The area of the site that has been exposed by erosion along the lakeshore is well under 2 ha. Even with relatively extensive areas eroded, the site would be defined as a small hamlet using criteria developed by Blanton [1972]. The actual extent of the site and the total number of structures during each occupation is unknown. Although the number of excavated structurehold units decreases through time, the limited area excavated and differential preservation make any inferences regarding population changes on the site tenuous.

It appears that Tronadora and Arenal phase households utilized a single, relatively small (ca. 20 m²) structure constructed of a framework of vertical support poles, likely with a thatched roof. The households sometimes utilized interior and exterior smaller structures in addition to the main structure for special purposes, possibly including food storage or processing. Hearths were outside of the structures, and burials appeared to have been outside of structures but within the hamlet. Direct evidence of food storage features is lacking, but the bell-shaped pits may have been used for this purpose.

Many questions remain regarding the occupations at Tronadora Vieja, however, the site offers some unique opportunities to study the prehistory of lower Central America. Future excavations should concentrate on finding areas with unmixed Fortuna Phase and early Tronadora Phase deposits to determine the date of transition from the Archaic to the Formative. Other questions concern the date of the introduction of maize to the site, and the variability of construction and structurehold units during the Formative. Tronadora Vieja has already contributed to the understanding of the Archaic/Formative transition in lower Central America, and further research can add to our understanding of this crucial period of cultural change.

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**Excavations at Sitio Bolivar: A Late Formative Village in the Arenal Basin**

**INTRODUCTION**

Sitio Bolivar (G-164) is situated on a small point of land on the south shore of Lake Arenal. It is 1.25 km NE of the modern town of Tronadora (ARENAL 1:50,000; UTM 276300 m N X 436500 m E) at a maximum altitude of 565 m above sea level (Fig. 5.1). The site extends northward below the present surface of the lake (540 m). It is named for Quebrada Bolivar, the small drainage 350 m to the west of the site. Sitio Bolivar is currently the property of ICE; however, the site is being farmed under agreements that include the planting of trees in order to control erosion. Modern agricultural activity on the property is intensive, with the principal crops being tomatoes, beans, yuca (sweet manioc), and corn.

The southern end of the site is marked by a stand of yuca and several citrus trees. The northern half includes corn and beanfields, which are planted to the edge of the lakeshore. A heavily overgrown bulldozed road runs east-west across the site. Current access is via a small two-track road that leaves the main road 2.5 km east of Tronadora.

The site, as defined by the extent of subsurface features on the ridge top to the south and the lakeshore margin to the east, covers an area of approximately 2.5 ha. It is situated on a landform comprising small foothills in the Arenal Valley that are dissected by a number of small drainages and that has been largely denuded for pasture.
FIELD METHODS

RECONNAISSANCE

Hoopes, Matthews, and Sheets first recorded Sitio Bolivar at the end of March 1984, during a shoreline survey of Lake Arenal (Mueller 1984a, Chap. 3). A lowering of the lake during the dry season exposed deposits 10-30 m wide along the water’s edge. Artifacts were scattered along 215 m of shoreline. Surface collection produced 271 diagnostic sherds, 23 chipped stone artifacts, eight ground stone artifacts, and one small fragment of a greenstone pendant. Approximately 140 fire-cracked cooking stones were recovered. These, together with a high proportion of monochrome ceramics, suggest the remains of domestic activities. At the time of the initial reconnaissance, a local informant (Abel Gutiérrez) showed me a large number of round boulders in and around a loose pit near the top of the ridge overlooking the lake-shore. Their size and location suggested prehistoric burial features. The informant also mentioned that waves along the lake’s edge had exposed whole vessels, subsequently removed by local collectors. Mueller assessing the volcanic stratigraphy in the cut banks of the eroded lake-shore, noted a high density of artifacts embedded in layers below Unit 50.

SURVEY AND EXCAVATION

The specific goals of subsurface testing at the site were (1) to determine the nature of the disturbed stone features on the upper part of the site, and (2) to determine whether there was a functional difference between the features on the shoreline and those on top of the small knoll. Our working hypothesis was that the shoreline, with its high percentage of monochrome ceramics and large
quantity of thermally fractured debitage, was a
domestic activity area while the hilltop, with
large stone features and evidence of looting, was
mainly the locus of funerary activities.
We used a manually operated posthole digger
to identify buried features and to determine the ex-
tent of artifact distribution, digging small holes
every 10 m along two 70 m transects. Cultural
materials appeared in nearly every posthole, indi-
cating a continuous distribution of artifacts to the
north and west of the site datum. Although some
material was as shallow as 30 cm, we located the
majority of artifacts between 90 and 110 cm be-
low the present ground surface (Fig. 5-2).

