

INTRODUCTION

On July 1, 1948, which date marked the establishment of the California Archaeological Survey, there became available to the Department of Anthropology at Berkeley for the first time substantial funds to execute a program of systematic exploration of California prehistory. Among the several separate field parties working during the summer of 1948, one under the direction of Robert F. Heizer took the form of a regular summer session field training course in archaeology and involved the excavation of site Hum-118, located in Patrick's Point State Park. The State Park Commission, then under the chairmanship of Mr. J. R. Knowland, authorized the excavation. The entire collection of artifacts recovered during the excavation, after being studied at Berkeley, was returned to Patrick's Point State Park where it is still held in storage.

In 1949 a field party financed by the California Archaeological Survey worked during the summer exploring the refuse deposits of site Hum-169 at Trinidad Bay. This excavation was performed with the permission of Mr. H. B. Hallmark of Eureka, who at that time owned the archaeological site which is also known as the historic coastal Yurok village of Tsurai (Heizer and Mills 1952).

Northwestern California was, in 1948, as little known archaeologically as any region in California. The only archaeological investigation which had been carried out and reported before 1949 was by L. L. Loud, who dug a trench in a large site (Hum-67) located on Gunther Island in Humboldt Bay.

Beyond these three investigations, the only other excavation worthy of mention conducted in the northwestern corner of the state was the exploration of site DNo-11, near Crescent City, which was carried out under the supervision of Dr. Richard A. Gould in the summer of 1964. Dr. Gould's report is now in press in the University of California Publications in Anthropology series.

It will thus be seen that in the extreme northwestern corner of California, in the present area of Humboldt and Del Norte counties, which was occupied at the beginning of the historic period by the Wiyot, Yurok, Karok, and Tolowa tribes, very little is known about the prehistoric. We have at Berkeley, in the Archaeological Research Facility site files, records of twenty-four sites in Del Norte County and two hundred and six sites in Humboldt County.

In the penumbra of the two county area mentioned we have some archaeological information from A. E. Treganza's excavation (1958, 1959) of sites on the Trinity River about sixty miles east of Eureka; bits of information from the Chetco and Pistol rivers on the southern Oregon coast; the interior riverine sites at Gold Hill on the Rogue River in Takelma territory excavated by Cressman (1933); and the Iron Gate Reservoir site excavated by Leonhardy (1961). All in all, we lack any substantial body of controlled archaeological information from the coast of northwestern California since we are limited to four excavated sites. No significant body of excavation data for the area remains unanalyzed. One can say that nearly everything yet remains to be done to secure even the most rudimentary understanding of the history of human occupation of the northwestern section of the state.

It has been suggested, though without much evidence to support the proposition, that the northwestern coast of California was the last area of the state to be permanently settled. This may be true, but it may also be wrong. The few radiocarbon dates for site levels can be taken as indicating that the sites of historic villages were first occupied within the last 1000 years. Peat from the base of the Gunther Island site is dated at about 900 A.D., and the lowest levels of the Patrick's Point shellmound date from about 1300 A.D. These are both situated in attractive locations and if more ancient evidence of occupation does not occur here, it may be because there are older sites as yet not recognized, excavated, and dated, or because there was in fact no sedentary occupation of the coastal edge before a thousand years ago. Newman's review (1959) of the prehistory of the Oregon coast led him to remark on the lateness of all known archaeological sites, indicating that the same apparent lack of time depth prevails along the coast to the north as far as the mouth of the Columbia River. On present evidence, though this is admittedly slender, there is general agreement that all of the presently known archaeological sites from Eureka northward along the Oregon coast are very late in time, and that they contain evidences of a technology and economy which are, with few exceptions, directly comparable with ethnographic forms. The presumption is, therefore, that these sites (exception is reserved, of course, for significantly earlier sites which may be found in future) are settlement spots of village groups of the same linguistic units or tribes, who held the area at the opening of this historic period. We are on fairly firm ground, therefore, in concluding that site Hum-67 on Gunther Island is a Wiyot site first occupied about 1000 years ago, and that the Patrick's Point site (Hum-118) is a Coast Yurok village first occupied about 700 years ago. The Hupa are estimated, by the lexicostatic method (Hoijer 1956; cf. Hymes 1957), to have been resident on the lower Trinity River for about 1000 years, and Goldschmidt (1951:523) argues

positively for the late crystallization of Hupa and Yurok culture. While he makes no age estimates, we judge that Goldschmidt would perhaps admit as much time as a millennium for this process to have occurred. The Athabascan-speaking Kato are suggested as having linguistically separated from the Hupa about a thousand years ago (Hymes 1957:292). The Kato are of special interest since they are physically of the distinctive Yuki type. Such a shift—presumably one of a Yuki group acquiring a new language—ought to be traceable archaeologically, and with reasonable success in such an effort a new linguistic time depth datum could be secured.

Another culture historical problem can be suggested for the northwestern corner of the state. This pertains to the broad problem of immediate origins of the several Athabascan, Hokan, and Algonkian tribes who live in fairly small territories, crowded up against each other, and all sharing to a remarkable degree the same material and social culture but each retaining its special language forms. While general culture forms are shared, there are specific differences whose analysis (especially if carried out diachronically and comparatively) should tell us a great deal about the details of intertribal culture diffusion. Where and in what way the distinctive northwestern California culture pattern took specific form can only be answered by archaeological data, and in the attempt to unravel these little tribal histories the prehistorian can test several hypotheses which have been advanced.

The boat-, harpoon-, and dugout canoe-using, gabled plank-dwelling, salmon and sea mammal eating culture pattern of northwestern California must have had its origin farther north in the Northwest Coast culture area proper, and the southward diffusion of that pattern, which changed as it spread, may have been along the Pacific shoreline, probably by river-by-river steps or southward from the Columbia River by way of the Willamette Valley. There may have been some leap-frogging along the long coast route as suggested by the fact of small and relatively stabilized territorial holdings of linguistically differentiated tribes, strung out like beads on a chain and running south from the Makah along the Washington and Oregon coasts. Jacobs suggests (1937:61) an alternative to large scale and relatively rapid migrations to account for the Athabascans in the southern Oregon-northwestern California region in the form of "processes of village intermarriage and intercommunication with consequent gradual speech boundary shifts." While Jacobs admits the possibility of "occasional more rapid populational movements," it does not seem to us very probable that the score or so of Athabascan groups settled on the southern Oregon coast and in northwestern California south of the extended block of Penutian tribes on the Oregon coast—who in turn are backed up in the interior by the Penutian Kalapuya of the Willamette Valley—have got to their present

locations at the slow speed which we might call the "Jacobs intermarriage rate." The first Athabascans, however many there were, probably came as a unit, speaking Athabascan and moving through western Oregon before it became Penutian territory. Jacobs (1937:58) proposes that the Coos-Siuslaw-Alsea Penutian-speakers have lived in their present territories "during many hundreds if not thousands of years." We are sure Jacobs did not intend these words to be taken, thirty years later, as estimated dates, but do assume that he at least meant to indicate his belief that the Penutian tribes had long been residents of the central Oregon coast. The special distinctiveness of the northwestern California culture type is a local subcultural specialization which has existed long enough to flow northward, as Barnett (1937:159) says, "in an everfading overlay...as far as the Coos [tribe on the central Oregon coast], there to blend with the more precise manifestations of North Pacific Coast features." This dispersion from what Kroeber (1936) calls the northwestern "hearth" also apparently diffused upstream into the interior, if we may judge from the ethnographic culture of the Karok, the archaeological manifestation at the late prehistoric site in Shasta territory in the Iron Gate Reservoir area which is radiocarbon dated at 1400-1500 A.D. (Leonhardy 1961), and the prehistoric site in Takelma territory on the Rogue River at Gold Hill (Cressman 1933), these last two sites lying some 88 and 82 airline miles east or northeast of the mouth of the Klamath River. All of these sites produce material culture forms which are practically indistinguishable from those we know from the Yurok of recent times as well as from prehistoric sites in Yurok territory.

