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ABSTRACT

Distinctive tephra and tephra-derived soil stratigraphy at the Silencio and Peraza cemeteries act as horizon markers facilitating spatial and temporal analysis of funerary activities from large scale earth and rock landscaping to treatment of individual bodies. Implications of the analysis for differential status and possible catastrophic death are also briefly discussed.

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INTRODUCTION

The excavation of two cemetery sites in the Silencio area just south of Laguna Arenal revealed fifteen tombs. Twelve of the graves were uncovered at the Silencio site, designated G-150, a large Middle Polychrome or Late Period V-Early Period VI (A. D. 800-1200) cemetery located on Finca El Silencio. The ranch is owned by Clara Corneli and operated by her son, Luis Jiménez C. The site is situated on the continental divide (970 meters) six kilometers directly east of the town of Tilarán and 3.5 kilometers southwest of the present shoreline of Laguna Arenal (Article 1, Fig. 2). The other three tombs were found during test excavations conducted on the Peraza site (G-155), a habitation site with a small Period VI (A. D. 1000-1500) cemetery, located on Finca La Peraza, owned and operated by Yolanda Peraza. The Peraza site is situated 0.9 kilometers downslope and northeast of the Silencio cemetery, adjacent to the Río Tronadora drainage. The sites were excavated between late January and late March 1984 by archaeologists of the Proyecto Prehistórico Arenal.

Although bone preservation was poor, precluding analysis of age, sex and pathological variability, all burials appear to have been the primary extended type. The distinct tephra Units 20, 40, 41, and 55A clearly demarcated plan and profile views of the tombs and associated cemetery features and acted as distinct horizon markers facilitating temporal and spatial analysis. When undisturbed by looting activities, Unit 20 (ca. A. D. 1500) preserves and caps the end of prehistoric activities associated with Unit 30. The presence of Unit 40 (a coarse black lapilli) and Unit 41 (a fine gray tephra), both tentatively dated to somewhere around A. D. 800-900, physically separate earlier funerary practices in Unit 50 from those of Unit 30. Unit 55A, a hard, orange sandy level approximately 20 to 30 cm thick, clearly outlined deeper intrusions. Units 40 and 41 (ca. 800-900) will be used to divide Middle Polychrome Period funerary activities at G-150 into pre-ashfall (Unit 50) and post-ashfall (Unit 30) phases.

The purpose of the following is to describe the mortuary practices at G-150 and G-155, briefly compare these to prehistoric Pacific-Guanacaste and Atlantic Water-

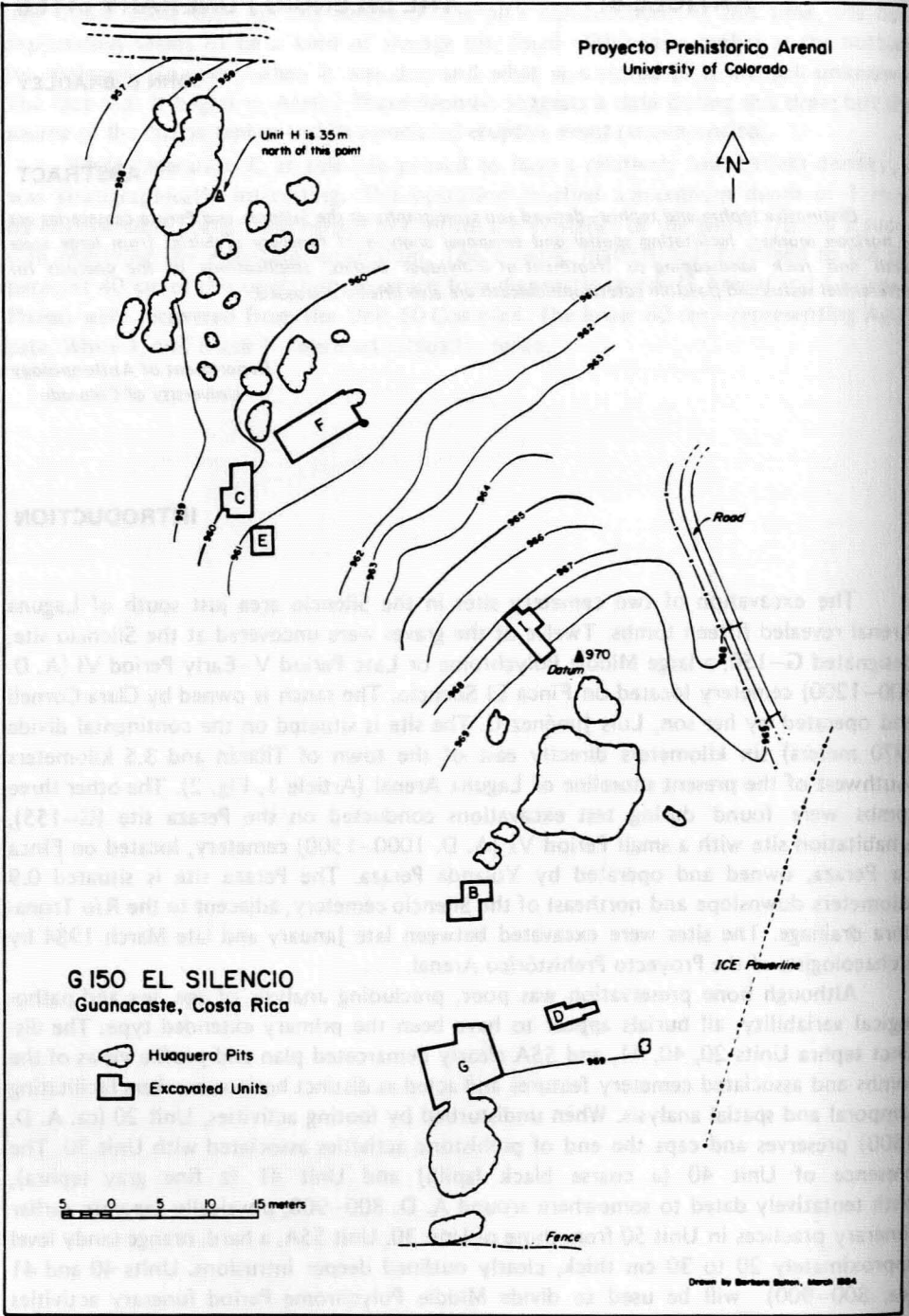


Figure 1. Map of G-150, El Silencio.

shed patterns in order to put them in a regional perspective, and discuss the implications of these practices for estimating status differentiation between individuals.

DESCRIPTION

The Silencio Site (G-150)

The clearing of vegetation covering disturbed portions of the site revealed two large flat areas connected by a slope of roughly equal size. Approximately 25 looted pits, ranging in size from a few meters in diameter to fifteen meters long and over two meters deep, covering an area of over 2,000 square meters were uncovered (Fig. 1). Huaquero activities in the presumed tomb areas were concentrated in the flat areas and near the edge of the site. This area has an excellent view looking west over the Río Santa Rosa drainage. The site is known to extend east across the two-track road that follows the continental divide. From the east side of the site there is also a good view to the northeast overlooking Laguna Arenal. Excavations were limited to the western portion of the site where advantage could be taken of the exposed tephra profiles.

Ceramics found near the looted pits and encountered during profiling of looted areas suggested a Middle Polychrome Period (A.D. 800-1200) context (Article 9). Inspection of the pits showed depths ranging from 40 cm to as much as 3 m, marked by at least three main tephra blankets. Large quantities of flat volcanic rock, or *laja*, in the backdirt piles suggested their importance in tomb construction.

