Appendix A

Proyecto Colonias Costeras de Tiwanaku 1989-90, Sitework Report

This appendix is a condensed and updated version of an unpublished sites report entitled Proyecto Colonias Costeras de Tiwanaku, 1989-90 Field Report, dated June 26, 1991. Copies of the original report are on file with the Programa Contisuyu and have been distributed to interested individuals and organizations. An abbreviated version in Spanish was submitted to Instituto Nacional de Cultura (INC) offices in Lima, Moquegua, and Ilo, and to various interested individuals.

The Proyecto Colonias Costeras de Tiwanaku (PCCT) was conceived in 1988 in order to examine the expansion of the Tiwanaku state into the coastal Osmore valley of southernmost Peru (see Figure 1-1). The results of the mapping, surface collection, and excavation conducted in 1989-90 forced the project to shift its focus. Published sources (Mujica 1985; Mujica, Rivera, and Lynch 1983; Ponce 1977; Kolata 1987; Santoro and Ulloa 1985) indicated that there were Tiwanaku colonies in the coastal Osmore valley, generally referring to the site of Loreto Viejo, and Loreto Viejo is the name and type site for Tiwanaku-related ceramics of the region (Rivera 1980; Berenguer 1978; Dauelsberg 1985; Santoro and Ulloa 1985). Surface ceramics suggested that the site of El Algodonal also had a component related to Tiwanaku. Nevertheless, PCCT found little clear evidence of the Tiwanaku state in the coastal Osmore valley. Instead, the Tiwanaku-like sites pertain to a local variant of Goldstein's (1985, 1989a,b) Tumilaca phase, roughly dated around AD 900 to 1050 (see Chapter 1 and Figure 1-5). During this time, Tiwanaku's hegemony in the middle Osmore Moquegua region broke down, the middle valley's population divided into a number of comparatively isolated subgroups, and people moved into the upper Osmore
valleys such as the Otora (Bermann et al. 1989; Stanish 1985, 1992; Watanabe and Stanish 1990). It now appears that during this phase, settlers moved down into the coastal Osmore valley as well.

PCCT excavated Tumilaca phase habitation areas at the sites of El Algodonal and Loreto Alto, and a Tumilaca phase cemetery at El Algodonal. Loreto Alto was originally thought to be a storage complex associated with El Algodonal and Loreto Viejo, but test excavations proved it to be a single-component habitation site that may be a key to understanding the Tumilaca phase in the coastal Osmore.

The original research design called for excavations in Chiribaya settlements, in order to contrast them with the Tiwanaku-related material. Since much of the habitation area of both El Algodonal and Loreto Viejo proved to be Chiribaya, a considerable quantity of this comparative material was collected. The cemetery at Loreto Viejo was surface collected or excavated around 1960 by Gary Vescelius, and although never published, this material was the basis of the interpretation of Loreto Viejo as a Tiwanaku colony. PCCT surface collected and excavated in the Loreto Viejo cemetery, but encountered only Chiribaya material.

Finally, PCCT encountered unexpected early occupations that are probably allied to the local coastal late preceramic, the Huaracane phase of the middle Osmore, and the Alto Ramírez phase of northernmost Chile. Two early ceramic habitation terraces were located at El Algodonal underneath the Tumilaca phase cemetery, and were excavated for comparative purposes and as salvage, since I feared that they would be destroyed by looters. Several test excavations were placed in the large area of early ceramic habitation terraces at Loreto Viejo. One burial tumulus at Loreto Viejo was test excavated at the request of a representative of the Moquegua INC office, in
connection with a request for a land grant including the tumuli. A report was filed with the Moquegua INC, and the land grant was denied.

PCCT is part of the Programa Contisuyu, a coalition of archaeologists who work in the Osmore drainage and share data and resources. The PCCT 1989-90 fieldwork was authorized by Resolución Suprema No. 386-88-ED, and funded by Fulbright-Hays Fellowship P022A80009 and National Science Foundation Dissertation Improvement Grant 8903227. I arrived in Perú April 5, 1989. Fieldwork began May 5, 1989 and alternated with periods of lab work, ending June 6, 1990. Lab work continued through September 23, 1990. I left Perú on September 24, 1990.

**Personnel**

Bruce Owen (University of California, Los Angeles) directed the project in all its phases, and is the author of this report. PCCT is my doctoral dissertation research. Starting and running PCCT was made much easier through the help of David Jessup (University of Chicago), who had already established contacts and procedures for extended archaeological work in the Ilo area, and who had partially completed a field house, lab, and storage facility in the outlying hamlet of Algarrobal where I lived for over a year. I gained access to many of the specialists who have worked on the PCCT collections through Jane Buikstra (University of Chicago) and her enormous Chiribaya Project, which conducted large-scale cemetery excavations and analyses while I was in the field. Both David Jessup and Jane Buikstra have been extremely helpful with logistical matters and open with their data and interpretations. Mike Moseley, Don Rice, Garth Bawden, Charles Stanish, and other members of Programa Contisuyu have also contributed important insights and comments from the beginning of PCCT to now.
I was ably assisted in the field by Gerardo Felipe Carpio Díaz (UCSM, Arequipa), Edmundo de la Vega (UCSM, Arequipa), Cecelia Chavez (UCSM, Arequipa), Augusto Cardona Rosas (UCSM, Arequipa), Adan Oligario Umire Alvarez (UCSM, Arequipa), Wilbert Vera Robles (UNSAA, Cuzco), Rick Reycraft (University of New Mexico), Guy Pinneo (Princeton University), and José Moya Yachachin (Ataura, Junín), all of whom excavated units, directed workers, maintained field notes with drawings, and took photographs. Felipe and José also acted as assistant field directors when necessary.

In the lab, Niki Clark (University of Chicago), Juana Lazo (UN, Cuzco), and Cecilia Quequezana (Instituto Nacional de Cultura, Arequipa, Peru) handled textile conservation. Kari Sandness (University of Nebraska, Lincoln) collected bone samples for a dietary study comparing the Tumilaca and Chiribaya phases. Dr. Sloan Williams (University of Chicago) collected bone and soft tissue samples for a biodistance study based on DNA restriction fragment length polymorphisms that will assess whether the Tumilaca phase settlers were a distinct breeding population from the Chiribaya. Dr. Arthur Aufderheide (University of Minnesota, Duluth) dissected the better preserved human remains to ascertain age, sex, and pathologies. Sloan Williams, Shelly Burgess (University of Chicago), and Phil Hartnady (University of Missouri) determined preliminary age, sex, and gross pathologies for many of the human remains. Shelley Burgess returned in 1991 for a thorough paleopathological analysis of the human remains from the cemetery at El Algodonal, which resulted in revisions to the preliminary demographic data as well.

In both the field and the lab, I was helped especially by Valentin Avelino Córdova Cotori, Andrés Moya, Pascual Pompeyo Rojas Aliaga, María Colana Bedoya, and
David Schwartz. Assisting in the field and lab were Hugo José Amézquita Dávila, Edgar "Yayo" Santiago Del Castillo Egiluz, Mario Silvestre Calizaya Cayo, Walter Gregorio Amézquita Dávila, and César [patronym unknown]. Ian Curry, Catherine Martinez, Banks Lee Leonard, Niceas Juarez, and Elaine Hubner all volunteered valuable time in the field or lab on various occasions.

Manuel Pacheco deserves special thanks not only for sharing his great knowledge of the coastal Osmore valley, his frequent emergency car repairs, and allowing us to process flotation samples alongside his irrigation tank, but also for his boundless enthusiasm, advice, and personal support. In this Manuel must share the credit with his wife Darina and children Doris and Rojelio, who always made us more than welcome in their home.

Field, lab, and analytical methods

All three sites were mapped in detail. A grid of control points at known coordinates were marked on the site with flags, using a theodolite and 30 meter tapes. For each rectangle of control points, two tapes were stretched along parallel sides of the rectangle. A third tape was stretched perpendicular to them and moved along the rectangle as features were drawn in on the map sheet. Because of the steep, irregular terrain at Loreto Alto, this method was used only for the central part of the site, and the rest was mapped from air photos. Coarse elevation data were collected at El Algodonal and the central portion of Loreto Alto. Only Loreto Alto was finally contour mapped, using both field and stereo pair air photo data.

Only El Algodonal was systematically surface collected. The site map was divided into sixteen sampling strata based on differing surface features such as terrace
shape and size, slope, stonework, and so on, and a computer program generated
random coordinate pairs within each stratum. Each collection unit was a circle five
meters in diameter centered on a random coordinate pair, and enough non-overlapping
units were collected to approximate a 10% sample of each stratum. Additional
collection units, occasionally varying in size and shape, were placed intentionally in
order to collect material of interest, including unusual ceramic concentrations and
human remains. Within each collection unit, all cultural material on the surface was
collected.

All reasonably intact human remains and some textiles, ceramics, and other
artifacts were collected from the surface of the looted Tumilaca phase cemetery at El
Algodonal. These collections often extended as much as 50 centimeters below the
surface, in backdirt from looters' pits. We attempted to collect human remains such
that each collection unit represented as much as could be found of a single individual
and the artifacts clearly associated with it, but this was often difficult in practice. The
location and size of each collection area was noted. The cemetery at Loreto Viejo
proved to be Chiribaya, and only the most intact human remains and artifacts exposed
on the surface were collected. Fragmentary, looted material was judged less important
at Loreto Viejo, because good samples of other Chiribaya cemeteries are already
available for study.

Excavation units in the habitation areas of all three sites were not placed
randomly, but rather were located purposefully in order to sample well-preserved
terrace surfaces in different areas of each site. In some cases, especially at Loreto
Alto, accessibility and the need to have teams working close enough together to share
equipment such as cameras were also considerations in the placement of excavation
units. Most units were placed towards the back edges of terraces, since experience showed that in most cases the living surface was eroded away in all but the back portion of the terrace.

Excavations proceeded in natural stratigraphic units as far as possible, with arbitrary subdivisions made as appropriate. Each stratum was described with a code indicating its site, unit, level, and locus, for example, LV 2510-2-3/1. Loreto Viejo was coded as LV, Loreto Alto as LA, and El Algodonal as AD, to distinguish it from the Chiribaya site of El Algorrobal. Excavation units were typically 1.5 X 1.5 meter squares, each of which was given a three or four digit identification number. Three digit numbers are units at El Algodonal, numbers from 1001 to 1999 are units at Loreto Alto, and numbers from 2001 to 2999 are units at Loreto Viejo. Numbers ending in 1xx or 2xx are surface collections in habitation areas, those ending in 3xx are surface collections or excavation units in cemetery areas, and those ending in 5xx are excavation units in habitation areas. This system became somewhat inconsistent when early ceramic habitation remains were discovered underneath the Tumilaca phase cemetery at El Algodonal in units numbered 3xx.

Each excavated provenience within a unit was labeled with a level and locus number. A new level was begun when the soil changed in any way from that above it. A new locus was begun when a level was not uniform across it's surface. For example, a floor might be level 3, locus 1, while the fill of a posthole dug into it might be level 3, locus 2. All notes and provenience information are keyed to these unit-level-locus codes; there are no additional tomb numbers, feature types, etc. Most tombs were assigned their own unit number and were not further subdivided in the proveniencing system, but a few are identified with full unit-level-locus proveniences.
When it was necessary to identify an artifact or soil sample within a locus for point-proveniencing or to distinguish it from another similar item, the object received a special collection number that was also recorded in the field notes. A full provenience code looks like AD 525-15-11/1, meaning El Algodonal, unit 525, level 15, locus 11, special collection 1. In this case, locus 11 is the fill of a pit, and special collection 1 is a post that was standing in it.

Notes concerning stratigraphy, soil types, artifact content, photographs, general procedure, and interpretations were taken on standardized forms, and maps were drawn showing the location of loci and elevations relative to a local floating datum for each unit or group of adjacent units.

At least one flotation sample was collected from each locus except for some tombs and strata cuts. Flotation samples were measured in graduated buckets, and were always eight liters or the entire locus, if it totalled less than eight liters. All the additional soil in the locus was passed through 1/4 inch screens, and in most cases all the cultural material was collected except for bits of chaff and cane under about 1 inch in length. Material collected included not only artifacts such as plain body sherds and river cobbles with pounding wear, but also all other plant material, camelid dung, fish scales, shell fragments, feathers, string, hairs, and so on. Except for items that seemed fragile or likely to be lost, all the material was bagged together for later separation in the lab. Appendix E describes the results of analyzing this material. In a few cases, test trenches were dug without screening or redeposited or sterile overburden was discarded without screening.

The early flotation samples were floated in a water tank and the light fraction
skimmed by hand. Later samples were floated in one of two similar modified SMAP-type machines (Pearsall 1989). 748 of the 893 light and heavy floatation fractions have been separated by hand at a macroscopic level into relatively detailed categories for future analysis.

Artifact preservation is naturally excellent and the soils are sandy, so most artifacts did not need to be cleaned and were stored without any potentially harmful intervention. The two primary exceptions were ceramics and textiles. All ceramic vessels and sherds were soaked for a minimum of one week in a series of clean water baths changed daily, in order first to clean them and then to dissolve out their high salt content and prevent exfoliation. Most of the textiles were gently flattened, dry brushed clean and stored rolled in acid-free paper. The collections are now stored in the field house in Algorrobal.

The ceramic data presented here are based on lab analysis of washed sherds. These results differ somewhat from the field impressions reported in the 1991 site report, and should be considered more correct.

Local terms

Several local terms are used throughout the PCCT notes and papers. Possibly most important are "ceniza volcanica," "volcanic ash," and "Huaynaputina ash". These refer to a distinctive powdery, light grey, slightly glittering volcanic ash that was deposited over a large area of southern Perú by the eruption of the volcano Huaynaputina, near Arequipa, in the historically documented year AD 1600. This ash is easily recognized, and often is found as a thin stratum overlaying a layer of fine, carbonized plant material. No other volcanic ash fall is known for the entire prehistory
of the Osmore drainage, so strata of volcanic ash serve as convenient indicators that everything below them is either prehistoric or dates to the very first decades of Spanish presence in the region.

"Fardo" or "mummy bundle" refers to the tightly flexed, usually seated human remains enveloped in textiles and often elaborately trussed up with wool or vegetal fiber ropes that are found in Late Intermediate Period burials. The human remains are often fully or partially mummified.

"Quincha" refers to a type of cane wall construction in which vertical, small-diameter canes are placed in a shallow trench and held in position with horizontal canes tied in place. Quincha walls and associated roofs are typically supported by vertical posts. The term does not imply mud or any other type of coating over the canes, and little evidence for such coatings is found in excavations.

"Estera" refers to a type of mat made from dried plant stalks laid parallel to each other and fixed in position by widely spaced pairs of identical stalks woven through them perpendicularly. The perpendicular pairs twist around each other like a two-ply rope. A few examples are twined with cotton string instead of the plant stalks, and esteras range in tightness from gapless structures to openwork screens.

**El Algodonal**

El Algodonal is located on a quaternary river terrace on the south side of the coastal Osmore valley, about 12 km from the mouth of the river. Figure A-1 shows that the site is composed of an oblong area of Late Intermediate Period habitation terraces and retaining walls, most of which presumably supported the front edges of terraces that have been obscured by erosion and slumping. Within this area are several
Figure A-1. El Algodonal.
larger terraces or plazas, and there is a separate cemetery at the east end that has no Late Intermediate Period habitation remains, but overlies buried Early Ceramic habitation terraces. Looting in 1991 exposed evidence that the virtually featureless area southeast of unit 510 is an burial tumulus similar to those of the Alto Ramírez period in the Azapa valley (Muñoz 1987), presumably associated with the Early Ceramic habitation terraces. Both ends of the site are cut by deep channels that were enlarged artificially in this century to control runoff during rare but severe rains. Some of the lower edge of the habitation area was eroded away by the river in the past, but the presence of a few prehistoric retaining walls in parts of the eroded scarp suggest that not a great deal has been lost. Part of the cemetery is being actively eroded by the river, and local people say that many tombs have been consumed in the last generation.

