

ACCULTURATION IN CALIFORNIAN AWL FORMS

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Among the ethnographic collections of the University of California Museum of Anthropology is a collection of twenty metal-pointed basketry awls from Central California. A study of the variation and style of these implements is of considerable interest as a case example of acculturation in material culture.*

The metal-pointed awls represent the adaptation of Caucasian metal objects for use in basket-making. All of the California specimens were acquired shortly after 1900, and some are noted as "old" by the collectors. These pieces are therefore relatively early examples of the use of metal tools by the California Indians.

Before describing the metal-pointed specimens, some note should be made of the aboriginal awl form which was superseded in some areas by the metal-tipped awls. It may be remarked at the beginning that despite the obvious (to us) functional superiority of metal for sharp pointed objects, not all of the Indian groups accepted this innovation readily. At least one California group, the Western Mono, still does not use metal-pointed awls; and, as will be discussed later, there was marked divergence in the degree to which metal awls were used in Central California.

Prior to the coming of the whites, the Indians of California used awls made of bird and mammal bones. A considerable variety of types was used; Gifford notes that the Sierra Miwok used six types of awls for the single purpose of coiled-basket making (Gifford, 1940, p. 155). However, the most common form was probably an awl made from the split cannon bone of a deer. Such awls occur in widely separated archaeological sites, and they are still being made by some California groups. Awls made from the ulnae of deer have also been collected ethnographically from some Northern California groups, including the Pomo.

None of the bone awls collected, either archaeologically or from the living Indians, are decorated by carving or other ornamentation. They may be considered strictly utilitarian household implements. The only modifications noted are the use of cloth padding at the butt end or occasionally perforation of the butt for a thong or cord.

* I am indebted to Professor E. W. Gifford, Director of the University of California Museum of Anthropology, for permission to examine and publish the specimens. My thanks are also expressed to Mr. D. F. McGeein for preparation of the drawings of bone awls.

Ethnographic information collected in 1948 (Riddell and Meighan, ms.) revealed the following steps in the manufacture of the split cannon bone awl:

1. The whole cannon bone of a deer is split lengthwise along the natural groove which occurs on the bone.

2. The proximal end of each half of the bone is worked by abrasion to a sharp point. The distal end is unmodified and bears half of the original articulation on the finished awl.

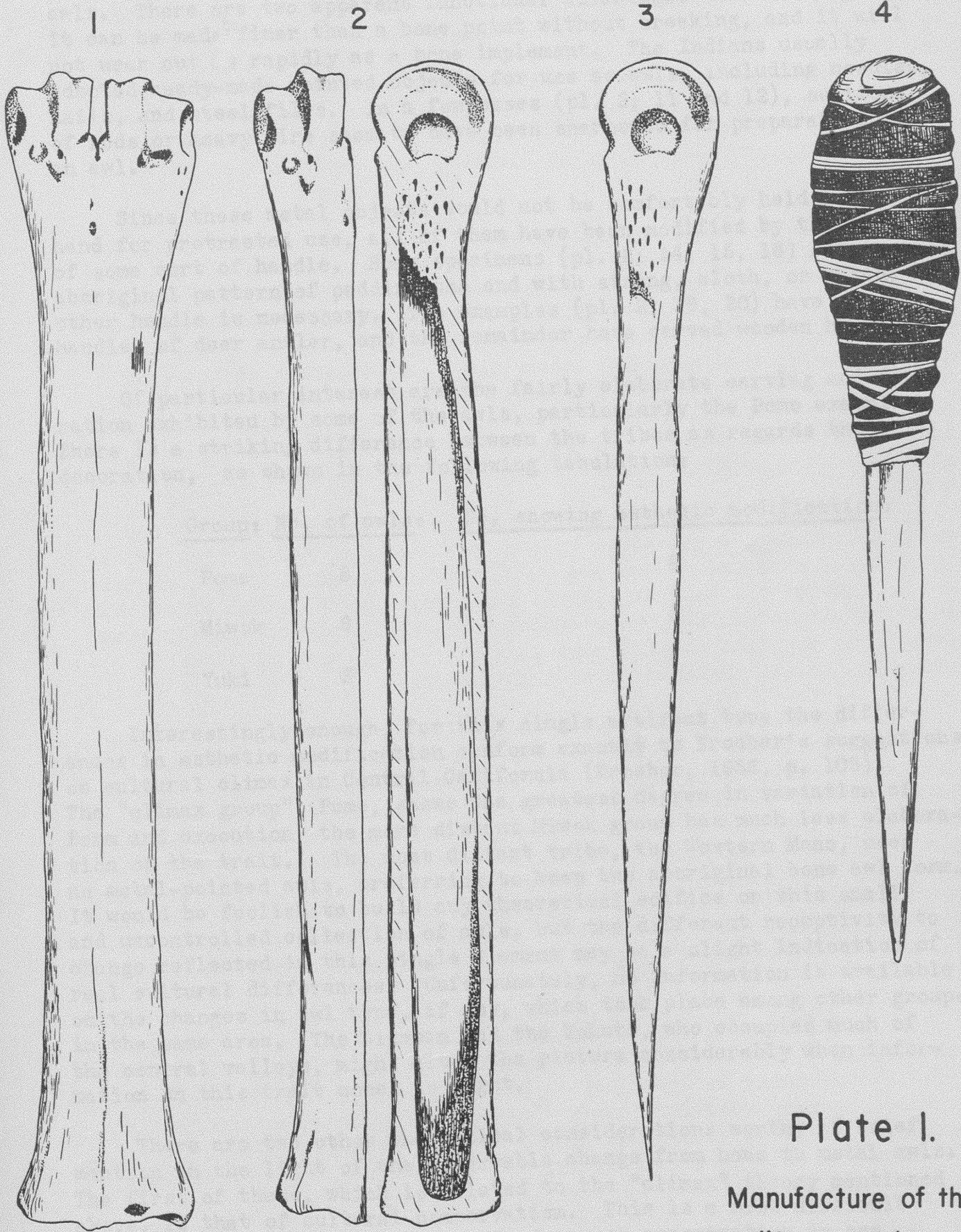
3. Occasionally, but probably in the minority of cases, the "handle" end is padded with leather or cloth.