Excavations at G-150 were conducted in three stages: examining exposed stratigraphic profiles in the looted areas, gently probing the subsurface with a metal rod, and finally excavating units or "operations." Operation locations were chosen on the basis of their meeting one or more of the following criteria: (1) large undisturbed areas between huaquero pits, (2) flat or gently sloped areas, (3) areas where probing revealed subsurface rock, (4) areas where huaquero pits exposed intact tomb construction, (5) areas where natural (non-cultural) stratigraphy was expected, and (6) sloped areas where natural deposition or evidence of artificial fill or terracing might occur. Operation size ranged from standard 2 m by 2 m units to 4 m by 8 m units, depending on burials or other features encountered. Screening with 1/8 or 1/4 inch screen was done only in Operation C where an abundance of lithic debitage was encountered.

The Silencio stratigraphic sequence, used as a numbering system during excavation operations, is described in Appendix A, Article 3. Operation H, a 1.5 m by 1.5 m test unit at the extreme north end of the site, revealed the most complete sequence within the site (Fig. 2). A total of fifteen natural and cultural strata, including at least seven tephra deposits, were tentatively identified on the basis of visual, textural and mineralogical characteristics. At the other extreme, in areas of prehistoric disturbance (e. g. Operation J at the upper and extreme southern end of the site), as many as five of the strata were absent.

Pre-ashfall (Unit 50) - Upper Area of Site

Burials

Six burials were encountered in the uppermost flat area, three in Operation B and three in Operation D. Each had been interred subsequent to the development of Unit 50

G 150 H, NE Wall

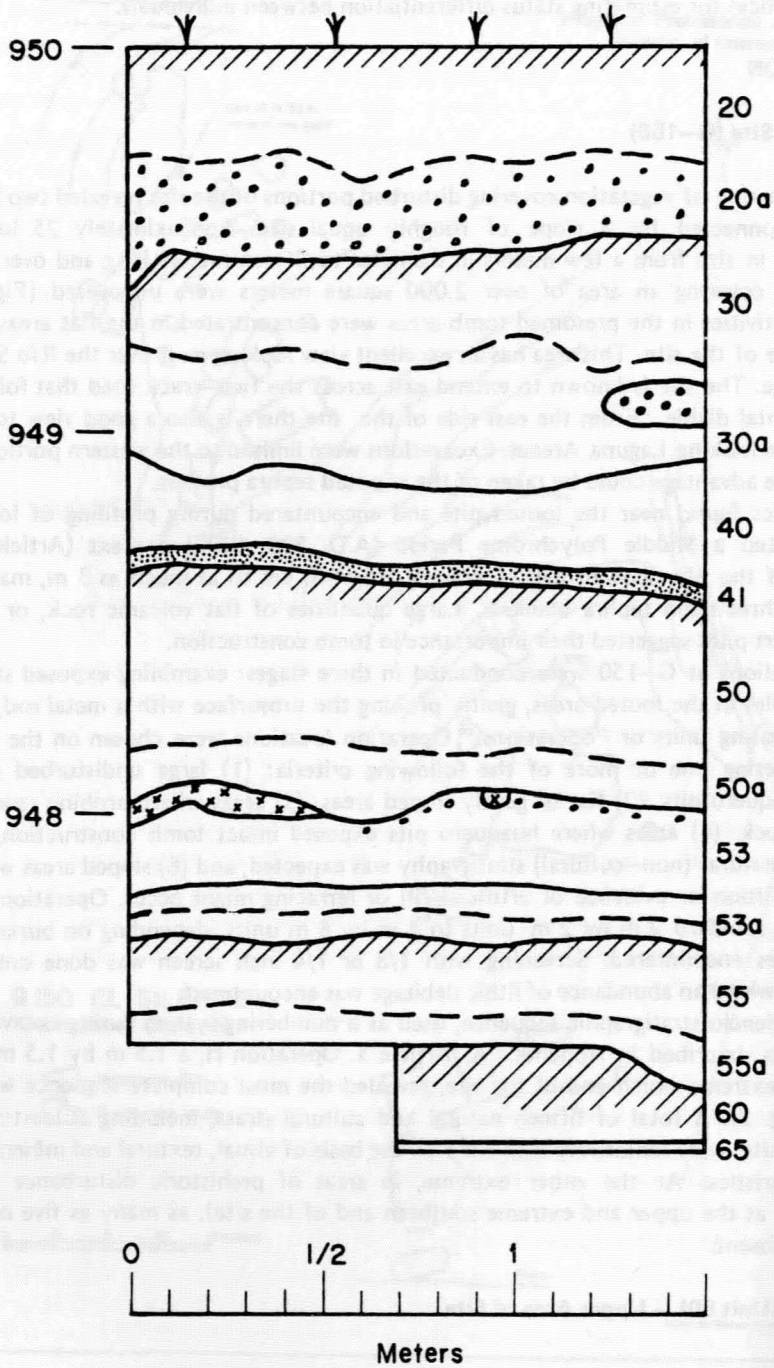


Figure 2. Stratigraphic profile of Operation H, showing the most complete stratigraphic sequence within site G-150.

but prior to the tephra fall of Units 40 and 41 (A. D. 800–1200).

Burials 1 through 3 were revealed in Operation B, a 2 x 3 m excavation unit later expanded to the north and east to cover a total area of 14 square meters. All three burials had been placed in intrusions excavated into Units 50, 60 and 65. Burial 1 (G-150B5), with a maximum depth of 2.48 m, consisted of two vertical slabs bridged by 2 horizontal slabs, all of unshaped weathered *laja* covering the head, shoulders and upper chest area of an adult (Table 1). A vertical slab at the head of the tomb rose above in a "tombstone" position. Orientation was with the head to the northwest. A gold avian pendant was found near the cranial area. Skeletal preservation was poor with only spongy remnants of the cranium, mandible, teeth, cervical vertebrae, clavicles and femurs remaining.

Burial 2 (G-150B4), at 1.97 m in depth, was oriented with the head to the north. Tomb construction was of three weathered, unshaped *laja* slabs laid horizontally over the upper portion of the body. No skeletal material was observed and only a cranial-shaped stain remained. Three Cabuyal Polychrome vessels (B4/1 through 3) had been placed at the foot of the tomb on its west edge.

Burial 3 (G-150B12) (Fig. 3), oriented to the east at 1.75 meters maximum depth, consisted only of a poorly preserved cranium, a ceramic vessel (B13/1) and a broken tripod metate (B12). The cranium and vessel, situated over the chest area, had been covered with two vertical *laja* slabs bridged with a single tabular *laja*.

Operation D, a 2 x 3 m excavation unit later extended to the north and west to cover a 9.75 square meter area, revealed Burials 4, 5 and 15. All were underlying an intact Unit 41 stratum. Burial 4 (G-150D3) (Fig. 4) tomb construction was of large *laja* arranged vertically in a double wall around the body and covered with a double-layered lid. The rock extended 1.9 meters over the entire body. Maximum depth of the tomb was 2.39 meters. Poorly preserved but identifiable bone included portions of the cranium, mandible, cervical and thoracic vertebrae, ribs, one scapula, one humerus, femurs, and one tibia. A carved metate (D3) had been placed near the left side of the skull and formed part of the tomb wall. Orientation was with the head to the northwest.