Drucker (1965:177) comments on the distinctive manifestation of northwestern California culture in the following words: "The whys and wherefores of this northwestern Californian culture focus, from the standpoint of areal culture history, remain to be discovered. Many distinctive features of [Northwest Coast] areal culture were lacking, such as the potlatch, masked dances, representative art, and the like. But the local pattern cannot be regarded as a marginal, watered-down manifestation in the process of diffusion from a higher center far to the north."

It is not clear whether the Oregon and northwestern California tribes exhibit a maritime culture which has been secondarily adapted to riverine environments or whether these are originally river-oriented cultures which have adjusted to the ocean coast. While the Wiyot, Yurok, and Tolowa seasonally hunted sea lions on offshore rocks, they were apparently not maritime in the sense that they ventured into the ocean at will. Nomland and Kroeber (1936) discuss this situation and state that "the Wiyot had made the pattern of their life attach to still water and its shores." The Coast Yurok concentrated their settlements on the shores

of the several freshwater lagoons which lay just behind the sand bars; otherwise they were mainly riverine in their outlook and economic dependence. Kroeber argued (1925:82-83) that the Yurok canoe and paddle are designed for river rather than ocean use.

Waterman (1920:10-11) characterized the Yurok dugout canoe as "exactly what we would expect to find, if a knowledge of navigation and a specialized industry in canoe-making had become gradually diffused southward from a center somewhere north of the Columbia River." From the map one would guess that Humboldt Bay and the lower Klamath River are the most favored areas of the northwest, and that they may have been settled first and held longest. A hint that this is so comes from Kroeber's (1934, 1941) discussion of types of kinship nomenclature of the Yurok, Wiyot, Tolowa, Hupa, and Karok, where he differentiates the Wiyot and Yurok from the other three. Since the "separation date" for Yurok and Wiyot languages is placed by lexicostatistics at slightly over 2000 years ago,¹ and similar data for the California Athabascans indicate more recent separations, the Wiyot and Yurok may be argued as older residents in the area, a conclusion which Kroeber reached—though with the proviso that this is pure inference—from his analysis of kin term systems in northwestern California. Jacobs (1937) makes a similar proposition on relative age of Algonkians and Athabascans in California on different grounds. It must be due to more than mere accident that the Wiyot and Yurok, who are both Algonkian in speech-family affiliation and who live next to each other, jointly held the most attractive economic locales in northwestern California; they seem, in short, to be the groups which arrived first and staked out the best living areas.

From this welter of opinion one can extract two useful and apparently sound conclusions: first, migrations of Algonkian and Athabaskan-speaking peoples into northwestern California have occurred, a point made obvious by their geographical separation from the main bodies of speakers (Kroeber 1917); and second, the two Algonkian-speaking tribes can be viewed as having entered the area either at the same time, or serially but at not too great an interval. They were then followed by the Athabaskan-speaking group or groups who were forced to take up residence either in unoccupied territories or, at least, in localities not occupied by the Wiyot and Yurok.

To bring the several points discussed here together with reference to suggested procedures to be followed in a program aimed at defining the prehistory of northwestern California, we propose the following:

1. Concentration of site survey and test excavation on the lower

courses of the several rivers which in most cases were held by separate groups. These would include, from north to south, the Smith and Klamath rivers, Redwood Creek, the Mad, Eel, Bear, and Mattole rivers. In addition, the lower Trinity and middle course of the Klamath should be surveyed. For each stream we have locations of named ethnographic village sites and these total, as a guess, a half thousand locations.

2. After this initial survey, and excavation results from, say, twenty sites, the larger drainage areas of each stream could be examined. This should not require as much time as the initial survey of lower stream courses since settlement patterns would by now be understood and some judgments of cultural affiliation of sites could be made on the basis of the information then in hand. Also, by this time the archaeologist should quite easily recognize anomalous sites, either as to location or material remains, and such abnormalities should be a reflection of age differences.

3. Once these two surveys were accomplished, further excavation for the purpose of throwing light upon duration of occupation, skeletal types, time of appearance in the sequence of specific artifact forms, and the like, could proceed at selected spots with the aim of providing necessary data to determine the exact nature of intra-area diffusion and, ultimately, to throw light upon extra-regional origins.

I. THE PATRICK'S POINT SITE (HUM-118)

Unlike the only archaeological site previously reported upon in northwestern California—Gunther Island in sheltered Humboldt Bay—the Patrick's Point site is situated on a relatively unprotected rocky bluff almost directly on the ocean front. According to the U.S. Geological Survey topographic map (Trinidad Quadrangle, 1952), it is located in Section 27, T9N, R1E, Humboldt Base and Meridian, at Longitude 124° 4' W, Latitude 41° 8' N. This map shows a small, unnamed point near the center of the slight coastal indentation formed between Rocky Point, one-half mile to the north, and Patrick's Point, one-quarter mile to the south of the site. This point is sometimes referred to as Palmer's Point. A mimeographed map issued by the California State Division of Beaches and Parks designates this point of land as Abalone Point. This is the location of site Hum-118.

This minor confusion in the naming of the geographical point was partly due to the earlier failure of Waterman (1920) to recognize the small Abalone Point as an Indian camp spot; he placed the nearest camp

known to the Yurok at the mouth of a creek which enters a small cove just to the south of Hum-118. This creek is unnamed on major maps, but is called Penn Creek on the mimeographed map referred to above. Waterman's site (1920:267) is called o-le'm, translated "where they camp." He states that "a good deal of confusion exists in my notes between this place and some large sea rocks lying about a mile offshore." Although site Hum-118 was doubtless abandoned and covered by heavy ground vegetation when Waterman was engaged in his field work, it is noteworthy that historic artifacts in the form of glass trade beads and some metal fragments, probably dating from not long after the mid-nineteenth century, were found in the midden deposit. Furthermore, there is today no physical evidence of a site at the mouth of Penn Creek. In all, it appears that Waterman did not visit the locality, and his Yurok Indian informants, while probably knowing vaguely of the Abalone Point site, simply chose to describe to him a comparatively unimportant nearby camp spot "at which sea-lion hunting parties were organized."

Whether or not Waterman's informants in fact knew of the Abalone Point site as a living place of their ancestors is another matter, since it does tend to depart from the pattern of living places evidently preferred by the historic Yurok. Site Hum-118 is on a fairly steep slope, and in this respect it is like other sites known to have been important villages of the coastal Yurok, such as Orick, Rekwoi, and Tsurai (Waterman 1920:226). Beyond this similarity ceases, for the usual location was one with a view toward a sandbar, open beach, and lagoon water. Tsurai is an exception in this regard, but its sheltered location in Trinidad Bay, near or on a small stream, perhaps explains why it was a notable Yurok coastal village. Site Hum-118 is neither sheltered nor conveniently located with respect to fresh water. Penn Creek is about 200 yards to the southeast but the walk from the site is precipitous and, today at least, the creek does not appear to be adequate to supply the water needs of even a small but concentrated population. Furthermore, the small beach adjacent to the site would not easily have accommodated the large canoes of the historic Yurok, although there is an open, rock-filled passage between the beach and the open ocean.

Environment

The dense plant cover of the site—which may have prevented its recognition by Waterman or his informants—was partially the result of its exposed situation on the windy coast where an extremely dense mass of low-growing vegetation had taken hold. Some of the plants were "ruderals," which have a special affinity for places which have been disturbed or

modified by human occupation. The stinging nettle (Urtica sp.) and the thistle (Cirsium sp.) are present, and in addition various grasses, the small blackberry (Rubus sp.), cow parsnip (Heracleum sp.), horsetail rush (Equisetum sp.), wild cucumber (Marah sp.), and various succulents (e.g. Mesembryanthemum sp.). These may have served effectively to disguise the characteristic shell midden soil. On the headland above the site there is the beginning of a rain forest which includes Douglas fir, hemlock, pine, and red elder, among others. The forest trees of the Wiyot territory (summarized by Loud 1918:394) may be taken as a rough index of the variety of trees occurring in the general region of Hum-118.

