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Two Biface Clusters and Their Relation to Mortuary Practices in the San Francisco Bay Area

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DISCRETE assemblages, or clusters, of bifaces in mortuary association are a relatively rare phenomenon throughout the greater San Francisco Bay area (cf. Contreras 1957; Wiberg 1988:23). This paper presents a formal description, trace element analysis, and interpretation of two such clusters found close together in a prehistoric cemetery in Santa Clara County, some 30 km. south of San Francisco Bay (Fig. 1).

The two discrete clusters consist of large, generally lanceolate obsidian bifaces, recovered in groups of 11 and 18 specimens at CA-SCl-131, informally known as the Mazzone site. The site, excavated by the senior author in 1979-1980, is located along Alamitos Creek in the Almaden Valley, near what is essentially the geographic center of the ethnographic Costanoan range (Levy 1978:485).

Soon after the completion of archaeological field investigations at CA-SCl-131, the deposit was encroached upon and severely impacted by residential development. Prior to this, the site consisted of an extensive (50,000 m.^{2}) but sparse surface scatter of chipped and ground stone artifacts and two surface bedrock milling stations fashioned on outcroppings of indurated sandstone; these bedrock mortar features have been preserved *in situ*. Subsurface midden deposits occur discontinuously over the site area and, although shallow in most places, exceed depths of 200 cm. next to the bedrock mortar features.

Prior to the archaeological work, the deposit was periodically disturbed by heavy equipment traffic, unauthorized dumping and soil borrowing, pothunters, and especially stump removal. Nevertheless, a discrete, tightly concentrated cemetery (180 m.^{2}), containing 64 single human interments, was discovered within the area of surface scatter, but outside the zone of true midden deposition. Fortunately, unlike other portions of the site, the cemetery had suffered only minimal historic disturbance prior to its discovery. A full reporting of CA-SCl-131, including the cemetery area, awaits our presentation in monograph form.

The numbers of preserved individual grave offerings at CA-SCl-131 are few and generally mundane. Five individuals were interred with portable mortars or pestles of locally available indurated sandstone. One quartz crystal, recovered in association with an elderly female, is the only "nonutilitarian" artifact in funerary association. These six interments were widely dispersed throughout the cemetery area, and their spatial distribution does not suggest any discernible pattern of status differentiation (cf. King 1970; Tainter 1978). Surprisingly, and perhaps significantly, the cemetery yielded not a single shell bead or ornament. Throughout the Santa Clara Valley, it is extremely rare to find mortuary sites without at least some materials of this sort (e.g., Wiberg 1988).

In general, the human remains at CA-SCl-131 were poorly preserved but it was possible to identify many of them as tightly flexed at the knees. Due to poor preservation, age and