Burial 5 (G-150D6) also had a layered lid of *laja*, but had only a single *laja* wall extending 1.41 meters in length. The capping *laja* sloped slightly up toward the middle of the tomb. Bone preservation was poor, with remnant portions of the cranium, mandible, ribs, one humerus, pelvis, femurs and tibia having the consistency of sponge. A carbonized maize cupule was found in association. No grave furniture was observed. Orientation was with the head to the west.

In Burial 15 (G-150D7), a portion of the cranium was the only well preserved bone encountered during excavation. Its preservation apparently was the result of the tomb architecture, which was single walled and double-bridged, with a wall at the head of the tomb as well as on the sides. This additional wall prevented soil from coming directly in contact with the skull. The postcranial skeleton was severely deteriorated and only the humeri were identifiable. The soil of the burial was similar to others in the group, Unit 62. Two small ceramic vessels (D7/1 and D7/2), similar to those in group B were found near the right shoulder. Orientation was with head to the east and maximum depth was 2.4 meters.

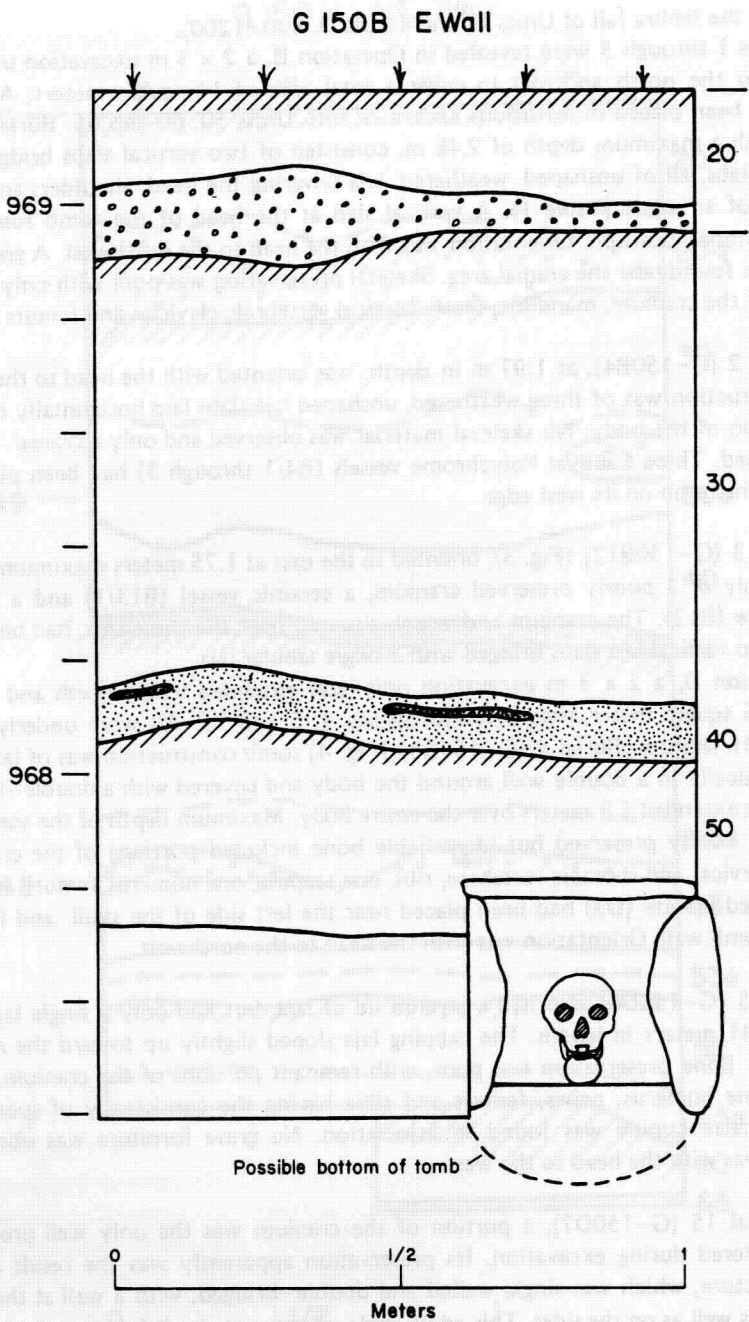


Figure 3. Burial 3 (G-150B12), a pre-ashfall (Unit 30) burial from the upper area of site G-150. Only the cranium was preserved. A ceramic vessel and broken tripod metate were found with the burial.



Figure 4. Burial 4 (G-150D3), a pre-ashfall (Unit 50) burial from the upper area of site G-150. This was the only double-walled tomb excavated. A decorated metate forms part of the tomb wall to the left of the skull.