The so-called Humid Transition Life Zone of coastal northern California (McMinn and Maino 1956:19) includes most of the territory of the historic Wiyot and Yurok and its characteristic acorn-producing tree is the tanbark oak (Lithocarpus densiflora). Although we cannot be certain what species of acorn was utilized by the occupants of Hum-118, there is evidence, in the form of pestles and hopper mortars, that they were grinding some kind of seeds at the site. Since the historic Yurok showed a definite preference for the tanbark oak (Baumhoff 1963:164), it is probable that the people of Hum-118 also utilized this kind of acorn.

Faunal remains at the site were dominated by molluscan species. Clams (Saxidomus, Macoma, Protothaca, Hinnites, and Donax sp.), mussels (Mytilus californicus), and oysters (Ostrea lurida) were the chief food species, although shells of chitons, barnacles, and sea urchins as well as those of the small gastropods (Tegula sp. and Thais sp.) were also found. Shells which may have been used for ornaments, such as abalone and Olivella, were probably rare at the site even though the Caucasian name for the locality is Abalone Point. Of the few burials with accompanying artifacts, only one had Olivella beads (two kinds); another included a mussel shell ornament.

Fish and bird bones recovered in the excavation do not seem to have formed an important part of the midden deposit. The relatively small quantities of fish bone can be attributed to causes other than that of non-exploitation by the inhabitants. For example, they may have ground up the fish bones or perhaps made special efforts to dispose of them by dumping in the ocean (cf. Barnett 1937:167, and Driver 1939:314, on ritual disposal of salmon bones among Tolowa and Wiyot). In addition, large numbers of net sinkers were found in the midden deposit, and the chipped implements of chert recovered would have served admirably for scaling fish (cf. Kroeber and Barrett 1960:pl. 20). Such specimens lend credence to the idea that fish may have been more important than would seem to be indicated by the small collection of fish bones found in the midden.

Of sea mammal bones recovered and identified, those of the Steller sea lion (Eumetopias jubata) and sea otter (Enhydra lutris) were most frequent, although the Pribilof or Alaska fur seal (Callorhinus alascanus) was also occasionally represented. Small quantities of whale bones were present at all levels in the site, in both modified and unmodified form, and one bone each of the harbor seal and the porpoise was found. A crude index of the importance of sea mammals to the inhabitants of the site was provided by weighing bones of all species (mainly sea lion but including seals and otter) recovered in one square (map 1, section 10 L2). This section is probably representative of the most intensively occupied part of the site, near its center. The depth levels and bone weights are as follows: 0-36 inches, 107 pounds; 36-72 inches, 84 pounds; 72-108 inches, 44 pounds; 108-130 inches, 27 pounds.

Remains of several land mammal species were noted, with the Roosevelt elk (Cervus roosevelti) and deer (Odocoileus sp.) most numerous. Bones of coyote, raccoon, lynx, and river otter were present in small numbers. Probably many of the mammal bones were also utilized in the manufacture of implements or ornaments.

Table 1 shows a selected list of bones which could be identified with certainty and which occurred frequently enough to suggest that the hunting of the animals represented was a regular practice at or near the site. The purpose of this list is to give an idea of the depths at which the bones were found, not of their relative numbers. It will be seen that of the important species, only the sea lion (Eumetopias) seems to have been introduced slightly later than the others. No reason can be suggested for this possibility unless it was that the early occupants had not at first developed proper techniques for taking this mammal. Otherwise, all of the prominent species seem to have been utilized almost throughout the life of the site.

The observations indicated in Table 1 do not disclose different food preferences between the prehistoric and historic Yurok residents of the region. If, as we suspect, the relative lack of fish bones may be attributed to some cause other than mere non-utilization, then we have a picture of a group which came to Abalone Point, probably seasonally, in order to exploit the resources of the region while yields were at their peak.

TABLE 1

Occurrence by Depth of Bones of Some Land and Sea Mammals at Hum-118

Depth (in.)	Sea Otter (<u>Ephydra</u>)	Sea Lion (<u>Eumetopias</u>)	Elk (<u>Cervus</u>)	Deer (<u>Odocoileus</u>)	<u>Cervus</u> or <u>Odocoileus</u>
0- 12			x	x	x
12- 24	x	x	x	x	x
24- 36	x	x		x	
36- 48	x			x	
48- 60	x	x	x	x	
60- 72	x	x	x	x	
72- 84		x	x	x	x
84- 96	x		x	x	
96-108	x	x		x	x
108-120	x		x	x	x
120-132	x		x	x	
132-144	x		x		

Excavation

The Patrick's Point site (Hum-118) first came to the attention of the University of California in 1947 when R. F. Heizer and A. E. Treganza visited it and made some preliminary observations, including the excavation of a small test pit in the center of the midden deposit. In the summer of 1948 a group consisting of ten University students registered in a field class under the direction of R. F. Heizer excavated about eighty per cent of the site.

In the spring of 1964 A. B. Elsasser visited the site for the purpose of recovering charcoal to be used for dating the lower levels of Hum-118. Excavation was carried out near the major face of the 1948 trenching, and it was possible to identify what seemed to be undisturbed midden deposit near this face. Charcoal was collected from here and from several other apparently undisturbed portions of the site. Results of the dating of the

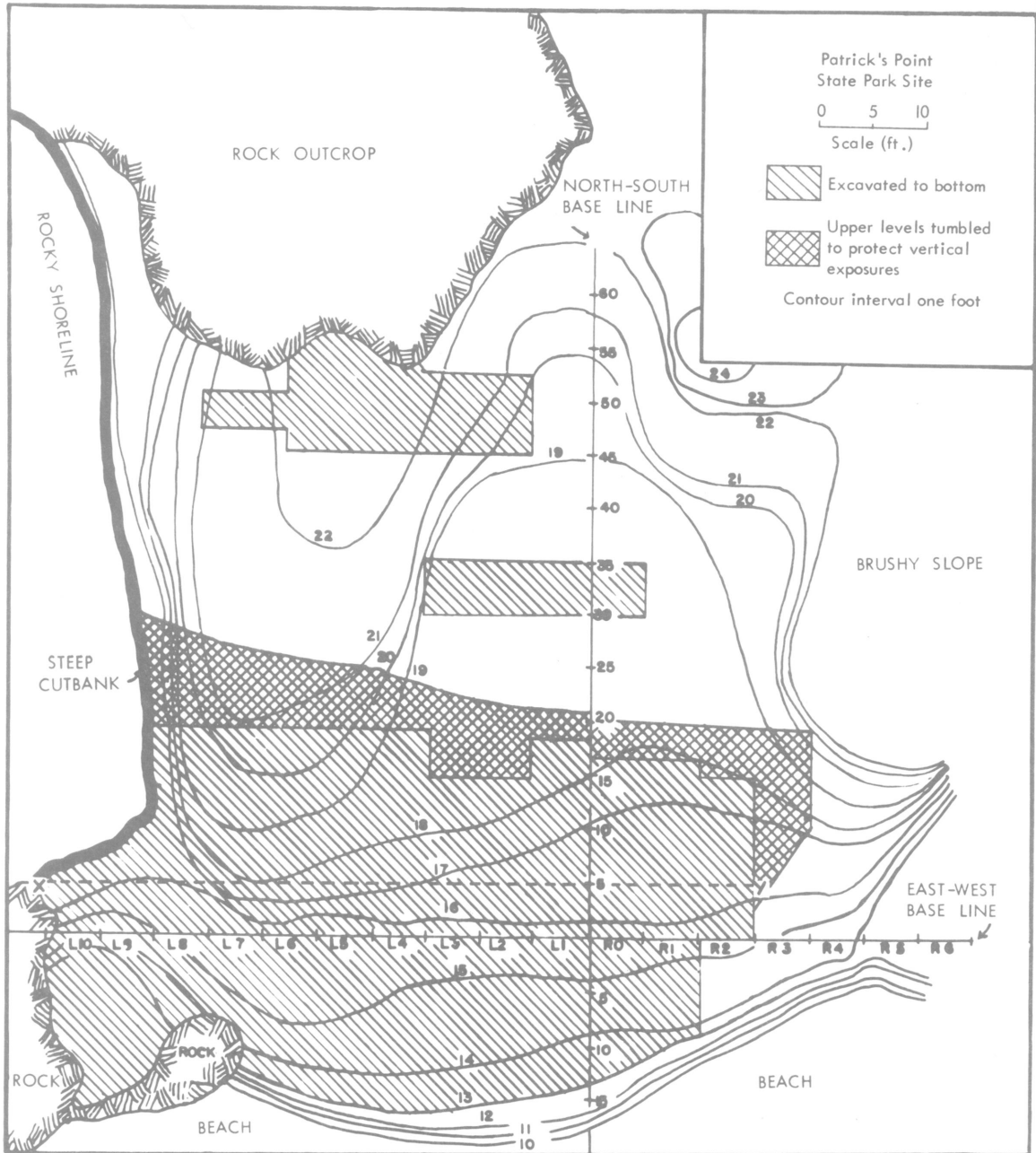
samples² indicate that the earliest date of occupation was around 1310 A.D. Although this date seems recent in view of the great depth of the deposit, it is not particularly out of line with the few other dates secured for sites on the northern California-Oregon coast.³

