caña brava (*Gynerium* sp.). In addition, cotton (*Gossypium barbadense*) was grown here. The fauna includes birds, crustacea rodents, deer (*Odocoileus* sp.), and foxes (*Dusicyon*), but also guanacos that descend from the altiplano in the winter.

The coast itself is characterized by terraces from the Tertiary that rise up in a step-like manner to 400 masl and reach up to seven kilometres inland. Sandy and rocky beaches give access to the sea, where a variety of fishes can be found, such as the small, schooling anchovy (*Engraulis ringens*), as well as molluscs (*Choromytilus chorus*, *Mytilus* sp., etc.), sea mammals such as sea lions (*Zalophus*), sea otters, (*Enhydra lutris*), and sea birds such as pelicans (*Pelicanus occidentalis thagus*).

The lomas are zones of seasonal xerophytic vegetation fed by sea fog that condenses during the night. These zones are found on coastal hills between 400 and 800 masl and mainly include bromelid plants (*Tillandsias* sp.) with *Zephyranthes albicans*, *Malvastrum peruvianum*, *Palana geranioides*, *Nolana latipes*, branched cactuses of the *Cephalocereus* species and shrub of the *Grindelia* species. Most plants, however, are not edible for humans, but do attract seasonal populations of deer, rodents, birds, lizards, foxes, and even guanacos, so that lomas have mainly been exploited as hunting grounds (Guillén 1992, 53-54; (ONERN 1976, 74-77, 283-284; Sutter 1997, 21-22).

5.2.4 EASTERN VALLEYS AND SELVA

The valleys of the eastern Andean slopes are locally known as 'yungas' and the Amazon jungle is known as 'selva'.^[4] The valleys are characterized by a subtropical climate, with year-round warm temperatures ranging between 16 and 18 degrees, and high average annual rainfall of 800 mm, resulting in dense and varied vegetation. The yungas are very productive agricultural zones, where maize, coca, manioc, sweet potato, gourds, and fruits as pacay, lúcuma (*Pouteria lucuma*), and guava (*Psidium guajava*) are grown. In addition, trees such as mahogany, ceiba, cedar, and walnut grow here, as well as medicinal plants such as *chinchona* that produces quinine, aromatic woods as *sarsaparilla* and *copal*, and hallucinogenic plants such as *vilca*. Animals from the selva, such as parrots and macaws with colourful feathers that were highly valued in pre-Columbian cultures, as

well as monkeys and jaguar (pelts), have been found in archaeological coastal contexts (Guillén 1992, 53; Sutter 1997, 11-13).

5.3 Osmore drainage

The Osmore river runs down the west flanks of the Cordillera de los Andes until it meets the Pacific Ocean after 139 kilometres, an area that coincides with the coordinates 70°27' and 71°20' West Longitude and 16°52' and 17°42' South Latitude. In total, the drainage comprises 3,480 square kilometres with a mean fall of 3.6%. Three tributaries, the Huaracane, the Torata, and the Tumulaca rivers form the higher valleys of the Osmore drainage (see *fig. 1.2*). The Tumulaca tributary is the main river and is born at the snow capped mountain peaks Chuquiananta and Arundane in the cordillera at about 5,100 masl. At this altitude, the river is known as Río Asana. In all, it will change name five times (Asana, Coscori, Tumulaca, Moquegua and Ilo) before it reaches the shore, depending on the altitude and corresponding environment. In this study, only the name 'Osmore River' has been used. The Coscori and Tumulaca sections run through the higher valley ('sierra'), above 3000 masl. All three valleys are extremely steep so that agriculture here was limited to extensive terrace systems. Where the three tributaries meet at 2000 masl, the valley spreads out to some 8 kilometres of relatively broad and flat irrigable land. This middle drainage is called the Moquegua valley after the modern town and forms the centre of agricultural productivity, both in ancient as in modern times. The name 'Moquegua' seem to refer to this fact, since '*Muki-wa*' in the Pukina language would mean 'moist land' (ONERN 1976, 12). In this zone, rainfall is practically non-existent. All agriculture takes place on level ground with the aid of irrigation canals, making year-round agriculture possible. The maximum amount of potential irrigated agricultural land is 3,920 hectares in this middle part of the drainage, but in 1976, only 2,810 hectares were exploited (ONERN 1976, 279). Although today alfafa as fodder for dairy cattle and vineyards for the local wine production form the main crops, in prehistoric times the production of maize was most important, grown together with ají peppers, calabashes, coca leafs and various kinds of fruits (Goldstein 1989, 143-144).

Gradually the valley tapers until at about 45 kilometres from the coast and at 1000 masl, the river disappears into subterranean channels. Over a distance of some 25 kilometres, the valley has turned into a '*quebrada*', a dry, rocky gorge with steep walls, uninviting to human habitation, and effectively separating the middle valley from the geographically distinct and far smaller lower valley zone. The small river reappears at the surface at around 400 masl. In the upper part of the lower valley, the flood plain averages only 115 metres across, then broadening to just 300 metres for the final stretch of about 23 kilometres.

The whole coastal Osmore valley is deeply entrenched between steep walls. The agricultural fields are located in the floodplains on both sides of the river and on terraces along irrigation canals. Though the floodplain fields are easier to cultivate, they are exposed to the risk of fluvial erosion and salinity. According to the ONERN report (1976, 276-279), a total of 630 hectares can be cultivated by irrigation in this coastal stretch of the drainage, although not all land is in use (390 hectares in 1976), depending on the amount of water available. Since the early 1990's, the river flows all the year round due to pipelines that conduct water from high altitude sources, mainly destined for the city of Ilo. Prior to this engineering project, irrigation water was derived from seasonal flow of the river and year round extraction from 62 wells that together produced some 2,463,910 m³ of water (ONERN 1976, 324, 337).