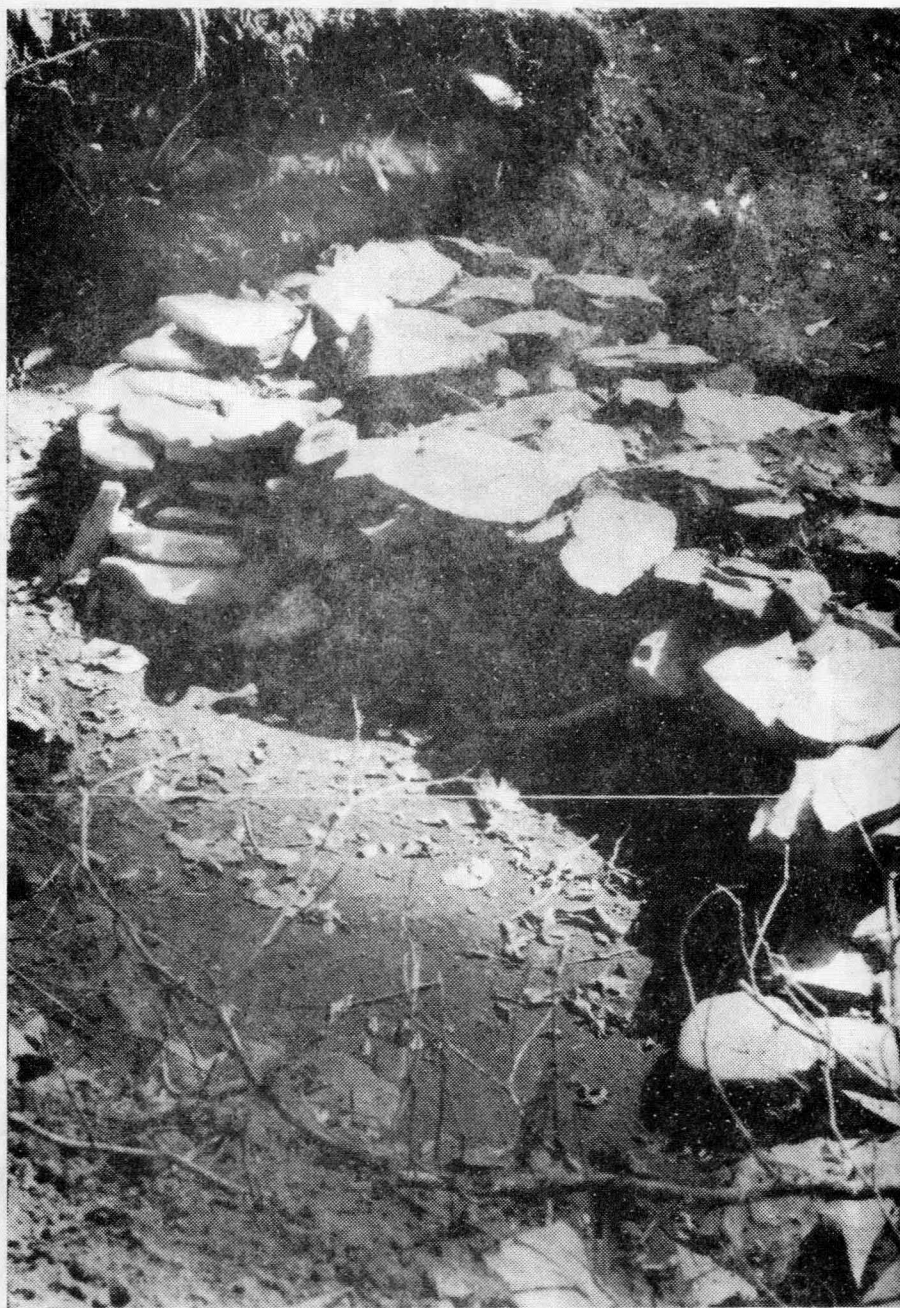


Figure 5. Operation G, showing part of the flat-laid laja wall along the western edge of the upper area of site G-150.

G 150I E Wall

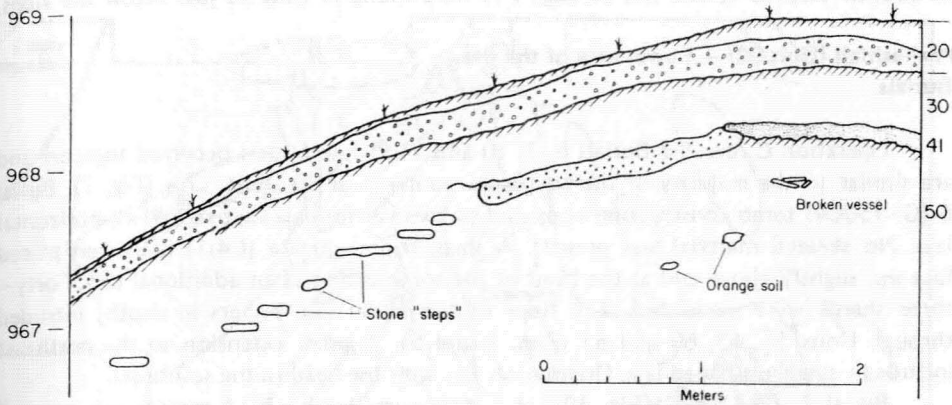


Figure 6. Profile of Operation I, site G-150, showing *laja* steps connecting the upper and lower areas of the site.

Features

The examination of the stratigraphy of a looted portion of the western edge of the upper area of the site revealed a large stone feature. This was later determined to be part of a dry-laid *laja* wall just over one meter in height and up to 3 meters wide in areas where it apparently had collapsed. Strata Cut 1, on the northern end of the looted pit revealed that the base of the wall was sitting in a trench prehistorically excavated into Unit 50. The lower portion of the flat-laid *laja* appears to have functioned as a retaining wall leveling off the western edge of the upper area. Sloping strata at the base of the wall and level strata of Unit 50 above the fill supports this interpretation. This lower portion of the wall was constructed prior to the fall of Units 40 and 41. Operation G (Fig. 5), a 10 m by 25 m excavation unit located along the edge of the disturbed area just south of Strata Cut 1, also showed that Unit 50 was partially excavated to act as the wall's base, and that the wall extended above the ground surface in this area. Continuation of the wall or stone fence to the north and south along the western edge of the upper area is probable. No other excavations were conducted in these areas due to the extensive nature of the looting activities to the south and the heavy undisturbed forest to the north.

Operation J, the southernmost excavation unit, also indicated extensive landscaping activities were taking place in the upper portion of the site. Missing Units 50 through 55 in this operation apparently were the source of the fill used with the retaining wall to level off the slope along the western edge of the site.

Operation I, 3 x 6 m in extent, was initiated to determine the nature of the fill on the slope connecting the upper and lower portions of the site. Excavation resulted in the discovery of a series of eight flat-laid weathered *laja* steps traversing downslope slightly west of north (Fig. 6). The steps were approximately 90 cm below the present ground surface, lying immediately above Unit 50. Although Units 40 and 41 were not present above the steps, an adjacent intact layer of Unit 41 at the same relative level as the

steps suggests they were used during the end of the development of Unit 50. A number of broken ceramic vessels (I-2 through I-7) were found in Unit 50 just below the steps.

Pre-ashfall (Unit 50) – Lower area of the site

Burials

Operation C revealed Burials 6, 7, 10 and 11. These burials occurred together and are similar to the majority of the burials encountered in the upper area (Fig. 7). Burial 6 (G-150C4) tomb construction consisted of two vertical *laja* capped by two horizontal *laja*. No skeletal material was present. A small tripod metate (C4/1) had been placed face up, slightly above and at the head of the tomb acting as an additional cap. Forty-three sherds were associated. The floor of the burial (2.6 meters in depth) intruded through Units 50, 55, 60 and 65 (Figs. 8 and 9). A small extension to the northeast included a single unshaped *laja*. Orientation was with the head to the southeast.

Burial 7 (G-150C5) (Fig. 10), at a maximum depth of 2.5 meters, was covered cranially by a single *laja* bridging two vertical *laja*. No skeletal material was encountered. Only a soft soil zone the shape and size of a cranium was found under the capstone. Two greenstone beads (C5/2) were found near the cranial area. Other artifacts found in the fill were 15 sherds and 2 flakes. Orientation was with the head to the southeast.

Burial 10 (G-150C8) (Figs. 7, 8 and 9), at 2.6 meters, contained a double bridged *laja* cranial cover similar to that of Burial 6. An inverted metate (C8/1) covered the upper chest area. One greenstone bead similar to those in Burial 7 was also found. Intact but fragile portions of the mandible, maxilla and two molars were present under the collapsed bridging. Orientation was also similar, with head to the southeast. The soil surrounding the burial contained 32 sherds and 2 flakes.

Burial 11 (G-150C9) had no skeletal remains visible. A large tripod metate (C9/1) was found lying above the double bridged tomb. Other artifactual material included 12 sherds and 5 flakes. Orientation was to the southeast. The base of the vertical *laja* was 2.35 meters below the present ground surface.

Features

Burials 6, 7, 10, and 11 discussed above were found beneath a cobble paved and terraced surface corresponding in depth and slope to undisturbed pockets of Unit 40 and just less than a meter below the present ground surface. The gently sloping rock-covered surface, similar in slope to the present day surface, contained a large rim sherd, lithic debitage and cores, and a hammerstone resting at the upper rock surface level (Figs. 7, 8 and 9). The rock-covered surface consisted of four rows of flat river cobbles lying perpendicular to the northwest trending slope. The cobbled rows were placed so as to never lie directly over the tombs. The surface between the rocks was a mixture of cultural material and Units 40, 41 and 50. The artifacts lying on this surface suggested interment or post-interment activities immediately prior to the fall of tephra Units 40 and 41.