The surface of the Late Intermediate Period habitation terraces is strewn with rocks and artifact-rich backdirt from the looting of Chiribaya tombs scattered about the site. Some terrace retaining walls are partially intact, but many of the terraces are poorly defined. Unlike many Chiribaya sites, there are no traces of cane walls visible on the surface. Excavations found that in almost all cases the vertical canes had been removed, leaving only wall trenches that are invisible on the surface. Most of the lower edge of the site is a steep scarp from one to about six meters high that borders the cultivated valley bottom. The site is slightly inclined near the scarp, and grows steeper as it rises away from the river. The highest terraces are built in the talus slope of the valley wall. Some of these have collapsed and buried parts of the back of the site.

Surface ceramics include diagnostic Chiribaya sherds, as well as sherds similar to
those of the Moquegua Tumilaca phase and sherds similar to the Cabuza style of northernmost Chile. Most of the excavations at El Algodonal encountered both Chiribaya and Ilo-Tumilaca/Cabuza ceramics, although a few were essentially pure Chiribaya. The ceramics showed no intelligible patterning in stratigraphic sequence and most units encountered relatively thin cultural deposits, suggesting that the cultural material was deposited over a relatively short period of time. The mixture of styles could indicate that both styles were in use at the same time in the same general vicinity, if not by the same people, or it could indicate depositional mixing, perhaps such that earlier material of one style was redeposited with later material of another due to terrace modifications, cleaning, or prehistoric burial looting. These mixed contexts were not included in most of the analyses reported here (see Appendix E).

Part of the site to the west of the western drainage ditch is in modern use for agricultural processing tasks. A recent stone corral and a number of recent graves further disturb this area. Towards the other end of the site, immediately west of the eastern drainage ditch there is a particularly well-preserved rectangular terrace. The well-laid retaining walls of this terrace may have been augmented in historical times to create a rectangular corral, and a looter's pit shows dense feces deposits on the terrace surface.

The cemetery comprises the eastern extreme of the river terrace, and extends onto the talus slope above and east of it. According to local people, the area of cylindrical stone-lined tombs and pit burials may have continued a hundred meters or more upriver in the talus of the valley wall, but this narrow band of cemetery has been almost completely eroded by the river within the last sixty years. Surface and excavated material from the cemetery includes Tumilaca-like and Cabuza-like remains
in close association, but not a trace of Chiribaya material.

Underneath the steeper back part of the cemetery, excavations encountered two partially preserved, buried habitation terraces characterized by burnt brown to black undecorated neckless olla sherds reminiscent of Carrizal ceramics from the coast around Ilo (Bolaños 1987). These terrace surfaces were already buried by up to 130 cm of talus when the cemetery was in use.

There appears to be very little soil formation on the site, but most areas have been covered by a few centimeters to two meters of material that has slid or washed down from higher terraces or the valley wall. Most of the more exposed terrace surfaces seem to have suffered erosion down to the subsoil level prior to being covered, especially where the front edges of terraces have collapsed. Occupation deposits are most often preserved at the rear of terraces, where erosion was weakest and protective deposition most rapid. When preserved, occupation deposits are generally shallow, from a few centimeters to 50 centimeters thick, resting on a distinctive natural subsoil. Soils are mostly sandy silts derived from granite, with high proportions of gravel and rocks. The soil has a very high salt content, with occasional cement-like chunks and layers held together by crystalline salt. Organic preservation is excellent.

A coordinate grid used for mapping and locating collection and excavation units was oriented parallel to the length of the site. The coordinate axes were labeled R (perpendicular to the river, 35 degrees west of north), and C (perpendicular to the coast, 55 degrees east of north). Points farther from the river took higher R coordinates; points farther from the coast took higher C coordinates. The datum was marked on a large, high rock near the west end of the site, and arbitrarily set at 200R, 200C, and relative elevation 200 meters, so that all coordinates and elevations would
be positive.

The habitation area of El Algodonal was divided into sixteen sampling strata for surface collection. Ten percent of the area of each stratum was surface collected as described in the Methods section, totalling 130 random samples. An additional 45 samples of varying size were placed purposefully. The research design called for the immediate analysis of the surface collections, and the use of the resulting data to help place excavation units. Unfortunately, the surface ceramics proved too small and eroded to form the basis of a sound ceramic typology, and the analysis of the surface collections was left until a good ceramic typology could be developed from the better-preserved excavated material.

The excavation units except for mortuary units in the cemetery are summarized below. The cemetery is described in general below, but the mortuary data from the cemetery are more fully reported and analyzed in Appendix D. Not all numbered units were excavated, and contiguous units often received discontiguous numbers, so the descriptions that follow are not in numerical order.

**AD 503, 505, 506, 509: A Chiribaya habitation terrace**

These four contiguous 1.5 X 1.5 m units were the first ones excavated, and were located near the western end of a long, moderately broad terrace from 8 to 10 m wide and 56 m long in the lower central part of the site. They were intended to begin a large areal exposure, but the complexity of the features and the unexpected density of midden material made excavation much slower than planned. Excavation strategy was subsequently shifted to a program of isolated test pits, to be expanded if they encountered preserved, Tiwanaku-related living surfaces.
The living surface of this terrace appears to have eroded away, leaving a flat subsoil surface cut by a number of shallow trenches and deep pits (Figure A-2). The pits were filled with stratified gravelly midden of varying artifact density with plentiful Chiribaya sherds. About 8% of the diagnostic ceramics from good contexts are Ilo-Tumilaca/Cabuza. Near the bottom of pit 503-4-4 was a complete mummified camelid with golden brown wool, a small brush-like ornament with a silver sheet bangle nearby in the fill, and two large cobbles with fresh-looking battering damage. Pit 505-6-4 contained layered low and high artifact density gravelly midden, two mummified llama legs with fur, and a similar brush-like ornament with a sheet silver bangle. A concentration of ash and burnt bone were found at the bottom of pit 506-4-3. Pit 505-6-5 contained similar gravelly midden, with a concentration of charcoal at the bottom. Pit 506-4-2 contained loose, high artifact density gravelly midden, two mummified camelid legs with fur, and a broken camelid cranium and mandible. Pit 506-4-8 was shallow and filled with loose, high artifact density gravelly midden, with a large rock in the center of the fill. Pit 506-4-6 was small, round, and vertical-sided, possibly a posthole, although no trace of a post was found. Shallow depression 506-4-7 contained plentiful molle seeds. Trench 509-5-2 contained low density midden and a few cane fragments laying lengthwise near the bottom of the fill, suggesting that it may have been a quincha wall trench. Pit 509-5-4 was filled with almost sterile soil.

Overlaying part of the area was a dense, disordered mat of corn or cane stalks and chaff with some domestic refuse up to about 6 cm thick. Above this in one area was a thin region of clay with a low density of artifacts, followed by gravelly soil with some artifacts and a cap of natural water and wind deposition.

This area probably contains the poorly-preserved remains of a quincha
Figure A-2. AD 503, 505, 506, 509: A Chiribaya habitation terrace.
construction. The parallel trenches may indicate several rebuildings. If the stalks in the midden are cane rather than corn, they midden might be decayed wall and roof material, while the clay layer could be melted daub, although only a small volume of clay is represented. Pits 509-5-4 and 506-4-6 could have held structural posts. The trenches are oddly shallow, suggesting that the living surface may have been eroded away or removed by later occupants. If this is the case, then the material laying on the subsoil probably was deposited secondarily, and does not pertain directly to the wall trenches.

**AD 510: A Chiribaya habitation terrace**

This single 1.5 X 1.5 m unit was located at the back edge of a relatively narrow, rectangular terrace about 5 m wide and 18 m long, immediately downhill from a confusing complex of crossing stone walls that may indicate repeated modification of the retaining walls of the terrace above. The terrace above contains several looted stone-lined cylindrical tombs with vertical slabs forming the lowest courses of stones.

The somewhat irregular subsoil had one post-hole like pit filled with very low artifact density soil, and a shallow depression filled with corn stalk or cane fragments with gravel and few artifacts. Over these deposits were a number of large rocks and a layer of gravelly soil with cane or corn stalk fragments, twigs, and some other garbage including sherds and human bone. This lense of cultural material was much thicker to the rear of the terrace and overlay the possible posthole, suggesting that it accumulated secondarily from the terrace above. A patch of volcanic ash overlay this lense, and was in turn overlain by a thin cap of nearly sterile natural overburden.

Sherds were primarily Chiribaya, with about 9% Ilo-Tumilaca/Cabuza. As in AD
503-509, the probably Chiribaya habitation surface appears to have been eroded away, leaving only a few subsurface features. The nearby tombs in Ilo-Tumilaca/Cabuza style and some weathered human bone in the middeny deposit suggest that the Ilo-Tumilaca/Cabuza sherds may come from looted or eroded tombs. Since this material was deposited prior to the 1600 Huaynaputina eruption, the tombs would have to have been open before that time, probably before Spanish contact.

**AD 511, 513, 514, 515, 517, 523, 524: A Chiribaya habitation terrace**

This medium-sized roughly rectangular terrace, from 9 to 10 m wide and about 15 m long, is located at the base of the talus slope at the upper rear edge of the site (Figure A-3). It first appeared interesting when a few sherds from apparent terrace-leveling fill in the 1.5 X 1.5 m test pit AD 511 appeared to be non-Chiribaya. An uncontrolled 4 X 0.5 m strata cut (AD 513) failed to find an intact habitation surface, but located a substantial trench about 45 cm wide and 30 cm deep relative to the eroded surface that probably held a quincha wall defining the south end of the terrace. A second 3 X 0.75 m uncontrolled strata cut (AD 514) located a possibly intact living surface under the talus at the rear of the terrace, as well as another large trench about 90 cm wide and 70 cm deep that probably held a substantial quincha wall along the back edge of the terrace. A concentration of reconstructible sherds of a small Ilo-Tumilaca or Tiwanaku V jar (Appendix B) were found in what was probably a subfloor offering context.

Despite the Ilo-Tumilaca/Cabuza material from subsoil features, subsequent excavations encountered virtually pure Chiribaya ceramics, and the occupation on this terrace was analyzed as one of the few unmixed Chiribaya areas at El Algodonal. This terrace also provides one of the few examples of stratigraphic superposition between
Figure A-3. AD 511, 513-5, 517, 523-4.
the Late Intermediate Period styles at El Algodonal, suggesting that the meager Ilo-Tumilaca material was deposited prior to the Chiribaya occupation.

Four contiguous units were excavated off the north side of strata cut AD 514. These units encountered habitation remains including patches of unprepared floor deposits. A round pit about 40 cm across that contained a concentration of coprolites large enough to suggest repeated use as a latrine, and a separate, second concentration of coprolites contained quantities of molle seeds, as well. At a stratigraphically lower level, a shallow ovoid hearth about 100 cm long and 60 cm wide was found with a large, unburnt wooden spoon without the decorative handle carvings found on the smaller spoons from mortuary contexts. Several parallel trenches perpendicular to the back edge of the terrace that probably indicate a multi-roomed rectangular quincha structure at the rear of the terrace. Part of a circular trench with a few upright canes in it was recognized in one unit. This feature is reminiscent of cylindrical quincha features from the Chiribaya sites of Chiribaya Baja and La Yaral, but lacks the evidence of intense burning sometimes associated with them. The plan suggests that this cylindrical structure may have been inside a small rectangular room, which is also typical of examples excavated by David Jessup at Chiribaya Baja. The floor and midden deposits contained large quantities of molle seeds. Restricted areas below the floor contained concentrations of cuy feces.

Near the bottom of the deep middeny fill of unit AD 511 was an intentionally placed offering comprising a strap-handled olla about 30 cm in diameter, heavily sooted on the outside, that apparently had a basket and two rocks placed inside it, and a cord wrapped once around it vertically. It was placed upright in the fill. It was capped by a layer of pink clay with molle seeds and branchlets on top of it, and the
immediately surrounding soil had an unusual concentration of brown and white feathers in it. The olla seems to have been largely intact when placed, but was broken and partially collapsed when found. Around and below it, the soil was hard and stained dark, as though cemented by a dark liquid. The fill contained Chiribaya sherds. The unit was capped by an undisturbed layer of volcanic ash, so the offering is pre-AD 1600.

**AD 512: A Chiribaya tomb**

This tomb was discovered and exposed by looters during our weekend absence from the site, but they did not succeed in removing the capstones or contents. The tomb appears to be intrusive into the largest terrace or plaza on the site, but any stratigraphic information was destroyed by the looters's cut.

The tomb was an unlined rectangular cut with rounded ends about 97 cm long by 45 cm wide, dug about 185 cm down into the hard natural subsoil. It was capped by stone slabs and pink clay in typical Chiribaya fashion, peaking about 36 cm below the surface. The well-preserved faro sat in the north end of the tomb, looking south across grave goods that included a cylindrical kero-shaped basket, four Chiribaya bowls most like Jessup's (1990b,1991) San Geronimo (Late Chiribaya) phase, a set of pan pipes, a wooden stick with red painted bands, several pieces of wood probably comprising a model boat, a cloth bag probably containing coca, and a San Miguel jar.

**AD 516: A probably Chiribaya terrace and deep subsoil test**

This 1.5 X 1.5 m unit was located at the foot of the large boulders of a low terrace retaining wall forming the back edge of a poorly defined habitation terrace. A lens of Ilo-Tumilaca/Cabuza sherds in the adjacent drainage channel suggested that the area
might have an Ilo-Tumilaca/Cabuza component, possibly deeply buried. Excavation encountered two thin lenses of midden deposits with a total of seven diagnostic Chiribaya and Ilo-Tumilaca/Cabuza sherds. Excavation continued approximately one m down through an extremely hard, gravelly, sterile subsoil with large boulders that eventually made further digging impossible. If there is an earlier component in this area, it must be buried at a greater depth, and must have been covered by a sizable landslide.

**AD 519: An Ilo-Cabuza pit burial of an adult and a child**

This burial and one of the two tombs in the adjacent unit AD 520 were exposed when a terrace retaining wall and the upper part of the fill behind it collapsed. The burial pit was dug into fill and subsoil about 20 cm behind the terrace retaining wall. The unlined pit had no remaining evidence of a constructed cap, but appeared to be unlooted and largely intact. It contained a 45-50 year old male in a seated, flexed position with poorly preserved textile wrappings, an unusual net bag, cobs of corn, tubers, and a jar in Ilo-Cabuza style. Roughly in the lap of the male were the poorly preserved remains of an infant or small child. This is one of the few Ilo-Tumilaca/Cabuza burials recovered from outside the cemetery, it contained one of the few males, and it is one of the few burials containing more than a single individual.

**AD 520: Two Ilo-Tumilaca tombs**

Tomb AD 520-2-2 was dug into the fill and subsoil about 80 cm behind the terrace retaining wall that collapsed and exposed it and the pit burial AD 519. Looters apparently opened the tomb and disturbed the upper contents, leaving much of the body and the poorly preserved textiles in disarray but apparently largely complete.
The lower part of the tomb appeared to be undisturbed. The tomb was actually a pit with three courses of mortared stones forming an ovoid wall around the upper part of the cavity and at least one large stone slab mortared in place as a capstone. It contained the disturbed but largely complete remains of a female over 50 years old, a pair of leather sandals, and a slightly unusual Ilo-Tumilaca jar. It also contained the mummified foot of an infant or small child, possibly pertaining to burial AD 519.

Tomb AD 520-2-3 was a cylindrical stone-lined tomb dug into the fill and subsoil of the same terrace immediately behind burial AD 520-2-2. The position of the stones of the two tombs indicates that AD 520-2-2 was constructed first, and AD 520-2-3 was built later, incorporating the end of one of AD 520-2-2's capstones into the penultimate course of its wall. AD 520-2-3 was not obviously exposed when the terrace retaining wall collapsed. Nevertheless, the capstones had been removed, but the contents did not appear to have been disturbed. The tomb contained the flexed, seated remains of a 24-28 year old male with partially preserved wrappings, a red decorated coca bag, a gourd bottle, and an Ilo-Tumilaca tazon (slope sided bowl).

