

UC Merced

Journal of California and Great Basin Anthropology

Title

The Clemmer Collection
Revisited: Re-evaluation
of Findings from the 1961
Excavation of CA-SLO-239,
Morro Bay, San Luis Obispo
County, California

Permalink

<https://escholarship.org/uc/item/454588f0>

Journal

Journal of California and Great Basin Anthropology, 37(1)

ISSN

0191-3557

Authors

Jones, Terry L.
Knight, David A.
Porcasi, Judith F.

Publication Date

2017

Peer reviewed

REPORTS

The Clemmer Collection Revisited: Re-evaluation of Findings from the 1961 Excavation of CA-SLO-239, Morro Bay, San Luis Obispo County, California

TERRY L. JONES

Department of Social Sciences,
California Polytechnic State University
San Luis Obispo, CA 93407-0329

DAVID A. KNIGHT

Department of Social Sciences,
California Polytechnic State University
San Luis Obispo, CA 93407-0329

JUDITH F. PORCASI

Cotsen Institute of Archaeology,
University of California
Los Angeles, CA 90095

Excavated in 1961, CA-SLO-239 at Morro Bay in San Luis Obispo County produced a large but undated assemblage of stone, shell, and bone artifacts. The first radiocarbon dates obtained from faunal samples (n=5) complement temporal diagnostics that indicate the site was occupied primarily during the early Middle and Middle-Late Transition periods. A single E2 Thick-Lipped Olivella bead suggests some minimal site use during the Late Period, but the lack of Desert Side-notched and Coastal Cottonwood projectile points suggests the site was largely abandoned after 700 cal B.P. Limited provenience data constrain our ability to define components more precisely. Faunal remains show an emphasis on marine animals for the entire span of occupation. Lack of evidence for occupation during the late Middle Period (ca. 1,550-900 cal B.P.) is consistent with other findings from the Morro Bay area, while a focus on marine fauna is consistent with previous findings for the Medieval Climatic Anomaly. The site produced two artifacts of possible extra-local origin, including an antler harpoon point with a line hole similar to examples from northwestern North America, and a

stone labret. Labrets are known from the Sacramento/San Joaquin Valley, so the origin of that artifact might not be distant. Whether the harpoon point arrived with Aleutian otter hunters during the historic era or by some other means at another time cannot be determined.

In 1961, John Clemmer, under contract to the Central California Archaeological Foundation, completed the first major excavation in the Morro Bay area of San Luis Obispo County, at CA-SLO-239. Preceded only by work at Whale Rock Reservoir (Reinman 1961) and Arroyo Grande (Wire 1961), this was one of the first professional excavations in the region, and it was undertaken to mitigate impacts from construction of a parking lot for the Morro Bay Power Plant. Typical of such work at the time, the investigation involved a substantial excavation volume (ca. 150 m³) that resulted in the recovery of a large collection of formal artifacts and documentation of multiple features, including a house floor and ten human burials. In his report on the project, Clemmer (1962) identified three “periods” in the midden deposit and correlated them with arbitrary excavation levels, but he was unable to secure radiocarbon dates or establish the actual age of the occupation(s) by any other means. The project resulted in a large but undated collection of artifacts, feature descriptions, human skeletal remains, and faunal remains that have been curated at California State Parks for the last 55 years.

In 2013 we borrowed the Clemmer collection¹ from California State Parks with a plan to establish the site’s chronology, re-assess its artifacts, and identify the faunal elements. Here we report the results of that effort, including the site’s first radiocarbon dates. Owing to uncertainty about sample provenience, the dating results are not perfect, but in combination with temporally diagnostic artifacts, they suggest that CA-SLO-239 was occupied primarily during early Middle and Middle-Late Transition (MLT) periods. This tentative chronology allows for the site’s formal artifacts to be used to help refine the cultural patterns that distinguish these phases in the San Luis Obispo area. The pattern of site use is also consistent with the overall record of occupation on the shores of Morro Bay, which shows a dearth of

evidence for occupation during the late Middle Period (Jones et al. 2016).

In addition to the general value of the overall collection, two artifacts are unusual for the central coast and merit renewed scholarly exposure: an antler harpoon point with a line hole (referred to as an “Aleutian harpoon” in the original report), and a stone labret. The harpoon point indeed resembles specimens from the Northwest Coast and Alaska, while the labret is similar to examples from central California as well as from Alaska. Both artifacts may have extra-local origins, but the harpoon point seems more definitive in this regard owing to its non-Californian morphology. Possible explanations for the presence of an Alaskan harpoon point at CA-SLO-239 include transport in the body of a migratory sea mammal or direct transmission via a visit to central California by northern maritime peoples. An attempt to establish the age of the harpoon point and determine when it arrived in central California via AMS dating failed due to a lack of collagen in the antler.

SITE DESCRIPTION

CA-SLO-239 is situated on a low bluff 0.9 km. east of Morro Rock, on the shore of Morro Bay in San Luis Obispo County (Fig. 1). Prior to construction of breakwaters to stabilize the entrance to Morro Bay in the 1940s, the site was situated just inside and near the mouth of the bay. The archaeological deposit is described in the report as a shell midden with an average depth of 2.5–4.0 feet (Clemmer 1962). The main focus of the 1961 investigation was the central portion of the deposit, where Clemmer identified a dense shell layer (dominated by various clams) at a depth of 18–36 inches below surface and overlying a roughly oval house floor. The house floor was ca. 30 feet in diameter with a mean depth of 4 feet below the surface. Clemmer’s excavation showed that the shell layer conformed reasonably well with the house floor beneath it, suggesting that an abandoned house had been used as a shell refuse pit later in time. Regardless of the accuracy of that interpretation, Clemmer’s documentation indicates that the central portion of the site was marked by three superimposed layers: (1) an upper homogeneous midden with small shell fragments (0–18 inches); (2) a shell layer/house floor (18–36 inches); and (3) a midden deposit beneath it (36–60 inches below surface).

METHODOLOGY

Clemmer established a grid of 5 ft. × 5 ft. excavation units with a central datum in the middle of the parking lot. Initially he excavated four dispersed units (2, 3, 5, and 6) to explore the deposit, and then cleared a long profile of midden exposed on the edge of the parking lot. When the house floor was discovered early in the investigation, he focused most of his remaining efforts on that feature, laying out a 35 ft. × 35 ft. block of 49 units over the area of the shell layer/house floor. He excavated 36 of these in all. He also established four 5 ft. × 5 ft. test units away from the central portion of the site (identified as “control units”) as well as two 5-foot-wide trenches. Finally, he excavated two additional “control units” on the edges of the deposit. In total, seven test units were excavated, along with 36 in a block over the house floor.

Units were excavated in 6-inch arbitrary levels. The first three units were screened with 1/8-inch mesh. Due to time constraints, Clemmer abandoned screening after completing these first three units. Because most of the units were not screened, the site collection is dominated by larger objects that would be recovered by excavators digging with shovels and not sifting. Obviously, this reduces the comparative value of the artifact collection relative to materials recovered from more controlled contexts. Still, we feel that the materials from CA-SLO-239 have some interpretive value as long as the methodological limitations are recognized.

Clemmer’s sampling procedure for faunal remains was also fairly typical for the time. Shells and shell fragments were not collected other than those from two control units that were used to characterize the site’s invertebrate fauna (Curtis 1962). The only exception to this procedure was the collection of shell artifacts and whole *Olivella*² shells. Unfortunately, the shell fragments collected from the control units were not curated and were not available as potential dating samples. Fish bones were not collected in any systematic way, and only those modified into artifacts were included in the curated collection. Large whole or nearly whole mammal and bird bones were collected from the units whenever they were encountered; however, bone fragments, which tend to be abundant in local archaeological deposits, were not.