The lower and middle sections of the Osmore drainage, up to an altitude of 1800 masl, are located in a sub-tropical desert climate with the mean annual temperature today around 19°C. The precipitation is scarce, with an average of about 17.2 mm, and falls in winter (ONERN 1976, 73-75, 84). Prior to about 1940, this area was reported to be subject to a persistent *garua*, the thick fog coming in from the ocean in the winter months. According to local farmers, it once supported seasonal growth of grass on the valley walls that are now barren. The presence of abandoned irrigation systems together with abundant archaeological evidence indicate that much more water was available in the past, probably all the year round (Owen 1993, 6). Today however, the environment in the Osmore valley is extremely dry, and completely limited to the arable tracts of land of the valley floor.

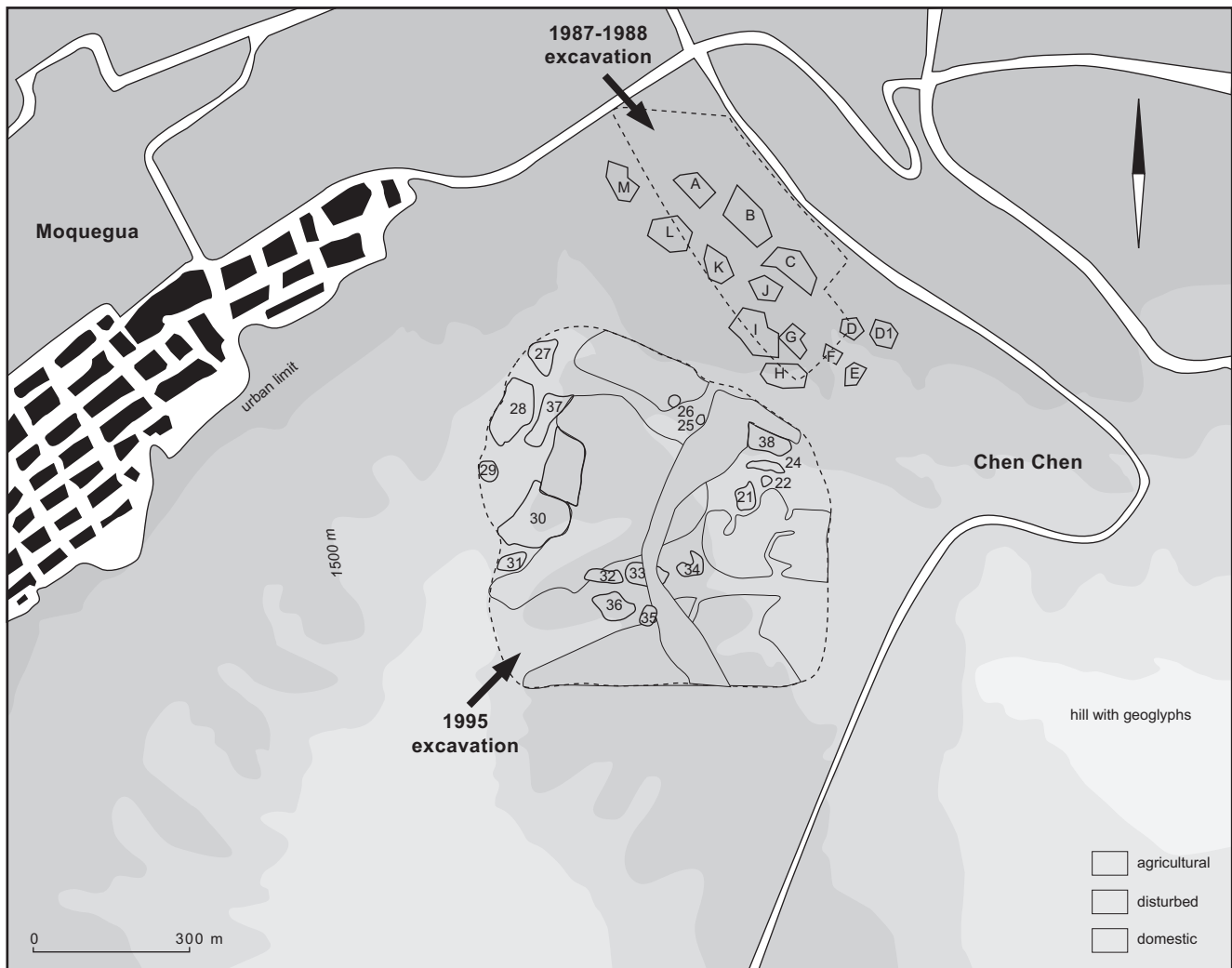


Fig. 5.2 Chen Chen nearby modern Moquegua (after García 1990 and Vargas 1994)

Along the Pacific coast, only few hundred metres of relatively flat land are present between the ocean and the steeply rising coastal mountain range. The modern port and town of Ilo are located here. This coastal strip was also the area where the earliest human activities of the Osmore drainage took place, exploiting the abundant marine resources (Buikstra 1995, 233). Today, the Pacific shore and coastal valley are seriously contaminated by the fumes from the copper smelter that is located 10 kilometres north of Ilo. Fumes laden with sulfur dioxide (SO₂) have been shown to have a direct effect on agriculture, yielding smaller crops, and on the longer term forming a serious threat to human health and the conservation of archaeological heritage.