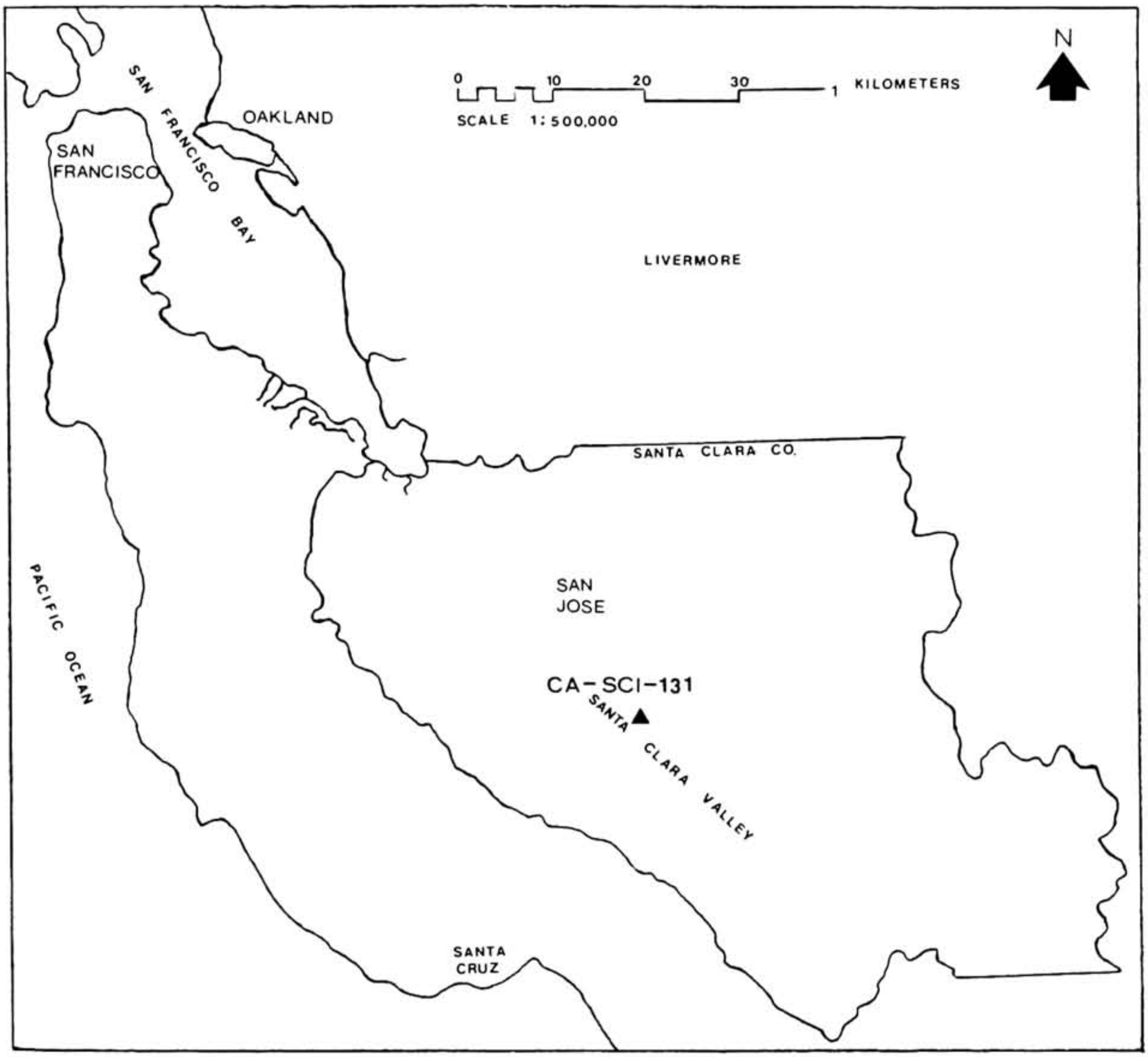

Fig. 1. Site location map of CA-SCl-131.

sex determinations were few. Of the 33 interments that could be aged, 28 (84.8%) fall into a generic, postpubescent "adult" category. The remaining five (15.2%) were identified as juveniles, children, or infants. Of the 22 burials that could be sexed, 12 (54.5%) were female and 10 (45.5%) were male.

Body orientation could be ascertained for 40 individuals. Orientation, reckoned as though an arrow were directed through the spine from the pelvis through the cranial crown, was distinctly southerly or southwesterly. Fully 62.5% (n=25) of the burials yielding orientation data are oriented to the south or southwest. The remaining 37.5% (n=15) are highly variable, but none are oriented within 10 degrees plus or minus of due east.

Thirty-four interments yielded data regarding burial posture. These present almost no discernible pattern: 15 lie on their right side, 15 on their left; three are face down, and one was interred in a sitting position.

Identifiable pathologies include several cases of arthritis, one case of a probably excruciatingly painful unerupted molar in an adult, and two "night stick" fractures, usually attributed to use of the forearm to fend off blows from a club or stick. In one instance, a foreign object, probably obsidian, was embedded, and healed over, within the proximal end of a radius. Analysis of the skeletal remains was not as detailed as desired because, in deference to the wishes of the local Native American community, all of the burials, and most of the grave accompaniments, were reinterred shortly after their excavation.

None of the interments was even partially cremated. Indeed, no evidence of burning was observed in any part of the cemetery. No discernible pattern appears in the placement of individuals relative to each other. In six cases, burials were encountered in immediate proximity to one another, but there is no evidence to suggest that these represent shared interments. These "multiple burials" are characterized as such on the basis of conflicting bone element, sex, and/or age data. No behavioral inferences can be derived from these "multiple interments."

Neither biface clusters could be unambiguously associated with any single inhumation. Instead, as developed more fully below, they appear to represent *cemetery goods* rather than grave goods (Walsh 1988); as such, the clusters probably are unrelated to the disposition of any single individual, but appear clearly associated with the disposal of the dead.

Throughout this presentation the term "cluster" is used to describe the assemblage of obsidian bifaces, to the conscious exclusion of the term "cache." This distinction is, of course, largely semantic, but seeks to avoid the connotation that the biface clusters represent utilitarian tools or valued raw materials stored for future use (e.g., Scott et al. 1986:7). Instead, we argue that these bifaces represent finished articles deposited within the cemetery complex for their own sake and, apparently, for posterity.

PHYSICAL DESCRIPTION AND CONTEXT

Cluster 1

The first cluster consists of 11 obsidian bifaces positioned with no discernible pattern or conscious arrangement. The bifaces were recovered *in situ* over a horizontal area 14 x 22 cm. and a vertical span of 13 cm. The nearest human interment coincided vertically, some 36 cm. distant. No age or sex determinations could be gleaned from this individual, which consisted only of longbone and cranial vault fragments. The body was flexed at the knees, and apparently faced away from the cluster.

The bifaces (Fig. 2) show some attention to symmetry in silhouette. Symmetry breaks down, however, in both cross section and profile (Fig. 3). Irregular thickness and longitudinal curvature tending toward the helical would seem to render these bifaces only marginally aerodynamic. Over half (n=6) show cortex on the face of the blade; one of these shows cortex on both faces, indicating that it was made from a thin parent obsidian piece.

The bifaces are lanceolate in form and display minor variability; each has a convex base. Although percussion flaking appears to be rather crude, pressure flake scars are evident on most of the pieces and often occur in regularly spaced intervals that suggest serration. Maximum width occurs at a point somewhere between 25% and 30% of the distance from the base. Metric data for each

Fig. 2. Cluster 1 bifaces, dusted with #7 aluminum metallic powder.