LAKE SHORE INVESTIGATIONS

Sheets and Mueller directed investigations along
the modern lakeshore at the northern end of the
site. They included excavation of a 2 m x 4 m
test unit (Operation D, Fig. 5-3) and the cleaning
and mapping of several features exposed by wave
action.

OPERATION D

Operation D was placed next to in situ deposits
in an eroded section of the lakeshore that had
a particularly high density of surface artifacts.
Given the domestic character of the lakeshore
assemblage, we hoped that this operation would
uncover intact domestic features and to provide a
stratigraphic cut with which we could determine the
associations of cultural materials and tephra units.

Ceramic and lithic artifacts were present in
Operation D, but we encountered no intact cultural
features, however, the excavation did
provide a continuous stratigraphic section from
present ground surface to the sterile Aguacate Formation (Unit 65). The strata in this operation
confirm the preservation of the regional tephra
stratigraphy at this site. They are presented in
Table 5-1.

In the southeastern corner of the operation, a
light, fine, tephra-laden stratum approximately
15 cm thick was present as a small lens directly
on top of Aguacate. It is probably Unit 61. The
greatest artifact density was in the strata beneath
Units 40/41, that is, in Units 50, 54, and 55.
The greatest concentration of materials appeared
in Unit 54—a light-colored stratum 10-15 cm
thick.

The ceramic assemblage included types Chaco
go-Red, Mojica Impressed [Corrida and
Arrastrada varieties], Guinea Incised, Los Herma-
ños Beige and Los Hermanos Beige: Cervantes
Variety—all of which date to the latter portion of
the Late Arenal Phase (cal AD 300-600; Chap. 1). We found no ceramics from earlier or
later phases and there was little apparent tempo-
ral variation within individual ceramic types.

LAKESHORE FEATURES

As noted earlier, the rise and fall of the lake
between wet and dry seasons dissects Sitio Bolivar
laterally at the water's edge. When the water level
is low, the shoreline exposes a section of cultural
materials as much as 30 m wide. Although the
erosion of softer strata is severe, harder strata such
as the Aguacate Formation and portions of over-
lying tephra layers survive. In these we found sev-
eral well-preserved archaeological features.

The lakeshore features consist of the following
(in the order of their discovery):2

A6/1: A short, outflaring-necked, globular Los
Hermanos Beige: Espinoza Variety olla (cooking
pot). Its base was in Unit 65, but this vessel prob-
ably was deposited at the same time as Unit 54.
A6/2: A Los Hermanos Beige jar in a black
stratum (Unit 60)! overlying Unit 65. Carbon14
carried on its interior indicates that it was used
for cooking.
a: A: A prehistoric fire pit, demarcated by a cir-
cular depression 135 cm in diameter outlined
by red, oxidized clay (Fig. 5-4). It contained 25
fragments of fire-cracked rock, 10 compact
cooking stones, charcoal (C-14 sample TW-573),
14 sherds (one with charcoal on the interior), and
lithic debris.
Most of the activity was associated with John Hoopes. Figure 5-6. Stoshtigraphic profile of the west wall of Operation B.

Feature probably represents the redeposition of broken vessels and other debris from previously midden feature. We found the artifacts on top of fine, hard black surface within the burned and oxidized margins of the feature. Differences in the amount of fire-cracked rock between A8 and A9 suggest that the latter had been cleaned after use.

A10: A probable firepit on the shoreline between Features A7 and A8. It measures approximately 45 cm in diameter and contained 17 fragments of fire-cracked rock, 4 small body sherds, and a small amount of flaked lithic debits. It was filled with a sandy, dark-gray tephra.

A11: A small firepit containing 7 fire-cracked rock fragments and 75 sherds, including rims from nine Los Hermanos Beige bowls, two Los Hermanos jars, a small carinated, complex-silhouette bowl of unidentified type, and a fragment of a gabled-on jar of Los Hermanos Beige: Espinosa Variety.

A12: Another probable firepit containing 1 complete cooking stone, 3 fragments of fire-cracked rock, and 19 sherds (including rims of a Los Hermanos Beige bowl and jar).

