NEW PERSPECTIVES ON THE CUYAMACA COMPLEX: ARCHAEOLOGICAL INVESTIGATIONS AT CAMP HUAL-CU-CUISH, CA-SDI-945

LYNN GAMBLE

Cuyamaca Rancho State Park in eastern San Diego County is a region known to have been an inland complex of large, late prehistoric settlements. Despite the fact that True's (1961, 1970) pioneering research at the park defined the Cuyamaca Complex as a distinct archaeological tradition, basic questions concerning subsistence and settlement strategies remain unanswered. The following paper gives a preliminary outline of the results of 1999 and 2000 excavations at site CA-SDI-945, within the park. This work is part of a long-term research project designed to understand the subsistence and settlement strategies of the prehistoric Kumeyaay. This research is important because little is known about late prehistoric Kumeyaay subsistence in the region and the role of ceramic manufacture and use in a mobile hunterBgatherer society.

The first season of excavations at Camp Hual-Cu-Cuish (CA-SDI-945) was completed in May 1999 under my direction, with my field class from the Department of Anthropology at San Diego State University. The second season of excavations was completed in May of 2000. Results in this paper are based primarily on the 1999 excavations, because analysis has not been completed for the 2000 season. These investigations were conducted at the request of the Colorado Desert District of the California Department of Parks and Recreation to assess the integrity of the site after 59 years of use by the Boy Scouts, and to evaluate the cultural significance of the site. A number of research questions integral to understanding the subsistence, settlement, and exchange practices of the Kumeyaay, an ethnographic group that occupied central and southern San Diego County during the late prehistoric and historic periods, are of interest for this project.

The other primary goals of the archaeological investigations are to compile information on subsistence and settlement patterns that has not previously been collected for the Cuyamaca Rancho State Park region, to determine the time period that the site was occupied, and to reinvestigate True's concept of the Cuyamaca complex. In addition, data on exchange and mobility among the Kumeyaay during the late prehistoric period has been assessed. Because limited information is available from the region on subsistence, seasonality, and exchange, I focused efforts on these aspects of the research. To my knowledge, no ethnobotanical remains have been collected from the park, and few have been collected from prehistoric sites in San Diego County. In order to insure an adequate sample, we collected ethnobotanical remains from all the soil that was excavated in the 1999 season.

BACKGROUND INFORMATION

Cuyamaca Rancho State Park is situated in eastern San Diego County within the Cuyamaca and Laguna Mountains in the Southern California Peninsular Range, which stretches from the San Jacinto Mountains to the tip of Baja California. This area consists of a series of uplifted granitic batholiths of varying age, and elements of pre-Cretaceous metamorphic rocks known collectively in the area as Julian Schist (True 1970). Elevations in this region range from 1,036 m (3,400 ft) to over 1,981 m (6,500 ft). Several vegetative communities occur in the park, including meadows, grasslands, mixed broadleaf and coniferous forests, and chaparral, with the latter the most common community in the region (Parkman 1981; True 1970). Several species of oak (*Quercus* sp.) are found in the park, in addition to other plant resources important to the Kumeyaay, including sage (*Salvia* sp.), holly leaf cherry (*Prunus* sp.), sumac or lemonade berry (*Rhus* sp.), manzanita (*Arctostaphylos* sp.), elderberry (*Sambucus mexicana*), and western choke-cherry (*Prunus virginiana*). A list of plants that have been observed in and near the site was compiled by Jean Gregory, an amateur ethnobotanist who has worked on the project the past two seasons (Table 1). Substantial animal populations at the park include deer, rabbit, fox, coyote, bobcat, mountain lion, and numerous rodents and reptiles. The climate at the park is Mediterranean, as is most of southern

Lynn Gamble, Department of Anthropology, San Diego State University

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California. However, because of the relatively high elevations in portions of the park, snow can fall in places between October and May.

Historically the Kumeyaay occupied the region in and surrounding Cuyamaca Rancho State Park. The Kumeyaay Indians are also known as the Tipai-Ipai and the Diegueño. They are Yuman-speakers who were organized into patrilineal clans. The Kumeyaay historically lived in two different settlements, one for winter and the other for summer. It has been stated that they lived in the mountain upland areas during the summer months, and then moved to lower elevations, often in the desert or area around Descanso in the late fall after the acorn harvest (Hildebrand and Hagstrum 1995:87, Luomala 1978; Spier 1923; True 1970:54).

Some of the earliest archaeological investigations in the park occurred between the 1930s and 1950s under the sponsorship of the San Diego Museum of Man and under the direction of Malcolm Rogers, a pioneering archaeologist who was associated with the museum between 1919 and the 1950s. As a result of these relatively early archaeological investigations, collections and notes from fourteen sites were recorded at the museum (Parkman 1981). Of these fourteen sites, five were excavated and had evidence of cremations. During the late prehistoric period, cremations were the most common burial method in the region.

Archaeological investigations were undertaken by D. L. True (1961) in the 1960s at Cuyamaca Rancho State Park. True's investigations included intensive archaeological survey resulting in the recordation of 146 sites. He identified six site types, based on surface observations: villages, small camps, temporary camps, seed-grinding stations, cache caves, and quarry sites. Based on the survey data, True concluded that a relatively dense population had inhabited the region. Village sites identified by True consisted of well-developed midden deposits that he viewed as late prehistoric or protohistoric in most instances, some of which are historically known settlements (True 1970:5). Of these sites, 27 contained ceramics. It is believed that ceramics were first used in the Kumeyaay region around A.D. 1000. In particular, May (1976, 1978) has suggested that the advent of ceramics in the Laguna Mountains, in the eastern portion of the park, was about A.D. 990-1000.

True conducted test excavations at three sites, but most of the work occurred at one site, Dripping Spring (SDI-860). Here True recovered a considerable collection of artifacts using primarily a 1/4-inch mesh screen and occasionally 1/8-inch mesh. He identified this as the "type site" for the Cuyamaca complex (True 1970). It is one of the largest sites in Cuyamaca Rancho State Park, if not the largest. True recovered a wide range of artifacts and faunal remains from the site, including historic artifacts, ceramics, chipped stone tools and points, ground stone, shell, and bone. He also identified a number of features, including hearths. Based on ethnographic information, True suggested that this site was occupied during the summer months, but he did not find any direct evidence for a seasonal occupation. He noted that SDI-860 is typical of the terminal occupation of the Cuyamaca region, and that it is unknown how far back in prehistory this pattern extended. True interpreted most of the village sites at Cuyamaca Rancho State Park as complexes that were used during the summer months and suggested that these corresponded with winter villages in lower elevations (True 1970:6).