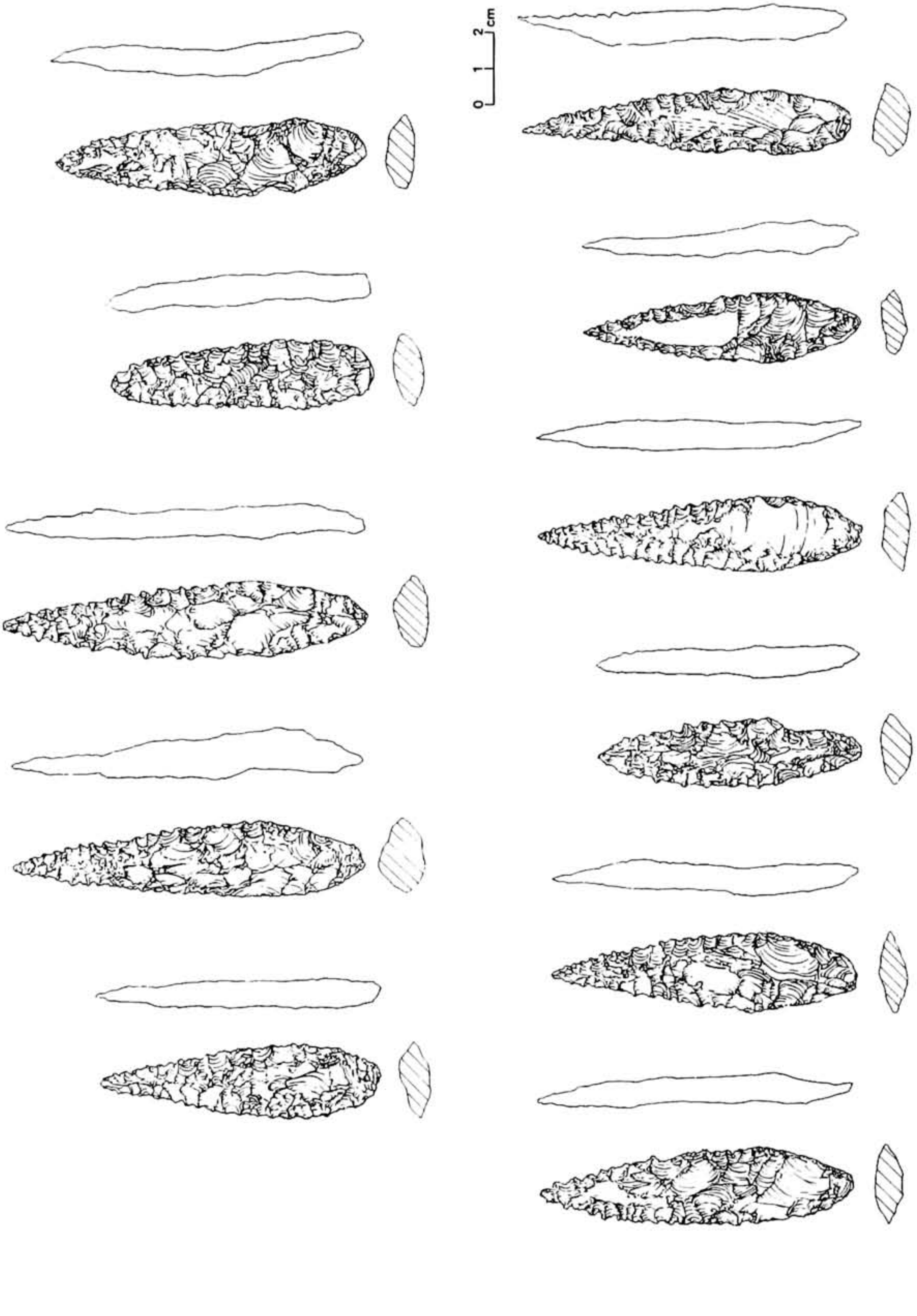

Fig. 3. Cluster 1 bifaces.

Table 1
BIFACES FROM CLUSTER 1

Specimen Number	Weight[a]	Maximum Length[b]	Width	Base Width	Maximum Thickness	Blade Angle[c]	Base Angle
31	10.5	7.6	1.9	1.9	0.75	26.0	42.0
32	18.2	9.6	2.1	2.5	1.0	17.0	35.0
33	16.2	9.7	2.0	2.5	0.9	17.5	20.0
34	12.5	7.2	1.8	1.8	0.7	15.0	24.0
35	13.0	8.5	2.0	1.9	0.8	16.0	38.0
36	13.6	8.6	2.0	2.4	0.75	26.0	28.0
37	11.5	8.3	2.1	2.9	0.8	20.0	27.0
38	10.9	7.2	1.9	2.1	0.8	14.5	23.0
39	12.6	8.7	2.1	2.8	0.7	17.0	27.0
40	9.1	7.6	2.0	2.3	0.7	18.0	29.0
41	13.6	8.9	1.8	1.9	0.8	17.0	24.0
mean	12.88	8.35	1.97	2.27	0.79	18.5	28.8
s.d.	2.46	0.83	0.105	0.36	0.08	3.78	6.48

[a] Weight in grams.
[b] Dimensions in centimeters.
[c] Angles in degrees.

specimen are presented in Table 1.

Edge damage in the form of nicking, crushing, and/or polish is evident on each biface. In every case, damage occurs on the base and extends forward along each margin beyond the point of maximum width. In two cases, damage occurs over the entire edge. No fixatives were observed on any of the bifaces, but it seems reasonable to assume that some form of hafting—or preparation for hafting—would account for the distribution of edge damage on these specimens.

Cluster 2

Cluster 2 (Fig. 4) consists of 18 bifaces, distributed over a horizontal area 80 x 80 cm., within a vertical span of just 3 cm. The nearest interment occurred some 40 cm. from the closest biface. Again, the individual was flexed at the knees; no age or sex determination could be derived from the fragmentary long bones and cranial vault segments.

Morphological variability is somewhat greater for the Cluster 2 specimens (Figs. 5, 6). Cluster 2 includes a small, shouldered point of the distinctive Stockton Serrated type (Johnson 1940). These generally are attributed to the latter end of the temporal sequence for prehistoric central California (cf. Lillard et al. 1939:79-80; Fredrickson 1966:58, passim, 1968:62; Hicks 1978:208). Metric data for the Cluster 2 bifaces are presented in Table 2.

The Cluster 2 points tend toward lanceolate, and have their maximum widths at approximately one-third the distance from base to tip. With the exception of the Stockton Serrated point, which is ground only on its base, each shows edge damage from the base forward along the margins to or beyond the point of maximum width. Damage takes the form of edge crushing and nicking. Evidence of fixatives is absent but, as with Cluster 1, the pattern of edge damage suggests hafting or, at least, preparation for hafting.