The extent of the 1948 excavation is shown in Map 1. The site mapping system followed was conventional for excavations in California, and allowed horizontal locations of important artifacts to be determined within close limits since square units (5 x 5 ft.) formed a grid system which could be projected over most of the surface of the site. Where possible depths of all artifacts were noted, and all were likewise assigned a definite unit square location. In order to maintain greater clarity of tabular presentation, for specimens unassociated with features or burials depth only is given.

Profile drawings were executed regularly in all excavation units and are on file at the University of California Archaeological Research Facility, Berkeley. Chart 1 gives an impression of the nature of the deposit. The necessity for excavating in arbitrary levels will be appreciated from an examination of the chart: no definite physical strata of a continuous nature could be determined in studies of the profiles at 5 foot intervals. Remains of house floors or pits, and concentrations of stones which probably represent comparatively intact fireplaces are indicated. All unusual occurrences or structural elements found throughout the deposit were labeled "features"; these are summarized in Table 2.

Grid square locations are presented for features and burials, thus placing them horizontally in the deposit. Use of the grid system is based upon the arbitrary designation of all 5 x 5 foot squares lying on and north of the east-west base line (map 1) as "0" squares. Thus Feature 11 is given as occurring partly in square "0L1" in Table 2 and is shown in Chart 1 as in unit "L-1," along the "5" foot wall of the unit. Accordingly the "5" squares all lie between 5 and 10 feet north of the east-west base line, and the system extends north to the "50" squares. Location of features or burials lying south of the east-west base line refer to squares beginning with a "-5" designation.

Whatever objections there may be to the assumption that artifacts found in the lower levels of a site deposit are older than those found in the upper levels may be thought to be multiplied when the site in question is located upon sloping terrain. Nevertheless, at Hum-118 there are certain aspects of the site which argue for the validity of the assumption. First of all, the habitation area is quite small as such areas go, for example, in sites in central California. Since a limited sloping area was



Map 1. Site Map of Hum-118
 Section X-Y, North of East-West Base Line
 Refers to Profile Drawing in Chart 1

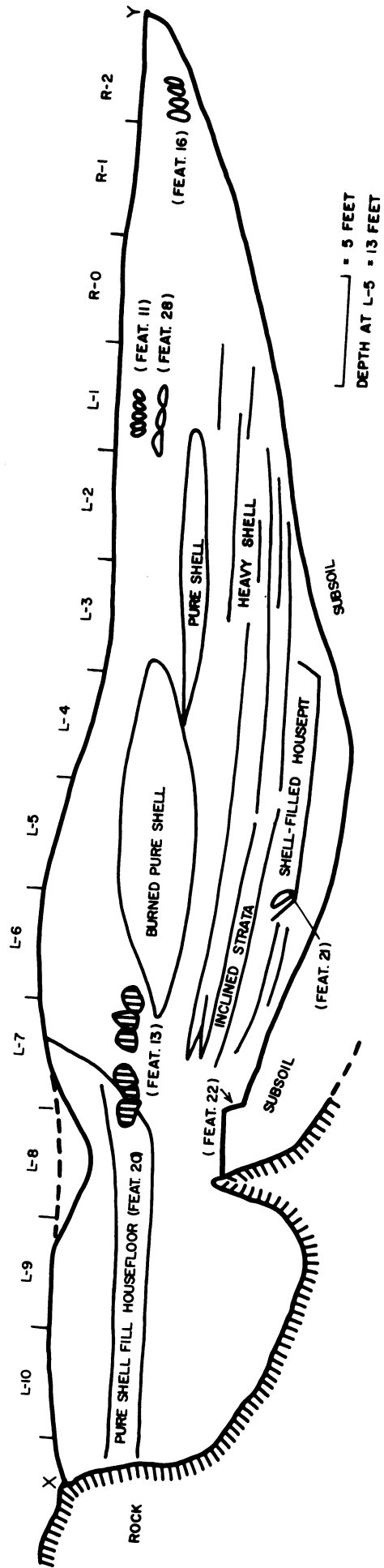


Chart 1. Hum-118. East-West Profile, along Section X-Y

chosen, there could not have been much room to practice effective separation of families or kin groups which may have been utilizing the site simultaneously. Accumulated shell and other refuse could be used from time to time in order to level out an area to accommodate perhaps one integrated group. Many artifacts were found in the talus on the west and south sides of the site; these could easily have been swept over the edge when some kind of crude artificial leveling was attempted, although the same result could have come about from natural erosion of the central mass.

The two definite house floors noted (features 20, 35, table 2) were located not more than 15 feet from each other, and in addition the depth of the midden deposit suggests a concentration of living near the center and at the southern, or naturally lower, end of the site. Maximum depths at which features or artifacts were recovered in selected squares indicate the approximate depths of deposit at various parts of the site, as follows, from north to south: 50L3, 40 inches; 30L4, 72 inches; 5L5, 156 inches; -10L5, 82 inches; -15L3, 40 inches. Finally, although the various layers of shell and midden soil show some disconformities of the soil—such as sloping lenses of pure shell interspersed in mixed masses of dark, sandy soil—there was remarkably little evidence of disturbance of the soil by the occupants themselves. There is indeed no positive evidence that the leveling suggested actually took place. The few burials found were not elaborate and did not occur in well-defined pits. In any case pits which were prepared for the burials probably were not very deep.

The two house floors probably represented spots which were used over a period of years, while the other features encountered seem to suggest something more temporary. These features consisted of nine fairly definite fireplaces and eight configurations or groupings of rocks which either may have been fireplaces or defunct storage places, or may have had some other unknown function. Six of the thirteen concentrations or caches of artifacts contained a total of 346 notched or grooved stones identified as net sinkers. Five of these concentrations contained chipping refuse and in one spot there was a cache of chert blades. Of the six or seven remaining features, all suggested the former presence of some kind of shelter or impermanent camping place. Whether or not this was actually the case, it seems fairly certain that the features were all associated with some positive, deliberate actions on the part of the occupants, in contrast to many of the other artifacts found at the site which presumably were accidentally broken or lost in the course of everyday living.

