46. AN UNUSUAL BURIAL FROM CONTRA COSTA COUNTY

By Eugene A. Hammel

In April, 1955, the University of California Archaeological Survey received a report from the Police Department of Walnut Creek, California, regarding the discovery of human skeletal material in their area. The remains, which proved to be aboriginal, had been uncovered during foundation excavations for a housing project some two miles northeast of Walnut Creek at a previously unrecorded site, now numbered as CCo-15 in UCAS files. The site exhibited no noticeable mound mass and had been under walnut cultivation prior to the construction project. Fragments of four burials, all disturbed by workmen, were recovered; one of these, presenting some peculiar features and accompanied by a number of artifacts, is here described.

Burial No. 1 lay about two feet under the surface in dark brown midden. All the post-cranial material had been disturbed, but the skull was fairly intact, having been broken in situ by a shovel blow across the base of the occiput, breaking that as well as the left ramus and the symphyseal region of the jaw. The disturbed portion of the burial included two innominate bones of a male, parts of three femora, and fragments of other long bones, vertebrae, and ribs. The skull itself lay face down in the midden, with the base toward the region from which the post-cranial material had been removed. Immediately beneath the face lay a row of five fairly complete birdbone whistles and sixteen fragments of others, together with a number of beads, whistle plugs, a rock fragment, obsidian chip, abalone shell pendant, and a large quartz crystal.

These materials only being recovered from the site, it was thought desirable to subject them to close examination in order to relate the site to others in the vicinity, the chronological and cultural positions of which are more precisely known.

Dating the site is most conveniently accomplished by means of the 265 beads of Olivella shell recovered. Corresponding to Gifford's X3c (Gifford, 1947) and Beardsley's 3b2 (Beardsley, 1954; Davis, n.d.), they are roughly rounded rectangles, ranging from 6.7 x 7.2 mm. to 8.9 x 10.0 mm. with conical holes drilled from the concave to the convex side of the bead so that the small end of the hole is on the convex side. The holes were more constant in size than the outside dimensions of the beads, perhaps because of the character of the drills used, averaging 1.2 mm. for the small end and 2.6 mm. for the large. Thickness of the beads at the edge ranged from 0.6 to 1.0 mm. Any wear on the edges of the beads is usually on the concave side, possibly from contact with the convex side of the next bead on the string (if strung); such contact would tend to bevel the edge of the bead and is here so faint as not to appear intentional. Biconical holes were not observed, although a few beads had holes with diameters at their centers slightly smaller than at their ends, this possibly from string wear; even in those cases, however, one end of the hole was noticeably larger than the other.

The 3b and 3b2 bead types are both helpful time markers, occurring typically in sites or site segments of the Middle Horizon (Lillard, Heizer,

and Fenenga, 1939, p. 25, passim; Beardsley, 1954, p. 45, Tables 12A, 13A). Heizer (1947, p. 17) records the single occurrence of a "3b" type in the Early Horizon of the Interior Province, although Types 1a and 2b were usual. Davis (op. cit., pp. 49, 107, 109-112), notes the occurrence of Type 1a in an early component of the Middle Horizon at Alameda 328, followed by a type 3b occurrence in a later component of the site. Types 3b and 3b2, then, are not often observed outside of Middle Horizon context and seem, in fact, to have been used as one of the chief discriminating criteria in assigning that horizon designation. They are succeeded, generally, by Type 2a (Beardsley, op. cit., p. 78) in Phase I of the Late Horizon. CCo-15, showing only 3b2, may be regarded as falling within the Middle Horizon, and possibly in a later phase of it, if Davis' comments on the 1a-3b succession within that horizon are valid for this area, and if type 3b may be considered as the local equivalent of type 3b2 at CCo-15.