Since True's archaeological investigations, most of the work in the region has consisted of surface reconnaissance conducted by State Park personnel for management purposes. Over 225 Native American sites have been recorded at the park, including the sites identified by True and early researchers. Only limited excavations have occurred since True's work at the park, and those investigations have focused on reducing impacts to sites that might result in potential damage. Although True gathered considerable information on large artifacts and features at SDI-860, very little information exists on subsistence and seasonality.

SETTING

The archaeological site at Camp Hual-Cu-Cuish, a former Boy Scouts of America camp, was originally recorded by True and more recently by Schwaderer *et al.* (1999). The site is situated at the eastern base of Middle Peak in Cuyamaca Rancho State Park at the edge of a meadow and a pine-oak woodland and is exposed to the south and east. Two elderberries are present on site, as well as a number of other plants (Figure 1 and Table 1). The matrix of the site consists of an extensive and well-developed midden and numerous bedrock-milling features. These features include 36 bedrock mortar depressions, seven bedrock metates or "slicks," three Cuyamaca ovals[1], five round basin metates, and three cupules (Schwaderer *et al.* 1999). The recent archaeological site record completed by Schwaderer *et al.* (1999) is thorough and includes maps and detailed descriptions of all the bedrock milling features at the site.

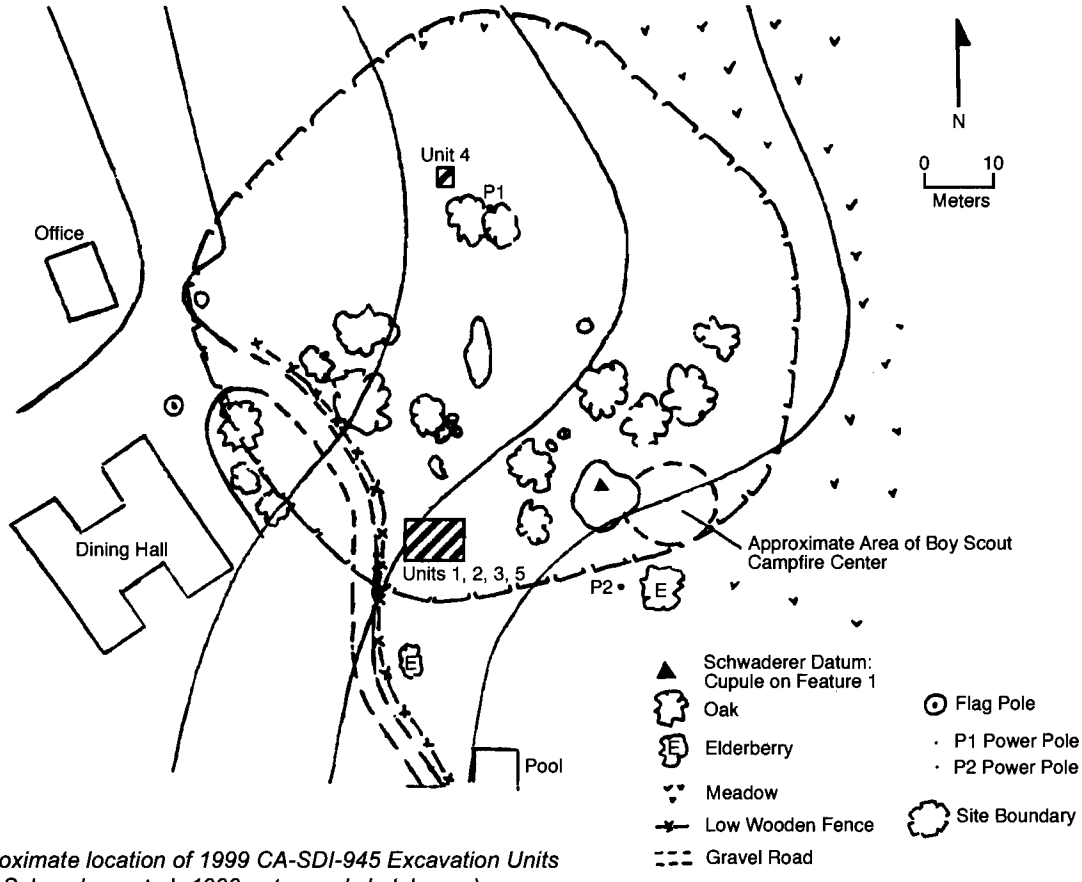

Figure 1: Approximate location of 1999 CA-SDI-945 Excavation Units (adapted from Schwaderer et al. *1999 notes and sketch map).*

Despite previous collection, a relatively dense scatter of artifacts remained on the surface at SDI-945, including manos, metate fragments, cores, flakes, hammerstones, ceramics, a shaped schist pendant fragment, the head of an apparent seal effigy, Cottonwood and Desert Side-notched point fragments, and ground ceramic disks. The site has been interpreted as a small village, based on the diverse artifact assemblage, features, and size. Numerous ceramic fragments indicate the site was occupied sometime after A.D. 900-1000.

Numerous man-made as well as natural disturbances have occurred at the site. The southwestern portion is disturbed as a result of a road, a paved area, and buildings, making it difficult to determine the extent of the boundaries in this portion (Schwaderer *et al.* 1999). Controlled excavations were not conducted at the site prior to our work, although the western edge was disturbed about ten years ago as a result of the installation of a leach field. In July of 1989, Dr. Tim Gross of Affinis oversaw the monitoring of the leach line at the site and collected 49 artifacts, including manos, metate fragments, stone tools, a schist pendant fragment, and ceramics. Crushed rock for the road and the leach line have been introduced to the site. In addition, the Boy Scouts have used the property since 1939 and have built fires and collected artifacts at the site (Schwaderer *et al.* 1999). Natural disturbance processes, including gopher and ground squirrel burrowing have also had clear impacts on the site.