Post-ashfall (Unit 30) –Lower area of the site

Burials

The only evidence of mortuary practices occurring at G-150 after the fall of Units 40 and 41 was encountered in the lower area of the site in Operation C. Burials 8 (G-150

G 150C Plan

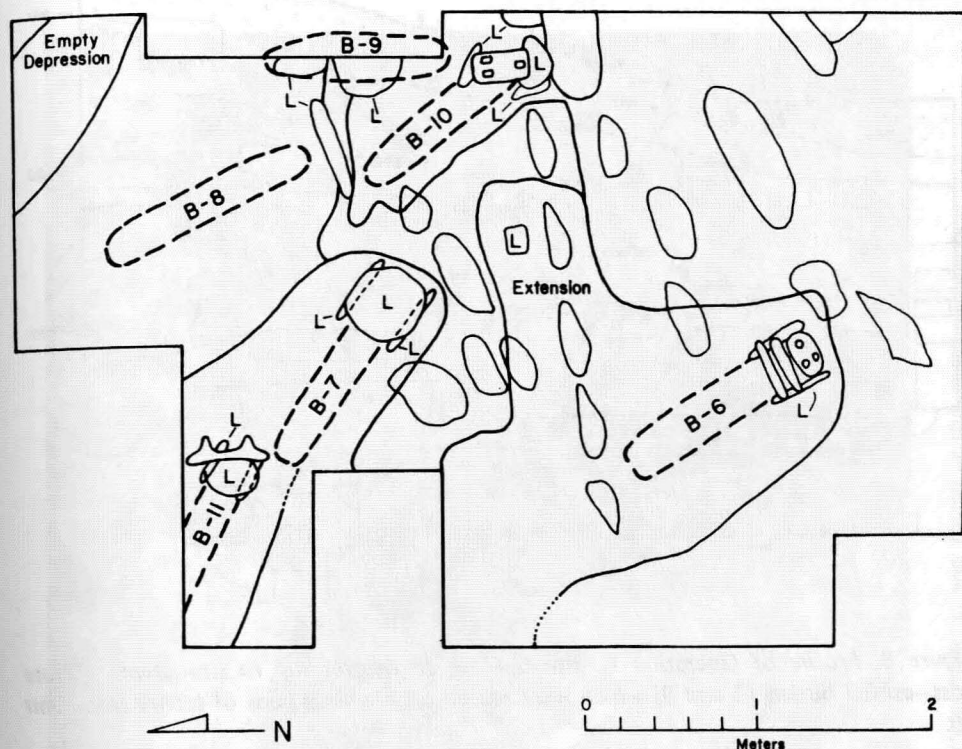


Figure 7. Plan view of Operation C, site G-150, showing location of burials and rock-covered surface. Note that the cobbles were not placed directly above the tombs.

C6) and 9 (G-150C7) (Figs. 7 and 8) were both placed on prepared beds of Unit 40 tephra, and covered with the same tephra, before being further buried with mixed fill. In Burial 8, four bones in the upper portion of the body were visible only as a white powder lying on and in the thin layer of Unit 40. No grave offerings were encountered. Tomb construction consisted of a single upright tabular slab in a "tombstone" position. In Burial 9, the thoracic and pelvic cavities had been stuffed with Unit 40 and an additional clump of Unit 41 was placed on top of the pelvic area. Partial preservation of the skeletal material enabled the identification of seven bones including the cranium and the phalanges of the feet. Tomb construction was of two flat-lying *laja*, one above the pelvis and the other above the cranial area. No grave offerings were encountered.

Features

Operation F, a 4 m by 8 m area cleared off to just above the base of Unit 20, was troweled down to determine the nature of the Unit 20/Unit 30 contact. Results showed a number of flat-lying *laja* with no apparent pattern; however, no other

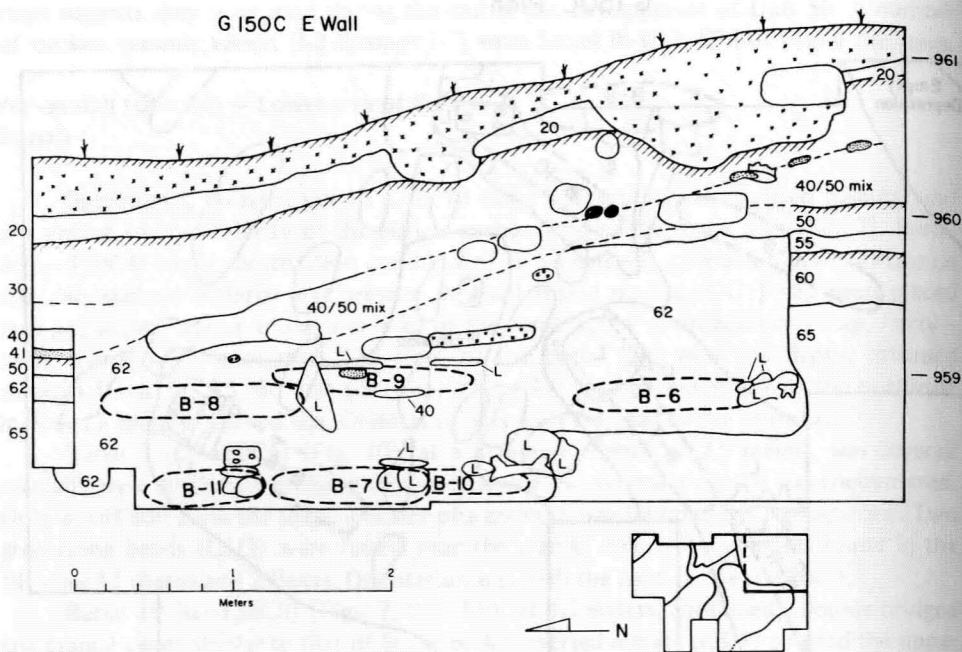


Figure 8. Profile of Operation C, site G-150, in relationship to stratigraphy. Note post-ashfall burials (8 and 9) which were placed on prepared beds of tephra from Unit 40.

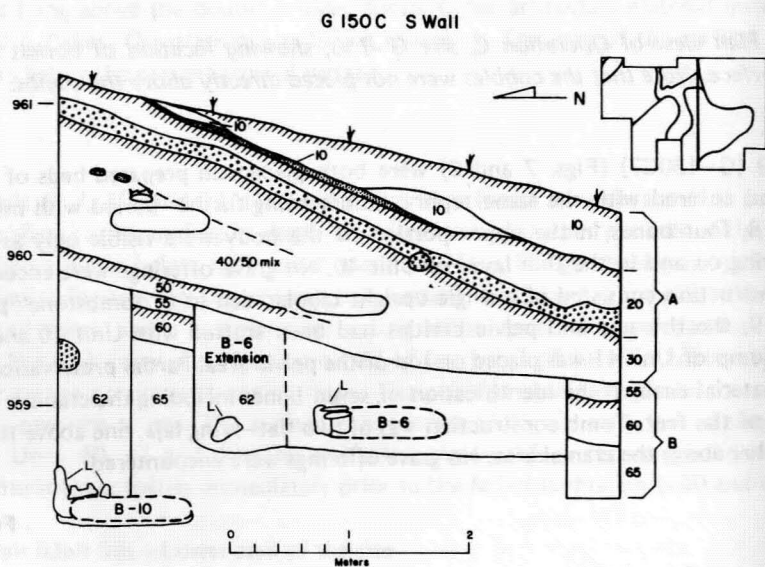


Figure 9. Profile of Operation C, site G-150, in relationship to stratigraphy.