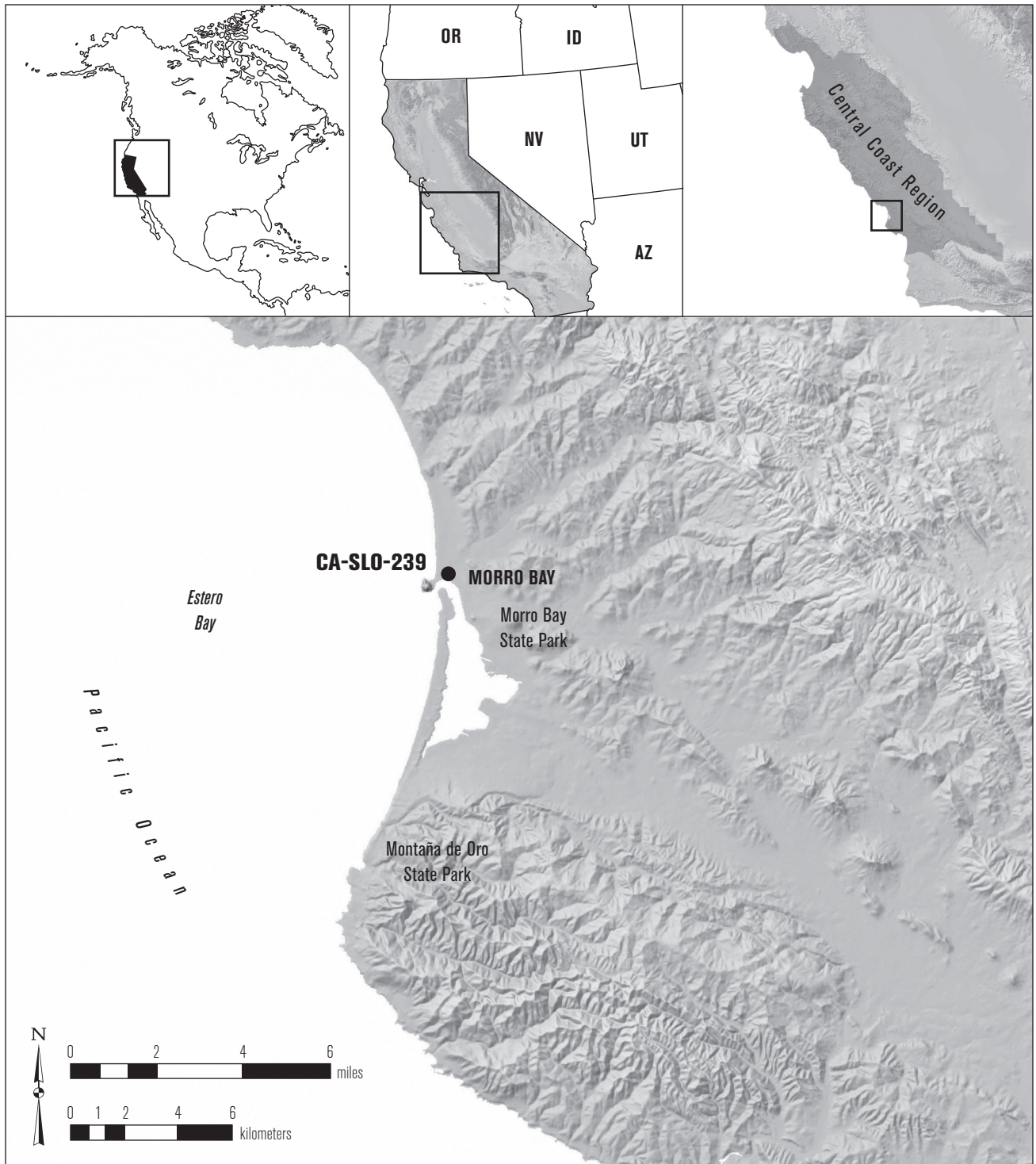


Figure 1. Location of CA-SLO-239 and other sites mentioned in text.

Table 1
SUMMARY OF THE CA-SLO-239 FLAKED STONE ASSEMBLAGE

Class	Monterey chert	Franciscan chert	Obsidian	Other	Total
Cores	5	5	0	0	10
Core tool (graver)	0	1	0	0	1
Debitage	384	380	0	28	764
Bifaces	19	18		0	37
Informal flake tools	20	28	0	1	49
Formed flake tools	1	5	0	0	6
Drill/gravers	4	1	0	0	5
Contracting-stemmed projectile points	12	14	0	0	26
Lanceolate projectile points	8	2	0	0	10
Small leaf-shaped projectile points	12	9	1	0	22
Indeterminate projectile points	25	10	1	1	37
Total	490	473	2	30	967

THE COLLECTION

The re-analyzed CA-SLO-239 collection includes 1,123 specimens: 1,064 artifacts and 59 unmodified faunal elements (including nine *Olivella* shells). Unfortunately, provenience data were recorded unevenly in the collection catalog, and the majority of the materials cannot be assigned to specific depths or levels within the deposit.

Artifacts

The collection includes 968 flaked stone implements, 24 pieces of ground stone (including 16 tarring pebbles), 30 bone implements, 32 beads, nine *Olivella* shells, three shell ornaments, and eight non-bead shell artifacts (four fishhooks and four fishhook blanks). Our emphasis in re-evaluating these items was on the more formal artifacts that were thought to have the greatest potential as time markers.

Flaked Stone

The flaked stone assemblage is dominated by pieces ofdebitage (n=764), followed by projectile points (n=95), bifaces (n=37), informal flake tools (utilized flakes, n=49), formed flake tools (n=6), drill/gravers (n=5), one core, and one core tool (Table 1). Owing to the unsystematic collecting strategy, it was decided that there would be little gained in attempting to evaluate the stages of flaked stone-tool production vis-à-visdebitage and bifaces. Rather, our emphasis was on the formal projectile points.

Ground Stone

The collection includes eight ground-stone objects along with 16 tarring pebbles. The specimens include two complete small boulder/cobble mortars of light colored siliceous sandstone. One of the specimens was extensively pecked at one end, suggesting that it was in the process of being transformed into a more symmetrical bowl mortar. The lip fragment of a large flower-pot mortar was also recovered. Based on the curve of the specimen, the complete mortar would have had a diameter of 50–80 cm. Other ground stone items include one small sandstone milling slab fragment, one small, complete pestle that could have worked effectively with either of the boulder/cobble mortars, one fragment of a hopper mortar with a substantial (115 mm. × 20 mm.) asphaltum stain, and one unusual grooved artifact that seems to have been fashioned from a recycled cylindrical pestle fragment. This grooved stone likely functioned as a fishing weight. All of these artifacts were fashioned from dacite, a local volcanic that dominates the geology of Morro Rock and the rest of the Morros. The 16 tarring pebbles are typical rounded pebbles and small cobbles with at least 50% of their surface coated with tar. The final ground stone specimen is a cylindrical labret of rhyolitic tuff (Fig. 2). A second labret, described as identical but smaller than the one shown here, was reported by Clemmer (1962:44) but could not be located in the current collection. While not as common as dacite, rhyolitic tuffs are known from