METHODS

The field strategy at the site included both surface reconnaissance and sub-surface excavations. Carmen Lucas, a Kwaaymii (Kumeyaay) descendant whose father, Tom Lucas, was an important consultant to numerous anthropologists, played an important role in the field investigations and decision-making, along with John Simmons and Monica Guerrero. A surface reconnaissance was conducted to determine the boundaries of the site and to establish the best areas to place the excavation units. Most of the units were placed in the area of highest artifact density based on the surface remains (Figure 1). Unit 4 was situated at the north end of the site in the meadow, where a lower density of artifacts was observed on the surface, but there was a relatively high density of small obsidian flakes (Figure 1).

Table 1: Plants Observed at or near Hual-Cu-Cuish (CA-SDI-945).

Botanical Name	Common Name	Description	Traditional Uses
Achillea millefolium	Wooly Yarrow	tall annual up to 2'	medicinal uses
Allium ssp	Wild Onion	bulb up to 1'	edible bulbs
Ambrosia psilostachya	Western Ragweed	tall annual up to 2'	medicinal
Amorpha fruticosa	False Indigo	small low annual	-
Arctostaphylos pringlei	Cuyamaca Manzanita	large shrub to a small tree	hardwood tools, edible berries
Asclepias erocarpa	Milkweed	annual up to 3'	yields strong fibers for cordage
Astragalus douglasii	Parish's Locoweed	small low annual	medicinal uses
Avena fatua	Wild Oat	annual up to 2'	edible grains
Berberis equifolium	California Mahonia	shrub	edible berries/dye
Brassica	Wild mustard	annual up to 2'	edible greens
Callocedrus decurrens	Incense Cedar	evergreen tree	bark used for fibers/building materials
Calochortus	Mariposa Lily	bulb - up to 1'	edible bulbs
Cardamine californica	Milkmaids	small low annual	edible greens
Ceanothus greggii	Desert Lilac	shrub	medicinal uses
Ceanothus leucodermis	Chaparral Whitethorn	shrub	medicinal uses
Cercis occidentalis	Western Redbud	large shrub to small tree	choice basket materials
Cercocarpus betuloides	Mountain Mohogany	shrub	roots for dye/hardwood for tools
Clarkia purpurea	Wine Cup Clarkia	short annual 1'	-
Corethrogyne filaginifolia	Cudweed Aster	perennial up to 2'	tea
Dichelostemma pulchellum	Blue Dicks	bulb - up to 1'	edible bulbs
Eriogonum fasciculatum	California Buckwheat	shrub	medicinal uses/edible seeds
Eriogonum wrightii	Wright Buckwheat	shrub	medicinal uses/edible seeds
Eriophyllum confertiflolium	Golden Yarrow	perennial up to 2'	seeds for flour
Erodium cicutarium	Red-stem Filaree	small low annual	edible greens
Galium augustifolium	Bedstraw	vining annual up to 2'	tea
Grindelia hallii	Cuyamaca Gumplant	perennial up to 2'	medicinal uses/edible leaves and stems
Gutierrizia sarothrae	Matchweed,Broom Snakeweed	perennial up to 2'	medicinal
Lamium	Henbit	small low annual	-
Lathyrus laetiflorus	Chaparral Pea	vining annual up to 4'	edible greens and seeds
Limnanthes gracilis	Cuyamaca Meadowfoam	short annual 1'	edible seeds
Linanthes ciliatus	Whisker-Brush	short annual 1'	medicinal
Lomatium lucidum	Biscuit Root	short annual 1'	medicinal
Lupinus bicolor	Dwarf Lupine	short annual 1'	leached seeds edible
Muhlenbergia rigens	Deer Grass	forms clumps 2' diameter	basket material
Nemophila menziesii	Baby Blue Eyes	small low annual	-
Oenthera	Evening Primrose	annual up to 2'	edible seeds
Opuntia engimannii?	Prickly Pear	low spreading mats 1'tall	edible leaves and large fruit
Penstemon heterophyllus	Foothill Pentstemon	perennial up to 2'	medicinal
Phacelia distans	Wild Heliotrope	annual up to 1'	edible greens
Phoradendron sp.	Mistletoe	parasite lives in trees	medicinal
Pinus jeffreyii	Jeffrey Pine	tall tree	wood / pitch / nuts
Potentilla glandulosa	Sticky Cinquefoil	small low annual	edible seeds
Prunus virginiana	Western Choke-cherry	shrub	wood / berries used for dye
Pteridium aquilinum	Bracken Fern	perennial up to 2'	basket materials / edible new shoots
Quercus berberidifolia	Scrub Oak	evergreen shrub to small tree	acorns / wood
Quercus chrysolepis	Canyon Live Oak	evergreen tree	acorns / wood
Quercus engelmanii	Englaman Oak	semi deciduous tree	acorns / wood
Quercus kelloggii	Black Oak	deciduous large tree	acorns / wood
Ranunculus californicus	Southern Buttercup	bulb up to 1'	seeds and roots edible
Rhamnus ilicifolia	Hollyleaf Redberry	shrub	berries eaten with meat
Rhamnus tomentella	Chaparral Coffeeberry	large shrub	bark and berries medicinal
Rorippa nasturtium aquaticum	Watercress	small low annual likes wet areas	edible greens
Rosa californica	Wild Rose	deciduous spreading shrub	edible flowers and fruit
Rumex crispus	Curly Dock	perennial up to 2'	edible seeds/leaves
Salix	Willow	deciduous tall shrub	basket material
Sambucus mexicana	Elderberry	deciduous tall shrub	flowers,berries edible
Sanicula bipinnatifida	Purple Sanicle	perennial up to 1'	tea
Scirpus	Tule	wiry clumps up to 2'	basket material
Sidalcea malvaeflora	Checker Bloom	short perennial to 1'	edible leaves and seeds
Symphoricarpos mollis	Spreading Snowberry	deciduous spreading shrub	medicinal berries
Trifolium depauperatum	Bladder-Clover	small annual 1'	edible greens
Typha latifolia	Cattail	water growing perennial 3'	edible pollen, roots, stems / weaving materials
Urtica holosericea	Stinging Nettle	perennial up to 2'	edible greens / strong fibers for cordage
Viola douglasii	Douglas's Violet	small annual 4"	edible leaves
Wyethia ovata	Southern Mule's Ears	perennial 1'	medicinal / edible seeds
Yucca whippleii	Our Lord's Candle	7 yr from seed to bloom, grows to 5' then dies	not on site, but grows 2 miles east as the crow flies. Important fiber and food.