**AD 521: A probable Chiribaya habitation terrace and Chiribaya tomb**

This 1.5 X 1.5 m unit was located at the foot of a terrace retaining wall forming the back edge of a moderately large rectangular terrace about 8 m wide and at least 11 m long in the southwestern extreme of the site. About 18 cm of moderate density occupation debris lay on the original terrace surface, and was covered by thick layers of gravelly talus with some artifacts which evidently slumped down from the terraces and rocky slopes above. During the deposition of this overburden, apparently after garbage ceased to accumulate on the terrace, a Chiribaya tomb was dug into the overburden and subsoil, just at the edge of the unit. The tomb was found undisturbed.
The occupation debris contained a concentration of small fish and a diagnostic Chiribaya sherd that could be like either Jessup's (1991) Algarrobal (early Chiribaya) or Yaral (middle Chiribaya) phase. The later, intrusive tomb (AD 521-16-2) was a typical Chiribaya tomb with two parallel mortared stone walls and a cap of mortared stone slabs. It contained a very well preserved fardo of a 45 to 50 year old male with a wad of botanical material in its mouth, wrapped in three shirts, with a decorated bag of coca, a wooden model boat with an oar, a gourd bottle, a wooden spoon, a cuy, a pair of leather sandals, cobs of corn, tubers, a large and a small bowl-shaped basket, the smaller containing the feet and ears of a cameliid, a jar and a bowl most like Jessup's San Geronimo (late Chiribaya) style, and a kero most like Jessup's Yaral (middle Chiribaya) style. The stratigraphic relationship of the ceramic styles corresponds nicely to Jessup's (1991) Chiribaya ceramic sequence, although the presence of both Yaral and Algarrobal phase ceramics in the same tomb, if they are properly identified, may be problematic.

**AD 522: A Chiribaya habitation terrace and Chiribaya tomb**

This 1.5 X 1.5 m unit was located near the front edge of the lowest terrace of the site. This appears to be a natural, rather than a constructed terrace. It is currently about 12 m wide, but has been eroded by the river since the Chiribaya occupation. Several tombs and superficial layers of midden are exposed in the resulting scarp.

The natural subsoil has a complex structure which may be the remnants of a stream channel. Into the surface of this subsoil was dug a large Chiribaya tomb mostly outside the excavation unit. Over the tomb cut accumulated several distinct layers of occupation refuse totalling from 30 to 50 cm thick. A nearly sterile surface layer
probably washed down from the scarp forming the rear of the terrace.

The midden layers included Chiribaya sherds, as well as about 12% Ilo-Tumilaca/Cabuza sherds. Near the middle of the midden deposits was an informal floor bounded by a row of stones, which at the time protruded about 20 cm above the floor. Midden accumulated on both sides of the row of stones, and a hearth was dug into the midden late in the sequence.

The tomb, which definitely predates all of the midden deposits, was opened by looters who dug into it through the excavation unit. It was a large but otherwise typical Chiribaya tomb, 203 cm long, with two parallel mortared stone walls and a cap of mortared stone slabs. The poorly preserved human remains were crushed by the capstone that the looters pushed into the tomb to open it, but they appear to have been of an aged individual, flexed and seated in the north end of the tomb, looking down the length of the tomb. The tomb was cleaned, and among the artifacts left by the looters were a chert point, a two rectangular copper alloy sheet bangles, a silver sheet fragment with punched holes, a concentration of small bones (possibly cuy or bird), and a bowl and kero both most like Jessup's (1991) Yaral (middle Chiribaya) style. An additional tomb was noted in the north edge of the excavation unit, but was not opened.

**AD 525, 529, 530: An Ilo-Tumilaca/Cabuza house under mixed midden**

These three contiguous 1.5 X 1.5 m units are located at the back edge of the central section of a long, narrow terrace from 5 to 9 m wide and 64 m long in the upper central part of the site (Figures A-4 and A-5). A stone-lined pit, probably for storage, is about four meters away near the front edge of the terrace. An intact burial of
Figure A-4. Units AD 525, 526, 529, 530, and surrounding area.
Figure A.5. Units AD 525, 529, 530.

El Algodonal
Mixed I-T/C and Chiribaya terrace
Units 525, 529, 530

- Shallow depression with fill
- Low density fill around pit
- Steep-sided trench or pit
- Retaining wall rock; wood post
uncertain cultural affiliation (AD 526) in an unlined pit near the front edge of the same terrace was discovered when erosion from our own foot traffic exposed the top of the fardo's head. Because the surface of the terrace was eroded away, this burial could not be related stratigraphically to the nearby house or midden, except that it probably postdates the construction of the retaining wall supporting the front of this terrace.

The back of the terrace was defined by a dry-laid stone retaining wall. Excavations revealed a wall trench running parallel to this wall about 18 cm away from it, turning 90 degrees to form the corner of a rectangular quincha structure. The segment perpendicular to the terrace retaining wall still had numerous vertical canes in situ. Several pits and the bases of three posts, six to nine cm in diameter, suggested structural supports both along the walls and inside the enclosed space, possibly to support a roof. Two posts formed a pair on opposite sides of the wall trench, and the third was in the inside corner. The inside post of the pair was in one of a cluster of three or four adjacent postholes, suggesting repeated replacement of this pole. One of these holes was an open airspace covered by a rock, forming a cavity that was perhaps used as a storage or hiding place. It contained nothing. That it was still open suggests that there was little traffic over this void, perhaps indicating a brief final occupation or low intensity of use. Near the rear wall was a well-defined pit about 20 cm in diameter cut into the sterile subsoil and bordered on one side by a hard concretion possibly cemented by wetting the salty soil. This pit contained an offering of large blackened plainware sherds, probably comprising most of a reconstructible vessel, with a single large mussel shell, a corn or cane stalk, and a layer of ash and charcoal at the base. It was not clear whether or not the vessel was intact when placed in the hole, nor whether it was intrusive into the house floor context or predated it.
Areas of compacted casual floor were encountered inside the structure, and a possible patch outside the structure. Over these floor deposits were finely divided horizontal occupation layers bounded by the wall trenches. In the occupation deposits on the floor inside the quincha structure was a small, shallow hearth probably not big enough for cooking. Also inside the structure was a small, shallow concentration of molle seeds. The surface outside the structure was somewhat irregular, the soil was softer, and contained a high density of molle seeds concentrated in slight depressions as well as distributed throughout the area.

Midden accumulated in all of these areas, mounded up against the rear terrace retaining wall, crossing the wall trenches and lapping over the stone terrace retaining wall onto the higher terrace surface. These layers of midden probably postdate the structure, although their contents do not differ notably from the more horizontal layers and trench and pit fills below. The canes and posts that were still in situ were cut off at a roughly uniform elevation, suggesting that the structure may have been leveled to the ground surface by intentional cutting or natural weathering before the midden accumulated over it. This wedge of midden may relate to a later occupation of the terrace, or it may have been dumped or scraped over the front edge of the terrace above. A pocket of volcanic ash was mixed into the top layer of the midden, indicating that the material was deposited prior to AD 1600.

The ceramic assemblage, mostly from the thick and dense midden overlaying the architectural features and floor, contained the highest proportion of Ilo-Tumilaca/Cabuza sherds of any habitation area at El Algodonal. Only 44% of the diagnostic ceramics are Chiribaya, while 56% are Ilo-Tumilaca/Cabuza. The house construction, with small posts set on either side of the wall trenches rather than in the
wall trench itself, corresponds to the Tumilaca phase architecture documented by Goldstein (1989a) at Omo, and differs from both Tiwanaku V quincha architecture there and the Chiribaya quincha architecture at Chiribaya Baja and elsewhere at El Algodonal, which tends to have larger posts directly in the wall trenches. Interestingly, it also differs from the Ilo-Tumilaca/Cabuza quincha architecture at Loreto Alto, where no postholes were noted at all.

**AD 526: A pit burial of uncertain affiliation**

This intact burial, located about one m from the front edge of the habitation terrace sampled by units 525, 529, and 530, could not be stratigraphically related to those units because the terrace surface was eroded away (see Figure A-4). The roughly round burial pit was unlined, and there was no evidence of a constructed tomb cap. It contained the flexed, seated, well-preserved fardo of an adult male wrapped in plain brown textiles, and an unusual undecorated globular black ceramic bottle with a short, narrow spout and strap handle in an unidentified style (see Figure B-25). A textile strap comprised part of the wrapping. The overall impression of the fardo and burial pit is more similar to those of the Ilo-Tumilaca/Cabuza tradition than the Chiribaya tradition, but it could well reflect the practices of a non-local variant or a different ethnic group.

**AD 527: A Chiribaya habitation terrace with possible later reuse**

This 1.5 X 3.0 m unit was placed at the back of the largest terrace or plaza at El Algodonal, against one of the large stones of the impressive retaining wall forming the back edge of the terrace or plaza. Two of these stones are about 160 cm wide, while the largest one in this unit is about 90 cm wide. Surface traces suggested that this wall
might have been fronted by a low stone-faced bench that would have suggested a possible public function for the terrace. Excavation revealed no hint of the hypothesized stone-faced bench, and that quite to the contrary, the impressive stone retaining wall had been hidden behind a substantial quincha wall parallel to it, set in a trench about 50 cm wide and 60 cm in front of the retaining wall. A shallow posthole was dug directly in the trench, and contained the base of a heavy post about 25 cm in diameter. This post was either burned or severely weathered down to about the level of the subsoil on either side of the trench, and then covered by midden. Both the massiveness of the rear terrace quincha wall and the large post in line with it are consistent with Chiribaya habitation constructions from AD 514, Loreto Viejo, Chiribaya Baja, and elsewhere.

The ceramics from this midden were mostly Chiribaya, with about 14% Ilo-Tumilaca/Cabuza. One of the retaining wall stones proved to rest on a 15 cm thick layer of midden indistinguishable from the rest, indicating that the retaining wall was built or rebuilt in Chiribaya times or later.

Later, several large stones were laid, possibly with mortar, over the midden in an L shape not aligned with the terrace retaining wall. Whether or not these stones were the base of a wall, subsequent deposition was somewhat different on either side of them. "Inside" the "corner," a more complex series of levels was deposited, including one rich in coprolites, but on both sides the deposition of rich midden very similar to that under the stones continued. During the course of this deposition, a pocket of Huaynaputina volcanic ash accumulated "inside" the "corner," suggesting that some of the midden material may be either redeposited or post-AD 1600 in date. A late prehistoric to early historic occupation would be consistent with the possible structure
built over Chiribaya midden and not aligned with the earlier terrace retaining wall. However, a large stone-lined storage pit excavated as unit AD 528 is only 3 m away, and had only shallow deposits above the prepared floor, suggesting that some of the artifact-bearing material on the terrace nearby may be backdirt dug out of the pit by post-AD 1600 looters.

**AD 528: An ovoid stone-lined storage pit of unknown affiliation**

This vertical-sided, ovoid stone-lined storage pit about 170 by 140 cm across is located about 3 m west of unit AD 527, near the west rear corner of the largest terrace or plaza at El Algodonal. The pit is in a slight rise above the terrace surface, possibly composed of the backdirt from its original excavation. This pit is one of two in this terrace. The excavation unit was a pie-shaped quadrant on the floor of the pit, which was empty to just a few cm above its probably prepared floor. No Huaynaputina ash was noted in the excavation. Since this protected location would probably have gathered some ash had it been open in AD 1600, the pit is either post-AD 1600 or, more likely, has been dug out since 1600. The mortared stone walls of the pit were well constructed, with an effort to make a smooth interior surface, and extended to a depth of about 150 cm from the terrace surface. Several protruding stones probably formed a stairway for easier access. The compacted floor appears flat but is actually slightly concave, and it starts at the level of the bottom of the stone wall. There was some burning in the pit, leaving one or more thin layers of soil with carbon and ash totalling one to three cm thick directly on the compact floor. Later, an irregular layer of two to fifteen cm of soil with artifacts accumulated in the pit, and this was subsequently covered by up to ten cm of apparently windblown sand and silt. There were no diagnostic artifacts, and the only evidence of the products stored in the pit
may come from the flotation samples.

**AD 531: A rectangular stone-lined storage pit with a burial**

This rectangular stone-lined pit is about 220 cm long, 100 cm wide, and 105 cm deep from the present terrace surface to the flat, intact floor. The excavation unit was a one m square at one end of the pit, which is the only rectangular stone lined pit on the site that is not clearly a Chiribaya style tomb, which usually have only two stone-faced walls and are smaller and deeper. It is located northwest of the center of one of the larger terraces or plazas.

The four mortared stone walls of the pit were well constructed, with an effort to make a smooth interior surface. Several protruding stones probably formed a stairway for easier access. On the unprepared subsoil floor of the pit were laid four overlapping estera mats, oriented square with the walls of the unit. The two bottom mats were similar and of a fine texture, while the upper two were successively coarser. Over these mats accumulated soil with corn chaff, domestic debris, and an extraordinary density of molle seeds, reaching 24 cm to 30 cm in thickness. The upper portions of this deposit were probably disturbed by looters, although the unit was placed to avoid the obvious disturbance in the other end of the pit. Within the thickness of the fill was a well-preserved fardo of a 20 year old female probably *in situ*, flexed but flattened as though it had been originally placed on its back, and wrapped in a coarse, plain textile.

The estera mats and molle seeds suggest that this pit was used for storing molle, or possibly for storing another food crop such as corn with molle seeds mixed in to control insect infestation. The cultural affiliation is uncertain, since any sherds in the
fill need not be associated with the pit's construction or use. The faro is not diagnostic in itself. It may have been buried by people reusing the pit after it was abandoned and partially filled. The departure from the usual flexed, seated position suggests a different, possibly later burial tradition.

**AD 532: A Chiribaya tomb**

This tomb was discovered when I stepped on and collapsed a large void while walking across the site. Voids of this type seem to migrate upwards from tombs as soil filters into them. The tomb was excavated to salvage it from imminent looting.

The intact Chiribaya tomb, about 90 cm long by 35 cm wide, had two parallel mortared stone walls, the faro and offerings were placed at one end, and the walls were sealed with a cap of stone slabs and mortar. It contained the faro of a 3 to 6 month old infant with extreme cranial deformation in a flexed, seated position with its back against the west end of the tomb and its face turned to the north. In its lap was a coarse miniature jar with a stopper of wadded plant fibers. At its feet was a small handled bowl most like Jessup’s (1991) San Geronimo (Late Chiribaya) phase, containing a wooden spoon and several tubers. Most of the tomb was open, empty space.

**AD 533: A Chiribaya tomb**

This Chiribaya tomb is one of several looted rectangular and cylindrical stone-lined tombs near the back edge of the largest terrace or plaza at El Algodonal. We salvaged this tomb when we noticed that although it was open, it appeared to have most or all of its contents intact and *in situ* because they happened to be hidden from view. The original tomb construction pit was extended as a tunnel under the northwest
side of the original cut. Three courses of mortared stones were laid in two parallel rows forming just the upper sections of the chamber walls, and only in the part that did not tunnel under the edge of the cut. The final chamber was about 120 cm long, 35 cm wide, and 174 cm deep, with about 40 cm formed as an unreinforced tunnel. The faro and offerings were placed towards the tunneled end of the tomb chamber. The capstones were mortared in place. Looters later removed the tomb cut fill and one or two of the capstones at the southeast end of the tomb, exposing the open space at that end of the tomb. The tomb contents were not visible through this opening unless the observer was lowered head down into the hole. Why the original looter did not finish his work is not clear, but the appearance of an empty looted tomb probably protected the contents from later disturbance.

The tomb contained a well preserved faro of adult size, a wooden model boat, a camelid cranium and mandible, camelid foot bones, two flat baskets, of which one was badly decayed, a coarse bag probably containing coca, a stick with a flat bone tied to one end like the blade of a digging tool, a curved stick strung like a bow but with two smaller crosspieces tied to one end, lucuma fruits and pits, and a handled bowl and kero both most like Jessup's (1991) San Geronimo (Late Chiribaya) phase. A wooden spoon was in the handled bowl, and a small corn cob may have been placed in the tomb, or may have fallen in from the fill above.