Each cannon bone yields two awls when this technique is used. The steps in the manufacture are illustrated in Pl. 1.

Archaeological specimens from Central California appear to be made in the same way, but it was apparently more common to sharpen the distal end and use the proximal end as the handle. Of the specimens tabulated by Gifford (1940, p. 161), only 30 are made as described above, and 154 have the distal end made into the point.

The completed bone awl is about nine inches in length and is used without further modification. The point of the awl is resharpened from time to time (by abrasion) as it is dulled by use. A needle-sharp point seems to be desirable, and the sharpening results in a gradual shortening of the implement. The modern Western Mono say that it is easier to work with a long awl, probably because the tip can be tapered gradually to a finer point. When the awl is worn down to a length of about four to six inches, it is thrown away as no longer usable for making fine basketry. It is interesting to note that most of the bone awls recovered in Central California are relatively short, seldom exceeding a few inches in length. It seems probable that the majority of these specimens represent discarded pieces, thrown away because they could no longer be ground to a suitably fine point.

Bone awls are most commonly used in the manufacture of coiled baskets, the point of the awl serving to separate the stitches (and sometimes the foundation) of the top coil to permit insertion of the wefts forming the next coil. However, the occurrence of bone awls is not necessarily proof that coiled baskets also occurred in a given region, since the identical awl form was sometimes made to serve an entirely different function. Among the Northern Pomo, bone awls were also used for slitting lampreys (Gifford and Kroeber, 1937, p. 139). Among the Yurek and Hupa, who made only twined basketry, seven types of awls were used for slitting lamprey eels and for perforating buckskin for sewing (Gifford, 1940, p. 155). The awls could even be used on occasion in the manufacture of twined baskets. The Miwok sometimes used them in this way to tighten the wefts (Barrett and Gifford, 1933, p. 230).



0 1 2 3 4 5 Cms.

Plate I.

Manufacture of the
split cannon bone awl.

With the introduction of metal, some groups adopted metal-pointed awls. There are two apparent functional advantages to a metal point--it can be made finer than a bone point without breaking, and it will not wear out as rapidly as a bone implement. The Indians usually adopted ready-made pointed objects for use as awls, including needles, nails, and steel files. In a few cases (pl. 2; 11 and 12), sections of rods or heavy wire seem to have been sharpened for preparation of an awl.