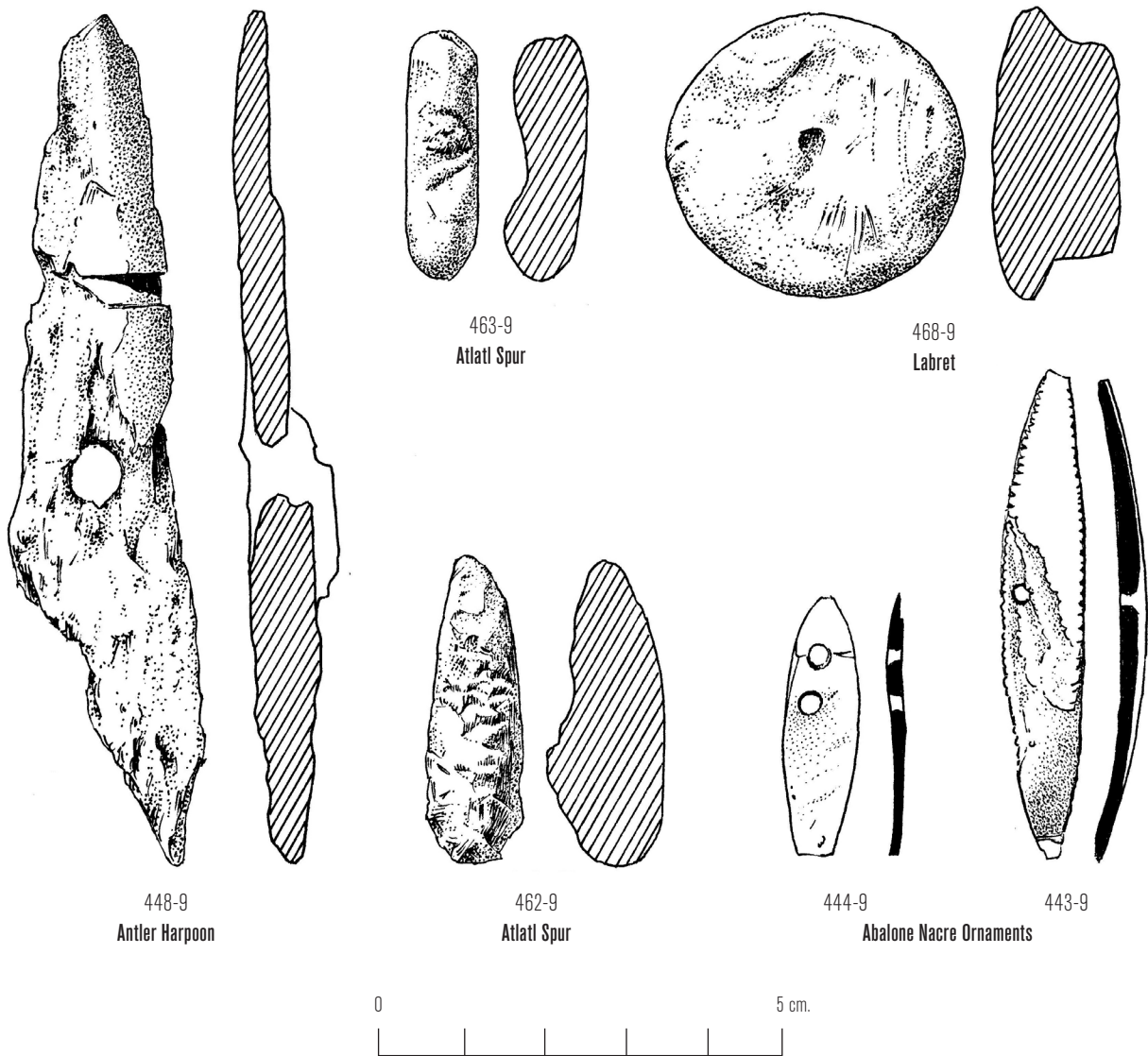


Figure 2. Artifacts from CA-SLO-239.

volcanic formations within San Luis Obispo County (Cole and Stanley 1998; Ernst and Hall 1974), but it is unknown if any of these were the source of the stone used to manufacture this artifact. The rock, however, is definitely unique among all of the other materials in the collection. The specimen is discussed in more detail below.

Bone Artifacts

Clemmer (1962) described 31 bone artifacts from CA-SLO-239, including seven whistles, two antler tine flakers, two tubes, six awls, three “skewers,” one drilled

bone fragment, one incised bone, one fish gorge (Fig. 3), two atlatl spurs, one “Aleutian harpoon point” (Fig. 2), one sea otter penis bone, one sword, and three modified bird bones. The current collection includes 30 specimens: eight awls, five whistles (see example in Fig. 3), three modified otter baccula, three modified bird bones, three pins (Clemmer’s “skewers”), two antler flakers, two atlatl spurs (Fig. 2), one cut and battered bone, one tube, one gorge (Fig. 3), and one antler harpoon point with a line hole (Fig. 2). Ten of the artifacts were complete enough to allow determination of species and were included in the tabulation of the site’s fauna.

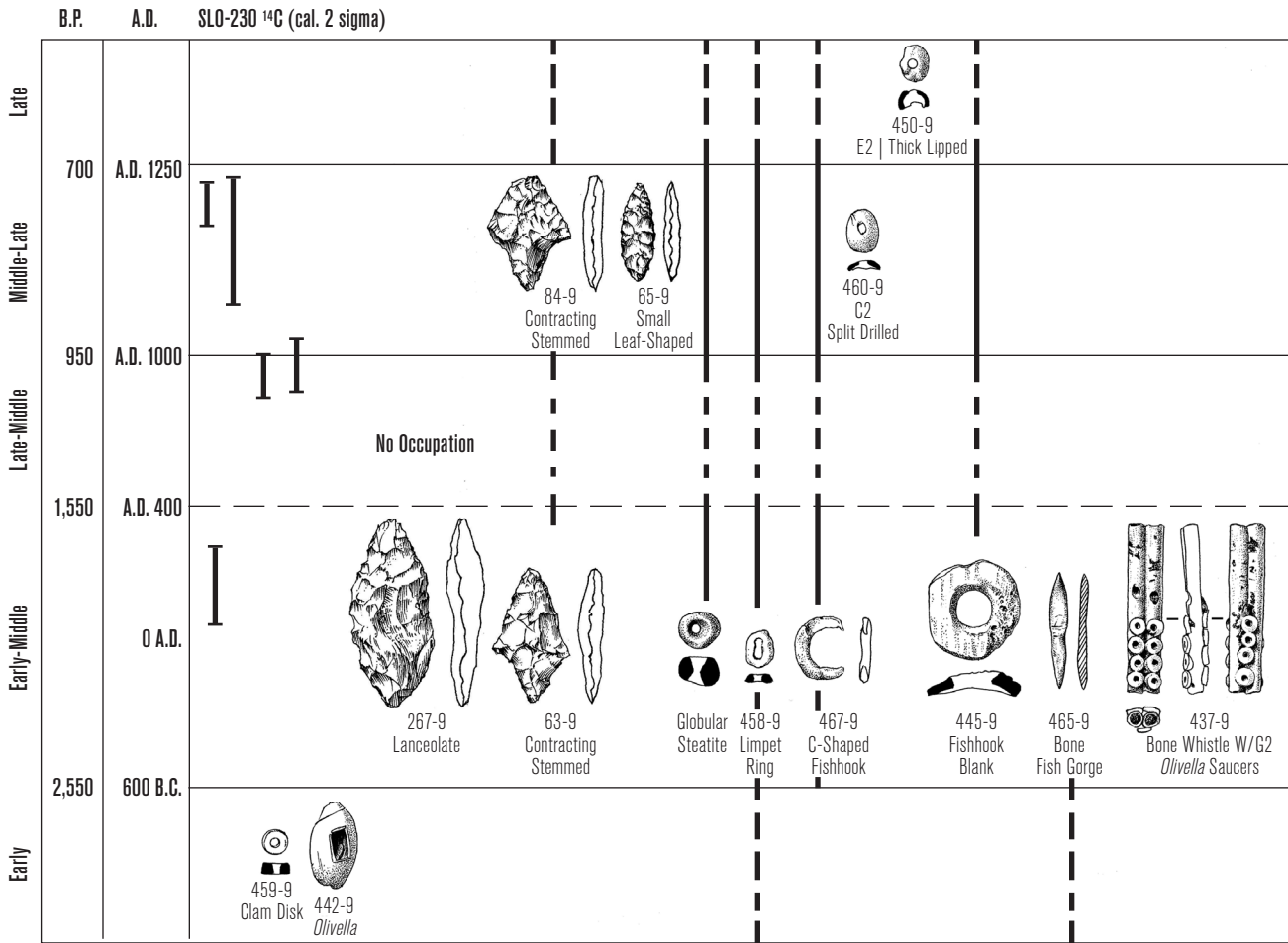


Figure 3. Hypothesized chronological summary of CA-SLO-239 artifacts showing possible gap in occupation during the late Middle Period. Dashed lines represent portions of the lifespan of types unrepresented at the site. Bead types from Bennyhoff and Hughes (1987). Projectile point types from Jones (1993).