A13: The remains of a small structure, as indicated by a circular pattern of six postholes, spaced 120 cm to 135 cm apart. The feature had been partly eroded by wave action, leaving approximately 60% of the floor intact. Postholes vary from 46 cm to 45 cm in depth and 13 cm to 15 cm in diameter. One has a small "pocket" appended to one side, perhaps traces of an extra post. The enclosed area is about 8 m in diameter, for a total internal area of 7 m². Nothing remains of the living surface inside or outside of the feature, with the exception of a small, elevated patch of hard earth at the western end.

We identified a second round structure immediately to the west of A13. (We did not assign a lot number because we collected no material from it.) This feature is larger than the first and marked by eight postholes spaced from 1.30 m to 2.30 m apart. With the exception of the largest span at the SW end of the feature, the average distance between them is about 1.5 m. The entrance was probably located on the southwestern side, which faces away from the prevailing winds. The postholes range from 14 cm to 19 cm in diameter. Although erosion had claimed the northern end of the feature, it is estimated that 60% to 70% of the total area is preserved. The structure has a reconstructed diameter of 5.5 m, for a total area of about 24 m². Unfortunately, all traces of the floor had eroded away.

A14: A small, roughly rectangular pit measuring about 140 cm x 110 cm, filled with a mixture of sand and Aguacate Formation clay. It contained 2 fragments of cooking stones and 188 sherds, including fragments of Mosica Impressed jars and both bowls and jars of Los Hermanos Beige.

We found several other features interpreted as postholes in the vicinity of the hearths and the circular structures, however, none demonstrate structural plans as clear as the aforementioned circular structures except for a small group of holes to the SW of the larger circle. This group was interpreted as the remains of a small windbreak built to shelter the two firepits (A8 and A9) from prevailing northeasterly winds.

INCIDENTAL LAKE SHORE FINDS

We found a fluted Clovis-style point made of local chalcedony (Melson, personal communication to Sheets, 1985) under water 50 cm to 100 cm deep a short distance off the beach. This artifact greatly predates the major occupation of Sitio Bolivar (Chap. 11). We also found a fragment of a small greenstone pendant offshore (Chap. 12).

RIDGE TOP INVESTIGATIONS

OPERATION B

Operation B was located on the ridge top immediately to the south of the disturbed area of large stones noted on our initial survey of the site. The purpose of this operation was to discover whether any of the looted features remained intact and to expose a large enough horizontal area to judge their shape and size. At its maximum extent, Operation B provided a total exposure of 24 m².

Surface clearing revealed that large, rounded boulders visible on the surface had been moved by looters. Informants stated that the site had been looted within two years of our arrival, however, the presence of intact Unit 10 tephra above looted deposits clearly indicates that some looting had occurred prior to the 1968 eruption of the Arenal Volcano (Fig. 5-3). The informants also reported that no one had found anything at the location but large stones.

The upper 20 cm in Operation B were badly disturbed by agricultural activity and this "plug"
Although several loose boulders that had been precedent year were present on the surface, the loose, thick deposit of ceramics and other cultural debris (Fig. 5-6) associated with an earlier occupation of a small pit, located at a depth of 110 cm below the present ground surface. It measures approximately 60 cm x 80 cm and was excavated into the Aguacate Formation to a depth of 20 cm. On the west it is enclosed by six large stones, one of which had fallen into the depression. The southwestern corner is a small (6 cm in diameter) Los Hemanos Beige outflaring-rim jar. Charcoal from the feature yielded a C-14 date of 770 ± 80 BP (see Chap. 10).

The presence of domestic debris, however, does not necessarily indicate the presence of dwellings. The ridge top portion of the site appears to have some domestic deposits—were absent.

Ground stone artifacts (Chap. 12) support the interpretation of the feature as a household mid- ven. Virtually all of the ground stone artifacts, including manos and metates, are broken or unfinished. As with Operation B it is puzzling. The only complete ceramic artifi we found in Operation B is a crude, unslipped, unfinished, and all fragments are small [maximum diameters of 7.5 cm maximum dimension] and there were no fully re-constructable vessels. The nature of this midden is puzzling. The only complete ceramic artifact we found in Operation B is a crude, unfinished, miniature tripod bowl, only 2.2 cm high with a rim diameter of 3 cm and occasionally this was the red. Not far from this was a perforated sherd disk spindle whorl, 7 cm in diameter. Both of these objects indicate domestic activities, i.e., children's sherds with carbonized residue—common in domestic deposits—were absent.