Each biface from both clusters was subjected to obsidian source and hydration analyses. In addition, 30 miscellaneous pieces of obsidian from both the cemetery and the site at large were sourced and analyzed for hydration rind thickness. The results are presented below.

Fig. 4. Cluster 2 bifaces, dusted with #7 aluminum metallic powder.

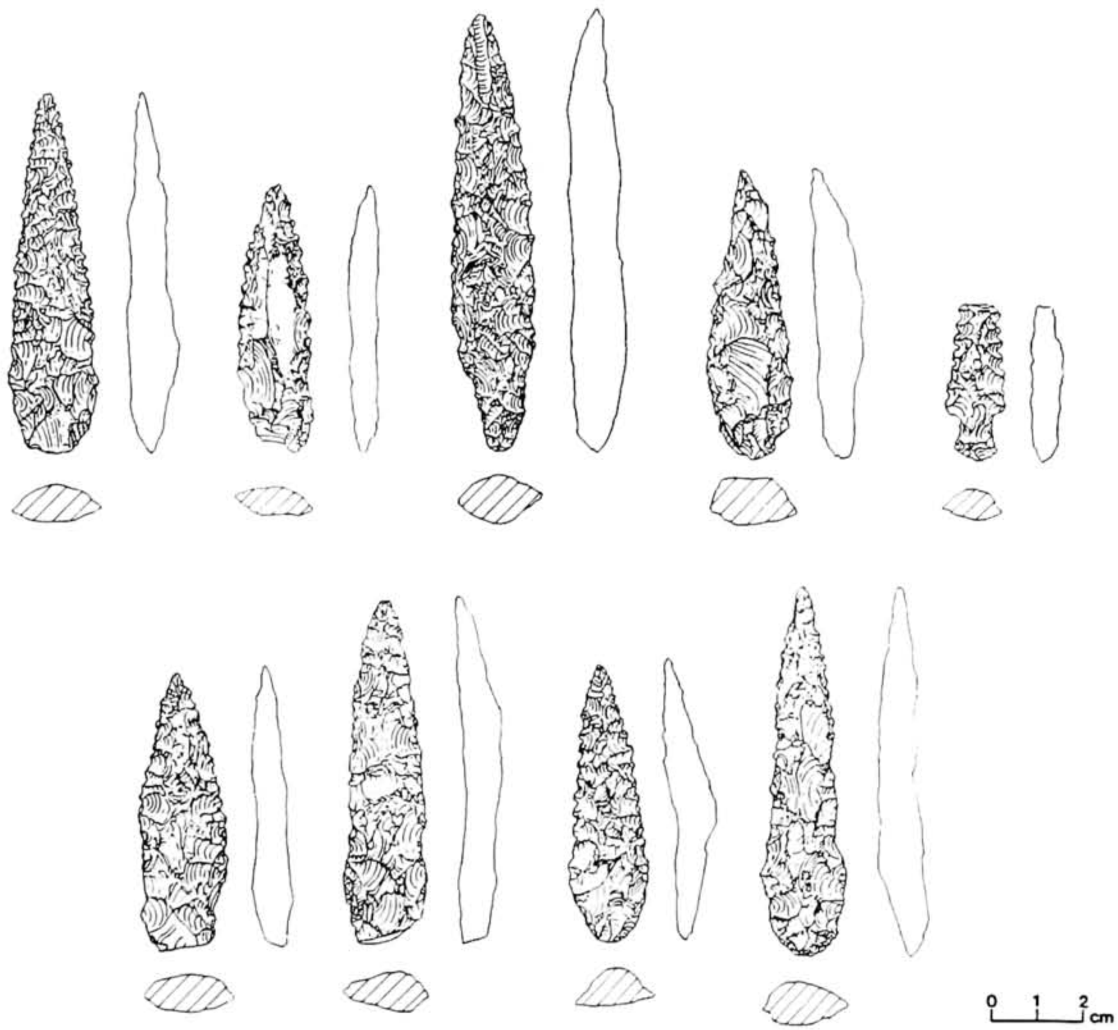

Fig. 5. Cluster 2 bifaces. Specimens are those in Fig. 4, upper row.

OBSIDIAN SOURCE AND HYDRATION CHARACTERIZATION

The purpose of obsidian analysis at the site was two-fold. First, because of the lack of typologically sensitive artifacts, or suitable amounts of charcoal or other organic remains other than human bone, obsidian analyses provided the only viable means for dating the deposit. Secondly, obsidian analysis was sought to independently identify the clusters as synchronous events. Both directions proved fruitful. Table 3 presents source and hydration data for Cluster 1. Nine of the eleven specimens derive from the Napa Glass Mountain source; the remaining two are from Borax Lake, somewhat to the north (Jackson 1974:45). Using the formula proposed by Origer (1987:57), the Napa materials project a mean date of 1,331 years before present. The removal of a single outlier (specimen No. 32 at 3,389 years before present [Table 3]), brings the Napa Glass Mountain mean to approximately 1,074 years before present