During the 1999 season, five 1 x 0.5-m units (Units 1-5) were excavated in 10-cm levels, ranging in depth from 40 to 90 cm. All intact soil was water-screened through 1/8-in (3.2 mm) mesh screen after flotation, and the residues were bagged for laboratory analysis. Except for the 0-10 cm level, each levels was floated in its entirety, resulting in an impressive amount of charcoal, among other items. The "bucket method" was used for all of the flotation (see Hammett and Wohlgemuth 1982 for a description of this method). These techniques allowed us to recover floral remains and very small bones, chipped stone, beads, and other artifacts that otherwise might have been overlooked.

During the 2000 season, we reopened Unit 5, because it had not been excavated to sterile the previous year. We also excavated a 50 x 50-cm unit adjacent to Unit 1, because of a feature in that area. Three other units, all 1 x 0.5 m, were excavated in the 2000 season, but analysis of these has not been completed.

A wide range of artifact types has been found at the site. Numerous ceramic fragments, including incised sherds, pipe fragments, and circular ground disks that may have been used as gaming pieces, were recovered. Other artifacts include Desert side-notched and Cottonwood points, a small steatite effigy fragment that appears to be the head of a seal, chipped stone tools and debitage, ground stone, and numerous faunal and floral remains. The focus of much of this discussion is a summary of the types of floral and faunal remains at the site. Thomas Wake (1999) of the Zooarchaeology lab, and Virginia Popper and Steve Martin (2000) of the Paleoethnobotany lab at the Cotsen Institute of Archaeology at UCLA conducted the analyses from which this summary is drawn.

RESULTS AND DISCUSSION

A total of 458 artifacts was found on the surface of the site in 1999, but were not collected. Most of these were fragments of ceramics (n = 339). The remaining artifacts consisted of chipped stone (n = 105), point fragments (n = 3), and pieces of ground stone (n = 11). Excavations yielded a fairly wide range of artifacts and other cultural remains from SDI-945, considering that only 1.6 cubic meters of soil were excavated. A total of 2,606 bones (1,629 per cubic meter) was recovered from the site, 2,243 ceramics (1,402 per cubic meter), 1,504 flaked stone items (940 per cubic meter), including points, cores, and tools, and 39 ground stone objects (24 per cubic meter), including seven mano fragments and six metate fragments.

The soil encountered during excavations was similar in most of the units and consisted of a dark brown/gray silty loam. One exception was in Unit 1, where in the 30-50 cm levels, the remains of a hearth were encountered (Feature 1). Ash lenses, charcoal, and fire-reddened earth were observed in a concentrated area in the northern part of the unit. In the 2000 excavations, we opened a unit (Unit 6) adjacent to Unit 1 and found more ash lenses and charcoal overlying fire-reddened earth. Gophers had disturbed some of this feature, which appeared to be the remains of several hearths. Broken ceramics and flakes were observed in and around the feature; no historic remains were observed in association. We collected several charcoal samples for a radiocarbon date from this feature, but have not submitted the samples because of budgetary constraints.

The total number and weight of artifacts in each unit are presented in Table 2. The greatest density of artifacts was in Unit 3, then Units 1 and 2 respectively. Although Unit 5 was not excavated to sterile, it yielded a high density of artifacts. A detailed accounting of artifacts for each unit by level is presented in Table 3. Graphs of the more frequently occurring artifact types in each unit by level are presented in Guerrero (this volume). These data provide some striking contrasts between the area where Units 1, 2, 3 and 5 were placed and the area where Unit 4 was placed (Figure 1). The only unit that lacked ground stone and baked clay was Unit 4 (Table 2). Moreover, this unit only had seven fragments of bone, unlike the other units that all had hundreds of pieces (Table 2). The most common artifact types from Unit 4 were chipped stone and ceramics (Table 2). One reason we originally chose to excavate in this area was because there were numerous small obsidian flakes observed on the surface. The weight and frequency of obsidian for each unit at the site were relatively high in Unit 4 compared with bone and ground stone (Tables 2 and 3). It may be relevant that Unit 4 was the only one that lacked projectile points or biface fragments. In summary, it is clear that the types of artifacts and other cultural remains are very different in Unit 4 than in the other units. In all five, the frequency of historic remains is relatively low, especially in the lower levels of the site (Table 3).

One important focus of this project was the recovery and analysis of floral remains. Densities of charcoal are relatively high at the site. The distribution of charcoal compared with selected artifacts is of particular interest (Table 2). In Units 1-3, charcoal weighed more than ceramics, chipped stone, or bone. This is remarkable, particularly when we consider that there are hundreds of fragments of ceramics, chipped stone, and bone in these units (Table 2). Although

	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Total	
Artifacts	**wt.**	**#**	**wt.**	**#**	**wt.**	**#**	**wt.**	**#**	**wt.**	**#**	**wt.**	**#**
baked clay	45.0	106	6.0	37	9.9	53	0.0	0	0.7	2	61.7	198
bead	0.0	0	0.0	0	0.1	3	0.0	0	0.0	1	0.1	4
bone	46.2	650	35.7	616	63.0	935	0.3	7	29.7	398	174.9	2606
ceramics	406.4	289	953.8	526	1200.4	800	395.3	226	566.9	402	3522.9	2243
charcoal	1834	n/a	1629	n/a	1660	n/a	262	n/a	413.0	n/a	5798.0	n/a
chipped stone	538.7	320	397.2	343	606.7	468	17.6	118	148.2	255	1708.4	1504
fire affected rock	0.0	0	0.0	0	17.6	20	0.0	0	69.7	1	87.3	21
graphite	0.3	1	0.4	3	0.5	2	0.0	0	1.0	3	2.2	9
groundstone	2502.5	11	779.4	8	3029.2	15	0.0	0	338.6	5	6649.7	39
historic	22.4	29	11.3	109	69.2	122	9.0	10	3.2	25	115.1	295
mica	0.0	0	0.1	3	0.1	9	0.0	0	0.0	0	0.1	12
pipe fragments	0.6	1	0.0	0	0.0	0	0.0	0	0.0	0	0.6	1
shell	0.3	4	0.7	12	0.0	2	0.0	0	0.1	2	1.1	20
steatite	1.6	2	23.6	3	5.8	16	0.0	0	0.5	2	31.5	23
stone	2.1	3	0.0	0	0.0	0	0.0	0	0.0	0	2.1	3

Table 2: Weight (gm) and Number of Cultural Remains by Unit at CA-SDI-945.

some of the charcoal may be from natural wildfires and Boy Scout activities, most of it appears to be from the aboriginal occupation of the site, as charcoal predominates in the lower levels at the site, and most of the charcoal was fully burned (Popper and Martin 2000). Partially burned charcoal fragments would be expected if they were of historic age. During the 2000 excavation season, we placed a control unit outside the site boundaries and found very little charcoal there.