5.4 Middle Osmore valley: Chen Chen site

The name of the site Chen Chen has been derived from the Chenchén mountain to the south of the Osmore river (locally known as Río Moquegua), on whose slopes this site was situated (Kuon Cabello 1981, 23). The site is located some 60 to 100 metres above the irrigated agricultural fields on the valley bottom and two kilometres away from the modern town of Moquegua (fig. 5.2). In all, the vast site of Chen Chen measures 80 hectares and spreads out over various levels, ranging between 1474 to 1530 masl, and comprising relatively flat land of the pampa, the mountain slopes: quebradas and low hill tops. The site Chen Chen has been coded as 'M1' in the

inventory of archaeological sites of the Moquegua valley made by Programa Contisuyo. The coordinates of the site are: 70° 54' 42" West Longitude and 17° 11' 56" South Latitude. It has a mean annual temperature of 18.1° Celsius (ONERN 1976, 84).

Chen Chen was the major Tiwanaku settlement in the middle part of the Osmore valley throughout the final phase of the Tiwanaku culture, locally known the Chen Chen phase (Tiwanaku V, A.D. 800 to 1050). Chen Chen consists of several cemetery areas surrounding large habitation areas, plus a network of irrigation canals and a road connecting this settlement with the Tumilaca site in the northeast and with the Omo site in the southwest. Geoglyphs are found in the eastern hills overlooking the site.

The site Chen Chen and especially the associated cemetery sectors have been seriously and systematically looted, especially since 1965. Various tombs that appear to be intact were filled by local sand with a thick top layer of volcanic ashes, that seem to originate from the eruption of the volcano Huaynaputina in A.D. 1600. This suggests that a significant quantity of tombs of Chen Chen laid open at this time, without being obviously disturbed. The opening of the tombs may have taken place in colonial or prehistoric times. The human remains were found with their fragile textiles and ropes in place, and with ceramics with wooden spoons still in its original position, indicating that little to no movement of the grave contents had taken place, although it may be possible that other materials, specifically metal objects, were taken away.

The northeastern section of the site was excavated by Vargas in 1987 and 1988, while Owen and his team excavated the area to its south in 1995. Vargas excavated a cemetery area of twelve hectares, which she subdivided into thirteen sectors. The textile specimens for this study were taken the sectors A, B, C, H, and I. The western sector is thoroughly looted and heavily disturbed by a dirt road and a large compound of pork farms cutting into the cemetery sectors (Owen's sectors 27, 28, 29, 30, 31, and 37). Here, Owen's team identified a domestic area with levelled floors, stone concentrations and cleared areas, probably representing patios surrounded by temporary houses. The eastern section of the site is seriously damaged by the modern canal of Pasto Grande,

cutting through cemetery areas (Owen's sectors 21, 22, 24, 25, 26, and 38), while more cemetery areas are located in the southern area (Owen's sectors 32, 33, 34, 35 and 36). The site is bordered to the south by various ancient agricultural fields with irrigation canals and ditches.

Vargas' excavation campaign of 1987-1988 uncovered 4,291 tombs. Only 7.8 % (n = 334) of the tombs were found intact, while 44.7% (1,915 tombs) was totally disturbed and 47.5 % (2,042) partially disturbed. Vargas (1994) identified the cultural remains from the northeastern sector of the Chen Chen site as belonging to the Classic Tiwanaku IV phase (locally known as Omo phase) and the Tiwanaku V phase (locally known as Chen Chen phase). Very few burials were found to contain some ceramics made in the Wari (-Q'oscopa) style that may have been derived or copied from the ceramics from the nearby Wari site on top of and next to Cerro Baúl.

In 1995, Owen and his team excavated another 132 burials, almost half of them (n = 62) in sector 30. Owen (1997, 6) identified the ceramics as pertaining to the Tiwanaku V (Chen Chen) phase, with possibly few ceramics from the subsequent Tumilaca phase included, but none of the previous Omo phase material. The ceramic seriation corresponds with the radiocarbon dates taken from this site by Disselhof (1968) that yielded A.D. 910 (± 65) and A.D. 1020 (± 65), both corresponding to the final years of the Tiwanaku occupation of the valley. The distribution of the tombs suggests that areas with irrigation canals were abandoned after which these areas were used as cemeteries, indicating growth of the Chen Chen's population (Owen 1997, 8). Owen estimates that the total amount of burials in the excavated sectors of Chen Chen (1995) lies around 8,565 individuals. This number, plus the 4,291 individuals excavated by Vargas (1987-1988), yields a total of 12,856 buried individuals, which Owen considers to be conservative (Owen 1997, 7).^[5]

5.5 Lower Osmore Valley: La Cruz, El Descanso, and Algodonal Ladera sites

5.5.1 LA CRUZ

The name 'La Cruz' refers to a small chapel that was built in the middle of the coastal Osmore valley, in the district of El Algarrobal, behind the bioarchaeological

