

carrying the earth away in baskets. Throughout the entire time of building a hundred men were occupied in hunting and fishing to secure food for the workers, and fifty women were occupied in preparing and cooking acorn mush and other foods. According to this, one hundred and eighty-five men were employed in chopping, building, and hunting, and fifty women in preparing the food.

The centerpost of the Mode'sse ceremonial house was a tree trunk of black oak or incense cedar, 2 feet or more in diameter and 14 or 15 feet in length. It was set 4 or 5 feet into the ground so that the exposed part stood up 10 feet from the floor of the excavation.

The small front opening was not more than 2 1/2 feet in diameter. In addition to its function as air intake or ventilator, it was used as an entrance by the old and feeble and also by the younger children, who were not strong enough to climb up to the main doorway, the smoke hole in the roof.

The two stringers in the Mode'sse ceremonial house were about 30 feet long. The breadth of the building was approximately 40 feet. Its posterior part was 2 or 3 feet longer than that of the Ham-mah'-we structure. This would make the total length of the Mode'sse structure 55 or 56 feet.

87. SIX CHERT KNIVES FROM TULARE COUNTY, CALIFORNIA

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ABSTRACT

Six large stone knives or scrapers, recently excavated in Tulare County and thought to be of a type unique to the area, are described, together with some speculation as to possible relationships with generally similar specimens found elsewhere.

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A recently discovered burial and occupation site, designated Tul-145 in the files of the University of California Archaeological Survey, located near the town of Three Rivers on the south bank of the Kaweah River in Tulare County yielded artifacts which appear to be representative of the

late prehistoric period of the region. Directly associated with these objects, or at equivalent depth in the deposit, were found six large specimens of light colored chert (Fig. 8a-f). All of these specimens, here called knives, were associated with burials as shown in the following table.

Table 1

Spec. no.	Ill.	Size (cm.) length width		Type & depth of burial	Objects associated	Remarks
1	Fig. 8a	10.2	4.5	Flexed 49 in.	2 large steatite beads	Remnants of clay housefloor assoc. with burial
2	Fig. 8b	14.8	4.4	Undetermined (disturbed) 48 in.	1 chert drill 3 obsidian proj. pts. 1 chert proj. pt.	Traces of asphaltum near tip of specimen
3	Fig. 8c	13.8	5.3	In same burial as no. 2		
4	Fig. 8d	12.0	4.0	Flexed 47 in.	2 mortars 1 mano 1 pestle	Trace of asphaltum near tip
5	Fig. 8e	15.3	4.0	Flexed 49 in.	None	Same as no. 4
6	Fig. 8f	7.9	3.9	In same burial as no. 5		

In each case the burials were covered with heavy stones. Although there was evidence of discrete walls of burial pits, there were heavy concentrations of ash beneath each burial, and wood mold and charcoal were scattered throughout the putative burial pits. Of sixty-nine burials recovered at Tul-145, only one showed evidence of cremation.

Unfortunately, before I was able to expose any burials in the site, the

top 12 or 18 inches (estimated) had been removed by heavy earth-moving machinery, hence all of the depths shown in Table 1 indicate an addition of 15 inches (mean of estimate) to the depths at which the burials were actually found. Carrying the same depth estimate throughout the entire excavation, it was noted that the remnants of clay covered housefloors occurred at depths between 49 and 55 inches. Below 55 inches to the sterile base of the midden at 87 inches, no housefloor clay nor obsidian specimens of any kind were found, though ash pits, stone mortars, and pestles did occur in this lower portion.

One complete pottery vessel of the type called "Owens Valley Brownware" (Riddell, 1951) was found at a depth of 27 inches, associated with a burial (not one of the burials which included the knives). In all of the excavation carried out, steatite vessel sherds were found with burials consistently above the 55 inch level and were absent below that level.