Approximately 1,367 liters of soil were floated in 1999, which resulted in 6,167 gm of charcoal. The UCLA Paleoethnobotany Lab noted that the densities of charcoal were relatively high in the 18 samples they examined (Popper and Martin 2000). An average of 0.86 grams of charcoal per liter was recovered. The majority of plant remains from CA-SDI-945 are carbonized wood, primarily oak and pine. It is likely that the burning of wood for heat was quite important given the elevation of the site, even if it was not occupied year-round. The second most common type of remains were acorn nutshells, nutmeats, and portions of the nutshell that attach to the cap (attachments). This is not surprising considering the significance of the acorn in the diet of the Kumeyaay, and its relative abundance in the region. The seed densities averaged 2.85 seeds per liter, greater than that at most of the sites in the Camp Pendleton region (Ready 1997, 1999).

Table 4 shows the frequency of the plant remains recovered in the flotation from 1999. *Arctostaphylos* or manzanita seeds were recovered from most of the samples and in all of the units. The wood was also identified in several of the units. The fruits ripen in the early summer and can be ground, along with the stones, to make an edible flour. Many of the seeds in the *Cheno-Am* category are *Chenopodium* or goosefoot seeds. These seeds were an important plant food. In addition, all portions of the *Chenopodium* plant were used by California Indians. Poaceae or grass seeds were recovered in every sample at the site, although small Poaceae seeds were absent in Unit 1 and abundant in Units 2 and 3. Fifteen of the grass seeds at the site were identified as *Hordeum* (wild barley), which is common in archaeobotanical assemblages in southern California.

Popper and Martin (2000) conclude that plant use at the site was oriented predominantly towards acorn processing. The floral remains indicate that the site was occupied at least in the summer and fall, but possibly in the late spring and in the winter, although occupation during the latter two seasons is not clear. Unit 4 differed from the other units at the site in that there were slightly fewer plant remains there, suggesting less plant processing or disposal activity in that area.

Faunal remains from the site were highly fragmented, but yielded some interesting results (Tables 5 and 6). Most of the bone from the site was burnt (Table 7). This probably resulted from cultural processes rather than natural wildfires, since the majority was found in the deeper levels (Wake 1999). Mammals were the most common faunal remains

Table 3: Weight and Count of Cultural Remains by Level at CA-SDI-945.

Unit 1 Level	0-10 cm		10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		60-70 cm		70-80 cm		80-90 cm (not exc.)		Total	
	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#
baked clay	-	-	-	-	-	-	42.92	105	-	-	-	-	2.11	1	-	-	*	*	45.03	106
bone	3.8	35	2.87	31	4.21	49	7.18	111	11.71	161	6.07	79	5.48	104	4.86	80	*	*	46.18	650
ceramics	50.79	40	32.77	35	95.04	47	51.68	51	67.79	46	36.61	32	56.73	24	15.01	14	*	*	406.42	289
chipped stone	55.71	35	33.55	37	57.91	26	49.08	97	9.06	21	109.15	52	215.04	35	9.22	17	*	*	538.72	320
graphite	-	-	-	-	-	-	0.33	1	-	-	-	-	-	-	-	-	*	*	0.33	1
groundstone	194.95	2	-	-	12.85	1	55.71	2	221.2	1	2000	1	17.17	1	0.58	3	*	*	2502.46	11
historic	3.68	4	4.48	9	2.74	4	6.78	4	2.62	4	2.1	3	-	-	0.01	1	*	*	22.41	29
pipe fragments	-	-	-	-	-	-	0.61	1	-	-	-	-	-	-	-	-	*	*	0.61	1
shell	-	-	0.03	1	-	-	-	-	-	-	-	-	0.29	2	0.01	1	*	*	0.33	4
steatite	-	-	0.75	1	-	-	0.85	1	-	-	-	-	-	-	-	-	*	*	1.6	2
stone	-	-	0.98	1	0.6	1	0.56	1	-	-	-	-	-	-	-	-	*	*	2.14	3

Unit 2 Level	0-10 cm		10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		60-70 cm (not exc.)		70-80 cm (not exc.)		80-90 cm (not exc.)		Total	
	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#
baked clay	0.3	1	2.03	1	-	-	-	-	3.62	33	0.09	2	*	*	*	*	*	*	6.04	37
bone	4.09	29	3.49	60	6.49	27	9.51	201	8.47	212	3.67	67	*	*	*	*	*	*	35.72	616
ceramics	62.39	49	176.91	96	229.83	101	210.28	122	220.28	123	52.12	35	*	*	*	*	*	*	953.81	526
chipped stone	4.04	43	29.43	65	205.41	22	55.23	88	60.3	87	42.79	38	*	*	*	*	*	*	397.2	343
graphite	-	-	0.12	1	-	-	-	-	0.26	2	-	-	*	*	*	*	*	*	0.38	3
groundstone	-	-	133.26	3	467.36	3	91.92	1	86.87	1	-	-	*	*	*	*	*	*	779.41	8
historic	0.34	13	4.48	59	5.12	13	0.61	9	0.73	12	0.05	3	*	*	*	*	*	*	11.33	109
mica	-	-	-	-	-	-	-	-	0.02	2	0.05	1	*	*	*	*	*	*	0.07	3
shell	0.31	3	0.18	5	-	-	-	-	0.05	3	0.13	1	*	*	*	*	*	*	0.67	12
steatite	-	-	0.07	1	22.22	1	-	-	-	-	1.27	1	*	*	*	*	*	*	23.56	3