TABLE 2
Features Excavated at Site Hum-118

Feature No.	Description	Location (Map 1)	Depth* (in.)	Associated Objects, Remarks
1	Configuration of small rocks, some burnt; set in shell, fine gravel, bone	-10L4	18	
2	Cache of 39 notched pebble sinkers, in heavy shell layer (12x12x2 in. deep)	-10L2	54	
3	Upright flat stone (23x13 in.)	-10L3	62	No apparent assn. w/other artifacts
4	Upright flat stones (covering area 59x50x24 in. deep)	-5L3	86	
5	Trenches in subsoil (13 ft. long, 58 in. wide, 14-18 in. deep)	-15L3, L5	40	
6	Grouping of small stones (36x25 in. area)	-5L3	84	Charcoal and sea mammal bones
7	Fire pit (18 in. diam., 6 in. deep)	-5L1	84	
8	Rock configuration set in subsoil (30x12 in. area)	-10L5	82	
9	Fire pit (54x38x10 in. deep)	0L4, L5	34	Wood charcoal; no assn. with house floor
10	Fire pit or oven (68x42x6 in. deep)	0L5, L6	38	
11	Stone-lined fire pit (40 in. diam., 10 in. deep)	0L1, 5L1	27	Possibly below remnant house floor
12	Circular stone fire pit, lined with beach gravel (38x34x8 in. deep)	0L1, R0	19	12 in. above portion of Feat. 11. Historical objects: iron, glass, china frags. near pit

*Vertical depth from surface at find spot

TABLE 2 [cont'd.]

Feature No.	Description	Location (Map 1)	Depth* (in.)	Associated Objects Remarks
13	Configuration of rocks, possibly fire pit (67x36x18-24 in. deep)	OL6, L7, 5L7	9-30	Small pestle, sea mammal bones; not much charcoal found
14	Cache of 19 net sinkers (14x16 in. area)	OL3	62	One projectile point fragment
15	Configuration of rocks (55x45 in.)	OL5	55	Charcoal, under burnt shell and sand layer
16	Stone enclosed fire pit (73x46x13 in. deep)	OR2, R3	45	Pestle, scraper, harpoon point
17	Configuration of burnt stones (60x57x12 in. deep)	OL5	64	6 notched pebble sinkers, 1 steatite dish
18	Concentration of historic objects with objects of aboriginal manufacture above and amid historic specimens (120x120 in. area)	OL1, R0 5L1, L2, R0	3-28	Aboriginal: chert and obsidian points, scrapers, blades, cores, sinkers, choppers, bone implements. Historic: iron, glass, china, powder flask, metal buttons, pistol
19	Fire pit (38x21x15 in. deep)	OL6	76	
20	Housefloor; packed sand and dirt, incomplete (ca. 15x15 ft.)	OL8, L9, L10, 5L7, L8, L9	36	Hopper mortar, flush with floor level. Chert flakes, chipped stone, bone, antler objects; probably in post-occupation fill
21	Configuration of upright flat rocks (in a line 71 in. long, 15 in. wide)	OL4, L5, -5L4, L5	122	Within a slightly defined shell-filled house pit

*Vertical depth from surface at find spot

TABLE 2 [cont'd.]

Feature No.	Description	Location (Map 1)	Depth* (in.)	Associated Objects Remarks
22	Cut bank in sterile soil extending N and S (17 ft. long, 24 in. deep on N end, 18 in. deep on S end)	5L7, L8 to -15L7, L8	84(N) 18(S)	Sterile soil covered with midden soil
23	Stone-lined fire pit (30x25x8 in. deep)	5R0	25	1 jasper point, 1 charred harpoon base
24	Concentration of chipping refuse (4x5x5 in. deep)	5L1	25	Red & yellow jasper chips. Red jasper pt. found in lot
25	Concentration of primary and retouched green chert flakes (4 in. diam., 6 in. deep)	ORO	58	In sand level which was probably a house floor
26	Cache of chert flakes	5L5	72	No secondary chipping noted
27	Cache of 23 chert blades (14x11x6 in. deep)	ORO	36	1 hammerstone above cache. Blades show only primary flaking
28	Layer of boulders below Feature 11	OL2 to OR1, 5L2 to 5R1	24	Sea mammal bones; layer of flaking refuse within boulders
29	Concentration of 100 notched pebble sinkers (40x36 in. area)	OR1	64	At bottom of rubble-filled pit. Probably assoc. with net.
30	Sea lion skull with hole in parietal, with headless dog(?) skeleton & sea mammal scapula associated (cf. Heizer 1951)	5R0, ORO 5L1	87	Sea mammal tooth Stone maul frag. Projectile point Notched sinker Hammerstone

TABLE 2 [cont'd.]

Feature No.	Description	Location (Map 1)	Depth* (in.)	Associated Objects Remarks
31	Fire pit (30x29x10 in. deep)	50L3	40	Hammerstone, chert point frag., chert drill fragment
32	Wall of boulders and smaller rocks (60x16x12 in. high)	10L6	67	Resting on charcoal layer
33	Concentration of chert implement flaking refuse (24 in. diam., 1.5 in. thick)	10L6	36	
34	Concentration of chert implement flaking refuse (12 in. diam., 2 in. deep)	10L7	84	
35	House floor with marked fire pit (floor 12.7 ft. long)	15L7, 10L8, 10L9	63	Fire pit 60x44 in. area; charcoal interspersed with burnt planking
36	Sea mammal skull on clay layer	10L1	74	Pelvis at top of skull
37	Cache of 122 notched net sinkers, 1 grooved sinker (20x36 in. area)	10L2, 10L3	102	
38	Cache of 41 net sinkers	30L4	62	6 chert flakes
39	Concentration of 25 notched pebble sinkers (covering area 30 in. diam., 6 in. deep)	10R3	12-18	

*Vertical depth from surface at find spot

Data from the small number of burials excavated at Hum-118 (table 3) accord in most details with the simple interments (primary inhumation) noted at the Gunther Island site of Hum-67. The predominant position is extended (on back?), there are few or no artifacts with the burials, and

TABLE 3
Summary of Burials at Site Hum-118

Bur. No.	Location (Map 1)	Depth (in.)	Sex/Age	Type of Burial (primary, secondary)	Grave Accompaniments	Remarks
1	-5R2	40	?/Adult	Prim. inhumation, no articulation	None	Disturbed
2	-15L3	40	?/Inf.	Ditto	<u>Olivella</u> beads, (type 3d), Spire-lopped <u>Olivella</u> beads	Crushed
3	ORO, R1	75	M/Adult	Prim. inhumation, extended position, dorsal Orientation: W	1 circular mussel shell ornament	In subsoil, midden- filled pit
4	OL3, 5L3	112	?/?	Secun. inhumation	1 sea mammal scapula	
5	OL1, L2	102	M/Adult	Prim. inhumation, extended position, ventral Orientation: NE	1 ground slate perfor. object 1 chert point 1 beach pebble in mouth 1 sea lion scap.	See Pl. 9a
6	5L2	125	?/Young adult	Prim. inhumation, extended position, dorsal Orientation: NW	2 bone tools (pins)	On top of clay sub- soil of deposit
7	10L1	82	?/Adult	Secun. inhumation (skull only present)	None	Poor con- dition Skull lacks mandible

those objects which were present were evidently not of great value to the people. The orientation of the Hum-118 skeletons is inconclusive—the people may have preferred north or west over the other directions but were not very scrupulous in any case where direction was concerned. All of these elements could correspond with historic Yurok practices even though, according to Driver (1939:334) the Yurok utilized cemeteries close to dwellings. The site Hum-118 picture, based upon the small number of individuals found, could correspond to this only if we further assume that this site was a special case. Perhaps it was not considered a main village and therefore was rarely used as a burial spot, possibly for comparatively unimportant persons who happened to die when engaged in some seasonal activity at the site and whose remains could not easily be transported back to the real home village.