The correlation of bead types with bird bone whistle types to achieve an even firmer time marker is invoked as justification for the typological minutiae which follow (cf. Beardsley, op. cit., p. 103). Until an adequate and reliable typology of whistles (or of any objects) appears, published data should be sufficiently detailed to permit readers to draw their own conclusions. Correlation of the whistles found in Burial No. 1 with bead type 3b2 is certainly positive; it remains only to be seen if the whistles can be "typed" in some useful fashion. Five fairly complete specimens and sixteen fragments were recovered; the former seem to fall in Gifford's type FF2 (Gifford, 1940), while some of the latter were too small to yield much information. The data are given in Table I. Identification of the bone is difficult because only the shaft is available, and because several of the whistles have been finely polished. A partially successful attempt at identification, however, by R. F. Johnston of the Museum of Vertebrate Zoology at Berkeley shows that six of the specimens (1/141823-24. [Ill. Fig. 1c, b] 1/141825, 1/141828-29, 1/141831) are ulnae of the golden eagle, Aquila chrysaëtos, one (1/141827) an ulna of the bald eagle Haliaeetus leucocephalus, and two (1/141841-42. [Ill. Fig. 1d, a]) the ulnae of the brown pelican, Pelecanus occidentalis. Mr. Johnston appends a note to his identification: "The two fragments that I have placed as pelicans seem to have different cross-sectional configurations, but I believe this is due to the fragments being cut from slightly different parts of the shafts of the original bones." The remaining fragments appear to be from a variety of unidentified birds. Specimens at Ala-328 were of duck ulnae and humeri, crane, heron, and condor, none of which are found at CCo-15 (Davis, op. cit., p. 35).

The four largest specimens range from 174 to 253 mm. in length. Of these, two (1/141841-42) are the only ones in the group to have the hole on the flat, concave side of the bone, all others having the hole on the round, concave side. The difference seems to be one of bird species, i.e., the two with holes on the flat side happen to be the specimens made from pelican ulnae. The whistle-maker's criterion evidently was the curve in the long axis of the bone rather than that in cross-section; no whistle has the hole on the convex side. Further, the position of the hole in the long axis is approximately medial. This is evident not only from a comparison of the total length of the whistle and the distance from hole center to the large end ("top" in Table I), but also from the widths of the whistle at

the hole and at median point on whistle or whistle fragment. In the complete specimens, the width at hole center point is very close to that at median point, the two points being close together on the bone. In the fragmentary ones, the width at hole center differs from that at median, the median of most fragments being between the hole and one end of the original whistle. It is therefore possible, by calculating from the hole center to "top" distance in a fragment, to arrive at an estimate of the length of the original whistle, and from the varying widths, to arrive at some idea of the shape of the bone, assuming, of course, that the data from the complete specimens are not misleading. If the lengths of the original whistles be so calculated from the fragments, it will be found that they are longer, generally, than most of the complete specimens of similar type (excluding the pelican bone whistles, see Table I); such a result might be reasonable, since the longest whistles would be most liable to break and survive as fragments rather than as complete specimens. In any case, the sample here is probably too small to allow one to lean too heavily on such a procedure.

Further examination of the whistles shows that the holes are all of the same general type, oval, with the long axis of the hole parallel to the long axis of the whistle, and with long to short axis usually in the ratio of 3:2. The holes are most frequently cut so that the edge of the cut is perpendicular to the bone surface, with some outward slanting at the ends of the oval; one hole seems to have been cut only by abrasion tangential to the cross-section of the bone (1/141852). In no case are the holes made with two parallel cuts perpendicular to the long axis of the bone and subsequent removal of the intervening portion. The asphaltum plugs, three of which were found in position and four loose, are crescentic in short cross-section and leave about 2 mm. of air passage between their upper surface and the plane of the opening, being positioned directly beneath the hole.

Decoration of the whistles is in the form of asphaltum rings with or without cordage impressions. Thirteen of the specimens show definite traces of asphaltum; two additional cases are doubtful. Of the thirteen, two show cordage impressions, although the whistles do not appear to have been bound together. No definite pattern of rings was observed, although wherever narrow bands appear in a series, the undecorated intervals are approximately as wide as the asphaltum rings. The region around the hole is seldom decorated although on one specimen (1/141852) there are asphaltum rings located quite close to the hole, on both sides of it. The cordage impressions indicate a two-ply, S-twist cord; degree of twist is difficult to determine from the specimens, but measurements from an enlarged photograph (see also Fig. 1e) show it to be approximately 50 degrees from the vertical. The cord is of two thicknesses, 0.5 mm. and 0.98-1.1 mm., measured on the specimens (specimen 1/141841 has both thicknesses). The whistles are not perfectly polished, and remains of small protuberances for feather attachment can be felt on most of them.