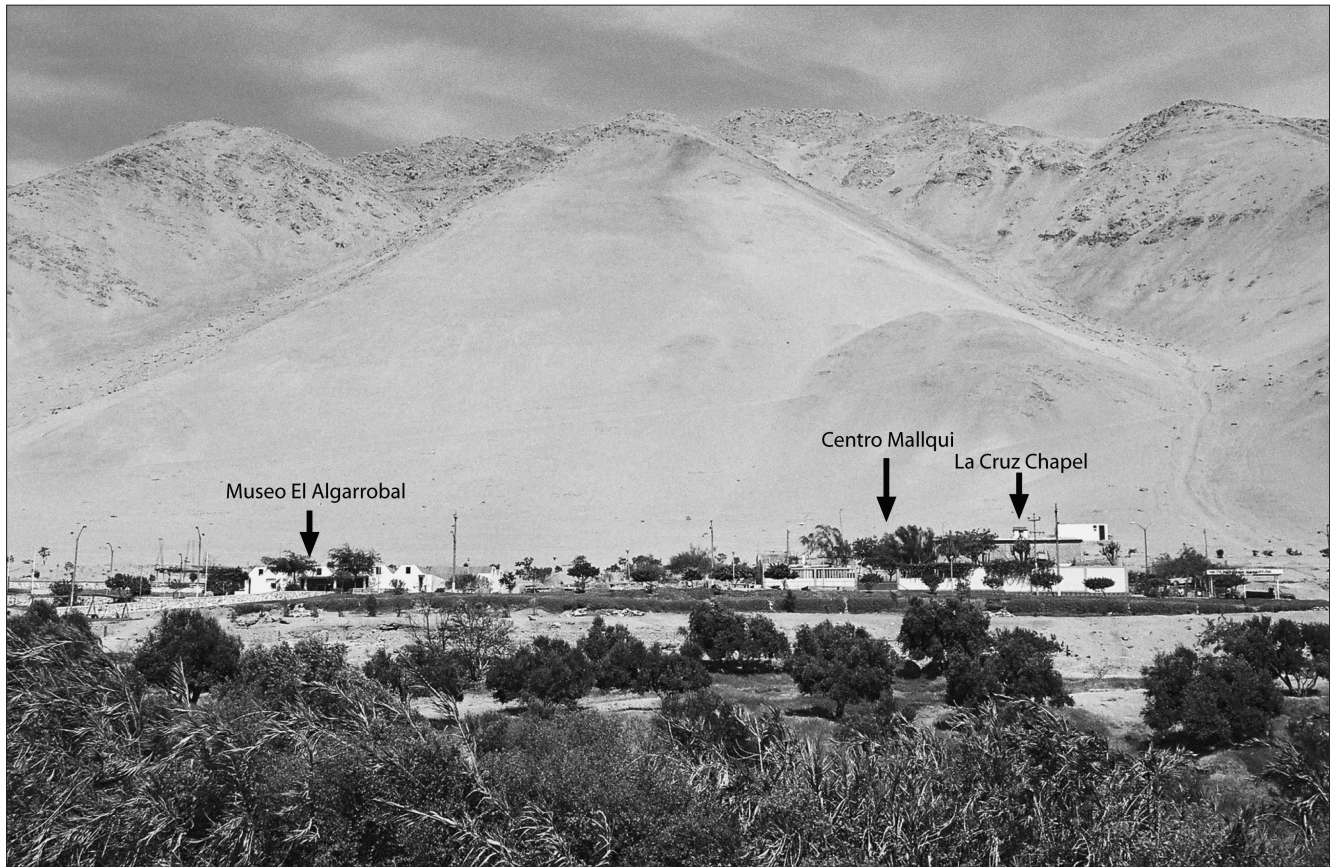


Fig. 5.3 La Cruz, now covered by the chapel, Museo El Algarrobal and Centro Mallqui (looking south)

Centro Mallqui. The archaeological site ‘La Cruz’ refers to the area where this chapel, the El Algarrobal Museum and the Centro Mallqui Research Centre are located (*fig. 5.3*). The construction of these buildings and the paved road in front of them, formed the reason to excavate the site in 1993. An emergency excavation followed in 1998, when a clandestine dirt road running just behind these buildings, issued by the local council, had exposed a large number of human remains.

La Cruz has been recorded as ChB-MS-2 by Centro Mallqui, the ChB referring to the extended archaeological site of Chiribaya Baja towards the west. This site went unnoticed in Owen’s valley wide survey (Proyecto Colonias Costeras Tiwanaku 1989-1990), as the site was still completely covered by sand prior to the construction of the chapel, research centre and museum.

The La Cruz settlement was built about nine kilometres away from the Pacific shore, on the south bank of the Osmore river. Like the majority of archaeological

settlements in this part of the valley, La Cruz was built on low terraces of alluvial origin, placed above the irrigated floodplain and agricultural terraces. The cemetery was traditionally placed uphill from the domestic area, on the dry mountain slope of Cerro Canicora.

The total size of the La Cruz site is estimated to measure about one hectare, lying at an altitude of more or less 150 masl. Unfortunately, the field notes of both excavations appear to be missing, so that the total amount of excavated area and tombs has to be estimated. Based on the tomb numbers, at least 30 tombs have been excavated in the 1993 excavation, while at least another 12 tombs and/or mummy bundles were rescued in the 1998 excavation. Guillén (*pers. comm.* 2004) and Carpio (*pers. comm.* 2004) both state that the cemetery area of this site had been divided into two areas along a straight line. One half had been used for Tiwanaku and Ilo-Tumilaca-style burials, the other for early (Algarrobal) Chiribaya-style burials, apparently without mixing.