Beads and Ornaments

Clemmer reported a total of 489 beads, including one of steatite, two fish vertebrae beads, and 486 shell specimens. One of the latter was made from Pismo clam (*Tivela stultorum*), while the rest were made from purple olive shell. Some 455 beads appear to have been associated with Burial 10, which was interred beneath the house floor. These beads were not included in the collection that we borrowed because they were grave-associated. The current collection consists of only 32 beads, including the steatite specimen and two decorated fish vertebrae (Table 2). A total of eight whole unmodified *Olivella* shells was also included in the collection, although one of these was used as a radiocarbon dating sample. There is one *Olivella* shell with a rectangular wall section cut away that appears to represent an intended bead. In

addition, the collection includes three shell ornaments; one is made of mussel shell and two of abalone.

Other Shell Artifacts

The remaining non-bead shell artifacts include four shell fishhooks and four fishhook blanks (Fig. 3). Clemmer (1962) originally reported seven hooks and three blanks.

Faunal Remains

As a result of the field sampling strategy, the vertebrate faunal remains in the curated collection are limited to a total of 50 whole or nearly whole specimens. Unfortunately, most of the bones did not have provenience information other than site number.

Identification of the remains was completed by Judy Porcasi, who used the comparative collection at the

TABLE 2
BEADS AND ORNAMENTS FROM CA-SLO-239

Specimen	Unit	Level (in.)	Length (mm.)	Width (mm.)	Thickness (mm.)	Perforation Diameter (mm.)	Material	Clemmer type	Type ^a	Figure (herein)
403	S1W14	24-30	11.4	10.5	6.8	4.3	Steatite	Barrel	—	3
423	1S 3E	54-60	28.4	19.1	2.5	1.4	<i>Mytilus</i>	Ornament	—	—
424	S1W14	18-24	20.1	—	—	3.2	<i>Olivella</i>	Spire-lopped	A1	—
425	3N2E	18-24	18.7	—	—	4.4	<i>Olivella</i>	Spire-lopped	B2	—
427	2N2W	30-36	15.5	—	—	3.9	<i>Olivella</i>	Spire-lopped	B2	—
428	5N12W	—	19.0	—	—	2.1	<i>Olivella</i>	Spire-lopped	A1	—
429	14W1S	—	14.3	—	—	4.1	<i>Olivella</i>	Spire-lopped	A4	—
430	1N3E	13-24	12.9	—	—	4.1	<i>Olivella</i>	Spire-lopped	A1	—
431	7N16W	24-30	8.9	—	—	2.7	<i>Olivella</i>	Spire-lopped	A1	—
432	1N3E	12-18	16.6	—	—	1.3	<i>Olivella</i>	Spire-lopped	B2	—
434	1E3N	12-18	22.6	—	—	3.2	<i>Olivella</i>	Spire-lopped	A1	—
435	1E3N	42-48	23.0	—	—	1.2	<i>Olivella</i>	Spire-lopped	A1	—
436	1E3N	24-30	10.6	—	—	3.5	<i>Olivella</i>	Spire-lopped	B3	—
437a	—	—	4.7	4.7	1.0	1.8	<i>Olivella</i>	3d small disk	G2a	3 ^b
437b	—	—	5.1	5.1	1.0	1.4	<i>Olivella</i>	3d small disk	G2a	3 ^b
437c	—	—	4.9	4.9	1.3	1.5	<i>Olivella</i>	3d small disk	G2a	3 ^b
437d	—	—	4.7	4.7	1.3	1.4	<i>Olivella</i>	3d small disk	G2a	3 ^b
437e	—	—	5.1	5.1	1.1	1.4	<i>Olivella</i>	3d small disk	G2a	3 ^b
437f	—	—	4.8	4.8	1.3	1.8	<i>Olivella</i>	3d small disk	G2a	3 ^b
437g	—	—	5.2	5.2	1.5	1.5	<i>Olivella</i>	3d small disk	G2a	3 ^b
437h	—	—	4.8	4.8	1.5	1.5	<i>Olivella</i>	3d small disk	G2a	3 ^b
437i	—	—	5.1	5.1	1.5	1.5	<i>Olivella</i>	3d small disk	G2a	3 ^b
437j	—	—	5.1	5.1	1.4	1.4	<i>Olivella</i>	3d small disk	G2a	3 ^b
437k	—	—	4.4	4.4	1.1	1.7	<i>Olivella</i>	3d small disk	G2a	3 ^b
437l	—	—	4.8	4.8	1.1	1.4	<i>Olivella</i>	3d small disk	G2a	3 ^b
442-9	—	—	23.6	23.6	—	3.6	<i>Olivella</i>	Rectangular bead detritus	—	—
443-9	—	—	59.9	12.8	3.7	3.1	<i>Haliotis cracherodii</i>	Ornament	—	2
444-9	—	—	31.5	9.8	2.4	2.6 3.0	<i>Haliotis cracherodii</i>	Ornament	—	2
446	—	—	18.7	18.7	9.7	4.2	Fish vertebra <i>Triakis semifasciata</i>	Ornament asphaltum plastered on sides	—	—
447	—	—	14.9	14.0	14.0	0.9	Fish vertebra	Ornament drilled hole down center	—	—
458	—	—	9.2	7.1	2.0	2.5	<i>Olivella</i>	3a1	E2	3
459	—	—	7.3	7.3	3.5	1.9	Limpet	Unclear 1 Limpet Ring	—	3
460	—	—	11.6	8.9	1.0	1.9	Clam <i>Olivella</i>	V1a1	Clam Disk	3
476	—	—	9.9	—	—	3.0	<i>Olivella</i>	Oval saucer Spire-lopped	C2 A1	3 —

^aFollowing Bennyhoff and Hughes (1987).

^bAppliqued to bird bone whistle.

Cotsen Institute of Archaeology, University of California, Los Angeles. The unmodified subsistence remains represent nine species and one element that could only be identified to the family level (Table 3). The subsistence debris is dominated by marine mammals (NISP=39; 78%), with California sea lion (*Zalophus californianus*; NISP=13) and sea otter (*Enhydra lutris*; NISP=13) being

the most abundant. Nine bones represent terrestrial mammals: coyote (NISP=5; 10%) and black-tailed deer (NISP=4; 8%). Two of the bones represent a marine bird (*Pelecanus* spp.). When bone tools are added to the faunal tabulation, total NISP increases to 65, with 12 species and two families represented (Table 3). This larger sample shows a higher representation of terrestrial mammals

Table 3
SUMMARY OF FAUNAL REMAINS FROM CA-SLO-239 (INCLUDING BONE TOOLS)