**AD 372-376: Two Algodonal Early Ceramic habitation terraces**

While excavating around the Tumilaca phase tombs in unit AD 364 in the cemetery of El Algodonal, we encountered unexpected strata of botanical material and a stone retaining wall deep under the gravely talus into which the tombs were dug. Unit AD 373 was started as a two m square within the cemetery unit AD 364, in order
to clear the habitation features. Unit AD 372 was placed inside the northwest corner of AD 364. It uncovered a higher terrace there with similar midden (not illustrated). The back edge of this upper terrace was outside the unit. Both terraces were set high up on a steep (23 to 30 degree) gravelly talus cone. The ceramics associated with both terraces are all Algodonal Early Ceramic style (see Appendix B).

Unit AD 364 was expanded by units AD 375 to the east and AD 376 to the west. After the Tumilaca phase tombs in these units were excavated and the inclined talus layers removed, the upper terrace was seen to extend all the way across the three units AD 375, 364, and 376. The upper terrace had several shallow informal hearths, eight or more cross-cutting filled pits, and a series of occupation layers totalling about 24 cm thick. The base of one of the pits was lined with perpendicularly criss-crossing reeds or stems. Another pit had a whole yuca (*Manihot*) tuber with the stalk and leaves attached placed at the top center of the fill.

The lower terrace and retaining wall extended into AD 376. The entire length of the retaining wall was exposed, although the terrace surface itself may have continued beyond the excavation units both to the west and slightly to the east. The retaining wall comprised two to four irregular courses totalling about 45 cm high and emphasizing two large stones of 60 and 90 cm in length. Additional stones representing perhaps two more courses had collapsed. The wall was not mortared, but instead had dense masses of fine rootlets stuffed in some of the interstices. The lower terrace surface in AD 376 had a layer of compressed midden resting on a casually compacted floor and several filled pits.

The lower terrace surface had numerous features (Figure A-6). A somewhat irregular, slightly constricted globular neckless olla about 44 cm deep, 50 cm in
Figure A-6. AD 372, 373, 375, and 376.

El Algodonal Early Ceramic Terraces
Units 373, 374, 376

- Living surface
- Pit fill with plant parts and artefacts
- Rock
- Clay mortar
- Artifact (sherd, lithic, gourd, mat)
maximum diameter, and 35 cm across at the rim, sooted on the outside from firing or cooking, was set about 60 cm into the terrace subsoil, slightly askew from upright. This feature was excavated separately as unit AD 374. It had a mortared stone neck and mouth constructed over it, forming an aperture about 13 cm across and a few cm above the terrace surface, with an irregular disk of unbaked clay with chaff "temper" about 20 by 17 cm across and 4 cm thick resting over the opening. The olla was cracked but intact and in situ, and empty except for about nine liters of fine soil which had filtered in. An offering or cache included a large rock and two flat river cobbles, one of which was pecked or battered around the edge and the other of which was fire blackened on one face. Several smaller rocks and various nondescript plant material was also included, all neatly arranged in a shallow depression. A large garbage-filled pit about 110 cm across included an unusual form of mat or coarse textile made from a more flexible fiber than most esteras, and twined together with white cotton string rather than vegetable fiber. This mat was placed horizontally in the center of the fill, near the top. Another large pit and four smaller pits from 35 to 70 cm in diameter were also found in the lower terrace surface. The large pit was evidently left as an open hole for a time, because the long botanical fragments of the floor deposits run smoothly from the terrace surface over the edge of the pit and down along the sloping pit wall. One of the small pits contained a large unmodified rock in the top middle of the fill. Another contained an intact gourd vessel, and a third contained a large pale green stone bead, both in the center top portions of the pit fill. Only the back edge of the terrace is preserved; the front portion was probably largely removed by erosion of the talus cone, and a bit more was destroyed by looting of the Ilo-Tumilaca/Cabuza tombs.
The complex stratigraphy was interpreted to indicate that the lower terrace had been abandoned and covered by a meter or more of gravely talus when the upper terrace was cut into the slope, such that the upper terrace rested on strata that covered the lower one. The three radiocarbon dates from these terraces (Appendix C) suggest the opposite order of occupation, however.

The upper terrace was as much as 130 cm below the modern talus slope, and the back edge of it must be deeper still. The Ilo-Tumilaca/Cabuza tombs originate from about 10 to 40 cm below the current talus surface; some cut into the terrace surfaces, but others did not reach the terraces at all. There was probably a considerable temporal gap between the abandonment of the later, upper terrace and the construction of the tombs. The radiocarbon dates from four of the Ilo-Tumilaca/Cabuza tombs (Appendix C) confirm this clear stratigraphic relationship.

Neither terrace had any evidence of architecture other than the stone terrace retaining wall. The structures, if any, either did not involve subsoil trenches or postholes, or were located away from the back edges of the terraces. This absence of evidence of domestic architecture even where preservation appears to be excellent parallels results from late preceramic sites on the coastline just north of the Osmore valley (Karen Wise, pers. com.). The numerous apparently special objects placed in the top center of pit fills suggests that some of the pits may have had ceremonial functions.

**AD 301-371 and 376-396: An Ilo-Tumilaca/Cabuza cemetery**

The cemetery at El Algodonal is divided by differing degrees of disturbance into three distinct areas (Figure A-7). Area one is on a moderately steep slope and is badly
El Algodonal Cemetery

○ Tomb, intact or largely intact
♀ Pit, intact or largely intact
○ Tomb, looted
⊕ Pit, looted
☐ Area cleared or excavated

Figure A.7. AD 301-371, 376-396. An Ilo-Tumilaca/Cabuza cemetery.
looted. Area two, immediately to the east of area one, is a very steep slope that is being eroded by the Rio Osmore, so that tombs are exposed and partially collapsed, and tomb contents are sliding down the slope. According to local informants, an unknown but considerable number of tombs have been lost to the river over the last sixty years or so. Area three, immediately above area one, is a steep, featureless gravelly talus slope covering tombs many of which had had their capstones removed prior to the 1600 Huaynaputina ashfall, but were never markedly disturbed or looted in the modern sense. Two early ceramic phase habitation terraces were discovered underneath the tombs of area three, and are described under units AD 372-376.

Area one was badly looted, although we did locate a few burials that were largely or completely intact. The looters often left largely intact fardos in or on their backdirt, or rummaged through the fardo without dispersing the parts much. Some fardos were stuffed back into looted tombs which may not have been the ones they originally came from. Sometimes only the upper portion of the fardo was disturbed, leaving the lower portion and some or all of the grave goods in situ. Fortunately, there are only two mortuary traditions known in the coastal Osmore valley that produced comparable fardos and decorated artifacts, the Ilo-Tumilaca/Cabuza tradition and the Chiribaya tradition. In all of the work at the cemetery, no Chiribaya ceramics, diagnostic Chiribaya textiles, or Chiribaya-style rectangular tombs were encountered. The looted material can therefore reasonably be treated as contemporary with the more intact tombs, and as representative of the same population for the purposes of bioanthropological and broad cultural analyses.

The first collections in area one were looted human remains and associated textiles from the surface. These collections extended as much as 50 cm down into the
looters' backdirt in order to recover all the remains of each individual. Eventually we delimited a 5 X 5 m area (AD 327) and removed the loose, disturbed soil entirely in order to find the human remains, textiles, and other artifacts dispersed through it. In the process, we uncovered a number of tombs and pit burials ranging from intact to severely disturbed. Since there was no meaningful stratigraphy or intact cultural context, this salvage work was done without screening or measuring volume. Each circular collection unit was defined in order to recover as much as possible of a single individual and any clearly associated textiles or other artifacts, and to exclude as far as possible human remains and artifacts pertaining to other individuals. The location and approximate diameter of each unit was noted, but detailed notes and drawings were made only when the unit included apparently in situ human remains or artifacts.

The same methodology was extended to area two. Area two is a precipitous, eroding gravel slope above a vertical drop to the rocky river bed. Because access is difficult, the tombs from area two appear to have been disturbed primarily by natural erosion, and only occasionally by looters. In some cases, only the side of the tomb closest to the river had collapsed, leaving the fardo and artifacts relatively intact within the remaining tomb walls. In other cases, the fardo may have slid down the slope from a collapsed tomb or eroded burial pit.

Later, four additional, contiguous areas (AD 364, 375, 376, and 384) were opened in the undisturbed talus of area three, immediately above unit AD 327. These units were excavated stratigraphically and encountered a number of intact and nearly intact tombs. Part of this undisturbed area was clearly covered by a layer of volcanic ash from the eruption of Huaynaputina in AD 1600. The gravelly talus strata below the ash covered cylindrical stone-lined tombs of the same type as in the rest of the
cemetery. Almost all of these tombs had been opened and then were reburied by a
smooth talus slope before the ash fall. Although the capstones of the tombs had been
removed, the contents were often minimally disturbed, and the grave goods were
apparently still in situ. This pattern of pervasive prehistoric disturbance is also
reported for similar "Loreto Viejo" style tombs from the Azapa valley (Dauelsberg
1985; Focacci 1981), but has not been noted in Chiribaya or Estuquiña cemeteries.

The burials, tombs, and contents are described in Appendix D.

Loreto Viejo

Loreto Viejo is located on and around a truncated alluvial fan roughly 20 meters
above the floodplain in the mouth of a large tributary quebrada on the south side of the
Osmore valley, about 13.5 km upriver from the coast. The site is divided into five
areas: Algodonal Early Ceramic habitation terraces, Alto Ramírez style burial mounds
that are probably associated with the Algodonal Early Ceramic occupation, Chiribaya
habitation terraces, and two Chiribaya cemeteries (Figure A-8). These areas are
separated by apparently sterile terrain.

The Algodonal Early Ceramic habitation terraces comprise the largest sector of
the site. These badly eroded terraces and a few traces of stone retaining walls form
barely perceptible linear features along the steep, gravelly talus slope of about 19 to 27
degrees that forms the south margin of the quebrada mouth. Below the inclined layers
of overburden, the terraces contain horizontal stratified habitation deposits up to 70 cm
thick. Features include informal floors, hearths, and pits, with low densities of sooted
crude globular neckless olla sherds in the Algodonal Early Ceramic style. In many
areas there is no cultural material on the surface, while scatters of shell, botanical
Figure A-8. Loreto Viejo.
material, human and animal bone, and low densities of coarse body sherds occur in areas where the terrace forms are least distinct. These areas appear to have been disturbed and pitted some time ago, possibly by looters or people mining construction stones for the adjacent Loreto Viejo farm compound. A broken shovel found in the pitted area corroborates this interpretation. Several Ilo-Tumilaca sherds and a polychrome tapestry fragment in a Tiwanaku-related style were found on the surface, but bear no relation to the habitation deposits. I suspect that they came from a small number of looted, intrusive Tumilaca phase tombs, although no tombs or clear concentrations of grave goods were noted.

The area of burial mounds is on the south-western corner of the alluvial fan, below the early ceramic habitation terraces. Many of the mounds are not well defined, but as an estimate there are some 20 mounds in all, including two outliers slightly to the east of the main group. The mounds range from about 6 m to 15 m in diameter, and about 1 m to 3 m high. The two mounds that were excavated are constructed of alternating layers of sterile soil and dense layers of long stalks of a single variety of reed. Excavation in one of the smallest of these mounds (unit LV 2501) found a single small, unlined tomb cut into the subsoil directly below the mound's crest. It was roofed with thick reed or cane stalks, and it contained the body of a three year old child with no textiles or grave goods. The body was apparently broken into pieces and placed in the tomb in a non-anatomical position. The second mound excavation (unit LV 2511) found more complex internal stratigraphy, including burned areas, corn cobs, and other botanical material, and was abandoned at a depth of about 15 cm due to lack of time. This mound construction and the mutilation of human remains is similar to patterns reported from the Alto Ramírez phase (500 BC to AD 200) in the Azapa valley, Chile (Muñoz 1987), and probably corresponds to the Algodonal Early
Ceramic style in the coastal Osmore valley.

The Chiribaya habitation terraces are located on the alluvial fan near the eroded scarp that forms the front edge of the fan, and are bounded to the northwest by the deep channel in the fan through which the tributary drainage empties onto the Osmore floodplain. The alluvial fan slopes at only about 6 degrees in this area, so the generally rectangular terraces are broad and the steps between them low, from 60 to 130 cm high. The terraces are generally rectangular, with typical examples measuring from 8 m by 12 m to 13 m by 41 m. They are generally aligned with one another and parallel to the scarp along the front edge of the alluvial fan. Some terrace retaining walls built of large stones up to about 70 cm in maximum dimension are still discernable. The surface is almost sterile except in areas disturbed by looters. Although no cane wall stubs are visible on the surface, excavation units in two of these terraces found trenches paralleling the front and back edges of terraces, suggesting that the spaces were enclosed by cane walls, if not roofed. Except for filled features, the occupation debris is no thicker than 25 cm. Two sunken rectangular areas were noted within the habitation area. They measure about 5 m square and 7 m square, and have traces of stone retaining walls on at least three sides. Excavation in the larger one (unit LV 2506) found a prepared clay floor smoothly joined to mortarared stone retaining walls. This structure may be analogous to the sunken rectangular courts of the Tiwanaku tradition. All the diagnostic ceramics from the alluvial fan habitation area are decorated in the Chiribaya style.

A number of shallow natural drainage channels, from about 6 m to 10 m wide and up to about 2 m deep, run across the surface of the fan, roughly parallel to the deep cut through which the tributary valley presently drains. Where these long, narrow
depressions pass through the habitation area, they are crossed by stone walls at 8 m to 16 m intervals, and occasionally have stone walls along the sides as well. An excavation unit (LV 2503) against one of these crossing walls found an informal floor but no wall trench, suggesting that the divided depressions may have been open, unwalled spaces.

Overlapping the Chiribaya habitation area slightly and extending up the alluvial fan is a heavily looted cemetery area (cemetery two). Visible tombs are rectangular chambers without walls or with two parallel mortared stone walls, covered by mortared stone slabs in typical Chiribaya style. All the diagnostic artifacts noted on the surface are Chiribaya. Some of the tombs appear to be intrusive into the habitation terraces, and the fill over the tombs is rich in Chiribaya artifacts, suggesting that this cemetery may have been used late in the occupation of the terraces or after they were abandoned. No excavation was done in this cemetery.

Cemetery one is located on the north side of the tributary drainage, in a slight hollow in the slope of the valley wall. The cemetery is isolated from all the other sectors of the site by the quebrada channel, which is about 30 m wide and roughly 15 m deep. This cemetery is said to be the one in which Gary Vescelius collected the Tiwanaku-related artifacts after which the "Loreto Viejo" ceramic style was named (Watanabe pers. com.). The cemetery is badly looted. With the possible exception of a basket with a shape resembling a tall, narrow-based Tiwanaku V kero, the only diagnostic artifacts on the surface are Chiribaya. The visible tombs are cylindrical, stone-lined, and have mortared stone slab covers. Limited fieldwork in this cemetery was intended primarily to establish the presence or absence of a Tiwanaku-related mortuary component, so the mummy bundles were not unwrapped and no systematic
analysis has been done on the human remains or grave goods. All the burials encountered were Chiribaya or later, including one four-walled rectangular tomb. However, neither the surface collections nor the excavations are large or systematic samples of the cemetery; other components may have been missed or may have been removed by Vescelius's work or by looting. In addition to the material recovered from the excavation units, human remains, textiles, and a few other artifacts were collected from the surface and from looted tombs.

The soil into which the Chiribaya burials were cut has several distinct dark, sloping strata or lenses containing botanical material, ash, charcoal, and sooted globular neckless olla sherds in the Algodonal Early Ceramic style. This material probably derives from habitation terraces somewhere above the cemetery. It may represent garbage that was thrown or swept downhill, or habitation debris or fill that spread downhill when one or more terraces collapsed. No terraces are visible now within or above the cemetery. No sample of this material was collected, because the cemetery excavations removed only mixed overburden and the fill from the pit cuts made by the tomb builders and later looters.