Unit 3 Level	0-10 cm		10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		60-70 cm		70-80 cm		80-90 cm		Total	
	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#	wgt	#
baked clay	-	-	6.55	38	-	-	-	-	3.18	13	-	-	-	-	-	-	0.2	2	9.93	53
bead	-	-	0.02	1	-	-	-	-	-	-	0.02	1	-	-	0.02	1	-	-	0.06	3
bone	2.01	15	3.1	37	4.72	73	10.89	173	12.7	166	6.93	134	10.7	129	8.6	128	3.31	58	62.96	935
ceramics	35.71	34	147.81	126	164.87	85	194.02	201	191.35	137	139.93	74	178.88	74	100.13	44	47.74	25	1200.44	800
chipped stone	3.08	14	174.35	53	59.76	49	13	32	29.83	38	216.43	82	81.01	132	19.66	54	9.58	14	606.7	468
fire affected rock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.59	20	17.59	20
graphite	-	-	-	-	0.49	2	-	-	-	-	-	-	-	-	-	-	-	-	0.49	2
groundstone	-	-	27.52	1	2.45	1	257.94	1	1651.07	6	112.73	1	91.32	1	207	2	679.2	2	3029.23	15
historic	0.52	17	55.19	54	0.11	11	0.43	11	5.67	16	5.59	4	0.13	7	-	-	1.53	2	69.17	122
mica	-	-	-	-	-	-	-	-	0.04	8	-	-	-	-	-	-	0.03	1	0.07	9
shell	-	-	-	-	0.01	1	-	-	-	-	-	-	-	-	0.01	1	-	-	0.02	2
steatite	2.58	2	-	-	-	-	-	-	2.85	9	-	-	0.03	1	-	-	0.35	4	5.81	16

Table 4: Absolute Counts and Weights of Plant Material from CA-SDI-945 during the 1999 Field Season. (Nutshell pulled from a 2.5 gm subsample of the 1-2 mm fraction of selected samples).

Seed Types	Number	Plant Parts	Number	Weight (g)
Amaranthus sp.	1	Wood	-	208.85
Asteraceae	16	Bark	-	0.24
Arctostaphylos sp.	19	*Pinus* sp.:	-	
Calandrinia sp.	1	bark	-	0.88
Chenopodium sp.	12	leaf	29	-
Cheno-Ams	22	cone fragment	58	-
Fabaceae	23	*Quercus* sp.:		
Hordeum sp.	15	nutshell > 2 mm	-	5.39
Lamiaceae	4	nutshell = 1-2 mm	-	0.94
Malvaceae	1	attachment	-	36
Mentzelia sp.	1	nutmeat cf.	1	-
Phacelia sp.	11	*Monocotyledon* cf.	4	-
Phalaris sp.	1	Nutshell	-	0.01
Poaceae large	118	Unknown fruits	7	-
Poaceae small	160	Unknown plant parts	18	-
Polygonaceae	2			
Potentilla sp.	1			
Salvia sp.	1			
Sambucus sp.	1			
Scirpus sp.	2			
Viola sp., cf	1			
Unidentifiable seeds	322			
Seed Total	735			

(Table 5) recovered at the site, with rodents (ground squirrels, pocket gophers, mice and voles) in the greatest abundance (Table 6). It is likely that many of the rodents in the site were intrusive and do not represent dietary remains of the inhabitants; however, eight of the ground squirrel remains were burnt. Carmen Lucas was quite surprised with this identification, because she said the Kwaaymii never ate ground squirrels, as they could carry disease. She found this identification to be problematic because of this taboo. It has been noted that in families that lacked a deer hunter, rodents and birds were the only game that were captured during the winter in Kumeyaay sites (Luomala 1978:601). Rabbits were the second most commonly identified mammals and are dominated by cottontails, although jackrabbits were also present in the assemblage. Rabbits are known to have been hunted by the Kumeyaay with throwing sticks, nets, bows and arrows, and by circling the burrows with fire (Cline 1979:23; Luomala 1978:601). Sheep and deer (Artiodactyl) remains are relatively rare at SDI-945, with a total of only 18 bones, although they dominate the assemblage by weight (12.20 gm). Two of the artiodactyl remains were identified as black-tailed deer, and two others as bighorn sheep, one of which was a burnt antler fragment. Some of the remains identified as large mammal may have been artiodactyl. It is possible that deer and bighorn sheep were killed and butchered off the site, with only the meat being carried into the settlement; in such a case, few remains of these species would appear on the site (Shipek, personal communication).

Faunal remains other than mammal from SDI-945 include fish, amphibian, reptile, and bird. Of the five fish bones, three were identified as sucker, and tentatively identified by Wake as Santa Ana sucker. This type of sucker does not normally inhabit river systems as far south as those found in the region of the site. The presence of this fish at the site might indicate

Table 5: Types of Faunal Remains at SDI-945.

Class	Count	Weight (g)
Fish	5	0.12
Amphibian	1	0.02
Reptile	34	1.06
Bird	15	4.51
Mammal	2402	154.87
Vertebrate Unknown	9	0.22
Total	**2466**	**160.80**

Table 6: Types of Rodents at SDI-945.

Rodent Type	#	Weight (g)
Ground Squirrel	44	2.76
Pocket Gophers	15	0.6
Mice	4	0.06
Voles	3	0.07

Table 7: Burned ad Unburned Bone at SDI-945.

Bone Type	n	Weight (g)
Unburned Bone	1157	66.98
Burned Bone	1309	93.82

that the range of this species was greater prehistorically than it is today. We hope to find more fish remains from the 2000 field season assemblage that will help us address this issue.

The one amphibian bone was identified as a toad. Reptiles in the assemblage include rattlesnakes, gopher snakes, fence lizards, and alligator lizards. Five of the snake vertebrae are burnt, but none of the lizard bones. Fifteen bird bones were found at the site. Two were identified as hawk and one as a distal humerus of an eagle. The latter has been worked into a tube, probably a tubular bead. The eagle-bone tube has evidence of polish and striations and has apparent wear patterns where it was strung. Wake (1999) tentatively identified this as a golden eagle. Eagles have important religious connotations among the Kumeyaay. Carmen Lucas has expressed concern about this artifact because it may have been used in a ceremonial context. The artifact was found in Unit 1, in the 40-50 cm level. Sixteen other bones from CA-SDI-945 were worked. Most of the worked bones are non-diagnostic artifacts that display cut marks, striations from grinding, and/or evidence of polishing.

The faunal remains are interesting in that there is a complete absence of marine resources in the assemblage except for twenty fragments of shell, some of which may be marine. Analysis of these shells has not been completed. It will be important to determine if any of these shells were marine or not, as they may indicate contact with coastal areas of San Diego County. Shell was present in every unit except Unit 4 (Tables 2 and 3).