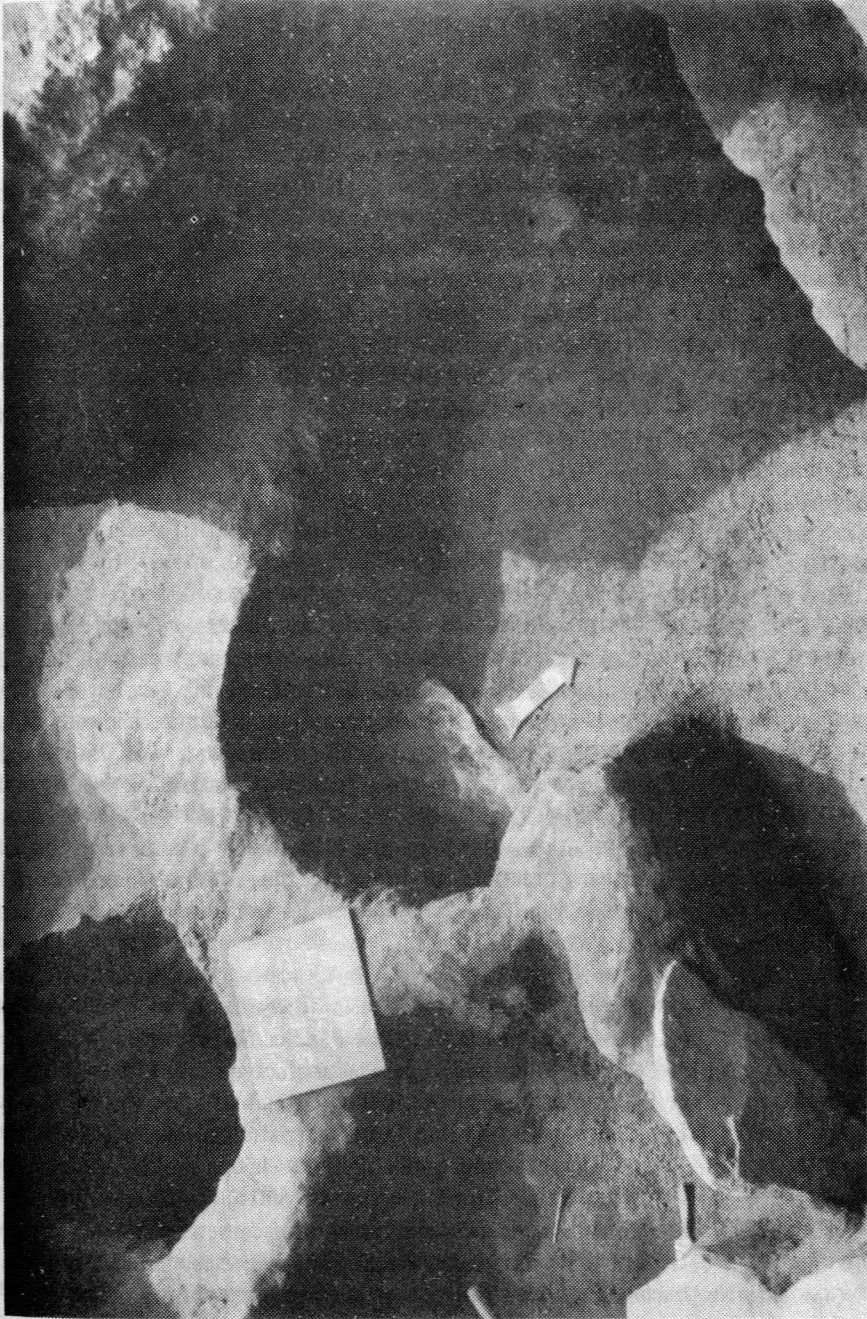


Figure 10. Burial 7 (G-150C5). No skeletal material was found in this tomb. Artifacts included two greenstone beads as well as sherds and flakes.

evidence of activity taking place immediately prior to the fall of the Unit 20 tephra in this flat portion of the cemetery was found.

The Peraza Site (G-155)

At G-155, surface indications of prehistoric activity were limited to a few small depressions approximately 5 meters in diameter and 30 centimeters deep. Short grass surrounds and covers the small knoll where the burials were encountered.

Reconnaissance of G-155 was in three stages: (1) examination of exposed road cuts and other recent surface disturbances for cultural material and to determine the local stratigraphic sequence, (2) posthole testing of flat to gently sloped areas in search of subsurface materials, and (3) excavations similar to those at G-150.

Operation C, a 2 x 2 m excavation unit placed over a circular depression that had produced subsurface material during posthole testing, revealed tombs 12, 13 and 14 (G-155C1 through G-155C3). The burials are known only from the shapes of the empty intrusions and associated vessels (C/1 through C/3). Assuming the vessels were placed near the heads of the tombs, orientation was with the head to the southeast. A hard-packed floor at the base of G-155C1 may represent a prepared surface on which the burial was placed.

DISCUSSION

The nature and sample size of the Silencio burial data severely limit inferences regarding mortuary variability at the two cemeteries. The twelve tombs from undisturbed areas of the heavily vandalized Silencio site are a small nonrandom sample of burials from a large community cemetery used over a number of generations. The three simple graves from the Peraza site appear to be isolated burials in an area that was used for a short duration of time by perhaps a single family. Poor preservation of the skeletal material at both sites precludes any analysis of age, sex, or genetic pathological variables. However, having stated these limitations, the following discussion will assume the burial data is representative of mortuary practices occurring at the sites discussed but not necessarily representative of Late Period V - Early Period VI mortuary variability in the area.

Comparison of the Silencio funerary data with that known from the Pacific-Guanacaste and Atlantic Watershed regions of Costa Rica indicates that the overall pattern of burial practices at G-150 is largely distinct. In the Pacific-Guanacaste region, only vague similarities exist and these are limited to general artifact types included as grave goods. Comparison of the Silencio cemetery data with the Atlantic Watershed of Costa Rica also shows more differences than similarities in overall pattern; however, the tomb construction of Burial 4 (Type V) in the upper area of site G-150 is similar to the stone cist type appearing in east central Costa Rica around A. D. 500-800 in early Period V (Snarskis 1984: 221). However, in terms of overall pattern of cemetery location, tomb types, grave goods and treatment of the body, the Silencio cemetery appears distinct. At the Peraza site, the burials appear to fall within the range of known variability of Period VI Atlantic slope mortuary practices.

Closer to the project area, known burial practices for the Guanacaste-San Carlos corridor to the northwest are Formative in age and follow an Atlantic coastal pattern of

multiple individuals interred within cobble filled and covered mounds (Lange 1984b:175). Again, these earlier sites share little similarity with the Silencio sites. For example, in the Rio Naranjo/Bijagua Valley, Norr (1982-3) has reported a number of Zoned Bichrome Period sites consisting of multiple burial mounds (20 to 40 meters in diameter) constructed of river cobbles and *laja*.