The coordinate grid used for mapping and locating collection and excavation units was oriented to magnetic north. The coordinate axes were labelled N (north) and E (east). Points farther to the north took larger N coordinates; points farther to the east took larger E coordinates. The datum was marked on a rock near the center of the site, and arbitrarily set at 500 N, 500 E, so that all coordinates would be positive. All elevation data were collected relative to local datum points, and no topographic data were collected for the site. For practical reasons, most distances were measured parallel to the ground surface, so the steeply sloping area of early ceramic terraces
looks wider in the north-south direction on the map than it would in a true plan view.

LV 2502, 2505: A Chiribaya habitation terrace

These two contiguous 1.5 X 1.5 m units were located about two meters back from the present front edge of a rectangular habitation terrace about 12 m wide by 41 m long, extending from the flat terrace surface onto a slight hummock towards the front edge of the terrace.

Excavation showed that the first feature constructed was an elongated shallow depression in the natural subsoil which was filled with coarse, dense Chiribaya domestic midden. This midden clearly comprises a rocky layer, followed by a layer rich in botanical material, followed by a layer comprised largely of ash. The depression is oriented correctly to have been a major wall trench perpendicular to the front edge of the terrace, but at 75 cm wide and 20 cm deep, it is a bit broader and shallower than would be expected. A 50 cm deep, roughly circular pit about one meter across was dug into the subsoil and filled with rocks up to about 20 cm in maximum dimension, a grinding stone, and a complete cuy. Later, a trench 35 to 45 cm wide and about 30 cm deep was dug into the subsoil parallel to the front edge of the terrace, probably for a quincha wall. A shallow hole centered in the bottom of the trench probably held a vertical post in line with the quincha wall. An informal floor developed just in front of the quincha wall, between it and the front edge of the terrace, possibly indicating foot traffic on the edge of the terrace but outside the quincha compound on it.

Towards the front edge of the terrace there was a depression in which stratified layers of garbage accumulated. The lower layer comprised dense botanical debris,
while the upper layer was primarily ash. Along the interface were some fist-sized stones, but not enough to constitute a distinct stratum. The top, ashy layer of this midden extends over part of the informal floor, so the midden is probably roughly contemporary with the floor. It is not clear whether the floor formed next to the midden-filled depression, or whether the depression was cut through the floor, which may have extended further towards the front of the terrace. No floor was noted on the inside of the wall, although artifacts were oriented horizontally. All the midden deposits contained Chiribaya sherds and dense domestic debris, including shell, feathers, textile fragments, small animal bones, corn cobs, etc.

The two complexes of midden deposits are remarkably similar, each containing a discrete layer of dense botanical debris, another of ash, and an apparently discrete deposition of fist-sized stones. The major difference is that the stones are at the bottom of the lower midden deposit, and in the middle of the upper deposit. They may represent some consistent pattern of activity such as a major house cleaning or some harvest-related activity followed by a large cooking event.

The original topography is difficult to define, but it may be that the terrace was originally about a meter narrower. If so, the midden layers in unit LV 2505 actually accumulated banked up on the back edge of the terrace below, reaching the level of the apparent pathway on the front edge of the upper terrace. The upper terrace was then extended about a meter forward, to the terrace retaining wall presently visible, incorporating the midden deposits as terrace fill.

LV 2503: A Chiribaya habitation terrace or activity area

This 1.5 X 1.5 m unit was located against the foot of a stone terrace retaining wall
that cuts across one of the shallow linear depressions that corrugate the surface of the alluvial fan. Downhill from the wall, the natural surface had been dug down to reduce the slope of the bottom of the drainage channel. The space behind the wall was filled with artifact-bearing soil. The shallow slope in front of the wall accumulated a series of occupation deposits including two superimposed informal use floors. On the uppermost compact surface was deposited a layer of gravelly midden with a very high density of corn stalks. Near the center of its thickness, this layer was virtually pure corn stalks, without soil or other artifacts. The stalks were long (80 cm and more), and arranged in criss-crossing patches of parallel stalks. Over the corn stalk layer accumulated a wedge of artifact-bearing soil that extended over the top of the lower stones of the retaining wall. On top of the same artifact-bearing soil, behind the retaining wall, a few depressions captured pockets of volcanic ash from the AD 1600 eruption of Huaynaputina.

The ceramics are all Chiribaya. The midden contained two large textile fragments, one decorated with brown stripes. The upper portion of the corn stalk midden also contained clumps of small molle branches twisted together and tied into bundles.

The absence of the usual wall trench parallel to the terrace retaining wall suggests that this may have been open, unwalled space. It appears to have been used for general domestic purposes initially, accumulating garbage and experiencing repeated traffic. Its later use appears to have been for drying corn chaff or some related process. The wedge of artifact-bearing soil above the corn chaff may have been redeposited by water running through the channel.
LV 2504: A Chiribaya habitation terrace

This 1.5 X 1.5 m unit was located at the foot of the terrace retaining wall that forms the front of the terrace tested by units LV 2502 and LV 2505. This lower terrace is about 20 m long by 10 m wide. The natural subsoil had been cut down to form a level terrace surface. The back meter or so of this surface abruptly slopes up at about a 30 degree angle to the base of a row of large rocks up to about 80 cm in maximum dimension that forms the terrace retaining wall for the terrace above. Along the foot of this slope, parallel to the stone retaining wall, was dug a trench about 30 to 50 cm wide and 30 cm deep. A pit slightly wider than the wall trench and directly in line with it extended about 20 cm deeper than the bottom of the trench. The trench and pit probably indicate a substantial quincha wall along the back edge of the terrace. The features were covered by soil with very low artifact density.

LV 2506: A Chiribaya sunken rectangular court with a prepared floor

This 1.5 X 1.5 m unit was located in the west corner of a rectangular depression about 7 m square and 70 cm deep, with traces of mortared stone retaining walls on all four sides composed of rocks up to 80 cm in maximum dimension with flat surfaces facing inward. On the hard, natural subsoil at the bottom of the depression was laid a flat, prepared floor two to four cm thick, composed of the same mortar as was used in the walls, and joining smoothly to them. This floor had no wall trenches or postholes within the unit, and showed no signs of ever having been modified or relaid. It also showed no signs of being worn down by traffic. After the floor was laid and had hardened (perhaps long after), the northernmost large stone in the west wall was removed, leaving a clearly defined impression in the edge of the floor, and a hole
below it where the base of the stone had been. The edge of the floor was sharp, with no sign of the stone's having been rocked back and forth or having fallen over. No appropriately sized stone was noted in the vicinity. The hole left by the missing stone was later filled by a wedge of rich apparently ordinary domestic midden that either slumped into the depression through the gap in the wall, or was piled in the corner and filled the gap as well. This midden lay directly on the prepared floor, with corn cobs, Chiribaya sherds, and plant stalks laying flat on it.

This sunken rectangular court features the only prepared floor I know of in the coastal Osmore valley. This feature may be a ceremonial construction analogous to the sunken rectangular courts of the Tiwanaku tradition. The absence of wall trenches or postholes suggests that the space may have been open, although there could have been quincha walls just outside the depression. The apparent minimal wear on the floor and lack of renovation may be due to the testing of a relatively protected corner, or to a genuine pattern of minimal use.

LV 2507, 2510: An Algodonal Early Ceramic habitation terrace

These two contiguous 1.5 X 1.5 m units were located on the narrow remaining flat of a severely eroded terrace and the slope immediately behind it. Deep, stratified cultural deposits were found primarily below the visible terrace flat; the slope was natural subsoil with sterile overburden. The hillside slopes at about 26 degrees, and the terrace is a barely-discernable area of shallower slope about 150 cm wide and about 22 m long.

To facilitate discussion of the deep and complex stratigraphy in this unit, the principle strata are identified by their provenience labels. The sterile subsoil was cut
to form a slightly inclined (5 to 12 degrees), rather irregular terrace surface with a
steep slope at the back. The subsoil was evidently hard enough not to require a rear
retaining wall. The surface was leveled by the accumulation of a two to seven cm
thick layer of ashy soil with finely divided botanical material probably deriving from
repeated domestic use of the area (2510-16-38). During the course of this deposition,
a small depression was scooped out and used as an informal hearth (2510-16-38/1),
and two pits were dug into the subsoil and filled with garbage (2510-17-39, 2510-17-
40). Pit 2510-17-40 contained abundant remains of small fish, including complete
heads. After a slightly different layer of fine occupation debris (2510-15-34) covered
the first one, another pit was dug in the floor and filled with garbage (2510-16-37,
2510-15-37). Several more artifact-bearing layers accumulated (2510-15-35, 2510-15-
36, 2510-14-34, 2510-13-33, 2510-12-15). These layers probably pertain to the
terrace's occupation, but they have irregular forms that do not correspond well to used
surfaces nor pit fills. 2510-15-35, for example, resembles a partial ring of small to
moderate sized stones, which is covered by a dense layer of twigs (2510-14-34) in a
concave shape. This feature included several coprolites, suggesting one possible
interpretation. Into these confusing layers was dug a large, deep pit. Only the edge of
this pit fell in the excavation unit, but it appears to have been over 120 cm in diameter
and at least 60 cm deep. It was filled with several distinct strata of artifact-bearing
soil, rocks, botanical material, coprolites, and charcoal (2510-15-31, 2510-14-31,
2510-13-32, 2510-13-31), and was covered by another horizontal layer of uncertain
interpretation (2510-11-15). This layer was cut by a pit or several superimposed pits
(2510-11-27, 2510-10-28, 2510-10-27), and was again covered by two more horizontal
artifact-bearing layers (2510-10-30, 2510-9-15). These were cut by two pits (2510-9-
24, 2510-9-18). On the layer covering the two pits (2510-8-15), an informal floor
developed in one area (2510-8-18), and another pit was dug into the terrace (2510-8-22, 2510-7-17). This pit contained a concave-based white chert point with a red pigment apparently outlining the area originally covered by the haft. Two horizontal layers accumulated (2510-7-15, 2510-6-15), another pit was dug (2510-4-13), and a second pit was dug cutting the first (2510-8-23). Another horizontal layer accumulated (2510-5-15), the top of which formed the final use surface of the terrace. This surface contained an informal hearth (2510-6-16, 2510-5-14, 2510-4-8) that may have been used repeatedly, an area of scattered ash near the hearth (2510-4-9), and a large, deep pit about 90 cm in diameter and 50 cm deep, cutting all the earlier levels down to sterile subsoil (2510-5-12, 2510-4-12). This pit contained extremely high concentrations of crayfish (*camarón*) shells, numerous whole corn cobs without kernels, handfuls of corn chaff, some marine shell, and other domestic garbage. A small, hard deposit immediately on top of the pit fill (2510-4-11) may have been formed by wetting the salty soil. Several layers of gravelly overburden with extremely low artifact density accumulated over these features. When Huaynaputina erupted in AD 1600, a small amount of finely divided charcoal and gravel was deposited on the overburden at the rear of the terrace, and patches of volcanic ash accumulated on top of it. These were covered by more sterile gravelly talus.

As at El Algodonal, no evidence of architecture was noted, although the terrace was clearly used repeatedly over a considerable period of time.

**LV 2508, 2513: An Algodonal Early Ceramic activity area**

These two contiguous 1.5 X 1.5 m units were located at the back of one of the larger terraces in the central part of the early ceramic phase habitation area, lower on the hillside than LV 2507-2510. This terrace is 3 to 5 m wide, and about 27 m long.
The hillside around this terrace slopes about 19 degrees.

To facilitate discussion of the complex stratigraphy in this unit, the principle strata are identified by their provenience labels. The sterile subsoil was probably cut to form a relatively level terrace, although the difference in subsoil slope between the terrace surface and the area behind the terrace within this unit is not pronounced. A moderate sized informal hearth (2513-14-31, 2513-12-24) was built on the subsoil. Substantial ash deposits accumulated around it (2513-13-27, 2513-13-26, 2513-12-25, 2513-12-23), separated by artifact-bearing soil presumably deriving from the use of the area (2513-12-22). These features were covered by a uniform layer of ash 3 to 13 cm thick (2513-11-18). The complete burial of the first hearth suggests that at least the upper portions of this ash may have derived from one or more different, possibly larger, hearths somewhere outside of the excavation unit. A patch of compact informal floor (2508-9-14) developed and a shallow patch of mussel (*chorro*) shells, charcoal, and ash (2508-9-13, 2513-11-19) was deposited. On top of the ash and the garbage lense a silty yellow soil was deposited (2513-9-15) which developed a compacted informal floor surface (2513-8-14, 2508-8-10). This floor was covered by a layer of artifact-bearing soil (2513-7-12, 2508-7-9) that probably pertains to the use of the terrace but lacks evidence of traffic or activities. A horizontal layer of artifact-bearing soil accumulated over the floor. A small, informal hearth (2508-6-8/2) was built on top of it, and eleven pits were cut into it. The pits ranged from about 17 cm across and 29 cm deep to about 50 cm across and 55 cm deep. Several of the pits contained clearly stratified fills, and most had nearly vertical sides. The pits were all filled with ash and soil with very low to moderate densities of botanical and other remains. One (2513-16-36) contained a wadded mass of plant stalks packed into the bottom of the pit. The pits were covered by another ashy layer (2513-4-3), on top of which was built another
small informal hearth (2513-5-4/1). About 3 to 5 cm of gravelly soil with low artifact densities accumulated over these features. A thin, irregular layer of volcanic ash from the AD 1600 eruption of Huaynaputina collected on the slope, and was covered by another 2 to 5 cm of gravelly talus.

This area contained an extraordinary concentration of ash that accumulated over a series of stratigraphic moments. The large number of small to moderate sized pits apparently dug and filled at about the same time is also unusual. This area may have been used intensively for cooking. Ceramic production is also a possibility, but the low density of sherds and the absence of wasters makes it less likely.

**LV 2509: A disturbed Algodonal Early Ceramic habitation area**

This 1.5 X 1.5 m unit was located at the rear of a poorly defined terrace in the area that appears to have been looted or mined. The only intact feature encountered was a small, informal hearth built on the irregular subsoil surface. Any other cultural deposits were evidently removed by erosion or late, severe disturbance. The surface was covered by a loose jumble of soil, rocks, and apparently domestic refuse. This material probably derives from looting or other severe disturbance higher up on the hillside. The artifacts in this overburden are consistent with an early ceramic phase occupation.

**LV 2512, 2514: An Algodonal Early Ceramic habitation terrace and burial**

Unit LV 2512 was a 1.0 X 2.5 m uncontrolled strata cut, and LV 2514 was a 1.5 X 1.5 m excavation unit dug off one of the long sides of the strata cut, using the exposed profile as a guide. These units were located at the back of one of the few apparently undisturbed terraces in the western section of the Algodonal Early Ceramic terraced
area. This terrace appears to be largely buried by the coarse, rocky talus that covers this part of the slope. The visible part of the terrace is about 2 m wide and 17 m long, and the hillside slopes about 27 degrees. Both units were terminated arbitrarily at the level where a burial was encountered, due to time constraints and the danger of the trench collapsing. Neither identifiable subsoil nor the bottom of the cultural deposits had been reached, so the beginning of the depositional history is unknown.

The lowest levels reached consisted of horizontal layers of artifact-bearing habitation deposits that had presumably accumulated on a terrace. Four large pits were excavated into these strata terrace. Three extended beyond the boundaries of the excavation, but were at least 1 m in diameter. They were not excavated completely, but one was at least 60 cm deep. These three pits were filled with loose, coarse, rocky soil containing pockets of botanical material. In the fourth, about 190 cm long, 80 cm wide, and between 20 and 40 cm deep, was placed the extended, face down body of an adult, wearing a plain, coarse wool knee-length shirt with a rope tied around it at the waist. The shirt appeared to have a large neck opening which was pulled down the back, exposing a portion of the preserved skin covering the upper back and right scapular area. The head and long hair were uncovered, the right arm extended along the side of the body, and the left arm flexed with the hand resting just above the right elbow. A concave-based chert point was in the fill next to the head of the burial. Large rocks up to 45 cm in maximum dimension were piled directly on the body, covering most of it. The top of the burial pit could not be identified, but horizontal occupation layers totalling between 50 and 70 cm thick accumulated on the terrace. These layers were patchy, irregular, and roughly horizontal layers of soil with artifacts, including a possible patch of floor, an informal hearth, and a patch of burnt soil, ash,
and charcoal about 14 cm across that appears too small to have been used for cooking. Into these layers was dug a large pit, or several superimposed pits, at least 120 cm across and 60 cm deep. A patch of burned soil and charcoal appears to indicate a small fire built at the bottom of the pit, although this informal hearth could have been located on a much earlier living surface immediately below the bottom of the pit cut. This pit (or pits) was filled with large rocks and coarse, loose soil with botanical material. The terrace was evidently abandoned, and the front portion of the habitation deposits was eroded away, leaving a sloping surface. Several inclined layers of loose, rocky, artifact-bearing overburden accumulated over the eroded slope, and in these was buried a worn textile bag filled with unidentified seeds, probably an offering. A thin layer of volcanic ash collected on the overburden when Huaynaputina erupted in AD 1600, and was covered by more rocky talus.