Common name	Taxon	NISP	% NISP	Weight (g.)	% Weight	NISP Tools	Total NISP	% NISP
Terrestrial Mammals								
Black-tailed deer	<i>Odocoileus hemionus</i>	4	8.00	76.52	6.09	0	4	6.15
Tule elk	<i>Cervus elaphus</i>	0	0.00	0.00	0.00	1	1	1.53
Coyote	<i>Canis latrans</i>	5	10.00	80.34	6.39	0	5	7.69
Deer and elk	Cervidae	0	0.00	0.00	0.00	6	6	9.23
Subtotal		9	18.00	156.86	12.49	7	16	24.61
Marine Mammals								
Sea otter	<i>Enhydra lutris</i>	13	26.00	261.45	20.82	3	16	24.61
Northern elephant seal	<i>Miroa angustirostris</i>	2	4.00	160.43	12.78	0	2	3.08
Harbor seal	<i>Phoca vitulina</i>	4	8.00	59.34	4.73	0	4	6.15
Northern fur seal	<i>Callorhinus ursinus</i>	5	10.00	73.66	5.87	0	5	7.69
California sea lion	<i>Zalophus californianus</i>	13	26.00	490.93	39.11	0	13	20.00
Dall's porpoise	<i>Phocoenoides dalli</i>	1	2.00	6.00	0.48	0	1	1.53
Eared seals	Otariidae	1	2.00	28.03	2.23	0	1	1.53
Subtotal		39	78.00	1,079.84	86.02	3	42	64.59
Marine Birds								
Pelican	<i>Pelecanus</i> spp.	2	4.00	18.69	1.72	3	5	7.69
Common loon	<i>Gavia immer</i>	0	0.00	0.00	0.00	1	1	1.53
Double-crested cormorant	<i>Phalacrocorax auritus</i>	0	0.00	0.00	0.00	1	1	1.53
Subtotal		2	4.00	18.69	1.72	5	7	10.77
Grand total		50	100.00	1,255.39	100.23	15	65	99.97

(NISP=16; 25%), but marine species remain dominant. Owing to the non-systematic recovery strategy and the small size of the collection, it is difficult to draw any firm conclusions regarding subsistence activities; however, the available data suggest a focus on marine animals.

CHRONOLOGY

Our primary goals in re-assessing the Clemmer collection were to establish its age and to identify any possible temporal components within the overall span of the site's occupation. Sources of chronological information included radiocarbon dates and temporally sensitive artifacts, including beads, ornaments, projectile points, and some bone implements.

Radiocarbon Dates

While Clemmer's site report describes a number of ash and charcoal features associated with the house floor, no

samples from those features are included in the curated collection. Samples available for radiocarbon dating were limited to unmodified bones, whole *Olivella* shells, and shell and bone artifacts. Virtually all of the shell and bone artifacts were coated with thick applications of clear lacquer that was apparently applied to preserve specimens, but which rendered them problematic for radiocarbon dating. The only uncontaminated organic objects in the collection that could be used for dating were whole *Olivella* shells (some unmodified), complete animal bones, and some bone artifacts. As noted above, however, none of the unmodified faunal elements had vertical or horizontal provenience information. After the faunal remains were identified to species by Porcasi, four specimens were randomly selected for submission to Beta Analytic for radiocarbon dating: one unmodified *Olivella* shell, two bones from marine mammals (one northern fur seal [*Callorhinus ursinus*], one sea otter [*Enhydra lutris*]), and one bone from a black-tailed deer (*Odocoileus*

Table 4
SUMMARY OF FAUNAL REMAINS FROM CA-SLO-239 (INCLUDING BONE TOOLS)

Laboratory No.	Material	Conventional Age (RCYBP)	Calibrated (290+/-35) ^a 2 sigma	Median
Beta-390140	<i>Callianax biplicata</i> shell	2,480 ± 30	1,885–1,685 cal B.P.	1,785 cal B.P.
Beta-390141	Marine bone (<i>Callorhinus ursinus</i>)	1,510 ± 30	880–670 cal B.P.	775 cal B.P.
Beta-390142	Marine bone (<i>Enhydra lutris</i>)	1,590 ± 30	930–735 cal B.P.	835 cal B.P.
Beta-390144	Terrestrial bone (<i>Odocoileus hemionus</i>)	1,170 ± 30	1,180–1,045 cal B.P. 1,030–985 cal B.P.	1,115 cal B.P. 1,010 cal B.P.
PSUAMS-1152	Cervid antler atlatl spur (463-9)	930 ± 20	910–790 cal B.P.	850 cal B.P.

^aMarine shell and bones only; from Ingram and Southon (1996).

hemionus). Two bone/antler artifacts were also submitted to Pennsylvania State University for AMS dating: the Aleutian bone harpoon (specimen 448-9) and one atlatl spur (specimen 463-9). The former proved to have no collagen, however, and therefore could not be dated.

The lack of depth provenience from the dating samples nullified any attempt to define vertical temporal components within the deposit or to associate Clemmer’s arbitrary levels with specific intervals of time. The five radiocarbon dates suggest two intervals of site occupation. The whole *Olivella* shell produced a two-sigma date range of 1,885 to 1,685 cal B.P. (Table 4), which is consistent with what is referred to locally as the early Middle Period (2,550–1,550 cal B.P.), although the full range of early Middle Period occupation cannot be established. The four bone collagen dates produced the following two-sigma ranges: fur seal, 880–670 cal B.P.; sea otter, 930–735 cal B.P.; deer, 1,180–1,045 cal B.P. and 1,030–985 cal B.P.; and cervid antler (atlatl spur), 910–790 cal B.P. Altogether the bone samples suggest an occupation span from ca. 1,100–700 cal B.P. (cal A.D. 900–1280), which corresponds reasonably well with the Middle-Late Transition (950–700 cal B.P. or cal A.D. 1000–1250).

Temporally Sensitive Beads and Ornaments

Clemmer’s classification of the beads reflected the as-yet unrefined status of bead typologies in California circa 1962. He sorted the beads into seven types based primarily on the classification system of Bennyhoff and Heizer (1958). Type VIaI, the thick clam disk, is represented by a single specimen (459-9) in the present collection (Fig. 3, Table 2). These beads are now known to occur during both the Early and Late periods in central

and southern California (King 1990). Type 3a1, thin-lipped (Fig. 3, Table 2), was also represented by a single example (450-9). The specimen is equivalent to Bennyhoff and Hughes’ (1987) type E2, thick-lipped, which is a solid marker for the Late Period in both central and southern California (Bennyhoff and Hughes 1987; Groza et al. 2011; King 1990). Type 3d, the small disk in the Bennyhoff and Heizer (1958) typology, can be recognized as a wall bead. This was by far the most abundant type in the collection, represented by 468 examples, including 455 associated with Burial 10 (not available for study). Twelve examples are available in the present collection (437a–437l), all of which are applied via asphaltum to two bird bone whistles (Fig. 3). Based on width measurements (Table 2), these 12 examples conform to Bennyhoff and Hughes’ (1987) type G2, normal saucers, which are now recognized as solid markers of the early Middle Period (Gamble and King 2011; Groza et al. 2011). If the specimens associated with Burial 10 are also G2s, they would indicate that the internment dates to the early Middle Period. Because the pit for this burial extended through the house floor, Clemmer (1962:57) thought this was likely “the only burial contemporary with the occupation of the house.” If this assessment is accurate, it suggests that the house floor was an early Middle Period feature. The degraded condition of Burial 10 as described by Clemmer suggests—albeit speculatively—that the burial was associated with earlier rather than later site occupation.

Clemmer (1962:52) classified one bead (460-9) (Fig. 3) as an “oval saucer,” but this bead clearly exhibits part of the inner shelf of the olive shell and represents type C2, split drilled, in the Bennyhoff and Hughes (1987) typology. This type is now generally recognized

as marking the early Middle Period and Middle-Late Transition (Milliken and Schwitalla 2012:24).

Clemmer (1962:14) also identified 14 spire-lopped *Olivella*. The eight available in the current collection represent type A1, which has no temporal significance (Bennyhoff and Hughes 1987). One (429) is a punched spire-lopped (A4), that also has no chronological significance. Three specimens that we classify as Class B, end-ground (two B2 and one B3), are probably among the beads that Clemmer considered spire-lopped. Type B2 is found in central California during both the Early Period and Phase 1 of the Late Period (Milliken and Schwitalla 2012:20). Type B3 barrels are even less temporally restricted, occurring from the Early Period onward (Bennyhoff and Hughes 1987:122).