The ridge top portion of the site appears to have served as both a cemetery and a dumping ground for plant remains. The ridge top portion of the site appears to have served as both a cemetery and a dumping ground.
for broken pots and household artifacts. The midden feature probably represents a secondary deposition of this material—or perhaps midden material associated with burials (see below)—as a result of excavations for new tombs in a previously utilized section of the cemetery. This would explain the small size and the large number of fragments from different ceramics. Some vessels present suggest that the contents of the feature accumulated over the space of two hundred or three hundred years. The lack of internal stratigraphy and soil development, however, suggests that the midden itself represents a short-term depositional event.

OPERATION C

Operation C was a 2 m x 2 m excavation unit with its northeastern corner at the site datum. We placed it near the highest point of the site to explore the stratigraphy of the ridge top portion of the site and to identify funerary or domestic activities.

The stratigraphy for the operation consists of six strata, listed in Table 5-2. The upper 30 cm had been heavily disturbed by modern farming activities, and gray lapilli from Unit 20, which was intact, were scoured throughout this level. Unit 50 and Upper 50s strata extend beneath the disturbed level to a depth of approximately 80 cm. In general, the strata below Unit 50, in some places overlain by what appear to be Units 52 and 53 and in others overlain directly by Unit 50. In general, the strata below Units 52 and 53 are very mixed; however, portions of Unit 60 and Unit 61 are intact directly beneath the stone alignments. Upon excavation, it was evident that the stones had been placed around the perimeters of several burial pits excavated into underlying strata sometime during the formation of Unit 54.

Features

The principal cultural feature in Operation E consists of a layer of over two hundred large (30-50 cm maximum dimension), rounded boulders and cobbles overlain by a dense deposit of sherds, lithic debitage, and ground stone fragments. Two deposits of tightly packed boulders probably appeared as a low stone mound, less than 1 m high and at least 8 m in diameter, prior to its burial by later tephras deposits and the associated soil development. Although we were able to define the eastern, southern, and western edges of the feature through excavation, we could not determine whether the original plan was round, square, or amorphous. The northern edge of the feature continues beyond the limits of the excavation.

Most of the large stones that form this feature were not deposited with care. Many of the boulders fractured in place, probably from violent impacts as they were tossed on top of one another. Unmodified percussion flakes found within the cobbled areas were produced as they were thrown together.

Stone Enclosures

Despite the haphazard appearance of most of the stones capping the feature, some of the large strata that overlie the cultural features, above and including Unit 50, were intact (Fig. 5-7). In the first 2 m x 2 m square excavated in Operation E, we recognized Units 10, 20, 30, 40/41, 50, as well as a mixed, clay-laden brown stratum with yellow/orange flecks—probably Unit 54. This overlying Unit 64, which in turn overlies the Aaguacate Formation (Unit 65).

The concentration of stones proved to be part of a large mortuary feature that consisted of burial pits outlined and covered by large boulders. These were in turn covered with a layer of ceramic and lithic artifacts (Fig. 5-8). This feature is located in the strata below Unit 50, in some places overlain by what appear to be Units 52 and 53 and in others overlain directly by Unit 50. In general, the strata above Units 52 and 53 are very mixed; however, portions of Unit 60 and Unit 61 are intact directly beneath the stone alignments. Upon excavation, it was evident that the stones had been placed around the perimeters of several burial pits excavated into underlying strata sometime during the formation of Unit 54.

Botanical Remains

Botanical remains from Operation C consist of three fragments of either Crescentia or Lagenaria from Unit 54. We also recovered two samples of carbonized wood.

Discussion

This operation was useful for revealing the stratigraphic sequence in a relatively undisturbed portion of the ridge top. Its artificial assemblage is suggestive of domestic activities associated with food preparation and artifact manufacture, however, the artifacts are all fragmentary and were not found in association with any recognizable habitation features. They probably represent redeposited household debris from another portion of the site (as do the materials in Operation B).

OPERATION E

Operation E was begun as a 2 m x 2 m excavation unit with its southeastern corner located 45 m west and 10 m north of the site datum. It was later expanded to a total of 22 m². The purpose of the excavation was to investigate a concentration of large stones discovered during posthole testing.