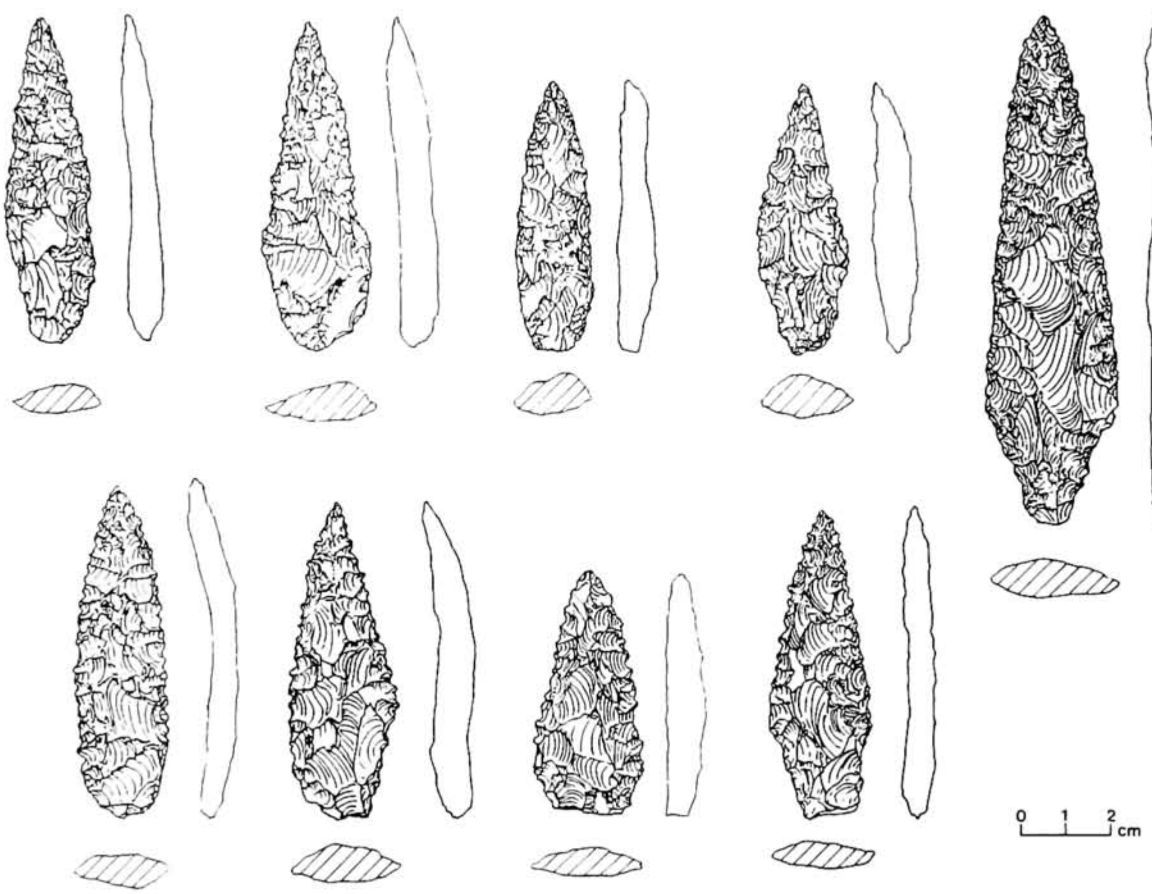

Fig. 6. Cluster 2 bifaces. Specimens are those in Fig. 4, lower row.

(A.D. 973: cf. Origer 1987:57). The Borax Lake specimens (n=2) show an average years before present of approximately 1,269 (A.D. 681: Ericson 1977:67).

General congruence among individual micron readings is sufficient argument itself for interpreting placement of the cluster components as a synchronous event. The distinctive calibrated dates for the Napa and Borax Lake materials may reflect an inconsistency with the Borax Lake formula for converting hydration width to years before present.

The second biface cluster similarly shows a general agreement among obsidian source determinations and individual hydration rind measurements. Table 4 shows the range of readings and source determinations from Cluster 2. The Napa source (n=17) clearly predominates; the Borax Lake source provides the sole outlier. This latter specimen proves anomalous for its relatively thick hydration rind as well. Measurements on the Napa material range from 2.1 to 3.3 microns, with a mean of 2.64±0.28. By contrast, the Borax Lake specimen has a hydration rind measurement of 3.7 microns. The Napa mean predicts a chronological value of 1,069 years before present (A.D. 881: Origer 1987:57). The Borax Lake piece predicts a chronological value of 2,473 years before present (523 B.C.: Ericson 1977:67), and suggests, therefore, that either an heirloom piece exists in

Table 2
BIFACES FROM CLUSTER 2

Specimen Number	Weight[a]	Length[b]	Maximum Width	Maximum Base Width	Maximum Thickness	Blade Angle[c]	Base Angle
42	12.7	7.8	1.95	1.6	1.1	16.0	29.0
43[d]	3.2 est.	4.0 est.	1.3	1.0 stem	1.65	-	-
44	21.1	9.6	1.9	2.7	1.15	13.0	19.5
45	11.1	7.2	2.0	1.5	1.7	15.0	22.5
46	9.3	6.1	1.7	1.7	0.8	27.0	16.0
47	11.6	7.6	1.8	1.2	0.9	17.0	14.0
48	7.1	6.1	1.8	1.5	0.8	17.0	29.0
49	11.3	8.1	1.8	1.7	0.7	15.0	21.5
50	25.7	11.5	2.9	2.4	0.7	14.0	45.0
51	6.5	5.8	1.5	2.2	0.6	14.0	12.5
52	9.4	7.1	1.8	2.6	0.7	19.5	25.0
53	13.3	7.2	2.3	2.2	0.8	21.0	16.0
54	8.1	5.9	1.15	2.15	0.8	11.5	19.0
55	9.3	5.9	2.0	1.8	1.0	28.0	29.0
56	11.7	6.3	1.8	1.9	0.9	17.5	23.0
57	13.9	6.9	2.5	2.1	0.9	29.5	19.0
58	9.6	5.2	2.3	1.2	0.7	27.0	38.0
59	9.1	6.7	2.2	2.0	1.5	23.0	31.0
mean	11.81	7.12	1.96	1.91	0.93	19.1	24.1
s.d.	4.74	1.50	0.39	0.43	0.29	5.6	8.4

[a] Weight in grams.
[b] Dimensions in centimeters.
[c] Angles in degrees.
[d] Specimen #43, Stockton Serrated point, measurements not included in mean and standard deviation.