One specimen that Clemmer classified as “Unclear 1” can be recognized as a limpet ring (467-9, Fig. 3). These are common on the Pecho Coast to the south (see Codding et al. 2009:14), and appear to have no temporal significance.

The single steatite specimen (403) is a large globular bead similar to artifacts referred to elsewhere as steatite “barrels” (Jones and Ferneau 2002:151). These have been reported from Middle Period contexts in San Luis Obispo (Jones and Ferneau 2002) and Santa Barbara (King 1990) counties, but are not necessarily restricted to that time period.

Two of the artifacts that Clemmer (1962:48) classified as fish vertebra “Unclear 2” are leopard shark vertebra. One (447-9, Table 2) has a drilled perforation through the center while the other (446-9, Table 2) is an ornament smeared with asphaltum to which a small bead was originally attached. The bead, illustrated in Clemmer’s report (1962: Fig. 25G), is missing from the collection. Identical specimens are known from the Santa Barbara Channel from Phase M4 through the Late Period (King 1990:Figs. 15 and 16).

The chronological implications of the non-bead shell artifacts are generally consistent with those of the beads themselves. The shell fishhooks and hook blanks (Fig. 3) are types not found on the central California coast any earlier than the beginning of the Middle Period (Breschini and Haversat 2000; Jones et al. 2007). The remaining non-bead shell artifacts include one abalone nacre ornament (specimen 443-9) with edge incising on one side and a single perforation, and another non-incised nacreous abalone ornament with two drilled perforations.

These most closely resemble Middle and Late Period artifacts from the Santa Barbara Channel.

Overall, the beads and ornaments show little if any indication of pre-Middle Period occupation. Only one *Olivella* shell with a rectangular wall removal scar suggests the possibility of a rectangular Early Period bead (Fig. 3, 442-9). One Class E thick-lipped *Olivella* (Fig. 3, 450-9) is a definitive marker of the Late Period, but the majority of the beads, ornaments, and other shell artifacts are consistent with the Middle and Middle-Late Transition periods.

Bone Artifacts

Most of the bone specimens, including the awls, modified otter baccula, cut and battered bone, antler flakers, pins, modified bird bones, and the tube have little if any chronological significance. However, the five bone whistles (four of which are made of bird bone) represent types that do not appear in the Santa Barbara Channel until the beginning of the Middle Period (King 1990:Fig. 32), which is consistent with the G2 *Olivella* saucer beads that are attached to one of the CA-SLO-239 whistles (437-9). Bi-pointed fish gorges like the single example from CA-SLO-239 (465-9, Fig. 3) disappear from the Channel record at the end of Phase M3 (ca. 1,250 cal B.P.; King 1990:Fig. 1). No definitive bone gorges were recovered from Middle-Late Transition contexts at CA-SLO-9 (Codding et al. 2009) or CA-SLO-457 (Jones et al. 2016), which suggests a similar temporal restriction for these artifacts in San Luis Obispo County. The two bone atlatl spurs, while extremely rare, have unclear chronologies locally, but they appear to represent type IIc (grooved “acorn”) in the White (1989) typology. Ralston and Fitzgerald (2014:104) note that the acorn type is most commonly associated with the Middle Period in central California, but it has also been found in contexts dating as far back as 7,000 years ago. The date obtained from CA-SLO-239 specimen 463-9 demonstrates that the atlatl was in use during the Middle-Late Transition on the central coast. The antler harpoon point with a line hole (448-9, Fig. 2) is an extra-local artifact discussed in more detail below.

Projectile Points

In general, projectile points are not precise time markers on the central coast, but several types that seem to have

been more temporally limited than others help inform our assessment of the chronology of CA-SLO-239.

The 95 specimens in the curated collection represent only three formal types: contracting-stemmed ($n=26$), small leaf-shaped ($n=22$), and lanceolate ($n=10$), along with 37 indeterminate (Table 1). This limited typological diversity suggests that CA-SLO-239 was not occupied for an extremely long period of time. Of the three formal types, the ubiquitous contracting-stemmed type seems to have persisted throughout the local 10,000-year sequence, while the lanceolate type is not well defined morphologically nor is its time frame well delineated. The small leaf-shaped type, however, appears for the first time during the Middle-Late Transition ca. 950 cal B.P. or possibly a century or so earlier (Jones et al. 2007; Kennett et al. 2013). Recent findings from excavations for the Los Osos Wastewater Project confirm the Middle-Late Transition chronology for this type at Morro Bay (Jones et al. 2016). The large sample of these points from CA-SLO-239 is consistent with the presence of a Middle-Late Transition Period component.

Two types are notable by their absence: large side-notched³ and Desert Side-notched points. The former are solid markers of pre-5,000 cal B.P. times in the greater San Luis Obispo area (Fitzgerald 2000, 2004; Greenwood 1972; Jones et al. 2002, 2007, 2016), while the latter have long been recognized as definitive Late Period markers throughout much of western North America (Baumhoff and Byrne 1959). The lack of Desert Side-notched points is consistent with the near absence of evidence for post-700 cal B.P. site use, while the absence of large side-notched points is consistent with the lack of early Holocene occupation. Together, the absence of these two point types suggests occupation sometime between 5,000 and 700 cal B.P.

Synthesis

The combined radiocarbon results and temporally diagnostic artifacts are mutually supportive in suggesting that CA-SLO-239 was primarily occupied during the early Middle (2,550–1,550 cal B.P.) and Middle–Late Transition (950–700 cal B.P.) periods. A single *Olivella* shell with a rectangular wall removal scar (Fig. 3, 442-9) and a large side-notched point (missing from the current collection but reported by Clemmer in 1962) suggest possible site use prior to the Middle Period. One clam disk bead could represent the Early Period, but this type is also known

from the Late Period. Occupation during the early Middle Period is indicated by one radiocarbon date (1,885–1,685 cal B.P.) and G2 normal saucer beads applied to two bone whistles. Saucer beads are increasingly recognized as markers not of the full Middle Period, but rather of its early portion (ca. 2,600–1,550 cal B.P.; Gamble and King 2011; Groza et al. 2011). The other bone whistles, shell fishhooks, and abalone ornaments all occur during the Middle, Middle-Late Transition, and Late periods in the Santa Barbara area (King 1990). Three radiocarbon dates indicate occupation between 1,100 and 700 cal B.P., which nearly matches the Middle-Late Transition Period (950–700 cal B.P.). Supporting this dating is a robust collection of small leaf-shaped projectile points, which clearly are not known before 900 cal B.P. in the Morro Bay area (Jones et al. 2016) or the Santa Barbara Channel (Kennett et al. 2013). Complementing this point type is one C2 split drilled *Olivella* bead, which is a marker of the Middle-Late Transition and early Middle periods in central California (Milliken and Schwitalla 2012).

While a single E2 thick-lipped *Olivella* bead indicates some minor site use after 700 cal B.P., the lack of Desert Side-notched or Cottonwood arrow points, or any other definitive Late marker, is a strong indication that the site was largely abandoned after ca. 700 cal B.P.