Stratigraphy

Unlike the features in Operation B, those in Operation E had not been disturbed by looting. Natural artifactual and including Unit 50, were intact (Fig. 5-7). In the first 2 m x 2 m square excavated in Operation E, we recognized Units 10, 20, 30, 40/41, 50, as well as a mixed, clay-laden brown stratum with yellow/orange flecks—probably Unit 54. This overlying Unit 64, which in turn overlies the Aaguacate Formation (Unit 65).

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Artifacts

Lithic artifacts suggest that the assemblage from Operation C is primarily domestic in nature. The three pieces of ground stone include a bar mano fragment, a conical metate leg, and a grinding stone similar in morphology to artifacts from other parts of the site (Chap. 12). We also recovered a total of seventy-three pieces of thermally altered brown rock and two complete cooking stones. We found all but four pieces of flaked stone debitage in the lower 30 cm, with the greatest concentration coming from directly above and within Unit 61 (Chap. 11). These levels also yielded a flake core, a hammerstone, and two small water-worn pebbles like those found in direct association with the remains of an early dwelling at Tresmores Vieja (Chap. 4). Other lithic artifacts include seven pieces of general percussion debitage and twenty-five unclassifiable items.

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grinding stones, and a nutting stone. The nature of the feature suggests that it does not represent a single episode of burial activity. Instead, the community or a single family may have utilized it at intervals. The de-
posit of materials over time was complex. As new burials were added, ceramics and lithic debris was either placed or redeposited between and through the tombs. Although sherds were found throughout the feature, the scatter of lithics and ceramics directly on top of the stones appears to represent a final dedicatory event. After all of the burials were in place, whether con-
temporaneous or subsequent, large stones and then a layer of vessels were thrown onto the top and it was not used again.

INTRAREGIONAL COMPARISONS

The stone mortuary complex shares a number of important parallels with other contemporaneous sites in the Northwestern Cordillera region.

The stone mounds at Sitio Bolivar have more parallels in the Atlantic Watershed region than they do in the west. Elements of the Cordillera stone burial features are distinctive within the Cordillera. Stone burial mounds are not associated with Zoned Bichrome cemeteries in the Tempisque valley (Baudez 1967), the Nicoya Peninsula (Guerrero 1982-1983b), or the Pacific Coast of Guanacaste (Lang 1980b, 1984b). They are also unknown in the Rivas region of Nicaragua (Baudez 1967).

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many as one hundred tombs and was built in a single episode. Further, this might have required the direction of "an individual or group of special status" (1982:1-2). Nevertheless, it is clear that there was a conscious, family or community effort as individuals were placed in sequence throughout the occupation of the site (1982:1983:139).

To date, there is little evidence to support or refute either model. It is possible that both interpretations are correct, and that there was significant regional variation in social organization or mortuary practices in eastern Guanacaste during the Zoned Bichrome Period. In our view, the burials at Sitio Bolivar are probably best interpreted as an example of Nuu's accretional model focused on the local context.

All of the stone mortuary features that have been excavated contained multiple tombs, and none of them have been found to be particularly lavish in either their construction or the nature of burials offerings. In fact, despite Incahuacu's (Incahuacu's) reports of jades, ornamental metates, and elaborate ceramic decoration from the mound (Ryder 1982:1983:124), very few artifacts of any kind have been recovered from these features in controlled excavations with the exception of El Carmen.

The wealthier tombs such as those represented by Cache 1 at El Carmen (Ryder 1982-1983:107), which contained fourteen ceramic vessels and contained five vessels of Carillo Polychrome in association with a large carved tripod metate and four other vessels, were not identified by Incahuacu as "chimerical". While the use of base columns in large, volcanic basalt tombs in construction indicates the expenditure of a far amount of energy, it is not beyond what other known regional sites have produced a single-family unit. With the possible exception of the mound at Sitio Munillo, there is little evidence for crema- tion, including cremation in a single-family unit.

With the possible exception of the mound at Sitio Munillo, there is little evidence for cremation, including cremation in a single-family unit. The features and assemblages at Sitio Bolivar have been dated by means of charcoal samples from similar sites in northwestern Costa Rica and new radiocarbon dates. The chronologi- cal placement of prehistoric activities at Sitio Bolivar is useful not only for reconstructing cultural development in the Arenal basin, but also for understanding patterns that characterize the Zoned Bichrome Period in both the Cordillera and the Greater Nicoya region.