LV 2501: A burial tumulus

This unit was located directly on the crest of the smallest of about 20 mounds in a restricted area of the western corner of the alluvial fan, directly downhill from the central part of the early ceramic phase terraces. The mound is about 6 m in diameter and proved to be built up 105 cm over the original ground level. This unit was excavated at the request of Manuel Garcia, who visited Loreto Viejo as a representative of the Instituto Nacional de Cultura office in Moquegua. Mr. Garcia was conducting the cultural resources inventory for a denuncio (land claim) that had been submitted by a local landowner, requesting title to a large area of the Loreto Viejo alluvial fan for the purpose of building a chicken ranch. Such claims are only granted if they do not disturb archaeological remains or if funds are provided for appropriate salvage excavations. The obvious Chiribaya terraces on the northeastern
part of the alluvial fan ruled out that part of the claim. The eastern corner of the fan was marked by large, superficially sterile pits and hummocks that I took to be spoil heaps and borrow pits left by quarrying for a large brickmaking kiln just below the site. Mr. Garcia's archaeological experience near Tacna suggested to him that the hummocks might be burial mounds, and he asked me to test this area so that he could approve or disapprove the claim. The hummocks proved to be burial mounds, the landowner was unwilling to fund salvage excavations, and the claim was not approved. This particular mound was selected as the smallest and one of the most clearly defined on the surface, in order to make the test as simple and rapid as possible. The unit was located directly on the crest on the assumption that the most important subsurface features would be centered under the mound.

Over the roughly level and extremely hard, rocky subsoil accumulated a thin layer of loose, fine soil with a low density of small fragments of marine shell, charcoal, and botanical material. Then, a small, vertical sided pit about 40 cm across and 45 cm deep was dug into the subsoil. This pit may cut another pit which would be located just outside the unit to the north. The backdirt from the pit was piled up next to it. The relative order of the following three events is unclear, but they probably happened at almost the same time, perhaps in a single ceremony: a small fire was burned on top of the pile of backdirt, leaving not only burnt soil, charcoal, and ash, but also fragments of burnt shell; a dark, hardened patch was formed on the otherwise soft superficial layer of the ground surface next to the backdirt, possibly by wetting the salty soil with a dark colored liquid such as chicha; and the dismembered body of a three year old child was placed in the pit.

The cranium and arms were separated from the body, and the torso was divided
into two pieces at the lumbar vertebrae. A mass of unidentified leaves was placed in the bottom of the pit. Then the arms were placed in the pit, followed by the torso parts. The lower torso was placed over the right arm, and the upper torso was placed slightly higher and alongside the lower torso but inverted relative to it, so that the lumbar vertebrae of the lower body were to the south and the lumbar vertebrae of the upper body were to the north. The cranium was placed on top of the lower body and to the north, on the opposite side of the pit from the cervical vertebrae. This arrangement resulted in the flexed, articulated left arm, with the mummified left hand bent backwards at the wrist, being on the right side of the upper body. The articulated right arm, under all the other body parts, was on the left side of the upper body. Within these major chunks, almost all the bones were articulated, and many were united by desiccated connective tissue and areas of skin. The legs were tightly flexed, with the feet crossed and below the pelvis. I cannot imagine any sequence of natural decay that could have resulted in the observed arrangement of body parts. The leaves, soil, and right arm at the bottom of the pit were concreted together. The same effect was often noted in in situ Late Intermediate Period burials, apparently resulting from body moisture. This suggests that the body was not yet desiccated when it was divided and placed in the pit.

Molle leaves and branches were loosely placed around and above the body. There were no textiles or other grave goods in the tomb. Seven or eight thick lengths of cane were laid across the top of the pit, some resting on the edge of the backdirt pile. A layer of long, parallel reed stalks was laid over the entire surface, covering the tomb and the backdirt pile. A second layer was placed with the reeds perpendicular to the first. A third layer was placed with the reeds perpendicular to the second. The reed layers vary in thickness, totalling 3 to 23 cm thick in different spots. A small fraction
of other plant materials, especially molle branches and leaves, but also some
leguminous seeds and unidentified broad leaves, were included with these reed layers.
The reeds were covered by a layer of sandy soil with large rocks, and then by a layer
of more compact soil without rocks. Another layer of reeds was laid over the entire
unit. Some areas were laid parallel, while others appeared disordered. A number of
large rocks were included among the reeds. These reeds were covered by another layer
of compact soil, and another, thinner layer of reeds. A final layer of compact, gravelly
soil finished the mound construction about 100 cm above the canes covering the tomb.
The uniformity of the soils and reeds and the parallel form of the strata gives the
impression that the entire mound was built in a single episode, rather than accreting
gradually. Artifacts included a very low density of shell fragments, two twisted
clumps of molle twigs each bent around and tied in a ring, and a wad of feathers tied in
a knot. Not a single sherd was recovered from the unit.

Several later pits disturbed the upper part of the mound. One, located directly
under the crest of the mound, contained a shallow pit burial. The fully preserved
mummy bundle, apparently of an adult in a flexed, supine position, is wrapped in a
wool shirt with needle-knit band decorations, and tied with vegetal fiber rope. The
discolored, concreted soil below it indicates that the body was placed in this pit before
it was desiccated. There were no grave goods other than the textile wrappings and any
artifacts that may be inside them, but the textile, vegetal ropes, and overall appearance
 correspond to the Ilo-Tumilaca/Cabuza pit burials from El Algodonal.

This type of burial mound construction and the interment of dismembered bodies
in them is known from the Azapa valley Alto Ramírez phase (Muñoz 1987), and from
the Tacna area (Manuel Garcia, pers. com.). The cane-roofed tomb construction
differs from the Alto Ramírez examples, and many of those contain grave goods. The Alto Ramírez phase is roughly dated to between 500 BC and AD 200 (Muñoz 1987), which corresponds reasonably well with the 100 BC to AD 380 dates (Appendix C) for the Algodonal Early Ceramic material found in the nearby terraces.

**LV 2511: A burial tumulus, not fully excavated**

This unit was located directly on the crest of the largest of about 20 mounds in a restricted area of the western corner of the alluvial fan, directly downhill from the central part of the Algodonal Early Ceramic terraces. The mound is about 15 m in diameter; its height is roughly estimated at 3 m. This unit was quickly abandoned at a depth of about 15 cm, when it became apparent that the stratigraphy was substantially more complex than unit LV 2501 and time would not permit a sufficiently careful excavation. However, the final phases of mound construction were apparently similar to LV 2501, with lenses of reeds and other botanical material interdigitated with lenses of soil. The lenses in LV 2511, however, appear not to be uniform caps, but are more irregular and complex. Several areas had fires built on them before the final layer of soil was placed over the mound. The botanical lenses include a greater variety of plants than in unit 2501, including various leaves, chaff, and large corn cobs. A slight amount of shell was noted, as were a twig tied into a hoop shape with string and a braid of human hair with the end wrapped in string. No ceramics were recovered.

**LV 2515: A surface collection with a tapestry fragment**

This surface collection unit was located in the zone of Algodonal Early Ceramic terraces, in an area of disturbed topography with plentiful shell and botanical debris on the surface. A fragment of fine, decorated tapestry that may have chronological
significance was noted on the surface, and a small area was cleared in order to collect the entire fragment. The fragment was folded and twisted haphazardly around and between the rocks, gravel, and dense, loose midden that cover the slope to a depth of at least 30 cm. This material is clearly redeposited, probably from looting further up the slope. The midden contains plentiful marine shell, some botanical material, an immature human molar, and various fragments of human bone apparently from several individuals. No ceramics were noted. The fragment probably comes from a looted tomb somewhere further up the slope, but no tomb or clear concentration of funerary artifacts could be located.

The tapestry fragment is about half of a shirt with wide bands of rectangular panels containing geometric profile heads with split eyes and a variety of other geometric motifs related to the less representational aspects of Tiwanaku iconography, executed in tan, creme, red, black, and green. Whether this textile is actually a Tiwanaku or a Tumilaca phase artifact remains to be determined.

LV 2301: General clearing unit in Chiribaya cemetery one

This 4.0 X 4.5 m unit was opened near the upper margin of the looted area of cemetery one, between two deep, recent looter's pits, in an area that appeared to have been only superficially disturbed, in order to expose intact tombs that would date the use of the cemetery. This unit removed the overburden and mixed fill from within the clearly defined pit cuts made by the builders of the tombs and modern looters. Four intact cylindrical stone lined tombs, two looted cylindrical stone lined tombs, an offering, a broad flat area of mortar with nothing below it, and a severely disturbed intrusive extended burial were exposed. The edges of two pit cuts probably containing tombs outside the unit were discovered but not investigated further. In two cases,
ceramic vessels were placed in the fill directly above a tomb cover. In some cases, the mortared tomb covers may originally have been at or just below ground level.

The soil into which the tombs were cut included several inclined lenses rich in charcoal and containing sooted globular body sherds corresponding to the Algodonal Early Ceramic style. This material does not appear to represent living areas. Instead, it may be midden that was dumped off of terraces further up the slope, or material redeposited downhill when one or more terraces collapsed. No terraces are visible now within the cemetery or above it.

**LV 2302: A post-Algarrobal phase Chiribaya four-walled collared tomb**

This unit was located outside of LV 2301, near the margin of the actively looted area of cemetery one. The rectangular "collar" was barely exposed on the undisturbed surface and was noted during mapping. The tomb was a rectangular chamber about 50 cm wide, 85 cm long, and 80 cm high, with four carefully laid, mortared stone walls. The mummy bundle contained a flexed, seated adult in the northwest end of the tomb chamber, facing southeast across the grave goods at its feet. It is tied with ropes, a loosely braided hank of yarn, and a decorated textile belt. A decorated coca bag was on top of the head, apparently tied to the neck. Grave goods included a wooden spoon, two camelid feet, husked and unhusked corn cobs, a large cuy, a gourd bottle with vegetal stopper, and a matching pair of bowls most like Jessup's (1991) Yaral (Middle Chiribaya) phase. Preservation is excellent. The chamber was covered with large stone slabs mortared in place and covered almost completely by the rounded mass of mortar. The tomb cover was buried, and a low rectangular wall or "collar" comprising a single course of mortared stones was built directly over the tomb cover approximately at ground level. The "collar" was oriented at about 45 degrees relative
to the tomb chamber. We excavated the tomb through the opening in the center of the "collar," but the tomb was clearly built and sealed before the collar was erected.

**LV 2303: A possibly post-Algarrobal phase Chiribaya tomb**

This roughly cylindrical stone lined tomb from 50 to 65 cm across and 85 cm deep with mortared stone walls was located within the general clearing unit LV 2301. The bottom course of the wall was made of large, vertically oriented stones, while the upper portions were of smaller, randomly oriented stones. The seated, flexed body of an adult was wrapped in at least two brown textiles and tied with ropes and a decorated textile belt. Its orientation could not be clearly discerned within the textiles. Grave goods included a gourd bowl, two decorated bags of botanical material, unhusked corn cobs, two non-human ribs, and a pair of sandals tied to the mummy bundle. The tomb was sealed with mortared stone slabs largely covered by a convex mass of mortar. As the tomb cut was being filled, a Chiribaya jar was placed upright in the fill directly above the tomb. The jar is most like Jessup's (1991) Yaral (Middle Chiribaya) phase, although this attribution is less certain than most.

**LV 2304: A disturbed intrusive extended burial**

This severely disturbed burial within unit LV 2301 comprised the extended body of an adult laid on a rectangular wooden frame resembling a cot or stretcher, with rope and vegetal fiber ties wrapped across the narrow dimension of the frame to form the stretcher's surface. Recent looters had dug down to the extended burial and removed most of the body except for some vertebrae and the mummified lower legs and feet, which were found *in situ*. Aside from a few scraps of plain brown wool cloth, the only other artifact recovered was a length of string with five overhand knots forming loops
at 10 cm intervals. The center loop was tied around the neck of the dried body of a very small lizard; each of the adjacent loops on either side was tied around the neck of the dried body of a larger lizard, and each of the outermost loops appeared to be empty, but was laying adjacent to a small scatter of chili pepper (aji) seeds. They did not reach the Chiribaya cyst tomb below.

This burial was stratigraphically superposed over a Chiribaya stone lined tomb, LV 2310, the capstones of which were removed in the process of placing the stretcher burial. The Chiribaya tomb was full of sandy gravel, but the contents were not disturbed. One pole of the stretcher lay across the mouth of the Chiribaya tomb. The recent looters did not remove the stretcher, and so did not discover the Chiribaya tomb beneath it. The stretcher burial is clearly post-Chiribaya, and is the only one of its kind that I know of. Three post-Chiribaya extended burials with probable Late Horizon ceramics were recovered from a single context at Chiribaya Baja (David Jessup, pers. com.), but they were not laid on stretchers.

LV 2305: An offering of two pots with food (?)

This unit, within LV 2301, comprised an ovoid pit in which was found a "boot pot" was laid on its side, and a large, two-handled olla or "chomba" next to it, mouth down. The large olla or "chomba" was decorated with Chiribaya designs most resembling Jessup's (1991) San Geronimo (Late Chiribaya) phase. It contained the desiccated remains of a large non-human internal organ, tentatively identified by Dr. Arthur Aufderheide as a ruminant's stomach. It appeared to contain botanical material including several leaves, numerous seeds resembling quinoa or amaranth, legume (possibly algarrobo) pods, twigs, grass, and a corn kernel. The botanical material did not appear to have been chewed nor digested. The mouth of the vessel was plugged
with a mass of construction mortar. The "boot pot" contained consolidated plant material, some twigs and small leaves, and desiccated tissue identified by Dr. Aufderheide as liver with adhering loops of small bowel. The contents of both vessels may represent food offerings, the larger one probably holding a stuffed camelid stomach, and the smaller one containing a seasoned liver stew.

**LV 2306: A probably Chiribaya tomb**

Stratigraphic evidence suggests that this cylindrical stone lined tomb within unit LV 2301 was built some time after tombs LV 2311 and LV 2308. It is about 50 cm across and 100 cm deep, and contained the seated, flexed body of an adult facing approximately south. The body was wrapped in at least two textiles. The one enclosing the lower body is red, while the one around the upper body is brown. Grave goods included a gourd bottle and a basket containing corn cobs, tubers, and a wooden spoon. A worn shirt was laid over the body and grave goods. The tomb was sealed with mortared stone slabs largely covered by a convex mass of mortar. No ceramics were found in this tomb, but it appears to be consistent in every way with the Chiribaya tombs nearby. The textiles, spoon, and possibly the basket may eventually prove to be diagnostic.

**LV 2307: A possible mortar preparation area**

This unit within LV 2301 comprised a flat area at least 1.8 m wide and 1.6 m long that had been cut into the sloping subsoil surface. Over most of the flat surface was deposited a layer from 1 to 10 cm thick of the same mortar that was used in the construction of the nearby tombs. The top surface of the mortar had impressions of fingers in it, and had a few larger chunks of mortar projecting upwards in places. The
mortar was covered by overburden with a very low artifact density. This area was initially thought to contain a tomb, but there was nothing under the clay cap, and no artifacts were noted. The clay patch may represent an area used for the preparation or discard of mortar used in the construction of one or more of the nearby tombs.