The artifacts described in the sections which follow are divided into two major categories: stone; and bone and antler. The stone artifacts are subdivided principally into chipped and ground classes. Several kinds of stone specimens are treated merely as miscellaneous. The numbers used to identify certain specimens are field numbers; that is, the original numbers given the objects. It was not possible to assign permanent museum numbers from the University of California series as all specimens were returned to Patrick's Point State Park after the study.

Artifacts Recovered

Chipped Stone Objects

Projectile points: Five of the eight types of projectile points recovered at Gunther Island site Hum-67 and elsewhere in northwestern California were found at Hum-118. Following a typology originally devised in 1949, the points are described below according to their base form. The Hum-118 points were manufactured chiefly from gray or green chert (140 specimens), with jasper (38 specimens)⁴ obsidian (4 specimens), quartzite (3 specimens), and quartz (2 specimens) also represented. Although the objects are all referred to as projectile points, it is possible to be more specific in assigning functions to some of them by invoking ethnographic parallels. Thus Type 1 specimens may alternately be referred to as knives, most likely of the kind that were provided with wooden handles and used for a variety of domestic purposes, including the scaling of fish. Types 3 and 4 were almost certainly points for antler harpoons used in hunting sea mammals, and Type 6 specimens were probably used as arrowpoints.

The following summary of data on the various types of points recovered at site Hum-118 includes brief descriptions of the types which were

not found at that site but which are nevertheless part of the north-western California typology already mentioned. Measurements given are for length and width only; thickness of all specimens, except where noted, varied but slightly from a mean of about 7 millimeters.

Type 1: Leaf-shaped, convex base with sides gently curving or nearly straight (pl. la-d). Largest specimen is 73 x 30 mm.; smallest, 23 x 12 mm.; selected average specimen is 42 x 23 mm.

Type 2: Leaf-shaped with pointed base. (Not found at Hum-118.)

Type 3: Triangular, with straight base (pl. le-j). Largest specimen is 73 x 31 mm.; smallest, 19 x 10 mm.; average specimen, 44 x 33 mm.

Type 4: Triangular, with concave base (pl. lk-s). These points have variable depths of base concavity but in the majority of specimens this is quite shallow. Largest point, 71 x 30 mm.; smallest, 21 x 13 mm.; average, 45 x 24 mm.

Type 5a: Short, barbed and with rounded or square stem (corner notched).

Type 5b: Same base form as Type 5a but with long, extended tip. (Neither Type 5a nor 5b was found at site Hum-118.)

Type 6: Long-barbed with short stem, basal notched (pl. lu-y). These were the most delicately manufactured points found, and the edges of four specimens are marked by minute serrations. The short stems were evidently incomplete on most of the specimens found; hence it is not possible to designate these as contracting, parallel-sided, or expanded. Largest specimen measured 54 x 34 mm.; smallest, 23 x 14 mm.; and the average was 37 x 21 mm. The mean thickness of this type of point is but 4 mm.

Type 7a: Sloping shouldered point.

Type 7b: Shouldered, but developing small pointed stem. (Neither Type 7a nor 7b was found at Hum-118.)

Type 8: Large side-notched, convex base. One fragment only found; estimated length 62 mm., width 18 mm.

Table 4 gives the depth distribution of all types of points. The

TABLE 4
Depth Distributions of Chipped Stone Projectile Points
from Site Hum-118

Depth (in.)	Type 1	Type 3	Type 4	Type 6	Type 8	Totals
0- 12	1	2	5	4		12
12- 24	2	10	12	2		26
24- 36	4	8	8			20
36- 48	11	12				23
48- 60	2	5	6			13
60- 72		6	11			17
72- 84		4	5	1		10
84- 96			3			3
96-108	2	1	3	2		8
108-120		1	2			3
120-132		3	1			4
132-144		1	4			5
No provenience*	2	14	14	1	1	32
Total	24	67	74	10	1	176

*In this table and in depth distribution tables which follow, "no provenience" refers to specimens which were recovered from uncertain depths, disturbed areas, or found on the surface of the site.

list indicates that the specimens (types 3 and 4) which have been suggested as one of the component parts of the sea mammal harpoon are most numerous and extend to a greater depth in the site than the other types of points. This could be taken as a reflection of the highly specialized nature of the site. Since we do not know precisely the function of the so-called knives (type 1 points), there is little value in attempting to account for their relatively small number and their virtual concentration in the upper levels

of the site. On the other hand, it is not difficult to explain the small number of Type 6 examples found. If these points were used primarily with arrows in the hunting of land mammals—for which there is ample evidence at the site—we can infer that they were occasionally brought in with chunks of elk or deer flesh, for example. In any case they appear not to have been manufactured at the site.

Fragments of 34 additional projectile points were also recovered but could not be classified according to the typology presented.

Blades: Distinctions between specimens called "knives" and "blades" are arbitrary in northwestern California. Loud (1918:357, 399) was certainly not very explicit about what constitutes a blade, and the only satisfactory criteria suggested are those of size and perhaps workmanship; that is, a blade is larger and often less crudely made than a knife. These criteria will be used here with qualifications, and with the further comment that knives, with their usually narrower bases, should be considered as objects which could easily be hafted (cf. Kroeber and Barrett 1960:92, pl. 20). The addition of another criterion is desirable because the size differentiation between the two kinds of specimens is not always consistent. Thus the largest of the Type 1 points (knives) is larger than the smallest specimen here designated as a blade. In all, blades should be looked upon as objects which (1) tend to be larger than knives; (2) are usually not narrow-based; and (3) do not necessarily have sharp points but in fact may even be somewhat tabular in form. Obviously these specimens could be used as hand tools, without hafting. Several blades are illustrated in Plate 2i-1.

Of the 81 blades found at site Hum-118, 44 were of jasper and 37 of chert. The largest specimen noted is 83 mm. long, 39 mm. wide, and 15 mm. in thickness; the smallest 30 x 22 x 6 mm.; and a selected average specimen, 73 x 42 x 12 mm. Most of the specimens exhibit secondary flaking, although the 23 blades comprising the cache (feature 27) show primary flaking only. Specimen No. 481 (pl. 20) is classified merely as an incomplete blade or blank.

The depth distribution of blades (table 5) is not markedly different from that of knives (type 1 points) in the sense that by far the greater number of specimens occur in the upper levels of the site. It should be noted that the 36 specimens recorded for the 36-48 inch level include the 23 items from Feature 27.

Miniature obsidian ceremonial blades: Five obsidian specimens—although they accord with the general criteria for blades—deserve special

mention. These objects resemble in miniature the larger ceremonial blades found in both archaeological and ethnographic contexts in the southern Northwest Coast, but not at site Hum-118. All of the miniature blades are well made, showing pressure flaking on edges and flat surfaces, though one (pl. 1c') is not completely so flaked. They have either parallel straight sides or may show some central constriction (cf. pl. 1z), and all except one have definitely rounded ends.

Two of the miniature blades were made from red obsidian, while the remaining three are of black obsidian. One of the red obsidian specimens (pl. 1a') is rectangular in shape, with rounded ends. It is 46 mm. in length, 17 mm. in width, and 2 mm. thick. The second red blade (pl. 1b') is slender, sub-cylindrical in shape, and its termini are more sharply pointed than those of the other four specimens. Thickness of this blade is 4 mm., width 9 mm., and length 35 mm.