Since these metal objects would not be comfortably held in the hand for protracted use, all of them have been modified by the addition of some sort of handle. Some specimens (pl. 2; 14, 15, 16) retain the aboriginal pattern of padding the end with string, cloth, or pitch; no other handle is necessary. Two examples (pl. 2; 19, 20) have small handles of deer antler, and the remainder have carved wooden handles.

Of particular interest are the fairly elaborate carving and decoration exhibited by some of the awls, particularly the Pomo examples. There is a striking difference between the tribes as regards this decoration, as shown in the following tabulation:

<u>Group:</u>	<u>No. of awls:</u>	<u>No. showing esthetic modification:</u>
Pomo	8	8
Miwok	8	2
Yuki	3	1

Interestingly enough, for this single artifact type the differences in esthetic modification conform exactly to Kroeber's suggestions on cultural climax in Central California (Kroeber, 1936, p. 105). The "climax group", Pomo, shows the greatest degree in variation of form and execution; the more distant Miwok group has much less elaboration of the trait. The most distant tribe, the Western Mono, uses no metal-pointed awls, preferring to keep the aboriginal bone awl form. It would be foolish to build any theoretical edifice on this small and uncontrolled collection of awls, but the different receptivity to change reflected in this single element may be a slight indication of real cultural differences. Unfortunately, no information is available on the changes in awl type, if any, which took place among other groups in the same area. The Nisenan and the Yokuts, who occupied much of the central valleys, might alter the picture considerably when information on this trait comes to light.

There are two other theoretical considerations worthy of brief mention in the light of the observable change from bone to metal awls. The first of these, which is related to the "climax" theory mentioned above, is that of cultural conservatism. This is a most difficult quality to assess objectively, and of course conservatism in one

direction does not necessarily indicate conservatism for the culture as a whole. However, whatever the causal factors, it is apparent that the Pomo deviated furthest from the aboriginal form of basketry awl, the Miwok changed somewhat but considerably less than the Pomo, and the Mono did not change at all. The degree of change may have had something to do with the intensity of Caucasian contact, but only an intensive study of many cultural elements can permit a conclusion on this point.

The Pomo not only accepted a change from bone to metal awls, but did so aggressively, adding new elements of their own invention. For one thing, the awls involved the efflorescence of a new, although minor, art form in the manufacture of carved wooden handles. Aboriginal awls were apparently never decorated, and aboriginal wooden objects (message sticks, pipes) show no such elaboration as is apparent in the awl handles. Possibly the Pomo specimens reflect a greater interest in basket making; the points are generally finer and would be more suitable for delicate work than the coarser Miwok examples. However, the aboriginal awl form does not appear to have differed between the two groups.