**LV 2308: A disturbed possibly Chiribaya tomb**

This unit within LV 2301 is a cylindrical stone lined tomb stratigraphically between the earlier tomb LV 2311 and the later tomb LV 2306. The mortared stone walls of tomb LV 2308 are about 50 cm across and about 90 cm deep, with a row of large, vertically oriented stones as the basal course of the wall. Unlike other tombs except 2311, this tomb seemed to have a grey mortar between the wall stones that differed from the pink mortar of the tomb cover. The pink mortar is like that found in all parts of the other tombs. The tomb was looted recently, but apparently still *in situ* on the tomb's floor were two camelid feet, corn cobs with kernels, tubers, and a fragment of vegetal rope that probably was part of the mummy bundle. No diagnostic artifacts were found. The artifacts are consistent with Chiribaya grave goods from nearby tombs and other sites, but neither do they differ markedly from grave goods of other groups and periods.

**LV 2309: A disturbed possibly Chiribaya tomb**

This unit within LV 2301 is a cylindrical stone lined tomb with mortared walls about 35 cm E-W by 45 cm N-S and of unknown height. The tomb was looted recently, and the only artifact recovered was a wooden spoon apparently *in situ* on the floor of the tomb. The tomb construction and spoon are consistent with a Chiribaya affiliation.
LV 2310: An Algarrobal phase Chiribaya tomb

This unit within LV 2301 is a tomb that was stratigraphically earlier than the extended stretcher burial of LV 2304. The tomb is irregular in plan, almost rectangular near the bottom and roughly elliptical near the top, with mortared stone walls about 50 cm by 65 cm across and 85 cm high. In it was a mummy bundle apparently containing the flexed, seated body of an adult facing southeast. A whole cuy was tied by the neck with a blue string to the ropes binding the fardo. A brown cloth bag with green stripes was tied to the fardo on its chest, a cane with four balls of colored yarn and cactus spines was tied onto the fardo next to the bag, and a spindle and whorl were tied on next to the cane. An Algarrobal phase (early) Chiribaya bowl containing tentatively identified beans, tubers, camelid ears and feet, and a wooden spoon was placed in the bottom of the tomb. The bowl was apparently tipped over when the fardo was placed in the tomb, spilling its contents on the floor underneath the fardo. An Algarrobal phase (early) Chiribaya jar was placed alongside the mummy bundle. The tomb was presumably sealed. Later, a pit was cut for extended burial 2304. The capstones of tomb 2310 were removed in the process, and the tomb filled with gravelly soil. The contents do not appear to have been otherwise disturbed.

LV 2311: An Algarrobal phase Chiribaya tomb

This unit within LV 2301 is a tomb that was stratigraphically earlier than tombs LV 2306 and LV 2308. The mortared stone walls of the slightly constricted cylindrical cyst tomb are about 70 cm across at the base and 85 cm high. Unlike other tombs except LV 2308, a grey mortar was used between the wall stones, and the usual pink mortar was used only for the tomb cap. A fardo apparently containing the seated,
flexed body of an adult faced southeast. Underneath and alongside the fardo were corn cobs with kernels and twigs of a woody plant. The fardo has a blue string tied around the head, holding at least two small canes in a vertical position against the side of the head, as well as a spindle and bone whorl. A stick with six balls of colored yarn and an entire cuy may also have been tied to the blue string around the head. An Algarrobal phase Chiribaya bowl contained a mass of tentatively identified beans and a wooden spoon, partially spilled out on the tomb floor. Other grave goods include a gourd bottle, a tied mass of vegetal fibers probably comprising a model boat, two camelid ears, a wad of coca leaves, and an Algarrobal phase Chiribaya jar with a small elliptical hole in the side plugged by a wad of wool fibers. The tomb was sealed and buried. A single course or row of stones was probably placed above the tomb as a "collar" similar to that of tomb LV 2302. These stones were not mortared, however, and because some were removed by subsequent looting and others were not exposed in this excavation, the shape can only be approximately reconstructed. The collar appears to have been rectangular and oriented about 45 degrees from north. In the fill above the tomb cap, at the level of the stone collar and inside it, was found an intact sooted incensario (a pedestalled vessel, elliptical in plan, with black line decorations and a protruding lobe on the lip that may suggest the body and tail of a bird).

Loreto Alto

Loreto Alto perched among the steep quebradas and ridgelines high on the valley wall on the north side of the coastal Osmore valley, about 12 km from the mouth of the river, almost directly opposite El Algodonal, and directly above the largest area of prehistoric terraced fields (Figure 1-3). The site is a complex of 254 small terraces mostly arranged in rows stairstepping up the bottoms of five steep, branching
Figure A-9. Loreto Alto.
quebradas that run from about 50 m to 200 m above the floodplain, with 8 central terraces located on and around an artificially flattened ridge about 175 meters above the floodplain (Figure A-9). The topographic lines show the steepness of the dissected valley wall, ranging from about 20 degrees along the less inclined quebrada bottoms to about 45 degrees on the steepest hillsides. Only Ilo-Tumilaca/Cabuza sherds were found at Loreto Alto, so even units without diagnostic ceramics are considered to represent an Ilo-Tumilaca/Cabuza occupation.

The central terraces are divided into three clusters. The first cluster comprises two large flats approximately 25 meters long, and two smaller flats in a slight hollow immediately to the southwest. The two larger terraces were formed by artificially levelling the ridgeline and filling behind vertical stone retaining walls around part of its periphery. Two small, roughly square stone-faced platforms extend from the side of the upper terrace over the lower one. Combined with the upper terrace, these small platforms form the arms of a low, U-shaped platform arrangement opening to the southeast, overlooking the lower terrace. Units LA 1501, LA 1506, and LA 1509 sampled the two larger terraces. The second cluster comprises two smaller terraces a few meters to the southwest of the first cluster, on a smaller artificially flattened ridgeline. The third cluster is located southeast of the first, below it and on and around an artificially modified hump in the ridgeline. The ridge was levelled by removing the highest portions and filling behind vertical retaining walls along both sides of the ridgeline. A second terrace was built by filling behind a retaining wall in a slight hollow overlooking the ridgeline terrace. The ridgeline terrace was sampled in a broad area by units LA 1510 and LA 1513-1524.

Several of these central terrace flats are marked by shallow linear depressions with
right angle bends. The excavations in units LA 1513-1524 showed that these depressions correspond to trenches for cane (*quincha*) walls, indicating that multi-roomed rectangular cane walls enclosed most of the surface of at least four of the central terraces. The upper, U-shaped area in the first cluster was largely enclosed and divided by cane walls, but no evidence of wall trenches was noted on the lower terrace. Units LA 1510 and LA 1513-1524 also located abundant evidence of cooking, suggesting that these structures were at least partially residential.

The numerous surrounding terraces are different from the central ones in that they are constructed in the bottoms of steep quebradas, rather than on top of artificially flattened ridgelines. These surrounding terraces generally comprise a stone retaining wall supporting a crescent-shaped to semicircular flat in the quebrada bottom, and they range in size from just a meter or two long to about 15 m long, with a few larger examples. Although no wall trench depressions are visible on the surface, 4 of the 8 quebrada bottom terraces tested had wall trenches in the subsoil. The excavation units were small, and could easily have missed wall trenches on the other four terraces. These trenches and the debris recovered from occupation contexts suggest that the quebrada bottom terraces were residential in nature, and that many bore small, roughly rectangular cane-walled houses.

The arrangement and location of Loreto Alto is similar to several other sites located during survey in the coastal Osmore valley, but Loreto Alto is by far the largest, and is the only one with central ridgecrest terraces. Since the surrounding terraces are in separate quebradas rather than a contiguous area, the limits of the site are set somewhat arbitrarily, and some of the other quebrada bottom terrace sites might be equally well considered part of Loreto Alto. The overall structure of these sites is
similar to the Tumilaca phase upper sector of El Yaral in the middle valley. This part of El Yaral also comprises a multitude of small terraces located high above the valley floor, where access requires a strenuous climb and no water or natural vegetation is available. Aside from their locations and a few terraces that could serve as lookouts, these sites do not appear to be designed for defensibility. The quebrada bottom terraces would be vulnerable to attack from the ridgelines above, and there are no defensive walls.

Surface preservation is variable, but many of the terraces have retaining walls that are largely intact. A few are clearly intact to the finished top course of stones. Little water has flowed down most of these quebradas since the terraces were built. Three of the quebrada bottom terraces have circular, stone-lined pits visible on the surface. These pits differ from tombs in being slightly larger (70 to 80 cm across), having walls that come all the way up to the terrace surface, and showing no trace of a tomb cover or looted mortuary remains. Two of these pits have clearly been dug out by looters, and a local informant said that one or both contained corn cobs with kernels. The surface is almost sterile, and in general shows few signs of modern disturbance.

On the ridgetop terraces, most of the surface appears to have been deflated, rather than buried. The quebrada bottom terraces are generally less eroded, but still evidence relatively little soil formation and redeposition. Most of the excavations found shallow deposits with low artifact density, suggesting an occupation much shorter and/or less intense than those at El Algodonal and Loreto Viejo. There is no evidence of a cemetery within the site, but the Ilo-Tumilaca/Cabuza cemetery site 205 is located on the small alluvial fan at the mouth of one of the main quebradas of Loreto Alto, and probably served the Loreto Alto settlement. The relatively few diagnostic ceramics
recovered all pertain to the Ilo-Tumilaca/Cabuza tradition.

The name Loreto Alto for this site is not traditional, unlike most of the site names in the valley. The site does not appear to have a commonly known name. It is located above the landholding called El Fundición and the abandoned buildings called Loreto Nuevo, but these names are applied to other archaeological features. The names Loreto Alto and El Fundición are used interchangeably in PCCT fieldnotes, but Loreto Alto is the preferred, unambiguous site name.

Due to its location, the small size of the terraces, and the presence of stone-lined pits and depressions that might indicate additional pits, Loreto Alto initially appeared likely to be a storage complex analogous to Inka collca sites. For this reason, many of the initial units were placed to test surface depressions. None proved to be stone-lined pits, of which there now appear to be only four on the site. The others are postholes, looter's holes, and possibly unlined storage pits.

Only the central part of the site was mapped using tapes and a coordinate system. The surrounding terraces were drawn from air photos and carefully ground checked. The first two clusters of central terraces and some of the nearby quebrada bottom terraces were mapped using a coordinate grid aligned to magnetic north. The coordinate axes were labeled N (north) and E (east). Points farther to the north took higher N coordinates; points farther to the east took higher E coordinates. The datum was marked on a rock, and set arbitrarily at 200 N, 200 E, and relative elevation 200 meters, so that all coordinates and elevations within the mapped area would be positive. For practical reasons, the third cluster of central terraces was mapped using a coordinate grid aligned to magnetic northeast and southeast, using the point 180 N, 230 E in the first coordinate system as the coordinate datum for the second. This point
was arbitrarily set at 200 NE, 200 SE. The original datum was used for elevations throughout. Excavation units on terraces outside the coordinate systems were aligned to magnetic north or northeast as appropriate. Detailed topographic data were collected for the area within the coordinate systems using a theodolite. The topographic lines on Figure A-8 were drawn from a stereo air photo pair, and agree well with the theodolite and stadia rod data collected manually at the site.

Due to the very low density of surface artifacts, the central area of the site was intensively, but not systematically, surface collected. Surface artifacts from the rest of the site were collected as they were noted. Only lithics and a few non-diagnostic body sherds were located in the central area, and only the lithics were collected. Each collection was assigned a unique number, and its coordinates recorded. Only twenty numbers were assigned for the whole site. Of these, 9 were long, narrow, stemmed projectile points made of white chert, one was a similar type of point made from a brownish-grey translucent chert, and one was a concave-based point made from a grey translucent chert. All of these points were found on the two largest central terraces or on the slopes within three meters of these terraces. The stemmed points are typologically similar to points from Tiwanaku contexts in the Moquegua area, and also to the essentially identical points from Chiribaya contexts in the coastal valley. The concave based point is generally said to be an earlier type (Aldenderfer pers. com.), and corresponds to two excavated examples from Algodonal Early Ceramic contexts at Loreto Viejo. It is not clear how this point found its way to Loreto Alto. The remaining surface material included five chert flakes from the same central area, two pieces of a groundstone mortar or unfinished "doughnut stone" or mace head from the same area, a flake of red volcanic material from one of the quebrada bottom terraces, and half of a ground and polished "doughnut stone" or mace head from the slope near
the terrace tested by unit LA 1533.

These collections, though not systematic, document an unusual concentration of flaked lithic material, and especially points, on the surface of the two largest central terraces. By contrast, only two points were recovered from the entire surface of El Algodonal, despite an intensive surface collection program and many more man-days spent working on the site. This anomalous density of points could be due to the deflated surface conditions or to the relative inaccessibility of Loreto Alto to visitors likely to pick up points. On the other hand, it could indicate a different activity regime with a greater focus on hunting, or perhaps a prehistoric battle.

**LA 1501: An Ilo-Tumilaca/Cabuza room with a hearth**

This 1.0 X 1.5 m unit was located near the middle of the uppermost large, rectangular, central terrace. The north profile cuts one of sixteen shallow roughly circular depressions on this terrace. Shallow linear depressions like those over the wall trenches in units LA 1513-1524 suggest that this unit is approximately centered in a rectangular cane walled enclosure about 10 m long and 7.5 m wide, which would have been the middle one of a row of three similarly sized rooms or walled spaces. Unit LA 1506 is about 4 meters to the southeast. Excavation revealed that the sterile subsoil had evidently been cut down to a level surface, into which was dug a vertical-sided pit about 30 cm across and 40 cm deep. The pit contained small wood fragments, and probably held a post that could have been the central support for a roof over the central walled subdivision of the terrace. About ten cm of compact soil with a low artifact content developed on the surface, probably from foot traffic loosening the subsoil rather than any substantial soil formation or deposition. During the development of this layer, an informal hearth measuring about 70 cm wide and 75 cm
long, plus an unknown additional length outside the unit, was used near the pit, and ash and charcoal accumulated around it, especially in a shallow depression. The hearth is relatively large compared to most hearths from El Algodonal and Loreto Viejo, and suggests that at least the central room on this terrace may have had a domestic function. The dense domestic midden deposit in nearby unit 1506 supports this conclusion. Some wind deflation probably occurred. Finally, a shallow surface layer of silt and sand accumulated over the artifact bearing deposit.

**LA 1506: An Ilo-Tumilaca/Cabuza domestic midden**

This 1.5 X 2.0 m unit was located off the edge of the uppermost central terrace, about 4 m southeast of unit LA 1501, in the corner formed by the retaining wall of the upper terrace and one of the two small, roughly square platforms that project from it, that is, in an inside corner of the U-shaped platform arrangement. The dry-laid stone terrace retaining walls are from 25 to 50 cm high, rising from the roughly horizontal surface of the lower terrace. Dense domestic midden with rocks accumulated in the inside corner formed by the terrace retaining walls. On several occasions during the deposition of this midden, patches or lenses of hard, nearly sterile clay were deposited over parts of the garbage. The last midden layers lapped over the top of the terrace retaining wall somewhat. The midden contained diagnostic Ilo-Tumilaca sherds and plentiful domestic refuse in large pieces, including hair, threads, shell, bone, botanical material, fish remains, textile fragments, crayfish (*camarón*), large wood chips, and pieces of tree bark and canes to 40 cm in length. Rocks in the midden probably come from the uppermost courses of the terrace retaining walls.

This midden could have been banked up against the terrace retaining walls from the lower terrace, dumped off the edge of the upper terrace, or both. It clearly
indicates a range of domestic activities and strongly suggests that people lived on the central terraces.

**LA 1502: A nearly sterile hillslope**

This 1.5 X 1.5 m unit was located about 150 cm down the steep slope below the foot of the platform retaining wall of the uppermost central terrace. It was excavated to look for refuse that might have been swept or thrown off the edge of the central platform, but only a thin layer 1 to 3 cm thick of loose soil with rocks and a very low density of charcoal, shell, and a few eroded sherds was found.