Of the three black obsidian blades, one (pl. 1z) has relatively pronounced central edge constriction. Maximum width of the specimen is 23 mm., with a center width of 20 mm. Length of this blade is 67 mm., and thickness is 7 mm. Another specimen (pl. 1c') is rectangular in shape, with gently rounded ends. It is 47 mm. in length, 16 mm. in width, and 5 mm. thick. Specimen No. 1839 (not illustrated) is also rectangular in shape, with rounded ends. Its length is 50 mm., width 26 mm., and thickness 9 mm.

The miniature blades ranged in depth from 17 to 38 inches.

Drill: The 14 specimens designated drills on the basis of the ovate or quadrangular cross section of their "working" tips were manufactured from chert, except for two examples of jasper. Two types can be distinguished among the drills, using the shapes of their bases as criteria. One of these, Type 1, with "expanded base" (pl. 1t, d'), was represented by seven specimens, while only three specimens of Type 2 "nail-shaped" (pl. 8a, b) were found. Four of the remaining specimens were recognizable as drills but were fragmentary, and these could not be positively assigned to either of the two types. The lowest depth occurrence of the nail-shaped variety was at 60-72 inches, while that of the expanded base type was from 48-60 inches. In Table 5 there is no breakdown of drills according to type, and four of the specimens included are unidentified as to type.

The nail-shaped drills average about 37 mm. in length, 7 mm. in width at their base ends, and 4 mm. in width or diameter near the center of the shank. The specimens which represent this type are delicately chipped and sharp-pointed. It seems possible that these objects were hafted while

the expanded base drills were held between the thumb and forefinger of the user. The expanded base type has a larger average size than the nail-shaped specimens, being about 54 mm. in length and with a width at the base of about 19 mm. The width or diameter of the shank center is about 8 mm. It will be noted that about half of the total length of these drills is taken up by the expanded base, while the length of the base of the nail-shaped drills is practically negligible.

Choppers: Choppers are probably the simplest of the chipped stone tools found at site Hum-118 in the sense that less attention was evidently paid to their manufacture than to any other class of tool. They were manufactured from a variety of beach cobbles or pebbles, mostly of hard metamorphic rocks such as quartzite. Most of the choppers have a crude cutting edge which was produced by breaking a pebble in half, for example, and then removing a few flakes by percussion from one side of the specimen only. The chopper shown in Plate 2p is a good example of one with a straight cutting edge, while those of the other specimens illustrated (pl. 2q-s) are more jagged or curving. Although some of the choppers show bifacial flaking, it is likely that occasionally flakes were removed during use of the tool from the side opposite that from which flakes were intentionally struck. Occasionally the primary removal of flakes was evidently done in a careful way, thus producing a fairly symmetrically shaped implement.

The ordinary appearance of the chopper is that of a crude, unifacially chipped tool about 8 cm. long, 7 or 8 cm. wide, and 4 or 5 cm. thick. Table 5 indicates that choppers were recovered from practically all levels and that one specimen occurred at a greater depth than any other chipped stone object. Choppers may have been used for woodworking, or they could also have been utilized in butchering the numerous sea mammals which were brought to the site.

Saws: Seven chert specimens, all showing serration on one or both lateral edges, were recovered from above the 72-84 inch level of the midden deposit (table 5). Since there is already some overlapping of nomenclature involving knives and blades, adoption of the term "saw" for small flake tools with serrations seems justified. The object illustrated in Plate 8c is a good example of this type of tool. The flake from which it was manufactured is flat on one side and has a center ridge on the other. One end is rounded, the other straight. The specimen measures 32 mm. long, 7 mm. wide, and has a thickness of 3 mm. There is no evidence that these implements were hafted, but it may be assumed that they could have been used effectively—for cutting small sticks or bones, for example—hafted or not.

TABLE 5
Depth Distributions of Some Chipped Stone Specimens
from Site Hum-118

Depth (in.)	Blades	Miniature obsidian blades	Drills	Cobble choppers	Saws	Scrapers
10-12	8			6	1	29
12-24	5	2	3	22	1	30
24-36	9	1	2	6	1	23
36-48	36	1	1	6	2	36
48-60	3		2	4		13
60-72	3		2	9		11
72-84				8	1	8
84-96	2		1	6		5
96-108	1			5		5
108-120				5		3
120-132				5		1
132-144	1			10		
144-156						1
156-168						
168-170				1		
No provenience	13	1	3	29	1	141
Total	81	5	14	122	7	306

Scrapers: These were by far the most numerous type of chipped stone artifact found at site Hum-118, and must have been used for a great variety of purposes. The large number recovered (306 specimens) probably indicates that the scrapers were not greatly valued as tools by the inhabitants. Analysis shows that 132 of the scrapers recovered were simply primary flakes with a minimum of retouching; that is, they must represent tools which perhaps were used once or twice for some such purpose as

scraping hides or as knives for cutting, and were then thrown away. The other 174 specimens show retouched edges, and here, as with the pebble choppers, unifacial flaking is predominant, though occasionally bifacial flaking is noted.

Chert was the most frequently used material for scrapers (198 specimens), with jasper (87 specimens) next in common use. The few remaining specimens are of quartzite and other metamorphic rocks. Though eight scrapers were made from small beach pebbles and thus resemble small choppers, the great majority were manufactured from angular fragments of stone (see pl. 2m, n) with long side(s) or end(s) chosen for retouching. Average size specimens measure approximately 73 mm. in length, 43 mm. in width, and 13 mm. in thickness.

Ground or Pecked Stone Objects

Stone vessels: Judging from the number of pestles found of the size and type used by the historic Yurok, and from the presence also of Yurok-type hopper mortars (e.g. in feature 20, table 2), it would appear that portable mortars of the bowl variety were not used for grinding acorns or other foods at site Hum-118. Bowls or dishes of soft steatite are not suitable for grinding foods, and in any case the use by the Yurok of steatite vessels for collecting salmon grease by placing the vessel under salmon being dried or smoked over a fire is recorded by Driver (1939:324, 388). This use may be assigned to the steatite vessels recovered at Hum-118 and probably to most of the vessels manufactured from sandstone or other materials.

Of the 12 non-steatite specimens recovered, two (Nos. 329, 1848) may be described as possible mortars. These items are both of sandstone, with cup-shaped pits. Specimen No. 1848 has a lined depression around the inner lips of the side walls of the cup which may have been intended to accommodate a basket hopper.

Another vessel (No. 330) is a circular sandstone boulder only partially worked, with rounded shoulders (lower part of the outside walls) and a flat bottom. The process of hollowing the basin had been started and is marked by the presence of a circular ring 150 mm. in diameter pecked out to form. Part of the surface within this ring had also been pecked out. It is not possible to be certain whether this specimen was to be used as a mortar or as a grease dish.

Seven vessels of material other than steatite, but apparently designed to serve as grease-catching dishes, include two complete and three

partially broken specimens as well as two large fragments. On one of the complete specimens (pl. 4a) the ends are patterned to a shape resembling the bow and stern of a wooden Yurok canoe. This dish is made of sandstone and has a flat bottom. Its basin is ground to a semi-smooth texture, and its side wall surfaces, both inside and out, show a carbon deposit resulting from fire.

The other complete specimen (pl. 3d) is also of sandstone. It has a shallow basin and is trapezoidal in shape. The bottom of this specimen is flattened, but the shoulder portion is rounded rather than angular. The outer walls had been roughly pecked to shape, but the inner walls were more carefully ground. Only one side wall showed evidence of burning, and clinging to the burned portion of the vessel is a layer of organic residue about one millimeter in thickness.

The three incomplete specimens in this group of seven are of sandstone or of a fine-grained schistose material, with all or parts of the side walls missing. These specimens resemble the complete ones in shape in having relatively shallow basins and in showing irregularly burnt portions on the rims and sides. One vessel in this category (No. 1924) had segments broken off both of its sides, but continued use after the break is indicated by evidence of burning on the broken edges. Organic residue also was found clinging to these edges.