Table 3
BIFACES FROM CLUSTER 1

Specimen	Source	Microns	ybp[a]	A.D./B.C.
31	Napa	2.4	884	A.D. 1066
32	Napa	4.7	3,389	1,439 B.C.
33	Napa	2.7	1,118	A.D. 832
34	Napa	2.7	1,118	A.D. 832
35	Napa	2.4	884	A.D. 1066
36	Borax Lake	2.7	1,317	A.D. 633
37	Napa	2.8	1,203	A.D. 747
38	Napa	2.7	1,118	A.D. 832
39	Napa	3.0	1,381	A.D. 569
40	Napa	2.4	884	A.D. 1066
41	Borax Lake	2.6	1,221	A.D. 729

[a] ybp = years before present, with present = 1950. Napa rate follows Origer (1987:57). Borax Lake rate follows Ericson (1977:67).

Table 4
BIFACES FROM CLUSTER 2

Specimen	Source	Microns	ybp[a]	A.D./B.C.
42	Napa	2.3	811	A.D. 1138
43	Napa	2.8	1,203	A.D. 747
44	Napa	2.1	676	A.D. 1274
45	Napa	2.7	1,118	A.D. 832
46	Napa	2.8	1,203	A.D. 747
47	Napa	2.7	1,118	A.D. 832
48	Napa	2.7	1,118	A.D. 832
49	Napa	2.4	884	A.D. 1066
50	Napa	2.5	959	A.D. 991
51	Borax Lake	3.7	2,473	523 B.C.
52	Napa	2.8	1,203	A.D. 747
53	Napa	2.5	949	A.D. 991
54	Napa	3.0	1,381	A.D. 569
55	Napa	2.4	884	A.D. 1066
56	Napa	2.4	884	A.D. 1066
57	Napa	3.3	1,671	A.D. 279
58	Napa	2.6	1,037	A.D. 913
59	Napa	2.9	1,290	A.D. 660

[a] ybp = years before present, with present = 1950. Napa rate follows Origer (1987:57). Borax Lake rate follows Ericson (1977:67).

Table 5
CEMETERY ENCLAVE DEBITAGE AND MISCELLANEOUS MATERIALS

Specimen	Source	Microns	ybp[a]	A.D./B.C.	Comments
3	Napa	1.6	392	A.D. 1558	
5	Napa	2.7	1,118	A.D. 832	
6	Napa	2.7	1,118	A.D. 832	
9	Napa	1.8	497	A.D. 1452	
12	Borax Lake	2.4	1,040	A.D. 909	
15	Napa	2.9	1,290	A.D. 660	point midsection
22	Napa	2.9	1,290	A.D. 660	point midsection, serrated
23	Napa	2.7	1,118	A.D. 832	mends with specimen 22
25	Napa	1.5	345	A.D. 1605	point tip

[a] ybp = years before present, with present = 1950. Napa rate follows Origer (1987:57). Borax Lake rate follows Ericson (1977:67).

the cluster or, again, that the Borax Lake formula is in need of reevaluation. It is apparent from these data that obsidian hydration and source analyses portray Cluster 2 as a synchronous event.

In terms of the numbers of artifacts, their size, and the presumed value of their parent material, the two discrete biface clusters from CA-SCl-131 present a regional anomaly. All the more unusual is the fact that they occur in clustered form, within a cemetery complex, but apparently unassociated with any single interment. We now proceed to an examination of additional obsidian specimens from the site, with the hope that some light may be shed upon the nature of the biface clusters themselves.

DEBITAGE AND MISCELLANEOUS OBSIDIAN

Of the obsidian specimens from CA-SCl-131 not associated with the two biface clusters, nine were found within the cemetery enclave (Table 5). Although the sample is small, there appears some concordance with the hydration values observed among the biface clusters: the miscellaneous cemetery obsidian fails to distinguish its mean hydration from that of either cluster at the 0.1 critical level for the Students t-test. Four of the nine specimens are projectile point tip or body fragments (MNI=3), none of which fit comfortably with the clusters either in association, size, or general form (although these fragments may represent serrated forms such as the Stockton Serrated point in Cluster 2). Eight specimens are from the Napa source and the other derives from Borax Lake. None were recovered in association with the human interments.

The 21 obsidian pieces recovered outside the cemetery complex are all secondary flakes and show a variety of source origins, including a wide majority from Napa Glass Mountain (n=13), and a sundry assortment from Borax Lake (n=3), Anadel (n=1) and such distant sources as Bodie Hills (n=2) and Coso (n=1) (see Jackson 1974:45 for the location of these sources). One specimen derives from an unknown source.

Hydration rind measurements vary widely. From the Napa Glass Mountain source alone a range from 1.8 to 6.9 or more microns is noted (Table 6). Although the 6.9 micron reading does not seem credible (cf. Origer 1987), the range alone argues for deposition of obsidian materials over a long period of time, in direct contrast to the tightly grouped hydration readings from each cemetery biface cluster. These seem to demonstrate that the