**LA 1503: A stone lined storage pit**

This unit was the fill of a cylindrical dry-laid stone-lined pit about 70 cm across and 75 cm deep, approximately centered in a modest quebrada bottom terrace about 5 m wide and 3.5 m deep. Units LA 1507 and LA 1505 are contiguous to the south. The bottom course of stones are larger and oriented vertically, while the upper courses are smaller stones mostly oriented horizontally. The floor was roughly flat but not prepared in any way. The pit was abandoned and left open. It gradually filled with fine windblown soil, occasional rocks collapsing from the walls, and bits of corn chaff and charcoal. When Huaynaputina erupted in AD 1600, considerable quantities of volcanic ash collected in the pit, which was still only slightly filled. This ash was found in pure pockets, interdigitated with lenses of corn chaff, charcoal from burnt chaff and leaves, and ash-free soil with a low artifact density, in a complex pattern totalling about 40 cm in thickness. In general, the unburnt corn chaff was most concentrated in the bottom of these deposits, the charcoal a bit further up, and the ash above that. Additional windblown soil accumulated on top of the ashy layers. All of
the fill appears to postdate the pit's use, and most of it apparently relates to the AD 1600 Huaynaputina eruption. The stratigraphy in the pit is confusing, and may represent accumulations spanning the burning, ashfall, and earth tremors that accompanied the eruption.

**LA 1505, 1507: An Ilo-Tumilaca/Cabuza terrace**

These two units were contiguous with the stone-lined storage pit unit LA 1503, on the southern side of a modest quebrada bottom terrace about 5 meters wide and 3.5 meters deep. Unit LA 1505 was a 1.0 X 1.5 m uncontrolled strata cut, located so as to section a broad, shallow depression that was suspected to indicated another storage feature next to the superficially visible LA 1503. This depression proved to be a shallow, intrusive pit probably dug by a frustrated looter. Unit LA 1507 was a 0.5 X 1.0 m unit excavated using one of the profiles of cut LA 1503 as a guide. The terrace was constructed of fill with a very low artifact density packed behind the terrace retaining wall in order to make a level surface. A compact horizontal surface developed in limited areas on this fill. In one area, this "floor" has a clear imprint of an estera mat, possibly formed by wetting the soil under the estera. About ten cm of soil with a low artifact density accumulated over this "floor". On the horizontal surface of this soil in one restricted area was deposited an ashy lense about 1 cm thick. Another 13 cm of nearly sterile soil accumulated above this ashy lense. No clear occupation zone, floor, hearth, or other feature was securely identified. The relationship of the features to the stone lined pit in unit 1503 could not be determined, but given the evident lack of soil development on the site, all of them might relate to the initial construction of the terrace, rather than its use.
LA 1504: An Ilo-Tumilaca/Cabuza terrace with a pit and a wall trench

This 1.0 X 2.0 m unit was located on a large quebrada bottom terrace about 10 m long and 4 m deep, roughly half of the way back from the front edge of the terrace, and near the northeast end. The unit was placed so that the north edge cut a shallow depression. Unit LA 1508 was located just off the southwest end of the same terrace. Excavation uncovered a trench in the subsoil parallel to the terrace retaining wall and running roughly down the middle of the terrace's width. It appears to stop short of crossing the unit, suggesting that the cane wall it probably contained either was a short partition or had a doorway in it. After about 20 cm of artifact-bearing soil had accumulated, a vertical-sided, flat-bottomed pit about 70 cm across and 55 cm deep was dug through it and into the subsoil, about 12 cm behind the trench. Ash with charcoal was dumped in the bottom of the pit. A 30 x 40 cm fragment of textile was found in the pit fill, along with low densities of marine shell, botanical material, charcoal, and a ceramic sherd. The pit is too neatly cut to suggest a looter's hole, and the intact ash deposit at the bottom suggests a domestic function. It may have been large enough to be used for storage, and it seems to have been located in a small walled space in a back corner of the terrace.

LA 1508: A small Ilo-Tumilaca/Cabuza shell dump

This 1.0 X 1.0 m unit was located on the slope just off the southwest end of the quebrada-bottom terrace tested by unit LA 1504, which is about 10 m long and 4 m deep. The unit was placed to investigate a concentration of mussel (chorro) shells eroding from the surface. This material proved to be a modest concentration of domestic midden in a shallow natural depression, containing predominantly marine
shell, especially mussels, but also small quantities of wool fibers, ceramic sherds, bone, charcoal, and other domestic debris. This midden could represent a single event in which food garbage and other debris, possibly swept up from the terrace surface, was dumped off the end of the terrace. That the deposit is so small and was never seriously dispersed probably attests to a brief occupation of the terrace.

**LA 1509: The nearly sterile surface of the lower central terrace**

This 1.5 X 1.5 m unit was located on the lower of the two largest central, rectangular terraces, straddling a subtle hummock of light-colored soil that appears to form a right-angled corner in plan. This apparent outline of a structure on this terrace was either imaginary or too ephemeral to confirm through excavation. A tiny fire, about 15 cm across, had been burned on the hard, sterile subsoil, and a very low density of artifacts accumulated in the surface soil. Most of the loose soil was evidently blown away by heavy winds.

**LA 1510, 1513-1524: A multi-roomed Ilo-Tumilaca/Cabuza structure**

These 13 contiguous units, mostly 1.5 X 1.5 m, were located on the lowest of the central ridgetop terraces, and exposed about half of a three or four roomed cane-walled structure with an ephemeral cooking shack on one side (Figure A-9). Unit LA 1510 was the first excavated, in an inside corner just off the edge of the terrace. Instead of encountering the expected midden, LA 1510 found a wall trench with horizontal canes in it. Units 1513 through 1516 were laid out in a checkerboard pattern to test for further architectural evidence, and units 1517 through 1520 were subsequently excavated to fill in the gaps in order to better define the structure's plan. Finally, units 1521 through 1524 were placed to define the limits of the structure.
Figure A-10. LA 1510, 1513-1524.
The subsoil was probably cut to level the terrace, and small amounts of fill may have been added behind the dry-laid stone retaining walls running along both sides of the ridge. A low retaining wall may have been built across the crest, as well, but only a scatter of stones and a shallow step in the topography remain. Two small informal hearths were used on the subsoil surface, apparently just off the level part of the terrace. Several of the wall trenches contained horizontal bundles of canes, and a few vertical canes were also noted. The walls were probably composed mostly of vertical canes, held together by reinforcements made of two or three horizontal canes running along both sides of the verticals and tied together with vegetal ties passing between the vertical canes. These walls formed at least three, and probably four, contiguous rectangular rooms 1.6 to 2.1 m wide and 4.4 to 5.3 m long, communicating via doorways 0.5 to 1.1 m wide. The four rooms covered about 75% of the terrace. About half of the remaining space was occupied by a lightly built cane-walled structure abutting the more substantial one and containing several conjoined informal hearths and associated ash and charcoal deposits. This shack was divided into two rooms about 1.5 m wide and 1.3 to 1.8 m long, and closely spaced parallel wall trenches suggest that it may have been rebuilt or modified once or twice. After the terrace was abandoned, almost all of the vertical canes were apparently pulled out, leaving the bundles of horizontal canes buried in the trench fill. The surface of the terrace may have eroded slightly before being covered by a shallow layer of windblown soil and sand. Almost no cultural material was preserved outside of the wall trenches and burned areas, and the subsoil is only a few centimeters from the surface. The trenches were filled with soil containing variable densities of artifacts, including fragmentary botanical remains, shell, feathers, and sherds.
These excavations showed that the shallow linear depressions on several of the central terraces probably indicate wall trenches, so that at least some of the ridgetop terraces were walled in, if not roofed. No postholes for wall or roof supports were noted. The multi-roomed structure and attached shack apparently used for cooking suggest a generally domestic function for the terrace. The systematic absence of vertical canes from wall trenches at Loreto Alto, El Algodon, and Loreto Viejo may indicate that these sites were abandoned while there was still enough population in the valley to make old, dry cane a scarce commodity worth gathering. This situation contrasts with many of the Chiribaya sites in the coastal and middle valleys, where cane walls are often completely intact below ground level.

**LA 1512: An Ilo-Tumilaca/Cabuza terrace**

This 1.0 X 2.0 m unit was located on the back portion and the slope behind a large quebrada bottom terrace, about 13 m long and 3 m wide. No features were noted. A 4 to 10 cm thick darker, artifact-bearing soil layer contained fragments of botanical material and marine shell, bits of textiles, and a chunk of wood. This unit probably samples material associated with the occupation of the terrace, but neither the intensity nor the duration of the occupation appears to have been great. The absence of a wall trench indicates that there was no rear wall on this part of the terrace, and probably that at least the northeast 1/3 of the terrace was not walled.

**LA 1525, 1529-1531: An Ilo-Tumilaca/Cabuza house**

These four contiguous units of various sizes were located towards the rear of a medium sized quebrada bottom terrace about 7 m long and 4.5 m deep (Figure A-11). This terrace, like several others, is divided by a subsidiary retaining wall
Figure A-11. LA 1525, 1529-1531.
perpendicular to the main, front wall, forming a higher surface on the south end of the terrace and a lower one on the north. These units sample the lower surface. This terrace was selected for excavation because a looter's pit in the middle of the terrace exposed a layer of artifact bearing ashy soil.

The terrace was constructed by cutting into the subsoil of the quebrada bottom and filling behind a dry-laid stone retaining wall. The back of the terrace is formed by the retaining wall of the next terrace up the quebrada. Probably at about the same time, a secondary retaining wall was built perpendicular to the front retaining wall, extending across the entire width of the terrace. This wall supported a higher surface on the southern end of the terrace. The secondary wall had a gap in it about 50 cm wide, probably allowing for a ramp or step between the two terrace surfaces. A narrow trench ran along the back edge of the lower terrace surface, curving around to follow along the subsidiary retaining wall. This trench had a gap directly opposite the gap in the subsidiary wall. Clear imprints in the side of the trench indicate that it held a wall of vertical canes. Inside the cane walls, two pits were dug against the back wall. In the bottom of the pit in unit 1529 was deposited a lense of ash similar to that in the pit in unit 1504. Both pits were filled with soil with a high density of domestic refuse. A substantial informal hearth was found in the inside corner of the structure, and ash and charcoal from it was scattered around the floor. This material was clearly delimited by the wall trench, so it is presumably contemporary with the walls. Relatively high concentrations of domestic debris accumulated on the living surface, including dense areas of molle seeds. At some point, perhaps as the level of midden and dirt was rising on the lower terrace surface, the gap in the secondary retaining wall was filled with a single course of stones, their bases located well above the foot of the rest of the wall. A dense lense of molle seeds accumulated on the higher, southern
surface of the terrace, but this cannot be stratigraphically related to events on the lower
surface. The structure was abandoned, and most of the canes were removed from the
walls. Several vertical cane stubs remained in unit 1531, and a tied loop of vegetal
fiber similar to those joining the horizontal canes in units 1513-1524 was found in the
trench fill of unit 1529. A shallow depression about 3 cm inside the wall trench in unit
1531 might have held the foot of a pole supporting the cane wall or a roof. In the wall
trench fill was a broken Ilo-Tumilaca/Cabuza kero. The trench fill and overlaying
midden contained a high density of large botanical remains, including leaves, woody
roots, and branches, as well as the usual bone, sherds, charcoal, marine shell, fish
bone, and textile fragments. A wedge of dense, coarse domestic midden accumulated
over the wall trench and hearth. A complex leather thong artifact was recovered from
the overlaying midden in unit 1530. This midden was covered in some areas by a
cement-like layer of nearly sterile soil, probably deposited by water. Volcanic ash
from the AD 1600 eruption of Huaynaputina accumulated in some areas. Finally, a
thin layer of loose soil with a low artifact density covered all of the units, probably
deposited by water and wind.

The lower part of this terrace bore a rectangular cane structure at least 2.5 m
square. The hearth and midden deposits suggest a domestic function. The midden
deposits over the wall trench might originally have been trapped between the cane
walls and the stone retaining walls outside them, slumping down over the wall trench
when the canes were removed. If not, there must have been a substantial occupation
on this terrace or the one above after the cane structure was completely removed.

LA 1526: An Ilo-Tumilaca/Cabuza terrace

This 1.5 X 1.5 m unit was located on the front edge of a well preserved, small
quebrada bottom terrace about 5 m long and 4 m deep, immediately behind the terrace retaining wall. The terrace was constructed by placing virtually sterile fill, probably derived from cutting away subsoil at the rear of the terrace, behind a dry laid stone terrace retaining wall to create a level surface. A small lense of charcoal was incorporated into this fill. A slightly compact, darker colored layer about 4 cm thick and with a low density of artifacts developed on the fill. This layer was in turn partially covered by a cement-like, probably water-borne lense. Finally, the unit was completely covered by a thin layer of loose soil probably deposited by both water and wind. No features were noted. This unit probably samples material associated with the occupation of the terrace, but neither the intensity nor the duration of the occupation appears to have been great. The absence of a wall trench indicates that there was no front wall on this part of the terrace, and suggests that at least the southern 1/3 of the terrace was not walled.

**LA 1527, 1528: An Ilo-Tumilaca/Cabuza terrace**

These two contiguous 1.5 X 1.5 m units were located on the southwest half of a quebrada bottom terrace about 9 m long and 3 m deep, extending from just behind the terrace retaining wall up onto the slope behind the back edge. This terrace is the highest one in this quebrada. The subsoil was probably cut and moved to fill in behind the terrace retaining wall in order to create a level surface, but the contours are not clear. A poorly defined layer of slightly darker soil from 3 to 30 cm thick and with a low density of cane and other botanical fragments, bits of wool, and charcoal accumulated on the surface. No features were noted. Both units were covered by loose soil with very low artifact density, probably deposited by water and wind. This unit probably samples material associated with the occupation of the terrace, but
neither the intensity nor the duration of the occupation appears to have been great. The absence of wall trenches indicates that there was neither a front nor a back wall on this part of the terrace, and suggests that at least the southwestern 1/3 of the terrace was not walled.

**LA 1532: An Ilo-Tumilaca/Cabuza terrace**

This 1.0 X 2.0 m unit was located at the rear of a well preserved, medium sized quebrada bottom terrace about 6 m long and 3.5 m deep. The subsoil was probably cut to level the terrace surface. A trench was dug along the back edge of the terrace, parallel to the front retaining wall, probably to hold a cane wall. A layer of darker soil about two to seven cm thick and with a low density of sherds, botanical fragments, and marine shell accumulated on the surface. The back of the unit was partially covered by a wedge of rocky soil that apparently slumped down from the slope above. The entire unit was covered by a thin layer of loose silt and sand probably deposited by water and wind. This unit probably samples material associated with the occupation of the terrace, but neither the intensity nor the duration of the occupation appears to have been great. The rear wall trench suggests that at least the southeastern 1/2 of the terrace was walled.

**LA 1533: An Ilo-Tumilaca/Cabuza terrace**

This 1.0 X 2.0 m unit was located at the center rear of a modest quebrada bottom terrace about 5.5 m long and 3.0 m deep. The subsoil was probably cut to level the terrace. A trench was dug along the back edge of the terrace, parallel to the terrace retaining wall, and a second one was dug perpendicular to the first, roughly bisecting the terrace. Cane walls were probably erected in these trenches. A layer about 1 to 6
cm thick of darker soil with a low to moderate density of sherds, shell, botanical fragments, fish bone, textile fibers, and charcoal accumulated on the surface. A small amount of ash and charcoal was deposited on this layer, but there is no clear evidence that it was burned *in situ*. The structure was abandoned, and most of the canes removed. One horizontal cane and several vertical cane stubs remained buried in one of the trenches. The entire unit was covered by a thin layer of silt and sand, probably deposited by water and wind. This unit probably samples material associated with the occupation of the terrace. The density of cultural material may be slightly higher than on most of the other quebrada bottom terraces, but it still suggests a light, brief occupation. The two wall trenches suggest that a rectangular cane walled room probably enclosed the eastern half of the terrace. Whether the other half was also walled was not determined.