We obtained five radiocarbon dates from exca- vations in both the lakeshore and the ridge top portions of Sitio Bolivar. The earliest, 770 ± 390 radiocarbon dates from the base of deposits in Operation E. It is possible that both inter- preters of the date activity during the principal Late Arenal occupation of the site. A date of cal AD 145 (244) 338 (Tx-5272: 180 ± 50) was obtained on one of the two tipes (All) on the lakeshore. The latter half of its range is consistent with the esti- mated dates for the principal occupation of Sitio Bolivar. The second sample yielded a date of cal AD 879 (894) 975 (Tx-5269: 820 ± 50). It is several hundred years too late and does not over- lap the date of the first firepit even with a two- sigma interval, suggesting this second sample has been contaminated.

On the basis of interpretations of a cluster of radiocarbon dates, features and assem- blages elsewhere in Costa Rica, the principal occupation of Sitio Bolivar is dated to cal AD 800-500. These dates confirm evidence from rectangular to circular structures in the Atlantic Watershed region. Snarski's (1985) notes that El Bosque houses were rectangular, indicating the development of a round/ circular dichotomy between Mesoamerican and South American architectural traditions in the Formative Period. Snarski attributes the rectangular shape of El Bosque houses to Mesoamerican influence that accompanied the introduction of maize agriculture during the Early Formative. The presence of architectural evidence such as circular structures in the Atlantic Watershed/ Central Highlands regions around 500. According to our evidence from the Arenal, the residential house form tradi- tion did not extend to the Northwestern Cordil- lera region.

The contemporaneity of the occupation of the two areas of the site is clearly indicated by the associated ceramics. There is a higher percentage of decorated types in the northern area of the site, and the combination of forms from the lakeshore is identical to that associated with the mortuary features. As the site appears to be associated with the Late Arenal Phase, it is likely that the Lakeshore features—like those elsewhere at the site—originated in Unit 54 and persisted into the Arenal Formation.

**DATING FEATURES AND ASSEMBLAGES**

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**CONCLUSIONS**

Sitio Bolivar is interpreted as the remains of a Late Arenal Phase village. Lakeshore and ridge top investigations indicate activities associated with both life and death in this community. The site appears to be spatially organized with houses situated on a flat bench near a freshwater stream (now mostly inundated by the waters of Lake Arenal) and a cemetery on top of the ridge overlooking the lake. The features located on the shore of Lake Arenal at Sitio Bolivar are distinctly domestic in appearance and feature a number of hearths, the presence of firepits with charcoal, fire-cracked rock and large numbers of cooking stones, and the fact that vessels from this part of the site consist primarily of large jars for storage and cooking and indicate that this portion of the site served as the locus for household activities, especially the prep- aration of food. The features located on the shore of Lake Arenal at Sitio Bolivar are distinctly domestic in appearance and feature a number of hearths, the presence of firepits with charcoal, fire-cracked rock and large numbers of cooking stones, and the fact that vessels from this part of the site consist primarily of large jars for storage and cooking and indicate that this portion of the site served as the locus for household activities, especially the prep- aration of food. The features located on the shore of Lake Arenal at Sitio Bolivar are distinctly domestic in appearance and feature a number of hearths, the presence of firepits with charcoal, fire-cracked rock and large numbers of cooking stones, and the fact that vessels from this part of the site consist primarily of large jars for storage and cooking and indicate that this portion of the site served as the locus for household activities, especially the prep- aration of food.
We found no evidence of habitations during testing in the ridge top portion of Sitio Bolivar, which appears to have served a primarily mortuary function. The combination of both midden and mortuary features in this part of the site suggests that the ridge top was considered unsuitable for either dwelling or agriculture and was used for the disposal of both people and artifacts. The location of Zoned Bichrome cemeteries on the tops of hills and ridges is a common pattern in Guanacaste (Lange and Scheidenhelm 1972), and the choice of this type of setting for the cemetery at Sitio Bolivar is further evidence that Arenal Phase peoples were participating in cultural traditions characteristic of Greater Nicoya.

The feature in Operation B appears to represent a secondary deposition of material from surrounding burials, perhaps in conjunction with burials of individuals of lower social rank or with smaller families than those buried under the large stone features in Operation E. The group of enclosures of large river cobbles capped with heavy boulders in Operation E is interpreted as the remains of a funerary mound constructed by higher-ranking individuals or families. The large quantities of broken ceramics and other artifacts found in association with these features are suggestive of the rites and ceremonies that may have accompanied Late Arenal Phase interments. Large feasts in conjunction with funer- als are common to a number of cultures (Hunt- ington and Metcalf 1979) and can include ritual vessel smashing. At La Ceiba, a site on the Tem- pisque River dating to the late Middle Poly- chrome period (cal A.D. 800-1300), such activities are evidenced by a large complex of elongated clay ovens and huge quantities of faunal and floral re- mains in association with burials (Blanco et al. 1986:149). Unlike at La Ceiba, however, there is no evidence that the cooking of funeral feasts oc- curred on or near the burials at Sitio Bolivar.