Most of the faunal remains represent exploitation of the area near the site, with a strong emphasis on terrestrial mammals. The fauna identified do not indicate any clear seasonal pattern, although big horn sheep are known to inhabit higher elevations in the summer months. One tooth fragment was found at CA-SDI-945 that may be a human tooth.

The analysis of the ceramics has not yet been completed, but a few observations can be made on the assemblage. Numerous rim fragments were recovered in the excavation units and on the surface, and some of these, along with the body sherds, are decorated with incising or other non-paint decorations. The thickness of the ceramics varies considerably at the site. Most of the sherds appear to be brown wares. A sample of 20 sherds was selected for Neutron Activation Analysis (NAA) and hand-specimen identification by John Hildebrand, who has been working on sourcing

ceramics in San Diego County. The sherds have been submitted for NAA, but this analysis has not been completed.

Twelve of the 20 hand specimens are Salton Brown, indicating that they were made from desert clays. The others all appear to be Tizon Brown, or mountain clays. A bowl fragment of a very thin smoking pipe was found in the 30 to 40 cm level of Unit 1 in the 1999 season. Incising is present on the outer surface of the bowl of the pipe. A second pipe fragment was found in the 2000 field season. Pipes were usually used in religious contexts in southern California. Most of the ceramics at the site were recovered from Unit 3 (Tables 2 and 3). Unit 2 had the next greatest frequency and weight of ceramics, although all of the units had a relative abundance of ceramics. The paddle and anvil technique was employed by the Kumeyaay to produce pottery, which they used pots for the cooking of foods, storage, and as funerary urns, in addition to other purposes.

The chipped stone analysis has not been completed, but a few remarks can be made on the collection. Identification of chipped stone at the site was particularly difficult because of the presence of gravels from the road and the leach line. Because material types used by the Kumeyaay are also used in crushed gravel, it can be very difficult to distinguish gravel from chipped stone. Because of this, we included only obvious flakes or cores in this category. These have clear features that result from flaking, such as striking platforms and bulbs of percussion. Possible chipped stone that lacked these features were placed in a category called "angular gravels." These are still under analysis, and have not been reported in any of the tables in this report.

Most of the chipped stone (n = 1,504, all chipped stone) recovered in the 1999 field season is made from volcanic stone that ranges from fine-grained to course-grained. Some of the fine-grained chipped stone is meta-volcanic or felsite. The next most common are obsidian flakes (n = 464, 31%). Ten obsidian samples were submitted to Steve Shackley at U.C. Berkeley for sourcing; all ten come from Obsidian Butte, which is the closest obsidian source in the region, approximately 45 miles to the east in Imperial County. We are still waiting on the results of the obsidian hydration analysis. Most of the obsidian were found in Unit 2 (39%). Unit 4, which on the whole had fewer artifacts than the other areas of the site, had the next highest frequency of obsidian flakes (17%). This is similar to the high density of obsidian flakes that were observed on the surface in the area of this unit.

Eleven projectile points were recovered from the 1999 excavations, four of which are whole or almost whole. Seven of the points are obsidian, two are metavolcanic, and two are quartz. The points have not been measured and identified according to type; however, we found both Desert Side-notched and Cottonwood points. Guerrero (this volume) provides a discussion of the points. A number of tools and cores were identified during sorting and cataloguing. In summary, most of the assemblage consists of debitage made predominantly of volcanic rock from the region, although 31 percent of the chipped stone collection is obsidian.

Thirty-nine ground stone objects were recovered from the excavation units at the site (Table 2), most of which are fragmentary. Seven objects identified as ground stone are manos or mano fragments, five are metate fragments, and the remainder are probable mano or metate fragments, but need to be examined in greater detail. Unit 3 had the highest frequency of ground stone, although it was present in all of the other units except Unit 4. Ground stone does not appear to predominate in any of the levels at the site (Table 3). Most pieces are made of volcanic stone, but this need to be examined in greater detail.

Fire-affected rock and baked clay were found in limited quantities at the site. Units 3 and 5 were the only units in the 1999 excavations that had fire-affected rock (Table 2). The majority (20 out of 21 pieces) were found in the lowest level (80-90 cm) of Unit 3 (Tables 2 and 3). Baked clay was found in each unit except Unit 4 (Table 2). The highest frequency of baked clay (105 pieces, 42.92 grams) was in the 30-40 cm level of Unit 1 (Table 3). This is the level where Feature 1 was observed (see discussion above). This association strongly supports the idea that Feature 1 represents the remains of a hearth. There was also a relatively high density of baked clay found in the 10-20 cm level of Unit 3, though no features were noted in this unit (Table 3). No fire-affected rock was found in this level.

Four disc beads were found at CA-SDI-945, though these have not yet been thoroughly analyzed. Two of the beads are stone, probably steatite, and are whole. The other two are made from shell and are fragmentary. Steatite outcrops are present on the eastern flank of Stonewall Peak (Parkman 1983:140) of Cuyamaca Rancho State Park and probably are the steatite source for the beads. The shell beads need to be examined in greater detail in order to determine their material and possible origin. I looked at them quickly and believe they were both made from *Olivella*

sp., but this identification needs to be confirmed by a bead expert. We plan to send the beads to Chester King for a more complete analysis. Three of the beads are from Unit 3, and one from Unit 5 (Tables 2 and 3).

Twenty-three fragments of steatite were found at the site, besides the two disc beads. These fragments still need to be examined in greater detail. Some may have evidence of grinding on them, but none of the pieces appears to be an obvious artifact. It is important, however, that a detailed analysis of the steatite be completed before any definitive statements can be made. Steatite was present in every unit except Unit 4 (Table 2).

Small fragmented pieces of metal, glass, foil, and plastic make up the historic/modern artifact assemblage at SDI-860. These items are recent in origin and thus intrusive. Historic remains are more common in the upper levels of all the units than in the lower levels, although the presence of some historic remains in the lower levels indicates that there was disturbance throughout the units (Table 3). The presence of historic remains in the units is most likely a result of burrowing animals such as gophers and ground squirrels. Despite the presence of historic remains throughout the site, it is encouraging that there are few in the lower levels and suggests that the site, although disturbed, still maintains some semblance of integrity.