EXTRA-LOCAL ARTIFACTS

As mentioned above, two artifacts are of additional interest because of their possible extra-local origins. The first of these is the harpoon point made from cervid antler with a line hole (Fig. 2, 448-9). Unfortunately, there is no internal provenience information for this artifact in terms of unit number or depth, but as Clemmer (1962:47) recognized, this is not a type native to California. None of the California harpoons illustrated by Bennyhoff (1958) or Gifford (1940) exhibit line holes. Closer to San Luis Obispo County, bone harpoon points from the northern and southern Channel Islands also do not exhibit line holes (Hudson and Blackburn 1982:202–211). However, similar examples are well represented on the coast of Alaska during the Developmental Northwest Coast Stage (Davis 1990:200–202), particularly during both the Early (5,000–3,000 B.P.) and Late (A.D. 1500–Contact) phases. They are also common in the Aleutians from contexts dating from 4,000 years ago to historic times (McCartney

1984), and were recorded ethnographically among the Tlingit on the Northwest Coast (Drucker 1950:168). All of this ethnographic and archaeological evidence is in agreement with Clemmer's interpretation that the harpoon point most likely originated in the Northwest Coast or Alaska. Clemmer (1962) attributed the presence of this artifact at the Morro Bay site to its transport by a migratory animal. A few years earlier, Heizer (1944) had suggested artifacts like projectile points could be carried great distances in animals if they were not killed by the implement and retained it in their bodies. This indeed provides one possible explanation for the presence of this harpoon point 2,500 km. south of the nearest culture that produced this type of artifact. Northern fur seals, California sea lions, and northern elephant seals, all of which are represented in the site's faunal collection, migrate seasonally between California breeding colonies and the Bering Sea (Riedman 1990:Table 14) so it is certainly possible that one of these animals carried the artifact to Morro Bay. The other alternative is that the point represents a visit to the central California coast by maritime hunter-gatherers from the Northwest Coast or Alaska. Contact between coastal California Natives and Aleuts is known to have taken place in the early 1800s when Aleutian hunters were employed by Russians to hunt sea otters as far south as Baja California (Ogden 1941), so it is not unreasonable to surmise that Aleutians stopped at Morro Bay at some point. However, CA-SLO-239 seems to have been abandoned long before the 1800s, so Aleutian hunters would not have encountered any people at the site at that time. While an early historic date for contact and deposition of the harpoon point probably makes the most sense because Aleutian contacts are documented for that time, it is also possible that the artifact represents prehistoric contact during either the early Middle or Middle-Late Transition periods when the site was actually occupied.

One other artifact could have a similar extra-local origin, although the possibility is less likely. Clemmer (1962) described two ground-stone labrets from CA-SLO-239, one of which (Fig. 2, 468-9) is still present in the site collection. Both specimens were reported from 42-54 inches below surface and below the shell layer. The remaining labret is made from a soft, white rhyolitic tuff that Clemmer incorrectly classified as siltstone. Tuffs are known from local geological formations,

but the stone seems at least superficially unusual for the local area. No other ground-stone artifacts in the collection are made of this material nor does it resemble any items recovered during the extensive excavations for the Los Osos Wastewater Project (Jones et al. 2016). Labrets are not unknown in the California archaeological record, however, and are well documented in the Central Valley (Lillard et al. 1939), primarily from Late Period contexts. One was also recovered from such a context at CA-MNT-237, 75 km. north at Fort Hunter Liggett (Jones 2000). More recent investigations have recovered examples from Middle Period components in the Central Valley (Al Schwitalla, personal communication 2016). Labrets are also common in the archaeological record of the Northwest Coast and the Aleutians, where they co-occur with harpoon points with line holes (Davis 1990; McCartney 1984:Fig. 5). This suggests at least the possibility that the labret and harpoon point may have arrived at the same time via a visitor from the Northwest Coast or Alaska, but an origin closer to Morro Bay is of equal if not greater likelihood. In truth, there is no way to determine which of these alternative scenarios is accurate with the currently available information.

SUMMARY AND DISCUSSION

The first radiocarbon dates from CA-SLO-239, which was excavated in 1961, complement temporal diagnostics to indicate that the site was occupied primarily during the early Middle and Middle-Late Transition periods. *Olivella* G2 beads and bone whistles mark the early Middle Period, while an abundance of small leaf-shaped projectile points and a C2 split drilled *Olivella* bead support occupation during the Middle-Late Transition. A single E2 thick lipped *Olivella* suggests some minimal site use during the Late Period, but the lack of Desert Side-notched and Cottonwood types in the large point assemblage (n=95) supports the notion that the site was mostly abandoned after 700 cal B.P. Owing to a lack of vertical provenience information for the radiocarbon dating samples, it is impossible to isolate temporal components in the deposit, while the limited dating sample constrains our ability to define the span of site occupation more precisely. The large house floor, however, which was the primary focus of the 1961 excavations, appears to be an early Middle Period feature on the basis of a possible association with

saucer beads. Faunal remains show an emphasis on marine animals dominated by California sea lions and sea otters for the overall span of occupation.

The lack of evidence for occupation during the late Middle Period (ca. 1,550–950 cal B.P.), is consistent with virtually all other findings from the Morro Bay area, which show a lack of radiocarbon dates between ca. 1,600 and 1,100 cal B.P., suggesting that the bayshore was abandoned during this time (Jones et al. 2016). While the heavy marine focus suggested by the faunal remains cannot be assigned exclusively to the Middle-Late Transition, it is consistent with other findings from Morro Bay that show an extreme focus on marine foods during the Middle-Late Transition as a result of the impacts of droughts on terrestrial productivity during the Medieval Climatic Anomaly (Jones et al. 2016).

As recognized by Clemmer (1962:42), an antler harpoon with a line hole represents a type foreign to California but common to the Aleutians and Northwest Coast, and seems to have originated from one of those regions. A stone labret also represents a type uncommon to the central coast and could also have an extra-local origin, possibly from the same location as the harpoon point, but more likely from central interior California where labrets are relatively common. The exotic harpoon point could have been transported to CA-SLO-239 by Aleutian sea otter hunters during the early historic era; however, the site seems to have been largely abandoned ca. 700 cal B.P., so the point's transmittal to inhabitants of Morro Bay would seem to have been more likely during the early Middle or Middle-Late Transition Period when the site was actually occupied. The harpoon point could also have been transported to central California via a migrating seal or sea lion, as originally suggested by Clemmer (1962). While the extra-local origin of this artifact is fairly certain, the means and date of its transport ultimately cannot be determined.

NOTES

¹The borrowed collection did not include any human skeletal remains or grave-associated artifacts.

²The purple olive snail is now classified in some biological literature as *Callianax biplicata*. Here we retain the older designation, *Olivella biplicata*.

³Clemmer (1962:40) reported one large side-notched projectile point, but the specimen could not be located in the current collection. The presence of a single example of this type still constitutes only minimal evidence for pre-5,000 cal B.P. occupation.

ACKNOWLEDGEMENTS

We are deeply indebted to the San Luis Obispo County Archaeological Society for providing funds for radiocarbon dating. We also are most grateful to Richard T. Fitzgerald and Peter Hanchett of the State Archaeological Collections Research Facility for providing us access to the collection from CA-SLO-239. Richard T. Fitzgerald and Christopher Corey also provided constructive comments on an earlier draft of the manuscript. Figure 1 was prepared by Brian Coddling. Figures 2 and 3 were prepared by Rusty van Rossmann. The fish vertebrae beads were identified to species by Ken Gobalet. We are also deeply indebted to Scott Johnson of the Cal Poly Physics Department for his tentative identification of the rocks used to produce the ground stone artifacts from CA-SLO-239 and to Ethan Bertrando and one anonymous reviewer for comments they made on an earlier draft of this manuscript. We also wish to thank Douglas Kennett and the Pennsylvania State University AMS lab for providing the date from the atlatl spur.