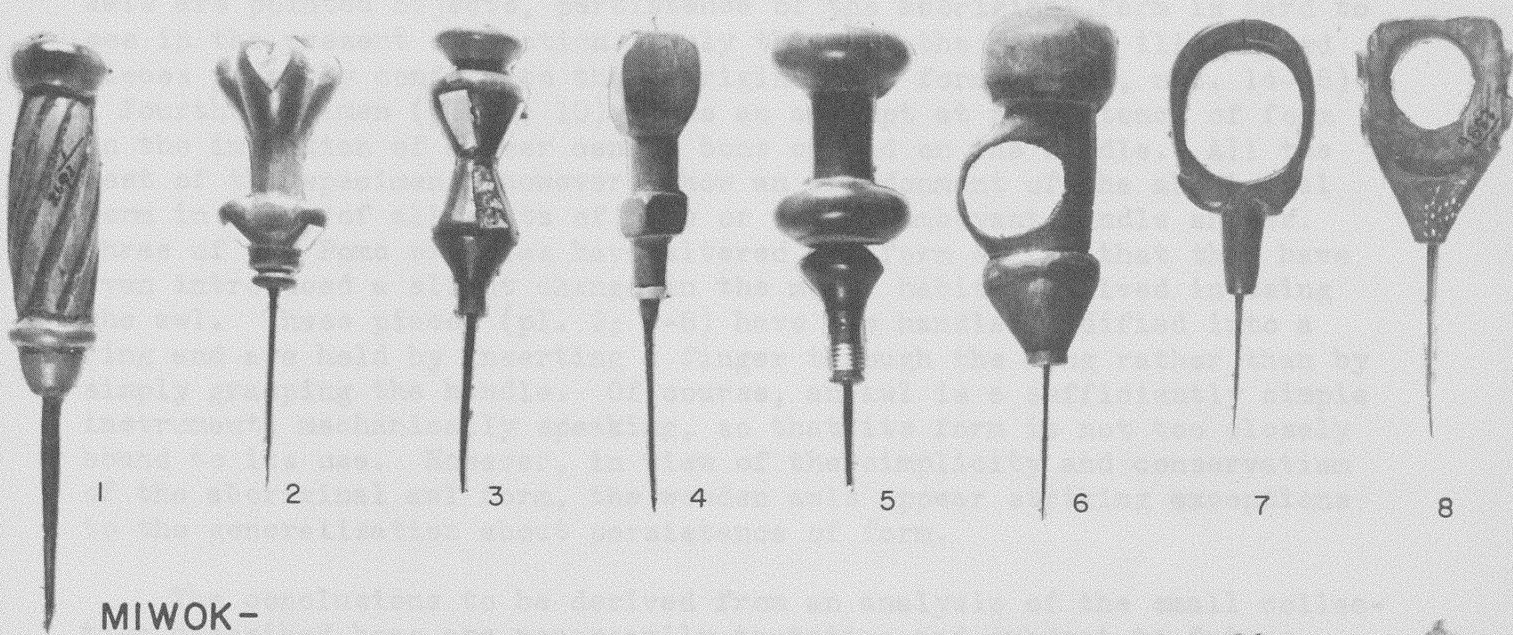
The Miwok were much more conservative in altering their former awl type. They did use metal points, but three of the eight examples have simple wrapping at one end to serve for a handle. Also, one of the two carved awl handles (pl. 2; 10) bears a good imitation of the distal articulation of a deer cannon bone. The piece represents an attempt to copy the old awl type in wood, at the same time taking advantage of the improvement of a metal point.

The Western Mono are most conservative of all in respect to their basketry implements. Even though they know that other California groups use metal-pointed awls, they still cling tenaciously to the deer bone awls which are indistinguishable from those used before the coming of the whites. It should be noted that in this case, the matter is strictly one of cultural choice, for nowadays it is easier for the Indians to get metal objects than to get the cannon bones of deer. One informant rationalized this adherence to the older form by saying that the Mono kept bone awls because they liked the squeaking noise made by a bone awl when it is pushed through a basket foundation (Riddell and Meighan, ms.).