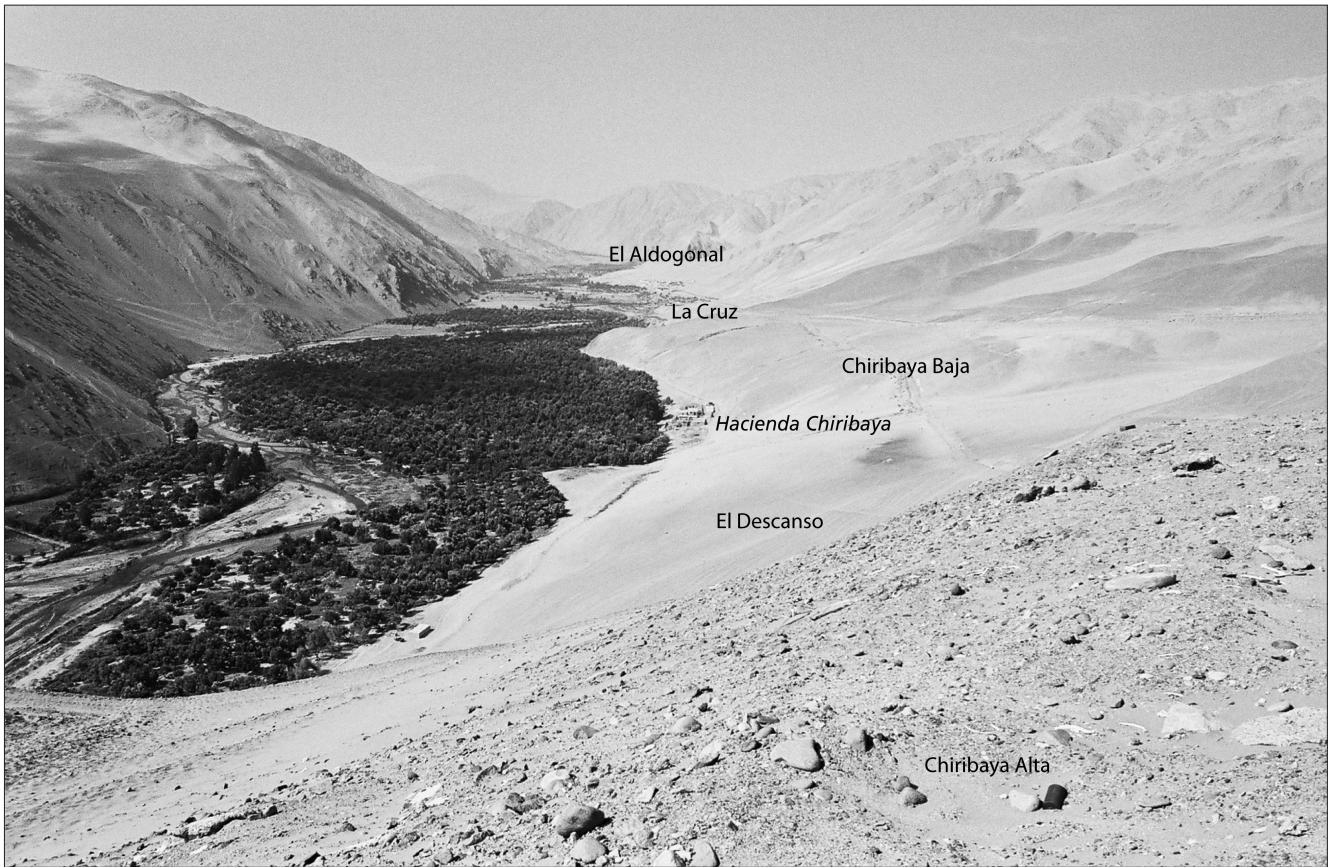


Fig. 5.4 Location of El Descanso and nearby sites and structures, seen from Chiribaya Alta (looking east)

Carpio (pers. comm. 2004) feels that the accessible location of La Cruz is typical of the Tiwanaku state settlement pattern and in contrast to the later Tumilaca and Chiribaya settlements, which leads him to conclude that the Tiwanaku colonists had formed an ‘active society’ in the lower valley.

5.5.2 EL DESCANSO

‘El Descanso’ means ‘resting place’ in Spanish. This name has been transmitted orally and refers to the traditional use of the site as resting place for the llama caravans on their way to or from the highlands via Moquegua, although the llamas were replaced by goats and sheep in the 20th century. The archaeological site of El Descanso has been identified by Owen during his survey (1989-1990) as PCCT-146. According to Carpio (2000c) and Salazar (2001), Owen did not recognize the total extent of the site nor its cultural affiliation with the Tiwanaku culture, which came to light a few years later,

when the placement of a water pipe by Sedailo from the higher valley to the town of Ilo, exposed a quantity of prehistoric tombs.

The site El Descanso is located at about seven kilometres from the mouth of the Osmore river, on the southern bank of the Osmore river. The site lies on a long and gentle slope of the Canícora mountain at an altitude of 110 masl (*fig. 5.4*). This mountain envelopes the archaeological site to the south and east. Immediately to its west, this mountain rises up steeply, with a steep northern slope towards the river below. On its flattened top, the archaeological site of Chiribaya Alta is situated, a unique high status site shared by the Chiribaya and Ilo-Tumilaca people in the early decades of their cohabitation. To the south, the site is bordered by the paved road running along Canícora’s slope towards the El Algarrobal District. This road crosses the vast Chiribaya site of Chiribaya Baja that was built on artificial terraces following the riverbed (*fig. 5.5*).

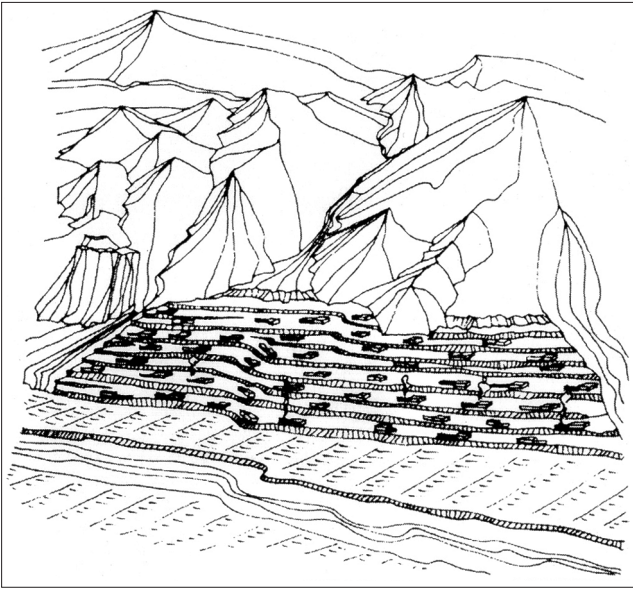


Fig. 5.5 Reconstruction of site Chiribaya Baja built on artificial terraces (looking south) (Umire and Miranda 2001, 70)

Towards the north, the site is bordered by a dirt road that follows the irrigated river bottom, where nowadays olive trees grow. Here too is located the *hacienda* (farm) Chiribaya that gave the name to the most important culture of the lower Osmore valley (fig. 5.6). A few hundred metres up river, Chiribaya Baja was located, the largest Chiribaya settlement in this coastal valley. In total, the site of El Descanso measures almost 8.8 hectares.