Other remains from the site include graphite, tourmaline crystals, and mica. Tourmaline and graphite can be found in the general San Diego region, but are not native to the site; both materials would have to have been brought in. The four tourmaline crystals at the site are relatively small in size. Three came from Unit 1, and the fourth is from Unit 3. Carmen Lucas expressed concerns about the tourmaline crystals because of their possible use in ceremonial contexts. Nine pieces of graphite were found, from all of the units except Unit 4 (Tables 2 and 3). Twelve fragments of mica were found at the site (Table 1). The significance of mica at the site is unknown. We plan to look at these remains in much greater depth in a future report.

CONCLUSION

Given the limited nature of excavations at SDI-945, a tremendous amount of information was gained about the site. The results of these excavations yielded valuable information in part because fine-mesh screening in conjunction with laboratory sorting was conducted. Nevertheless, there are a number of unanswered questions that need to be addressed with further archaeological investigations.

A wide range of artifact types and cultural remains were recovered from the site, indicating that a number of different activities occurred there. The abundance of ceramics suggests that the site was occupied during the late prehistoric period, at least after A.D. 900 or 1000, and perhaps more significantly, that pottery was used extensively. The most common uses of ceramics among the Kumeyaay are cooking and storage. It is likely that both activities occurred at the site. A more thorough analysis of the ceramics will be completed in the near future, in order to assess the types of vessels present at the site, their origin, and their function.

Burnt animal bone constitutes over half of the faunal assemblage by count and weight and most likely resulted from cultural activities, such as roasting or other methods of cooking meat. Other evidence of cooking, or at the least of hearths, can be seen in Unit 1, 30-50 cm, where a possible hearth was observed in conjunction with baked clay. Fire-altered rock, rock rings, rock clusters, and baked clay from other portions of the site also suggest possible hearths in the area where Units 1, 2, 3, and 5 were excavated. There is little or no evidence for hearths or cooking activities in Unit 4, which lacks baked clay and fire-altered rock. Moreover, Unit 4 yielded only seven bones, of which only two are burnt (see Wake 1999).

Other evidence of food preparation can be seen in the large quantities of acorns and seeds identified in the flotation samples from the site. A wide range of important food plant remains were identified in the samples, suggesting that the site was occupied over a fairly long time period. The abundant bedrock milling features, as well as the ground stone, indicate that the processing of plant, and perhaps animal foods, was a common activity at the site. The presence of both metate surfaces and mortars suggest that the grinding and pounding of plant remains was also important.

Information on seasonality at the site is difficult to assess. Plant remains that are commonly collected in the summer and fall were in abundance, as well as plant remains that may have been collected in the spring and possibly the winter. Storage further complicates the interpretation of these remains. The faunal remains do not indicate any clear evidence for seasonal occupation. Arrow points, in addition to the faunal remains, suggest that hunting occurred here. Apparently a relatively wide range of animal and plant foods were consumed or processed at the site, most of which were probably available locally. No clear evidence of horticulture was discovered.

Ornamentation was present in Units 1, 3, and 5 in the form of stone and shell disc beads and the eagle bone tube that appears to have been worn as an ornament because of the wear marks on the tube. Shipek (personal communication) stated that only high-status individuals could wear an eagle-bone bead. Eagle bone tubes such as the one from SDI-945 are apparently rare in the Cuyamaca region, as True (1970) did not mention finding any at SDI-860, his "type site" for the Cuyamaca complex.

The presence of two fragments of a smoking pipe indicates that there may have been ceremonial activities occurring at the site, as smoking of pipes occurred primarily in religious contexts. Other possible evidence of ceremonial activity are the tourmaline crystals, the eagle-bone tube, the seal-head effigy fragment, and the ceramic discs. Eagles are associated with a number of important Kumeyaay ceremonies, including the Eagle Dance (Luomala 1978). Eagle bone probably were not available to everyone. The meaning of the seal-head effigy (found on the surface during the 2000 field season) is enigmatic, although its presence suggests some ties to the coast. The ceramic discs may have been gaming pieces. Prehistoric gaming was often associated with ritual.

In summary, a wide range of activities occurred at CA-SDI-945. From the five units that we excavated during the 1999 season, it appears that the area around Unit 4 was used very differently than the areas where the other units were placed. There is more evidence for residential activities in the area of Units 1, 2, 3 and 5, in the form of baked clay, fire-cracked rocks, a possible hearth feature, and the presence of shell, bone, and ornamentation. The portion of the site where Unit 4 was situated may represent an area that was outside of the residential portion of the settlement. We hope to learn more about this area of the site after analysis of the 2000 season's remains. This site is not as large as some others in Cuyamaca (such as SDI-860). CA-SDI-945 probably represents a hamlet of about three to seven houses and not a larger village settlement. Further archaeological investigations at the site should provide important additional information on significant research questions. A radiocarbon date from a charcoal sample from Feature 1 should provide more information on the dating of that feature and the site. The collection of more samples from reliable contexts for radiocarbon dating will aid in determining when the site was occupied. Hydration on numerous obsidian flakes will add further information on the date of the site. A thorough analysis of the ceramics at the site should provide more information on the function of pottery use. Moreover, it may provide data on the spatial structure of the site, particularly in the area of the site where Unit 4 was situated.

A detailed analysis of the chipped and ground stone should shed light on the range of tool types and activities at SDI-945. Finally, data on mobility and exchange can be examined through obsidian studies and thin-section analysis and neutron activation studies of the ceramics from the site. With these types of analysis, differences can be distinguished between wares made in the mountains and those made in the desert.

Although it is obvious that the site at Camp Hual-cu-cuish has been severely impacted by approximately 60 years of Boy Scout activity, in addition to natural disturbance processes by burrowing rodents, the site still has enough integrity to provide significant information on its prehistoric use by the Kumeyaay Indians. It is apparent from the artifact assemblage and the features at the site that SDI-945 was a residential site occupied by a relatively small group of people during the late prehistoric period. The artifact assemblage is very similar to that from True's Cuyamaca type site (see Guerrero's paper in this volume for a more thorough discussion of this issue). Continued work will provide even more information on the site and its significance in the Cuyamaca region.

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(Footnotes)

[1] "Cuyamaca ovals" are similar to bedrock mortar features, but the mortar depressions are oval in shape, not circular. These are named "Cuyamaca ovals" because their distribution is primarily restricted to the region of Rancho Cuyamaca State Park and its immediate vicinity.