Table 6
MISCELLANEOUS NONCEMETERY OBSIDIAN MATERIALS

Specimen	Source	Microns	ybp[a]	A.D./B.C.	Comments
1	Coso	7.0	1,714	A.D. 236	
2	Napa	3.8	2,215	265 B.C.	
4	Napa	1.9	553	A.D. 1396	
7	Napa	5.3	4,309	2,359 B.C.	
8	Napa	2.9	1,290	A.D. 660	Additional reading 3.2 microns
10	Unknown	2.1	—	—	
11	Napa	6.0	5,522	3,572 B.C.	Additional readings 6.2 and 8.6 microns
13	Napa	6.9	7,303	5,353 B.C.	Additional readings 7.7 and 11.0 microns
14	Borax Lake	4.1	3,036	1,086 B.C.	Additional reading 11.1 microns
16	Borax Lake	5.7	5,868	3,918 B.C.	
17	Napa	2.5	959	A.D. 991	
18	Napa	1.8	497	A.D. 1453	Surface find: concave-based point frag.
19	Napa	3.2	1,571	A.D. 379	
20	Bodie Hills	2.5	955	A.D. 995	
21	Napa	4.5	3,106	1,156 B.C.	Additional reading 6.5 microns
24	Napa	4.7	3,389	1,439 B.C.	Additional reading 5.1 microns
26	Napa	1.8	497	A.D. 1453	
27	Napa	5.4	4,473	2,523 B.C.	
28	Borax Lake	2.8	1,416	A.D. 534	
29	Bodie Hills	13.4	27,439	25,489 B.C.	
30	Anedel	1.6	473	A.D. 1477	Additional reading 2.6 microns

[a] ybp = years before present, with present = 1950. Napa rate follows Origer (1987:57). Borax Lake rate follows Ericson (1977:67).

biface clusters differ in kind and in synchronous association from the site at large.

DISCUSSION

Each cluster appears unassociated with any single discretely defined element within the cemetery complex. As we have noted, no evidence of burning was observed anywhere within the cemetery; hence, it appears unlikely that either cluster is related to a poorly preserved cremation. Similarly, no evidence, stratigraphic or otherwise, was adduced to suggest that either cluster was associated with the disintegrated remains of a neonatal interment, although, given the generally poor state of preservation throughout the site, this alternative remains plausible.

Based on the evidence at hand, we consider these obsidian biface clusters to represent not *grave goods* per se but, rather, *cemetery goods*—items associated not with any single individual but with the mortuary complex itself. This notion provides the impetus for the following discussion.

The two biface clusters within the CA-SCl-131 cemetery assemblage appear to present a poorly understood phenomenon. We have noted that the term "cache" appears inappropriate because of the implication of *storage* of valuable raw materials for eventual retrieval and subsequent use. This semantic distinction is based on the observation that (1) many pieces display fine pressure flaking, indicating a finished form rather than a blank or preform; and (2) edge damage on every specimen suggests that the artifacts had been used prior to their deposition. For these reasons, the term "cluster" seems most appropriate.

The presumed value of obsidian as a raw material is axiomatic for most of the ethnographic Costanoan territory. At CA-SCl-131 and elsewhere, large numbers of small obsidian flakes show the effects of use in the form of edge damage or reworking indicative of salvage of broken tool forms (cf. Hicks 1978: 207). Clearly, the biface clusters appear to represent a conspicuous, highly valued commodity, *offered*, not cached.

The obsidian analyses presented above provide a strong argument that both clusters are internally, and probably mutually, synchronous. Although some ambiguity exists, it appears that these clusters serve well to date the cemetery complex to around the closure of the first millennium A.D. This follows the observation of general congruence with obsidian analyses of miscellaneous materials recovered throughout the cemetery enclave.

In terms of the quantity and variety of goods associated with individual interments at CA-SCl-131, the cemetery might be portrayed as "poor." Yet, this does not necessarily reflect a "poor" development of social organization, as reckoned by studies of status differentiation at mortuary complexes (King 1970; Tainter 1978:121).

While little data pertaining to individual status was adduced at CA-SCl-131, the two biface clusters themselves may have provided suitable and adequate recognition for the cemetery complex as a whole. In this sense, these may represent homage to a sacrosanct plot. Alternatively, since such clusters appear rarely, if at all, in cemeteries throughout the Bay area, these biface clusters may have been emplaced to observe a single, perhaps catastrophic, event that led to the creation of the cemetery in the first place. In any event, the cemetery complex presents two striking anomalies—the biface clusters, and the conspicuous absence of beads, ornaments or other objects fabricated from shell. How the presence of two apparently valuable obsidian biface clusters correlates with the absence of other desired commodities within the cemetery enclave is unknown.

Although comparative references for the immediately surrounding Costanoan groups are generally lacking, there is ethnographic evidence of ceremonial grave markers or shrines among the Chumash (Priestly 1937:33; Landberg 1965:27). Archaeological evidence from the eastern San Francisco Bay area (Coberly 1973:11-12) suggests the existence of "cemetery markers" in the form of painted stones; and ethnographic data have suggested that among the Costanoans, arrows (and, by inference, their points) may have had ceremonial purposes as ritual offerings (Jackson 1986:130, endnote 3; Crespí 1947:377, Palou 1934:112). Although not specifically attributed to grave offerings, there is the provocative suggestion that certain goods may be placed in cemeteries independently of any single mortality.

The data suggest an alternative interpretation, particularly in light of the temporal imprecision often noted for obsidian hydration data. The biface clusters may in fact represent an event, or events, completely unrelated to any inhumation. It is possible that the cemetery complex was unintentionally defiled and the bifaces represent an act of propitiation. Although direct ethnographic analogies for such behavior are lacking, Beals (1933: 377) reported that the Nisenan of the central Sierra Nevada had a distinct aversion to burrowing animals because of a belief that their digging may release harmful "evaporations" from cemeteries; Kroeber (1925:88) reported an aversion among the Yurok to tobacco grown wild because of its feared association with "graveyards." Oblique as these ethnographic analogies are, they serve to demonstrate the potential for propitiatory behavior at or near cemetery sites, especially, perhaps, if defiled unintentionally.