The whole site is covered by a layer of mud, probably deposited as a result of one or more Niño-events. Erosion effects the site in the sense that sand has accumulated at the surface of this site, rather than being blown or washed away. The domestic area was situated on natural, alluvial terraces of low elevation, just above the valley floor. At the surface, no visible architectural remains can be detected, nor mounts or open spaces that might indicate the presence of public structures. However, large stones are found at the surface. The burial area is located slightly higher on the slope without external marks. The site is not intact, as evidence of modern and ancient looting has been found.

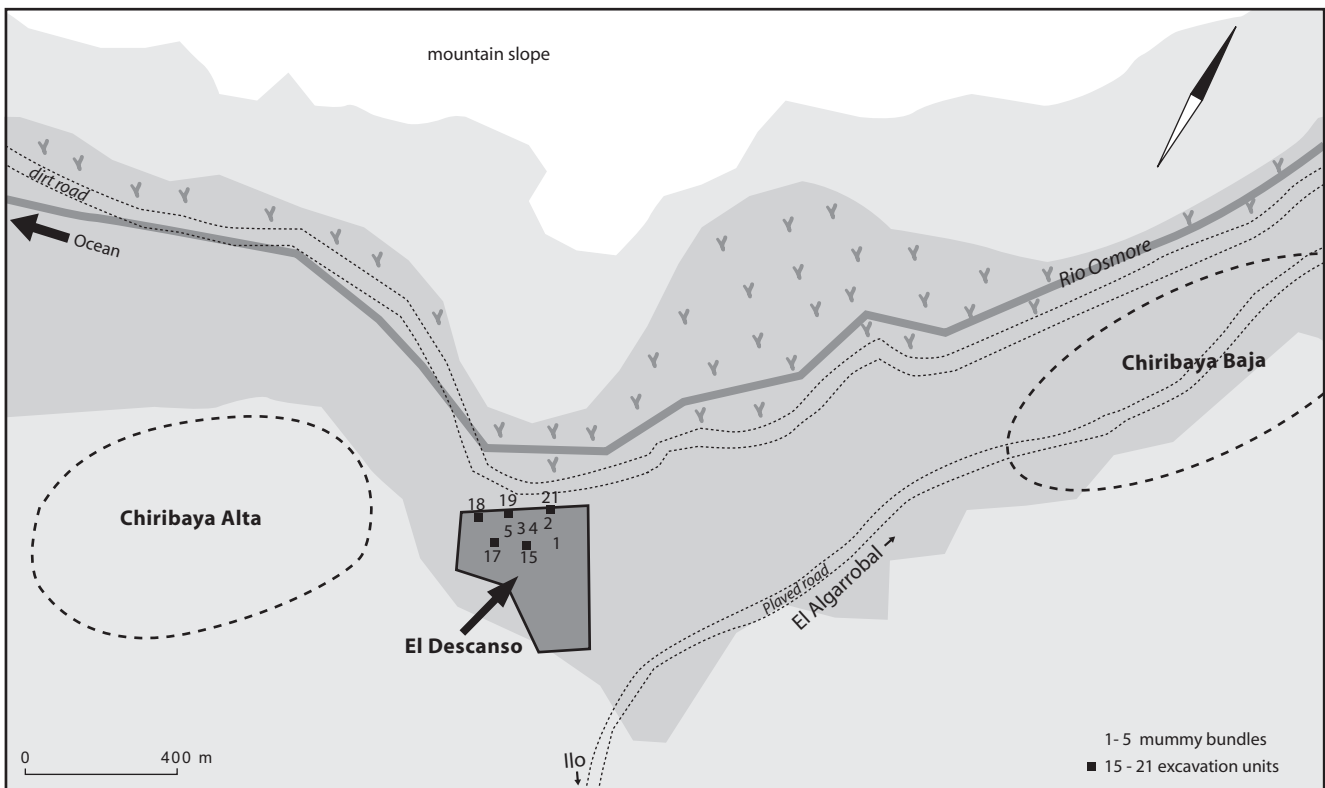


Fig. 5.6 El Descanso (after Barreda 2002)