Other steatite artifacts (e.g. large beads and some complete or almost complete bowls) as well as some chronologically nondiagnostic obsidian projectile points were also found above the 55 inch level. The relative position of the burials accompanied by the knives and the frequent occurrence of steatite objects, plus the presence of the one pottery bowl, suggests tentatively a date for the upper level of the site at some time after 1000 A.D. No definite historic period artifacts were found in the excavation, though it is possible that some were present and destroyed when the upper 15 inches or so of the deposit were removed by the machinery. Additional excavation must be performed before more exact chronology may be established.

Concerning the possible function of these artifacts, the term knife has been applied because the objects resemble in general outline chipped specimens found both in the archaeological and ethnographic periods in Central California and the Great Basin.* In such specimens it is usually assumed that the squared or rounded end, as opposed to the sharply pointed end, originally was hafted (cf. Steward, 1933, p. 261). In the Tul-145 specimens, as can be seen in Figure 8, the blunt ends of the specimen may serve to distinguish them from many other specimens which have been called knives. The squared or slightly rounded ends all show a steep-angled, unifacially chipped edge, and this characteristic suggests that the specimens may have been used as scrapers, with the steep-angled planes representing the principal working edges. In support of this notion is the fact that three of the six specimens recovered (Fig. 8b, d, e) still retain traces of asphaltum on or near their pointed ends. All of the specimens may not or need not have been hafted at their pointed ends, but presumably a wooden handle at this end would serve to increase the efficiency of the tool in a planing operation. On the cutting or planing (?) edge of only one specimen was observed slight evidence of grinding or perhaps use-polishing.

*Apparently, however, some of these specimens may be labeled "knives" arbitrarily.

Assuming for the moment that these specimens are truly scrapers, we note that similar specimens have been recovered in the Great Basin or near its southern periphery. Harrington (1957, p. 80) illustrates an obsidian "Shoshone knife" about 13 cm. long which seems to have a similar blunt end, together with what appears to be steep-angled chipping. This specimen was found at the Stahl site, near Little Lake, Inyo County, California. Implements even more closely resembling the Tul-145 specimens also were recovered by Harrington (1937) from the lower levels of a stratified camp site near Hoover Dam in Arizona. The specimens illustrated (*ibid.*, p. 88) are about 13 cm. long, and are referred to as "neatly made snub-nosed scrapers which in southern Nevada and California are often associated with very early cultures."

Specimens which may be looked upon as of the same generic type as the Tul-145 examples, but made from obsidian, and with concave bases instead of squared or blunted ends, have been found in several sites in the southern Sierra Nevada and even among the ethnographic Owens Valley Paiute. The archaeological specimens have usually been thought of as ultimately dating from a time much earlier than that represented by the sites in which they have been found (see Lathrap and Shutler, 1955, p. 234).

Even if there is a true identity between the Tul-145 specimens and the other implements (skinning knives?) mentioned by Lathrap and Shutler, there is no way at present of confirming or denying the supposed early origin of this type of implement. In any case, it is thought that the six specimens from Tul-145, with their steep-angled, chipped bases (or working edges?) are specifically unique to the area. It is, however, expected that further excavation at the site may reveal associative information which will allow the specimens to be placed more exactly in a local cultural sequence.

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88. THE DENTITION OF INDIAN CRANIA OF THE EARLY AND LATE
 ARCHAEOLOGICAL HORIZONS IN CENTRAL CALIFORNIA

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ABSTRACT

Dentitions of cranial specimens from two series of archaeological sites in the lower Sacramento Valley, differing in time by more than 1500 years, were subjected to measurement and observation in an attempt to discover distinct features or changes which could be attributed to different cultural practices pertaining to food between the two series. The oldest group consists of fifty skulls derived from sites of the Early Horizon (2500 B.C.-1500 B.C.); the more recent series comes from sites of the Late Horizon (300 A.D.-1700 A.D.).

Results of this investigation show that while certain morphological changes have been effected in the crania through time, specific dentitional features or changes have not occurred in such magnitude as to suggest, without further examination, that different dietary or culinary customs obtained between the early and late series.

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