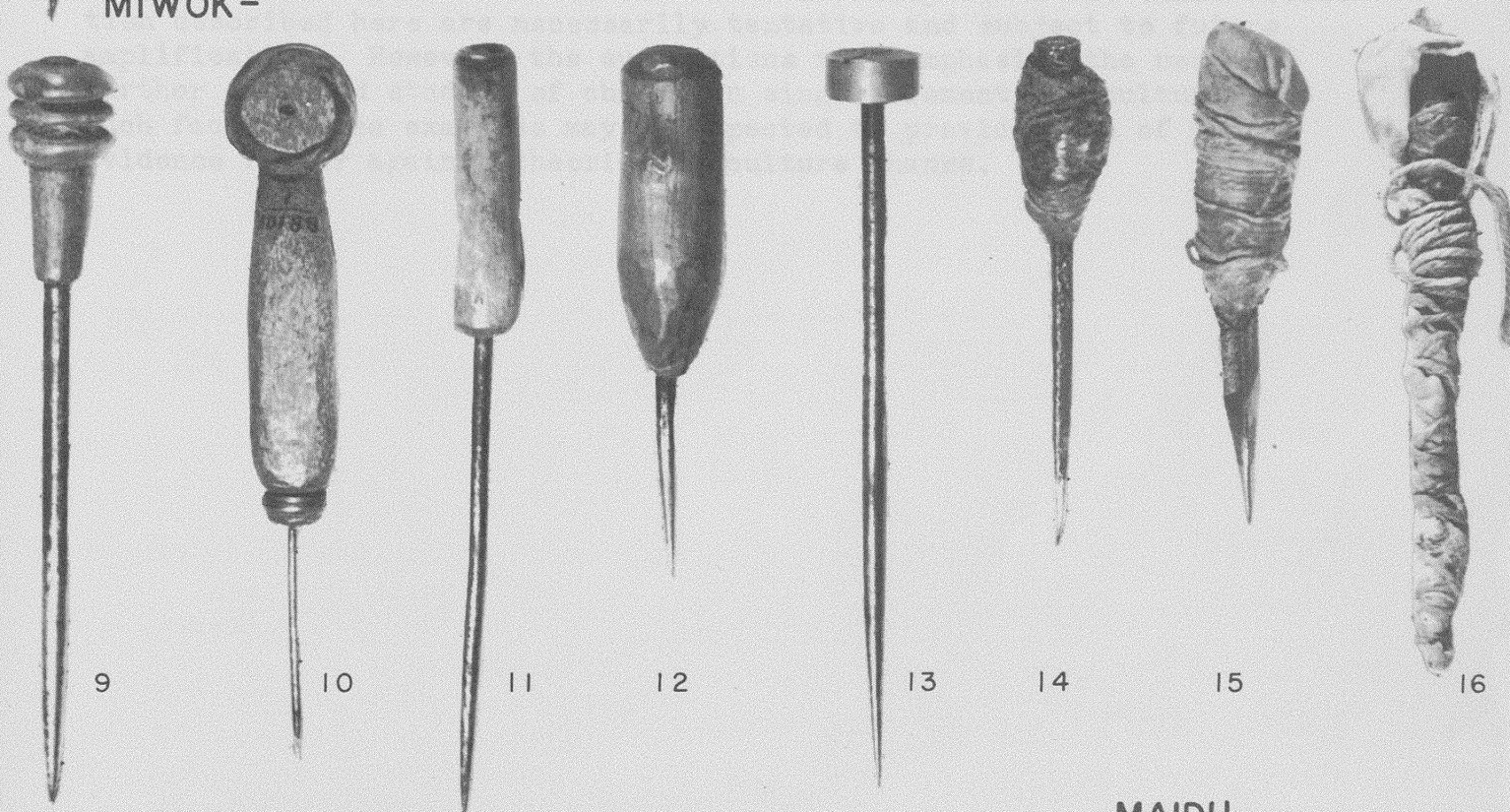
Finally, some attention may be paid to the ideas set forth in a recent study of acculturation in material culture (Quimby and Spoehr, 1951). This paper defines several kinds of change in material culture brought about by acculturative processes. The metal-pointed awls probably belong to Quimby and Spoehr's category A-3, "introduced forms manufactured or decorated locally, partly from native materials and partly from imported trade materials."

The collection of metal-pointed awls does not conform to one of Quimby and Spoehr's principal conclusions; namely, that form tends to be more stable and resistant to change than material (op. cit., pp. 146-147). Aside from the fact that both the aboriginal and historic

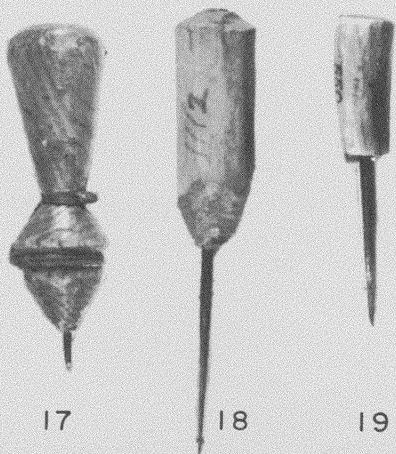
POMO-



MIWOK-



YUKI-



MAIDU-



awls are pointed objects, persistence of the aboriginal form is hard to see in the present collection. Only three of the twenty illustrated pieces properly conform to the aboriginal awl form (pl. 2, nos. 14-16). A fourth specimen (pl. 2; 10) shows an attempt at persistence of form in the imitation of a deer cannon bone carved on the handle. All the rest of the specimens, however, show an abandonment of the aboriginal form in favor of all sorts of more or less flamboyant handle shapes. Three of the Pomo examples have altered the form so far that they have even introduced a slight change in the motor habits involved in using the awl. These pieces (pl. 2; 6-8) have the handles modified into a ring and are held by inserting a finger through the ring rather than by simply grasping the handle. Of course, an awl is a sufficiently simple instrument, mechanically speaking, so that its form is not too closely bound to its use. However, in view of the simplicity and conservatism of the aboriginal awl form, the wooden awls appear striking exceptions to the generalization about persistence of form.

The conclusions to be derived from an analysis of the small collection described here are necessarily tentative and subject to future amplification. However, the suggestions made emphasize the need for further detailed studies of change in single elements of culture. Such factual case examples may be expected to provide much of the evidence for or against theories of culture change.