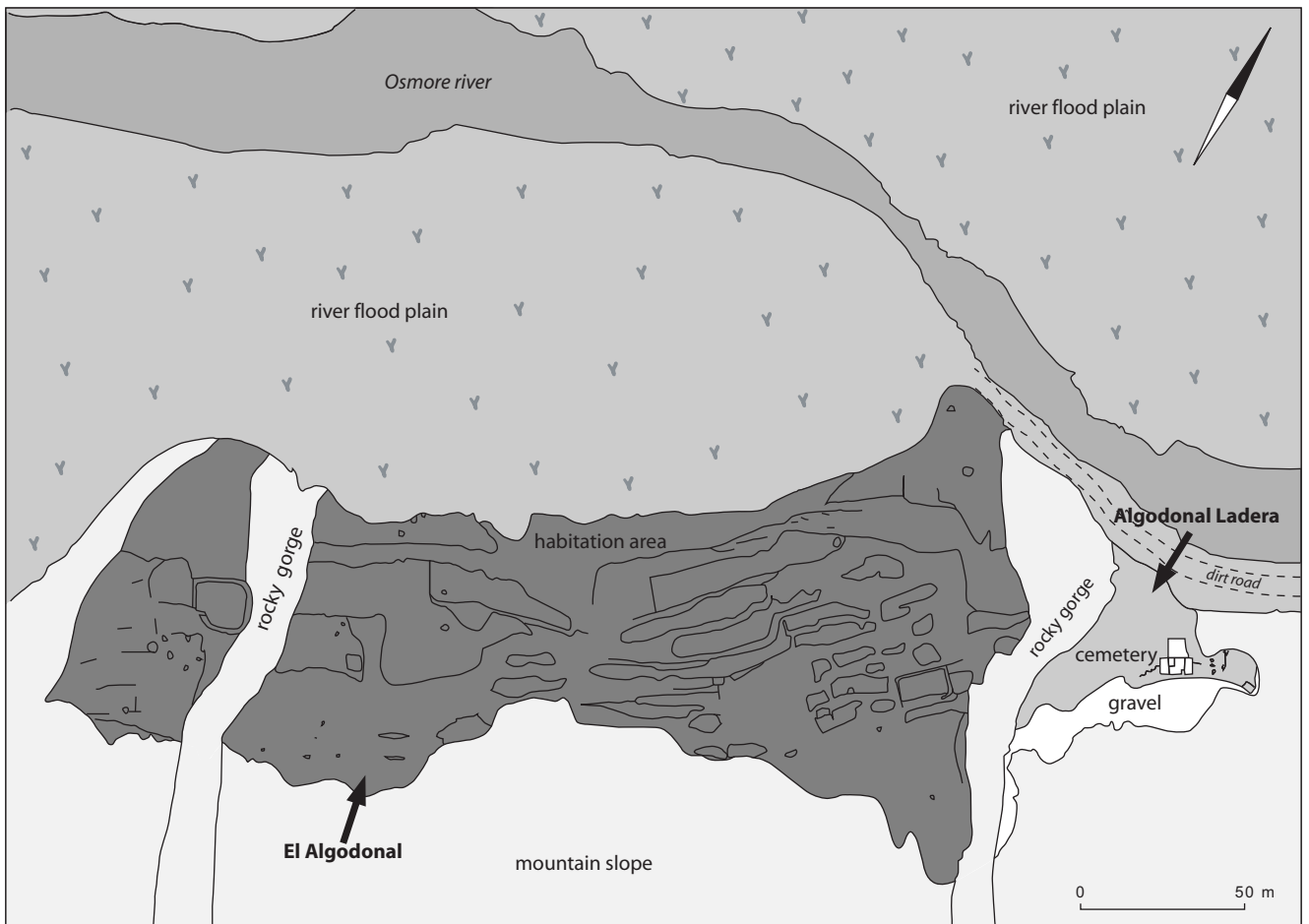


Fig. 5.7 Location of Algodonal Ladera in easternmost sector of the larger site El Algodonal (after Owen 1993, 267)

According to Carpio (2000c) and Salazar (2001), the population of El Descanso was closely related to the Tiwanaku culture. They identified the characteristics of this site as corresponding to the final phase of Tiwanaku (Chen Chen phase) from the middle Osmore valley and the subsequent Ilo-Tumilaca phase. Owen (pers. comm. 2004) identified El Descanso ceramics from a photograph as *'very similar to the Ilo-Tumilaca material from El Algodonal'*, and *'representative of terminal Tiwanaku and/or post-Tiwanaku refugee populations'*, and sees *'no reason to suspect that the Descanso material is any earlier or more closely related to the Tiwanaku state than was El Algodonal'*.

Based on the presence of a large quantity of burials and the presence of a large domestic area related to the Ilo-Tumilaca phase, Salazar (2001) suggests that the actual function of this site may have been a high status burial ground for these people, very much like the

Chiribaya Alta site served as high status residence and burial grounds for initially both Chiribaya and Ilo-Tumilaca people and in later times for Chiribaya people exclusively.

At El Descanso, evidence of pre-Tiwanaku and possible pre-ceramic people occupation has been identified as well (Salazar 2001).

5.5.3 ALGODONAL LADERA

Algodonal Ladera is the easternmost sector of the larger archaeological site 'El Algodonal' (fig. 5.7). The name 'El Algodonal' is named after the *hacienda* located on the valley floor, slightly towards the southwest of the site, which was probably once was dedicated to the cultivation of cotton. *Algodonal* means 'cotton plantation' in Spanish, while *Ladera* refers to the steep slope (20 to 30° talus slope) on which this



Fig. 5.8 El Algodonal (looking south)

eastern part of the site is located. Throughout this study, the cemetery of Algodonal Ladera will be abbreviated to 'Algodonal'. The archaeological site of El Algodonal was identified as PV 92-PCCT-195 and partially excavated by Owen in his *Proyecto Colonias Costeras Tiwanaku* (1989-1990).

The site El Algodonal is situated on the southern bank of the Osmore river, twelve kilometres from its mouth, that is, further inland than El Descanso and La Cruz. It is located at about 200 masl, on old river terraces cut into the steep slopes of the Loreto mountain, that rises up to the east and south of the site. To the north, the site borders with irrigated fields that are owned by the state and further down, the site is cut off by the river (*fig. 5.8*).