Hertz was one of the earliest researchers to argue not only that differences in mortuary practices will vary directly with the status of the individual, but also that persons suffering violent death, death by accident, during childbirth or by suicide are often treated differentially at death (Hertz 1960:95). Saxe (1970) and Binford (1971) have also been interested in analyzing the social aspects of mortuary practices cross-culturally. According to Binford's survey of previous research on mortuary practices, two general components are symbolized: the social persona of the individual and the composition and size of the social unit to which he belongs. An important additional factor, however, is death by peculiar circumstances, previously mentioned by Hertz. Basic characteristics of mortuary practices symbolizing social persona are age, sex, relative social standing (rank) within a social unit and social affiliation with broader social units or with the society itself. Binford proposes that these two general components determine the forms of variability of ritual discrimination and that these are measurable in terms of differential treatment of bodies, differential preparation of the burial facility, and differential contribution of burial furniture. His test cases show that age, sex, rank, and social affiliations are in fact differentially represented in mortuary practices. Location of death and condition of death were also important variables. In these cases, differential body treatment and location of the grave usually resulted. Rank and social affiliation, however, were the most variable and most complex. With very high status individuals, special treatment often includes a specific location, elaborate preparation, specific material symbols and large quantities of burial furniture. On the other hand, individuals of low status were not given any specific treatment. Tainter (1973) has expanded upon Binford's (1972:232) lead using energy expenditure as a possible measure of rank differentiation. Labor expenditure is measured in terms of complexity of body treatment, form and/or location of interment facility, and material contributions (Tainter 1977:332).

Cemetery and tomb preparation, burial furniture, treatment of bodies, and estimates of labor involved with these activities will be compared between the upper and lower area burials at G-150. The G-150 and G-155 burials occurring during post-ashfall (Unit 30) times will then be briefly discussed.

Tables 1 and 2 summarize burial data for the Unit 50 period in the upper and lower areas of G-150. The upper area burials (1 through 5 and 15) included tomb Types III, IV and V, averaging 7.7 *laja* per burial. Although the average number of artifacts per burial (1.2) was similar to that of the lower area (1.5), decorated and non-utilitarian items dominated the grave offerings. These included the gold avian pendant, miniature polychrome vessels and a decorated metate. One broken undecorated metate was also found in this group, as well as a row of carbonized maize cupulae.

The lower area, dating to Unit 50 times, included Burials 6, 7, 10 and 11 from burial group C. Tomb construction was Type IV in all four burials, averaging 3.75 *laja* per burial. Artifacts included undecorated utilitarian metates and three greenstone beads.

In the upper area, two burials (1 and 4) are oriented to the northwest and two

Table 1. Tomb Types

Type	Burial No.	Description
Type I	12	Simple intrusion with no stone included in, on, or around the burial.
	13	
	14	
Type II	8	Single vertical volcanic rock (laja) at the head of the skeleton in a tombstone position extending above the level of the skeleton.
Type III	2	One or more flat-lying laja situated above the burial.
	9	
Type IV	1	Two vertical laja on the side of the cranial portion of the skeleton bridged by one or two flat-lying laja.
	3	
	6	
	7	
	10	
	11	
Type V	4	One or two vertical laja on each side of the skeleton in two or more rows extending from the head to the pelvis or farther and bridged with one or more layers of laja extending over the entire length of the walled area.
	5	
	15	

burials (3 and 15) are oriented to the east, while all interments in the lower area are with the heads to the southeast.

Comparisons of tomb complexity (design and number of laja used in construction), as well as the form of the grave goods, appear to be indicative of status differences of the individuals. Burial 1 (with the gold pendant and vertical "tombstone") and Burial 4 (with the most complex tomb design and a decorated metate) have similar orientations and appear to represent high ranking individuals surrounded by individuals of lesser status. The upper burial group ritual interments included walled and bridged tombs, the use of a tombstone extending above the burial containing the gold pendant, a decorated metate, and small decorated non-utilitarian ceramic vessels. None of these appear in the lower burial group. Here all tombs are Type IV, simpler in design. The customary grave offerings are undecorated utilitarian metates and the burial orientation is identical, i. e., to the southeast.

The presence of the portion of a large stone wall or fence and retaining wall in the upper area also suggests the importance of funerary activities in this portion of the site. These construction activities required the labor of many individuals over a long period of time, perhaps significantly more than the simpler paved area found in Operation C in the lower area. Together, Operations G, I, and J and Strata Cut 1 at G-150 demonstrate

Table 2. Laja, Bone and Artifact Counts by Tomb Type, G-150, Unit 50

	Burial No. (Op, Lot.)	Tomb Type No. of Laja (Average)	No. of Bones (Average)	No. of Artifacts (Average)	Orientation of Head	Samples	Comments
G-150 Upper Area		Type V					
	4(D-3)	20	9	1	Northwest	No. 10 (D-3)	Decorated metate (D-3/1)
	5(D-6)	8	8	1	West	No. 11 (D-6)	Non-utilitarian
	15(D-7)	7	2	2	East	No. 12 (D-7)	vessels (D-7/1 and 7/2)
		(11.7)	(6.3)	(1.3)		Flotation	<i>Zea mays</i> cupule (D-6)
		Type IV					
	1(B-5)	5	5	1	Northwest	Bone Collagen	Gold pendant (B-5/1)
	3(B-13)	3	1	1	East	No. 2 (B-5)	Non-utilitarian
		(4)	(3)	(1)		No. 3 (B-13)	vessel (B-13/1) Undecorated metate (B-12)
		Type III					
2(B-4)	3	0	3	North	Bone Collagen	Non-utilitarian vessels	
	(3)	(0)	(3)		No. 1 (B-4)	(B-4/1 thru B-4/3)	
Average No. Upper group		7.7	4.2	1.2			
G-150 Lower Area		Type IV					
	6(C-4)	5	0	1	Southeast	Bone Collagen	Undecorated metates
	7(C-5)	3	0	2	Southeast	No. 8 (C-8/1)	(C-4/1), (C-8/1) and
	10(C-8)	4	2	2	Southeast	No. 9 (C-8/2)	(C-9/1)
	11(C-9)	4	0	1	Southeast		Greenstone Beads
		(3.75)	(.5)	(1.5)			(C-5/2 and C-8/2)
Average No. Lower group		3.75	.50	1.5			
Total G-150 Unit 50	10	61	27	13			
		(6.1)	(2.7)	(1.3)			

Table 3. Laja, Bone, and Artifact Counts by Tomb Type, G-150 and G-155, Unit 30

Burial No. (Op, Lot)	Tomb Type No. of Laja (Average)	No. of Bones (Average)	No. of Arti- facts (Average)	Orientation of Head	Samples	Comments
Type I						
12 (C-1)	0	0	1	Southeast		Atlantic Style ceramics
G-155	13 (C-2)	0	0	Southeast		Late Period
	14 (C-3)	0	0	Unknown		(C-1), (C-2) and (C-3)
	(0)	(0)	(1)			
Average No. G-155	0	0	1			
Type II						
8 (C-6)	1	4	0	Southeast	Bone Collagen	Ash bed of Unit 40
G-150	(1)	(4)	(0)		No. 4 (C-6)	
Lower Area					No. 5 (C-6)	
Type III						
	9 (C-7)	2	7	South	Bone Collagen	Ash bed of Unit 40
	(2)	(2)	(7)		No. 6 (C-7)	Thorax and pelvis stuffed
					No. 7 (C-7)	with Unit 40 tephra and overlaid with Unit 41 tephra.
Average No. Lower group	1.5	5.5	(0)			
Total G-150 & G-155 Unit 30	5	3 (.6)	11 (2.2)			3 (.6)

that extensive landscaping activities took place in the upper area during Unit 50 times.

The flattening and lateral extension of the upper area of the site to the west and north may have been conducted in order to provide additional areas for later interments as space became limited. In the lower area, however, burials appear to become more crowded over time. In Operation C, burials were placed close to the slope and even over its edge and later intrusions were dug into fill areas of previous Unit 50 burials.