It is possible that the artifacts on top of the mortuary features were the personal possessions of the interred. Smashing and depositing them on top of the burials would have removed the objects of the deceased from common use—the psychological equivalent of placing them in the grave. This could explain both the domestic nature of the artifact deposit and the paucity of offerings within the tombs themselves. As a practice simi- lar to the burning of the house of a dead relative, the smashing and destruction of vessels would have helped to remove traces of the deceased’s mortal existence from the community.

The destruction of objects that had been the property of the deceased has been reported from similar contexts. At the site of El Carmen (Hu- cienca Motica), Ryder (1982-1983a:107) reports a contemporaneous burial cache of fourteen ves- sels, most of which had been ritually “killed” by punching holes in their bases. As noted earlier, deposits of broken pottery on mortuary features are common in the Northwestern Cordillera of Costa Rica.

An alternative explanation for this pattern is that cemeteries and tombs were considered appropriate locations for disposing of broken artifacts. Just as burial practices removed deceased indi- viduals from the principal habitation areas, trash heaps and shed middens would have removed broken vessels from paths and other areas in daily use. In addition, broken vessels served as both of- ferings to dead relatives and markers for grave lo- cations. It seems likely that the features represent a cemetery that experienced relatively intensive use in a short amount of time, and that burial practices necessitated the frequent displacement of both soil and artifacts in and on it.

The features at Sitio Bolivar provide us with a glimpse of what village life was like in the Arenal basin at the end of the Late Formative Period. Late Zoned Bichrome society at the site appears to have had an economy based on both maize horti- culture and the collection of wild foods. Social organization was probably organized along the lines of kinship, but evidence for centralized lead- ership is lacking. The similarities in ceramic styles and mortuary practices that Sitio Bolivar shares with other sites in both the Arenal basin and the Northwestern Cordillera region suggest partici- pation in a more widespread, regional “culture,” possibly maintained through intercommunity ex- change networks and regional religious sodalities.

Understanding the nature of village life at sites like Sitio Bolivar is important for addressing prob- lems concerning the nature of sociopolitical or- ganization and the emergence of rank in lower Central America. At Sitio Bolivar, the only evi- dence for social ranking lies in the appearance of imported objects such as greenstone pendants and slate mirror backs and the differentiation between simple burials covered with sherds (Operation B) and more elaborate burials covered with both stones and sherds. Because evidence for chiefly in- dividuals and centralized political authority is missing, it is difficult to substantiate an interpreta- tion that Zoned Bichrome society was orga- nized along the lines of chieftains (see Habich- Mauche et al. 1987, Hoopes 1988). There is clear archaeological evidence, however, that Arenal Phase peoples were actively participating in a network of communication (and probably exchange) that stretched westward into Greater Nicoya. This in- teraction, as well as the construction of stone burial mounds, was probably carried out in the context of a decentralized political organization. Understanding the nature of prehistoric society at villages like Sitio Bolivar can provide us with im- portant insights into the emergence of ranking and complex tribes—as opposed to chieftains—in lower Central America.

NOTES
1. A detailed description of investigations at this site can also be found in Hoopes 1987:98-161.
2. Features are identified by individual lot numbers.
3. Although other material was grouped in separate lots, it is likely that all of it derives from this feature.
4. Norr (1982-1983:143) notes that ceramics from the stone “cap” of the Mendez mound were similar to col- lections from an unidentified stone burial mound near Arenal.
5. A large charcoal sample from this tomb yielded a date of 349 cal B.C. - 210 cal A.D. (UCLA-2161E. 160 ± 80, Ryder 1982-1983a:109). Its association with a vessel of Late Palmo Red-on-Bone makes this feature contemporar- y with the Early Arenal Phase, about 500 years earlier than the principal occupation at Sitio Bolivar.
6. This date is very close to that of a sample dated to 398-237 cal B.C. (UCLA-2163: 200) ± 400 from the base of a similar mound excavated by Norr (1982-1983:140) at Sitio Mendes.
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