Algodonal Ladera refers to the cemetery area that lies in the northeastern sector of the site (Owen's cemetery 1). Nowadays, this cemetery measures more

or less 0.15 hectare, although in the past it may have continued a hundred horizontal metres or more up river along the talus. At this point, the river cuts deep into the steep slopes and terraces that hold the cemetery of Algodonal Ladera, so that the cemetery was almost completely eroded away by the river, especially after the 1998 El Niño event. This event, together with the construction of a dirt road and the ongoing heavy looting of the site, formed the motivation to excavate the site in 2000. Other damage to the site was done when two natural drains, that empty on the terraces towards the eastern and western limits of the Algodonal habitation area, were artificially enlarged in the 20th century in order to control run off water during rare, but torrential rains.

The site El Algodonal consists of a habitation area and three distinct cemeteries that are located above and to

the east of the domestic area. The terraces that had been levelled for habitation in cane-walled houses, range in size between 5 and 10 metres wide and 18 to 56 metres long, and were retained by field stone walls. Some terraces were considerably wider and probably formed plazas. All together, the site of El Algodonal stretches out over an area of 2.68 hectares.

The site of El Algodonal and its three associated cemeteries forms the largest visible Ilo-Tumilaca/Cabuza cemetery in the valley observed in Owen's survey of the lower valley. Nonetheless, Owen (1993a, 8) calculated that the site merely represents a hamlet with a population of 40 to 54 people at any given time.^[6]

In the habitation area, Owen (1993, 104, 266-300) found a mixture of Chiribaya, Ilo-Tumilaca and Ilo-Cabuza ceramic styles that had been deposited in a relatively short period of time and without stratigraphic patterning. Much of the (highest) habitation area proved to be solely Chiribaya, while other areas contained a large predominance of Chiribaya material with only 8% to 14% of Ilo-Tumilaca/Cabuza material. The habitation area appears to have been used by Chiribaya and Ilo-Tumilaca/Cabuza people simultaneously, or by people living in separate areas, but whose refuse got mixed. Tombs that were found throughout the habitation terraces, contained both Chiribaya and Ilo-Tumilaca/Cabuza style artefacts. On the contrary, the three separated cemetery areas related to this site hold exclusively Ilo-Tumilaca/Cabuza ceramics, textiles and cylindrical stone-lined tombs. Owen (1993) and Boytner (1998) did not identify a single Chiribaya style artefact at Algodonal Ladera, despite the fact that the Chiribaya people lived less than a hundred metres away, where they dominated habitation terraces. The cemeteries were used to bury both sexes and all ages, indicating the presence of a complete and stable population, rather than a specialized work group (Owen 1992, 5; Owen 1993, 268-70, 300, 424).

Owen (1993a, 3) attributes all mortuary material from this cemetery to the Ilo-Tumilaca/Cabuza tradition (A.D. 990 to 1250). Carpio (2000a, b) in contrast, identifies the cultural remains in the tombs of the Algodonal Ladera sector as belonging to Ilo-Tumilaca/Cabuza's ancestral Tiwanaku culture. Unfortunately, no radiocarbon dates were obtained in this campaign to prove this point.

Prior to the arrival of the Ilo-Tumilaca and Chiribaya people, the eastern section of site was already occupied by settled agriculturalists of the local Early Ceramic Tradition (with neckless ollas), dated to around 100 B.C. and A.D. 370 (calibrated). They may be related to the burial mounds, similar to those of the Alto Ramírez period in Azapa Valley, located to the southeast of the habitation area. The site had long been abandoned when the western and central portions of terrace flats were reoccupied by Ilo-Tumilaca/Cabuza and Chiribaya people, although it remains unclear whether the earlier populations were still present at the time of arrival of these newly arrived groups (Owen 1993, 268).

In the description of the Osmore sites, many cultural determinations have been summed up. In order to gain a better understanding of the prehistoric habitation of the South Central Andes area and of the Osmore valley in particular, their cultural development is described in the next chapter.

NOTES

1. Severe earthquake are recorded for the years 1604, 1868, 1877, 1987, and 2001 (June 23rd), destroying many houses and complete villages in and near the Osmore drainage (Arriaza 1995a, 61; ONERN 1976, 12). The latest earthquake also destroyed the research centre Centro Mallqui near Ilo. Large tidal waves nearly destroyed Arica and Ilo in 1868 and 1877. The volcano Huayna Putina near the boundary of the departments of Arequipa and Moquegua erupted between February 15th and 28th, 1600, burying six towns completely, shrouding the entire regions in darkness for several days, and causing ash-fall in the wide region, including the Osmore and Azapa drainage some 250 kilometres and 450 kilometres, respectively, to the southwest: this layer of fine, light-gray ash serves as time marker in archaeological research (Kuon Cabello 1981, 135; Dauelsberg 1985, 277-28; Owen 1993, 268-70, 300, 424).

2. For example, in 1960, fishing in this current yielded 1,680 kg per hectare, almost a thousand times the average of worldwide ocean productivity (Burger 1995, 14). The diversity of marine life is such that fishermen can specialize in harvesting mollusks to large fish and sea mammals (Coe *et al.* 1986, 153-155; Moseley 1997, 47).

3. This phenomenon is called 'El Niño' because it often arrives around Christmas. In Spanish, the infant Jesus is known as 'El Niño'.
4. '*Yunga*' is a general term for warm valley, and in prehistoric and colonial times, the low altitude valleys of the western Andean flanks were also known as 'yunga'. Here, the latter will be referred to as 'western valleys'.
5. Owen's (1997, 7) calculation is based on multiplication of the numbers of burials per square metre by the area of a sector in metres.
6. According to Owen's 'best guess calculation', the entire cemetery area once held 600 to 800 individuals buried over an estimated period of 300 years with an average of 2 to 2.7 burials per year, leading to a 'most likely' reconstruction of the associated population of 40 to 54 people at any given time (Owen 1993a, 8).