If the data from excavations of burial groups B, C, and D (and the looted areas) are representative of the tomb types and density, then as many as 1230 individuals and 39,360 kilos of laja may have been buried during Unit 50 times in the upper and lower portions of the site. The figure for the number of individuals is based on the surface area of Operations B, C, and D (39 square meters), the number of burials encountered from the Unit 50 time period (10) and the total area of the upper and lower portions of G-150 (approximately 4800 square meters). The laja figures were extrapolated from the most common tomb type during Unit 50 times (Type III, averaging approximately 4 laja per burial), the approximate average weight of individual laja (8 kilograms) and the projected figure for individuals buried during this time period.

Analyses of lithic and ceramic materials indicate that cooking, tool manufacture and woodworking activities were taking place at G-150 during both Unit 50 and Unit 30 time periods. Although ethnographic evidence suggests lengthy post-interment funeral "chichadas," or drinking feasts, often occurred, involving temporary habitation and associated domestic activities (Bozzoli de Willie 1975), this activity may be responsible for only a fraction of the artifactual material present at the site compared with that resulting from the extensive earthen and rock work associated with burial and landscaping activities at G-150.

Analysis of the chipped stone suggests that a range of lithic manufacturing activities took place at the site, including core-flake technology, chipped stone celt manufacture, and bifacial thinning (in decreasing order of frequency and importance). Hammerstones, flaked cores and associated flakes (predominantly of andesite), a biface fragment (dark dacite), and chipped stone celt flakes attest to expedient but well-done lithic tool manufacture. None of these materials occurs naturally at the site.

Cooking activities are inferred by the presence of boiling stones (complete and thermally fractured debitage) of coarse-grained andesite. If the chipped stone sample is representative of activities at G-150, then it also supports "habitation" as opposed to ritual activities. This would be expected given the time and effort expended on extra-interment activities such as landscaping.

Ceramics are predominantly Silencio Phase vessels in both the Unit 30 and 50 time periods (Article 9). Utilitarian/domestic wares were as common as decorated wares, further supporting the importance of food preparation and water hauling. Groundstone artifacts are predominantly metate fragments; only one mano fragment was found. The undecorated nature of the majority of the groundstone at the site suggests their presence may have been utilitarian in nature (Article 11).

The lithic and ceramic evidence suggest that post-interment ritual may be of secondary importance in accounting for the abundance of material at the site. The amount of the time and labor spent at the site would have demanded shelter, large quantities of food and water, and the associated paraphernalia needed for their transportation and preparation.

Tables 1 and 3 summarize burial data for the Unit 30 period in the lower area of

G-150 and at the Peraza site, G-155. After the fall of Units 40 and 41, a different burial pattern appeared in the lower area of G-150. Burials 8 and 9 were interred in disturbed fill areas from the earlier Unit 50 time period and each was placed on a thin bed of Unit 40. Burial 9 was stuffed with this same tephra and an additional clump of Unit 41 tephra was put above the pelvis. Flat tabular rather than weathered angular laja were used as simple grave stones. Orientation was to the south and southeast. The unusual body treatment, location of the graves in disturbed fill and lack of grave furniture fits the ethnographic pattern for peculiar, usually violent death burial practices. These two individuals may have belonged to a special post-mortem group, possibly those killed directly or indirectly as a result of the fall of Unit 40.

The Period VI (Unit 30) burials from G-155, the Peraza site, appear to be more informative than their simple intrusions and single vessels might first indicate. The lack of burial laja, as well as their isolated nature, seems significant and suggests few individuals shared duty-status relationships to the individuals interred, possibly only the immediate family. Without more information on the range of mortuary variability at this time and in this area, however, little more can be inferred.

SUMMARY AND CONCLUSIONS

Although volcanic activity in the Silencio area has concealed the prehistoric past under thick layers of ash, the distinctive color, texture and preservative nature of the periodic tephra falls facilitate detailed stratigraphic as well as temporal analysis. As horizon markers they clearly separated burials of different time periods. In terms of spatial control they enabled accurate analysis of cemetery landscaping activities and mortuary practices in a diachronic as well as synchronic perspective.

Analysis of burial practices during the Middle Polychrome Period before the fall of Units 40 and 41 showed a large community cemetery with high ranking individuals, and individuals of lesser status in association. After the fall of the ash, two individuals of possibly ashfall-related deaths were interred. This is inferred from their unusual treatment and suggests the local social environment may have at least been temporally disrupted by the ashfall. At the small cemetery G-155, the interments subsequent to the fall of the ash have simple characteristics suggesting the individuals were of relatively low status.

The small sample sizes limit comparisons and make these conclusions tentative; however, the overall patterns in burial practices suggest a distinctive local tradition occurring during Late Period V - Early Period VI, with possibly more Atlantic than Pacific influences especially during later Period VI. Additional information on burials from other cemetery and habitation sites in the vicinity is needed to expand the local data base on mortuary variation for these time periods.

APPENDIX A
C13 Analyses of Bone Samples from Site G-150, El Silencio

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While a new technique in archaeology, carbon isotope analysis offers great promise in reconstructing aboriginal diets (Van der Merwe 1982). Plants which use a 3-carbon photosynthetic pathway discriminate against the heavier carbon isotope C13, relative to plants with a 4-carbon photosynthetic pathway. The arrival of maize was detected in sites in the North American woodlands by carbon isotope analysis (Van der Merwe 1982). Maize is the only known dietary staple in Precolumbian Costa Rica with a C4 photosynthetic pathway (Norr, personal communication 1980). Thus, for prehistoric Costa Rica, the amount of maize consumed is reflected by the C13/C12 ratio in bone collagen, the insoluble protein that fortunately is highly resistant to post-mortem contamination. Previous problems in using coastal human bone samples (Norr, personal communication 1980) are here avoided by using inland samples. Coastal peoples can obtain C13 from marine species (Van der Merwe 1982), making maize estimates more difficult.

Table 1. Stable Carbon Isotope Analysis of Bone Collagen from the G-150 Silencio Graveyard.

Catalog No.	Description	I. F. No.***	C13
G-150	B-4 Burial No. 2	3454-21	-20.3
	B-5 No. 1	-22	-18.8
	B-13 No. 3	-23	-18.8
	C-6 No. 8	-24	-18.8
	C-6 No. 8	-25	-15.9*
	C-7 No. 9	-26	-18.8
	C-7/4 No. 9	-27	-18.8
	C-8/1 No. 10	-28	-19.9
	C-8/2 No. 10	-29	-20.8
	D-6 No. 5	-30	-16.6
	D-7 No. 15	-31	-13.6*
	I-2 Stratum 50	-32	-24.3**

*-These samples contained very little carbon, and therefore the values are suspect. The true value may be three parts per mil above or below the reported figure. Calculations of mean figures or other statistics might best delete these two measurements.

Each sample was treated with acid to remove any potential carbonate contamination and then thoroughly dried. Each was combusted at 1000 degrees to yield C₁₂, and was analyzed with a mass spectrometer for the C₁₂/C₁₃ ratios. The C₁₃ values are accurate to ±0.1 % at the 95 % confidence level, except where noted.

** This sample was not from a tomb, but from excavation of the stairway feature, Operation I. It probably is human bone, but this is not certain.

*** Catalog number used in Isotope laboratory.