REFERENCES

- Baumhoff, Martin A., and J. S. Byrne
1959 Desert Side-notched Points as a Time Marker in California. *University of California Archaeological Survey Reports* 48:32–65. Berkeley.
- Bennyhoff, James A.
1958 Californian Fish Spears and Harpoons. *University of California Anthropological Records* 9:295–337. Berkeley.
- Bennyhoff, James A., and Robert F. Heizer
1958 Cross Dating Great Basin Sites by Californian Shell Beads. *University of California Archaeological Survey Reports* 42:60–72. Berkeley.
- Bennyhoff, James A., and Richard E. Hughes
1987 Shell Bead and Ornament Exchange Networks Between California and the Western Great Basin. *Papers of the American Museum of Natural History* 64(2). New York.
- Breschini, Gary S., and Trudy Haversat
2000 *Archaeological Radiocarbon Dating of a Portion of CA-MNT-103, Monterey, Monterey County, California*. Manuscript on file at the California Historic Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park, California.
- Clemmer, John S.
1962 *Archaeological Notes on a Chumash House Floor at Morro Bay*. Manuscript on file at California Department of Parks and Recreation, Sacramento.

- Codding, Brian F., Amber M. Barton, Emily J. Hill, Elise Wheeler, Nathan Stevens, and Terry L. Jones
2009 The Middle-Late Transition on the Central California Coast: Final Report on Salvage at CA-SLO-9, Montana de Oro State Park, San Luis Obispo County, California. *Occasional Papers of the San Luis Obispo County Archaeological Society* 19. San Luis Obispo.
- Cole, Ronald B., and Richard G. Stanley
1998 Volcanic Rocks of the Santa Maria Province, California. *U. S. Geological Survey Bulletins* 35:R1-R35.
- Curtis, Freddie
1962 A Shell Analysis for Morro Bay. In *Archaeological Notes on a Chumash House Floor at Morro Bay*, John Clemmer, ed., pp. 70-72. Manuscript on file at California Department of Parks and Recreation, Sacramento.
- Davis, Stanley D.
1990 Prehistory of Southeastern Alaska. In *Handbook of North American Indians, Vol. 7, Northwest Coast*, Wayne Suttles, ed., pp. 197-202. Washington D.C.: Smithsonian Institution.
- Drucker, Philip
1950 Culture Element Distributions: XXVI, Northwest Coast. *University of California Anthropological Records* 9:157-293. Berkeley.
- Ernst, W. G., and C. A. Hall, Jr.
1974 Geology and Petrology of the Cambria Felsite, A New Oligocene Formation, West-Central California Coast Ranges. *Geological Society of America Bulletins* 85:523-532.
- Fitzgerald, Richard T.
2000 *Cross Creek: An Early Holocene/Millingstone Site. [California State Water Project, San Luis Obispo County Archaeological Society Coastal Branch Series Papers 12.]* San Luis Obispo: San Luis Obispo County Archaeological Society.
2004 9000 Years of Prehistory and Beyond: A Survey of the Early Holocene Sites of the Central Coast of California Discovered Since Diablo Canyon. In *Emerging from the Ice Age: Early Holocene Occupations on the California Central Coast, A Compilation in Honor of Roberta S. Greenwood*, Ethan Bertrando and Valerie A. Levulett, eds., pp. 5-16. *San Luis Obispo County Archaeological Society Occasional Papers* 17.
- Gamble, Lynn H., and Chester King
2011 Beads and Ornaments from San Diego: Evidence for Exchange Networks in Southern California and the American Southwest. *Journal of California and Great Basin Anthropology* 31:155-178.
- Gifford, Edward W.
1940 Californian Bone Artifacts. *University of California Anthropological Records* 31:53-237. Berkeley.
- Greenwood, Roberta S.
1972 9000 Years of Prehistory at Diablo Canyon, San Luis Obispo County, California. *Occasional Papers of the San Luis Obispo Archaeological Society* 7. San Luis Obispo.
- Groza, Randy G., Jeffrey Rosenthal, John Southon, and Randall T. Milliken
2011 A Refined Shell Bead Chronology for Late Holocene Central California. *Journal of California and Great Basin Anthropology* 31:13-32.
- Heizer, Robert F.
1944 Artifact Transport by Migratory Animals. *American Antiquity* 9:397.
- Hudson, Travis, and Thomas C. Blackburn
1982 *The Material Culture of the Chumash Interaction Sphere: Volume 1: Food Procurement and Transportation*. Los Altos: Ballena Press.
- Ingram, B. Lynn, and Jonathon R. Southon
1996 Reservoir Ages in Eastern Pacific Coastal and Estuarine Waters. *Radiocarbon* 38:573-582.
- Jones, Debbie, Terry Jones, William Hildebrandt, Patricia Mikkelsen, and Kacey Hadick
2016 *Archaeological Investigations for the Los Osos Wastewater Project, San Luis Obispo County, California*. Report on file at Far Western Anthropological Research Group, Davis, Cal.
- Jones, Terry L.
1993 Big Sur: A Keystone in Central California Cultural History. *Pacific Coast Archaeological Society Quarterly* 29(1):1-78.
2000 *Archaeological Evaluation of CA-MNT-237 and CA-MNT-519, Fort Hunter Liggett, Monterey County, California*. Manuscript on file at the California Historic Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park, California.
- Jones, Terry L., and Jennifer A. Ferneau
2002 Prehistory at San Simeon Reef: Archaeological Data Recovery at CA-SLO-179 and -267, San Luis Obispo County, California. *Occasional Papers of the San Luis Obispo County Archaeological Society* 16. San Luis Obispo.
- Jones, Terry L., Richard T. Fitzgerald, Douglas J. Kennett, Charles H. Miksicek, John L. Fagan, John Sharp, and Jon M. Erlandson
2002 The Cross Creek Site (CA-SLO-1797) and Its Implications for New World Colonization. *American Antiquity* 67:213-230.
- Jones, Terry L., Nathan E. Stevens, Deborah A. Jones, Richard T. Fitzgerald, and Mark G. Hylkema
2007 The Central Coast: A Mid-latitude Milieu. In *California Prehistory: Colonization, Culture, and Complexity*, Terry L. Jones and Kathryn A. Klar, eds., pp. 125-146. Walnut Creek: Altamira Press.

- Kennett, Douglas J., Patricia M., Lambert, John R. Johnson, and Brendan J. Culleton
2013 Sociopolitical Effects of Bow and Arrow Technology in Prehistoric Coastal California. *Evolutionary Anthropology* 22:124–132.
- King, Chester D.
1990 *Evolution of Chumash Society: A Comparative Study of Artifacts Used for Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804*. New York: Garland Publishing.
- Lillard, Jeremiah B., Robert F. Heizer, and Franklin Fenenga
1939 An Introduction to the Archeology of Central California. *Sacramento Junior College, Department of Anthropology Bulletins* 2.
- McCartney, Allen P.
1984 Prehistory of the Aleutian Region. In *Handbook of North American Indians, Vol. 5, Arctic*, David Damas, ed., pp. 119–135. Washington D.C.: Smithsonian Institution.
- Milliken Randall T., and Al W. Schwitalla
2012 *California and Great Basin Olivella Shell Bead Guide*. Walnut Creek: Left Coast Press.
- Ogden, A.
1941 *The California Sea Otter Trade: 1784–1884*. Los Angeles: University of California Press.
- Ralston, Candace E., and Richard T. Fitzgerald
2014 Two Atlatl Engaging Spurs from CA-CCO-18/548: A Critical Examination of Atlatl Spur Taxonomy. *Journal of California and Great Basin Anthropology* 34:101–108.
- Reidman, Marianne
1990 *The Pinnipeds, Seals, Sea Lions, and Walruses*. Berkeley: University of California Press.
- Reinman, Fred M.
1961 *Archaeological Investigations at Whale Rock Reservoir, Cayucos, California*. Manuscript on file at California Department of Parks and Recreation, Sacramento.
- White, Laura S.
1989 *Atlatl Spurs of California: Their Cultural and Technical Implications*. Master's thesis, San Diego State University.
- Wire, Marcia
1961 Alamo Creek Site, San Luis Obispo County, California. *University of California, Los Angeles, Archaeological Survey Annual Reports* 1960–1961:107–148.