The chronological significance of the whistles is not wholly clear. Lillard, Heizer, and Fenenga (1939, p. 26) state that tubular birdbone whistles first appear in the "Transitional Culture," i.e., Middle Horizon of Central California. On the basis of size and degree of finish, most of the specimens appear to fall into Davis' Type II (Davis, op. cit., pp. 34-35). The hole, in the latter type, is on the concave side of the bone.

On the other hand, the position of the hole in the long axis in Davis' Type II is usually one-third of the length from the end rather than in a median position. The median position is more characteristic of his Type I, in which the hole is cut in the convex surface, something not found at CCo-15. While Davis states that the typological distinctions for Ala-328 are apparently valid for Central California, they do not seem to apply to CCo-15, where the specimens fall into both of his types. It is noteworthy that Davis' Type I, with centered hole, is later than Type II, with off-center hole (Davis, op. cit. p. 36). Beardsley, however (op. cit., pp. 89, 97) notes that whistles with off-center holes were found in the Late Horizon stratum at the Emeryville and Fernandez sites while whistles with presumably centered holes were found in McClure "B" (Middle Horizon) (op. cit., p. 60). Beardsley also notes (p. 77) that the whistle stops progressed from off-center to central position from Middle to Late Horizons in the Cosumnes Province. Lillard, Heizer, and Fenenga (1939, p. 44) record a bird bone whistle with an "end" perforation from the Transitional Culture at site Sac-66. If the position of the whistle hole is chronologically valid, as Davis states and Beardsley apparently assumes, the persistence of whistles with off-center stops at Emeryville "A" and the upper Fernandez levels is puzzling, and the position of the whistles from CCo-15 cannot be accurately determined. Possibly a re-examination of available specimens will adjust the difficulty. The important typological considerations in any re-examination would seem to be bone identification, size and finish, decoration, position of the hole with respect to surface curvature in the long and short axes, and the size, shape, and method of cutting the hole.

A quartz crystal from Burial No. 1, hexagonal and somewhat battered, measured 90 x 40 mm. overall and weighed 162.9 g. Around the smaller end were encrustations of a greenish ore, probably a salt of copper; similar inclusions were in the crystal itself. The crystal is of a type most commonly found in the Sierra Nevada. Battering of quartz crystals was noted at Ala-328 (Davis, op. cit., p. 30) with a suggestion of some unknown utilitarian purpose. Such a purpose may have been ceremonial as well, but it is not mentioned to the writer's knowledge in the ethnographic literature. None of the remaining material from the burial appears chronologically or areally distinctive.

The presence of an extra femur in Burial No. 1 throws some doubt on the association of the skull with particular items of the post-cranial material, although the skull is robust enough to have been that of a male, the sex determined for the pelvic bones. The skull does not appear to differ significantly from others found in the vicinity, except in the occurrence of supernumerary teeth. These are two incisors, one of which was still present and the second of which was lost prior to recovery of the burial. The opinion of Professor T. D. McCown, Department of Anthropology, University of California, is that the tooth in place is more probably a retained deciduous incisor and less probably a true supernumerary. Its large size militates against the possibility that it is a deciduous incisor, but its lingual position argues for it. The present non-spatulate shape of the tooth is perhaps a result of wear from the upper frontal incisor; definite wear planes are visible.

Table 1

Bird Bone Whistles (General)