The operative analytical term here is, of course, speculation. Still, the existence of cemetery goods and behavior associated with mortuary complexes as entities in and of themselves is a poorly reported phenomenon in the San Francisco Bay area and is in need of behavioral explanation. The potential for goods existing in direct association with cemetery enclaves, yet unassociated with any particular interment, requires focused consideration and study.

It is possible that what often are described as "grave goods" are reported incorrectly because they are simply attributed to the nearest interment, with spatial irregularities explained away under the rubric of "disturbance." This notion may lead to erroneous assumptions regarding status differentiation, or other behavioral phenomena, among selective individual interments where in reality none existed. For example, associating either of the CA-SCl-131 biface clusters with the nearest body would allow one to infer for that individual a social position that, in all likelihood, has no basis in fact. As one can easily see, this would lead to a significant misinterpretation of the past. Indeed, if the CA-SCl-131 biface clusters are seen as *cemetery goods* rather than grave goods, it is notable that the nearest interments had no burial associations whatsoever.

The notion that "cemetery goods" may apply in many northern California mortuary complexes is in need of further exploration. There is some ethnographic evidence for the presence of generic cemetery inclusions, and there is sufficient notice of an aversion to burial locations to suggest the possibility that behavior regarding places of interment may have been distinct from behavior associated with the disposition of the individual dead. It is important to evaluate closely the nature of "grave associations," and to pay particular attention to the distribution of materials in apparent disassociation with any single individual.

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REFERENCES

Beals, Ralph L.
1933 Ethnology of the Nisenan. University of California Publications in American Archaeology and Ethnology 31(6).

Coberly, M. B.
1973 The Archaeology of the Ryan Mound, Site Ala-329, a Central California Coastal Village Site. Greeley: University of Northern Colorado Museum of Anthropology, Occasional Publications in Anthropology, Archaeology Series No. 4.

Contreras, Eduardo
1957 An Extraordinary Central California Burial in Marin County. Berkeley: University of California Archaeological Survey Reports No. 38:29-33.

Crespí, Juan, O.F.M.
1947 An Unpublished Diary of Fray Juan Crespí, O.F.M. (1770). C. J. G. Maxim Piette, ed. The Americas 3(3).

Ericson, Jonathan E.
1977 Prehistoric Exchange Systems in California: The Results of Obsidian Dating and Tracing. Ph.D. dissertation, University of California, Los Angeles.

Fredrickson, David A.
1966 CCo-308: The Archaeology of a Middle Horizon Site in Interior Contra Costa County, California. Master's thesis, University of California, Davis.

1968 Archaeological Investigations at CCo-30 Near Alamo, Contra Costa County, California. Davis: University of California Center for Archaeological Research at Davis, Publication No. 1.

Hicks, Patricia A.
1978 The Holiday Inn (CA-SCl-128) Projectile Point Collection: General Discussion. In: Archaeological Investigations at CA-SCl-128, The Holiday Inn Site, Joseph C.

Winter, ed., pp. 203-222. MS on file at the City of San Jose, Redevelopment Agency.

Jackson, Thomas L.
1974 The Economics of Obsidian in Central California Prehistory: Applications of X-ray Fluorescence Spectrography in Archaeology. Master's thesis, San Francisco State University.
1986 Late Prehistoric Obsidian Exchange in Central California. Ph.D. dissertation, Stanford University, Palo Alto.

Johnson, E.
1940 The Serrated Points of Central California. American Antiquity 6(2):167-169.

King, Thomas F.
1970 The Dead at Tiburon. Santa Rosa: Northwestern California Archaeological Society, Occasional Papers No. 2.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. Bureau of American Ethnology Bulletin No. 78.

Landberg, Leif C. W.
1965 The Chumash Indians of Southern California. Los Angeles: Southwest Museum Papers No. 19.

Levy, Richard
1978 Costanoan. In: Handbook of North American Indians, Vol. 8, California, R. F. Heizer, ed., pp. 485-495. Washington: Smithsonian Institution.

Lillard, J. B., Robert F. Heizer, and Franklin Fenenga
1939 An Introduction to the Archaeology of Central California. Sacramento Junior College Department of Anthropology Bulletin No. 2.

Origer, Thomas M.
1987 Temporal Control in the Southern North Coast Ranges of California: The Application of Obsidian Hydration Analysis. Berkeley: Papers in Northern California Anthropology No. 1. Berkeley: Northern California Anthropological Group.

Palou, Francisco
1934 The Founding of the First California Missions Under the Spiritual Guidance of the Venerable Padre Fray Junipero Serra, as Told to Fray Francisco Palou. Translated by Douglas Watson. San Francisco: Nueva California Press.

Priestly, H. I., ed.
1937 A Historical, Political, and Natural Description of California, by Pedro Fages, Soldier of Spain. Berkeley: University of California Press.

Scott, Sara A., Carl M. Davis, and J. Jeffrey Flenniken
1986 The Pahoehoe Site: A Lanceolate Biface Cache in Central Oregon. Journal of California and Great Basin Anthropology 8(1):7-23.

Tainter, Joseph A.
1978 Mortuary Practices and the Study of Prehistoric Social Systems. In: Advances in Archaeological Method and Theory 1, Michael B. Schiffer, ed., pp. 105-141. New York: Academic Press.

Walsh, Michael R.
1988 Grave Goods from CA-SCl-131, in the Almaden Valley, Santa Clara County, California. Paper presented at the annual meeting of the Society for California Archaeology, Redding.

Wiberg, Randy S.
1988 The Santa Rita Village Mortuary Complex (CA-Ala-413): Evidence and Implications of a Meganos Intrusion. Salinas: Coyote Press Archives of California Prehistory No. 18.