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EXPLANATION OF ILLUSTRATIONS

Plate 1. Steps in the manufacture of the split cannon bone awl. From specimens observed in use among the Western Mono, 1948.

1. Unmodified deer cannon bone.
2. Split halves of bone.
3. Finished awl with point produced by abrasion.
4. Awl with end padded with cloth and tied with string. Most awls appear to be used without padding, as in "C."

Plate 2. Metal-pointed basketry awls from Central California. Nos. 1 to 8 are Pomo, 9 to 16 are Miwok, 17 to 19 are Yuki, and no. 20 is Maidu. No. 1 is 12.7 cm. in length; others are to the same scale. Catalog numbers are those of the University of California Museum of Anthropology. Description as follows:

1. Oak handle, point looks like a piece of an ice-pick with re-sharpened tip. No. 1-2693.
2. Madrone (?) handle with sharpened nail point. Decorated with insets of abalone shell (Haliotis sp.). Top originally had a triangular Haliotis inset which has now fallen out. There is no sign of adhesive material in the top cavity. This piece is unaccompanied by specific data in the Museum, but since the collection it came with was from the Pomo area, and since the piece fits perfectly into the Pomo typology, there can be little doubt that it is of Pomo manufacture. No. 1-64308.
3. Oak handle with sharpened nail point. Decorated with Haliotis insets, most of which have fallen out. The top originally had an inset Haliotis disc 1.6 cm. in diameter. Pitch was the original adhesive; one opening also has wax in it which was probably used to refasten a loose piece of shell. Collected at Yokaiia rancheria. Tip of handle reinforced with a small piece of copper tubing. No. 1-2770.
4. Manzanita handle with sharpened nail point. Decorated with a shell bead which is used to strengthen the tip of the handle. The bead may be Haliotis or a re-worked mother of pearl button. No. 1-2678.
5. Manzanita handle with sharpened nail point. The tip of the handle is reinforced with the metal ferrule off an ordinary wooden pencil. No. 1-2670.
6. Madrone handle with metal point which is either a large needle or a reworked nail, probably the former. Tip of handle is reinforced with a piece of brass tubing 3 mm. long. No. 1-24212.
7. Madrone handle with a sharpened nail point. No. 1-71818.
8. Madrone handle with a sharpened nail point. No. 1-2396.
9. Oak handle; the point is an iron rod 5.8 mm. thick which extends through the handle and is tapered to a point at the use end. No. 1-10053.
10. Oak handle with sharpened nail point. The tip of the handle is reinforced with two turns of copper wire. The handle is oval in

- cross section, with a groove running over the end. Carving looks like a stylized imitation of the articulation on a deer cannon bone. No. 1-10188.
11. Willow (?) handle; point extends through length of handle. The metal is fairly soft and may be simply a piece of heavy iron wire. No. 1-10054.
 12. Oak handle with point of fairly heavy (4 mm.) iron rod sharpened at one end by filing. Collected ca. 1906 and described as "old." No. 1-9957.
 13. Brass handle, with iron rod (5 mm. diameter) sharpened by filing at one end. No. 1-10143.
 14. Handle of cloth wrapped with string; exterior may have a coat of pitch. The metal part is a square iron nail which extends through the handle and has the point sharpened. No. 1-10079.
 15. String-wrapped cloth handle. Metal is a piece of a three-cornered file (the tang end) with the tip sharpened by filing. The file bears the legend "M. & J. Wing" on one side and "Cast Steel" on the other side. The metal extends through the handle but there is a layer of cloth over the base of the metal piece. No. 1-9958.
 16. Sharpened iron rod with handle of "roots and pitch." Wrapped in a bit of cotton rag and wound with cotton string. No. 1-9925.
 17. Pine handle, shingle nail point. Handle is reinforced with galvanized wire. No. 1-11881.
 18. Willow (?) handle with metal point extending through the handle. Handle has two small nails driven into the upper end to hold the metal point in place. No. 1-11950.
 19. Deer antler handle with metal point extending through the handle. No. 1-2700.
 20. Deer antler handle with sharpened nail point. This piece is catalogued as "Maidu" but came from Round Valley Rancheria in Mendocino County. It may therefore represent influences from other Indians, such as Pomo or Yuki. No. 1-2699.