UCM #1-	Length (mm)	Width (mm)				Material	Decorated
		Top	Hole	Median	Bottom		
141823	193	18.0	11.4	11.2	11.0	AC	x
141824*	185	15.9	10.9	11.4	10.3	AC	x
141825*	155	13.2	10.4	10.8	(0.9)	AC	x
141826	133	12.5	7.6	7.6	7.6	?	o
141827*	127	18.1	11.8	-	-	HL	o
141828*	135	12.4	10.6	11.4	-	AC	x
141829*	122	11.5	11.0	-	-	AC	x
141830	174	7.5	7.0	7.0	6.5	?	x
141831*	164	11.4	9.6	9.8	9.6	AC	x
141832*	105	-	-	-	-	?	?
141833**	-	-	-	-	-	?	o
141834**	37	-	-	9.5	-	?	x
141835**	26	-	-	11.3	-	?	o
141836**	39	-	-	16.5	-	?	x
141837**	41	-	-	11.6	-	?	x
141838**	41	-	-	9.8	-	?	o
141839**	37	-	-	9.9	-	?	x
141841	253	14.8	11.8	11.8	11.2	PO	x
141842	220	14.3	12.6	12.5	12.4	PO	?
141851**	69	-	11.4	-	-	?	x
141852*	106	-	15.6	-	-	?	x

* Fragmentary

**Very fragmentary

Materials: AC=Aquila chrysaëtos, HL=Haliaeetus leucocephalus, PO=Pelecanus occidentalis.

1-141825 is broken to a point, accounting for the 0.9 measurement.

1-141826 has an unworked process of bone at the bottom, making the actual bottom width 9.0; it is 7.6 just before the process.

Table 2

Bird Bone Whistles (Data on Holes)

UCM/. #1-	Hole				
	Length (mm)	Width (mm)	Position[1]	Cut[2]	EML[3]
141823	10.2	7.0	87	P	-
141824*	10.1	6.4	105	H?	210
141825*	9.3	5.5	90	P	180
141826	5.6	4.9	68	P	-
141827*	10?	?	122	P?	244
141828*	12.0	7.4	127	S	254
141829*	11.0?	5.4?	122	P	244
141830	7.0	4.0?	83	?	-
141831*	8.4	5.8	100	P	200
141832*	9?	7?	-	P	-
141833**	-	-	-	-	-
141834**	-	-	-	-	-
141835**	-	-	-	-	-
141836**	-	-	-	-	-
141837**	-	-	-	-	-
141838**	-	-	-	-	-
141839**	-	-	-	-	-
141841	8.7	7.0	125	P?	-
141842	9.8	7.5	73	P	-
141851**	-	-	-	-	-
141852*	10.3	7.8	-	H	-

* Fragmentary

**Very fragmentary

1/ Hole position is measured (in mm.) from the larger end of the specimen.

2/ Cut: P=perpendicular to bone surface, S=slanting, H=horizontal (tangential abrading)

3/ EML: Estimated minimum length, double the distance from hole center to larger end on the assumption that hole was medial. Given for fragmentary specimens only.

The skull also shows a circular hole and fracture in the lower margin of the right parietal bone. Professor McCown remarks that the regularity of the hole, the presence of a definite depressed fracture, the fact that a large chip has been removed from the inner table of the parietal, and the general character of the perforation indicate that it was most probably made by a sharp, conically-pointed, heavy instrument wielded with considerable force, and that it was present at the time of inhumation. Presumably a wooden spear or bone-tipped arrow shot from close range could have been the instrument. Although the hole is approximately of .25 caliber, the possibility of its being a bullet hole is out of the question; the date of the burial is too early, and its position in the ground would have made post-inhumation penetration of a bullet quite unlikely.

SUMMARY

Aside from the minor curiosities of the extra teeth and possible evidence of violence in the skull, the burial affords a means of dating the site, CCo-15, in terms of bead type, as Middle Horizon. The possibility of Early or Late Horizon strata in the site can no longer be investigated. The whistles, an excellent numerical sample for one burial, are undoubtedly contemporaneous with the beads and therefore Middle Horizon; their chronological position from a typological rather than associative standpoint, however, is uncertain. The nature of the burial indicates that it may have been that of a shaman, while the specific bones used for the whistles show possible local exploitation of raptorial birds or trade with the interior for certain types of bird bone if such were not available in the vicinity. The pelican bones may have been traded in from or obtained during an expedition to the coast. The quartz crystal suggests the possibility of trade with or trips to the Sierra Nevada.

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Explanation of Illustration

Figure 1.

Bird bone whistles from CCo-15 (a - d: actual size). Numbers are UCMA numbers. a. (1-141842). b. (1-141824). c. (1-141823). d. (1-141841). e. enlarged (3x) section of 1-141841, at xy.

Fig. 1