Neither of the two large dish fragments—one of sandstone and one of the schistose material mentioned above—showed any traces of burning. They are large enough to suggest that the original vessels had rounded shoulders and flat bottoms, and except for the lack of burning, look as though they were parts of the kinds of dishes already described.

Dimensions of these seven vessels or fragments indicate average measurements about as follows: length, 17 cm.; width, 13 cm.; height, 5 cm.; length of basin, 13 cm.; width of basin, 12 cm.; depth of basin, 2.4 cm.; wall thickness, 3.1 cm. Table 6 shows that non-steatite vessels possibly were used in about equal number with steatite examples below the 60 inch level, but were later surpassed in popularity by the latter.

Six steatite vessels complete enough to be measured were recovered, plus 27 fragments ranging from 64 to 180 mm. in length. Seventeen of the fragments have evidence of burning and residues of burnt organic material upon them. The six almost complete vessels all had one or more segments broken off the side walls. One of these (pl. 4h) was in a manufacturing stage before rejection. Its side surfaces are partially ground smooth, but its bottom is roughened and unworked. Pecking to hollow the basin had barely begun on the upper surface.

Specimen No. 159 is rectangular-shaped and has a rounded, shallow basin. It is about three-quarters complete. One end is missing, while the other projects 13 mm. above the upper edges of the side walls. Burned areas with organic residue clinging to them are present on the interior and exterior parts of the walls. An almost rectangular-shaped bowl (pl. 3c) was reconstructed from 17 fragments recovered. The shoulders of this specimen are round and the bottom flat. Organic residue on burned areas is present on one side wall. Another vessel of the same approximate shape (pl. 3a), also reconstructed from 17 fragments, is marked by rounded shoulders and a flat bottom. Both interior and exterior surfaces of the dish are covered with burned areas to which organic residue adheres.

Vessels No. 746 (pl. 3b) and No. 1489 are barrel-shaped bowls. The former is the smallest vessel in the steatite vessel collection, measuring 10.1 cm. in length and 8.5 cm. in diameter. A small segment had been broken off the rim, otherwise it is complete. The bottom is rounded, the side walls straight, and each end rises to a rounded peak. The surface of the basin is marked by a multitude of scratches. No evidence of burning is present. Specimen No. 1489 was reconstructed from six fragments. Its length and width are about twice those of No. 746. Shoulders of this bowl are rounded and the bottom flat. Organic residue still clings to the burned sections of the interior and exterior wall surfaces.

The mean measurements of steatite vessels, not including the last two specimens described, are as follows: length, 29 cm.; width, 14.5 cm.; height, 7.2 cm.; length of basin, 25.5 cm.; width of basin, 13.2 cm.; depth of basin, 3 cm.; wall thickness, 2.1 cm.

Mortars and pestles: The recovery of an almost equal number of mortars and pestles in California archaeological sites is a rare occurrence and Hum-118 follows the usual trend in this matter. While 36 complete or fragmentary pestles were recovered, only three complete and two fragmentary mortars were found in addition to the questionable specimens already described. The fragmentary examples were half of a small pebble mortar, and one other piece. Neither of these could be identified as having been designed for use with a basketry hopper.

The three complete mortars were virtually identical slabs and almost certainly were used with hoppers in the manner of the historic Yurok. It will be recalled that one of the complete specimens was imbedded in the floor of a house pit (feature 20, table 2), as if placed there for semi-permanent use.⁵ The other two slabs or boulders were not apparently associated with house floors. The mean measurements of the complete specimens

are as follows: slab, 42 cm. long, 25 cm. wide, 12 cm. thick; depression, 11 cm. diameter, 3.5 cm. deep. Depth data (above the 36 inch level) were available for but two mortar specimens.

Pestles recovered were, like the mortars, manufactured from fine grained hard sandstone or some metamorphic rock approaching quartzite, and fall into two types: ringed or flanged; and simple (unflanged). Only three flanged specimens were found and two of these are fragmentary. The complete specimen (pl. 4e) is 37.7 cm. long, 6.1 cm. in central diameter, and its flange rises 5 mm. around the main sides of the pestle. The surface had been roughly pecked and the pounding end shows little wear. Accompanying this specimen was No. 1924, a flanged pestle with the proximal end missing. The sides of the latter are semi-smooth and the pounding end is worn. It has a body diameter of 5.2 cm. and the flange rises 4 mm. from the sides. The pestle illustrated in Plate 5h has a well-worn pounding end and the body surface is ground smooth. It has the most pronounced flange of the three Type 1 examples, the ring rising 9 mm. from the side surface. The side of the flange toward the distal end is gradually incurvated, and that toward the missing proximal end is sharp-shouldered. The main diameter of the specimen is 3.4 cm.

Thirteen complete and 20 broken specimens of the simple or unflanged subtype were recovered (pls. 4d; 5f, g). Complete specimens average 22 cm. in length, the longest being 31.5 cm., the shortest 15.5 cm. The diameter average is 7.4 cm., the largest measuring 13 cm. and the shortest 3.3 cm. Occurrence of these specimens varied in depth from surface level to 98 inches and were scattered throughout the site, hence no specific correlation could be drawn concerning depth and size grouping. Pecked surfaces were present on 27 of the simple pestles and 6 were used in their natural (cobble-like) state. Those that had been pecked to form are sub-cylindrical in shape.

Only one pestle (No. 1624) was found with a tarred and burned distal end. Three specimens were recovered which had been in the process of manufacture before being discarded. Three-quarters of the body surface of specimen No. 43 (pl. 4d) had been pecked to shape but the distal end is missing and may have been broken off in the process of working it to shape, thus causing the pestle to be rejected. The central surface of specimen No. 1900 had been partially pecked, and No. 1362 was worked on one side only.

Both flanged and unflanged types of pestle were utilized by the historic Yurok (Kroeber 1925:pl. 16) and both types were found at Gunther Island site Hum-67 (Loud 1918:pl. 16).

Mauls: Although mauls in some respects resemble pestles, their specialized form (bell or pear-shaped with flattened, battered distal ends) and their recorded use among the ethnographic Yurok (Kroeber 1925:pl. 19; Driver 1939:326) make it virtually certain that they were used at site Hum-118 for driving wedges of antler for the purpose of splitting wood, probably to secure planks for houses.

Eleven mauls were recovered, of which only three were complete. Material is predominantly sandstone, although one specimen (pl. 5j) is of a granitoid rock. In spite of the fragmentary nature of the remainder of the mauls, it is possible to offer the following mean measurements, probably representing an average for the type: length, 15.9 cm.; maximum diameter (distal), 8.5 cm.; minimum diameter (proximal), 5.1 cm.; pounding surface diameter, 7.8 cm.; flange diameter (proximal), 5.9 cm.

The relatively small number of mauls recovered and their irregular depth distribution in the midden deposit indicate that these specimens, in contrast to ordinary hammerstones, either were not commonly used at the site or were perhaps a more valued implement and hence were not casually left lying about or frequently lost.

Hammerstones: These comparatively unspecialized implements were found in much larger numbers than were mauls. Of 105 specimens, mostly made of fine-grained sandstone and quartzite or schistose rocks, 37 show use on all sides. The remainder have the characteristic pounded or battered surfaces on the proximal or distal ends. Shapes range from spherical to sub-cylindrical (e.g. No. 2267, pl. 9i), with average spherical specimens having diameters of about 5 cm. and 3.5 cm. The average sub-cylindrical specimens are about 10 cm. long, 6.8 cm. wide, and 4.2 cm. thick. Ten of the hammerstones show secondary use as anvils, that is, they have small pits or depressions on their sides which presumably were used for placing acorns in position for cracking with other hammerstones.

Anvils: Four objects which apparently were designed for one purpose only were all made of sandstone, and all except one were round, flat pebbles with pecked depressions in the center of one surface. Specimen No. 435 (pl. 2a) is a good example of this type. The mean measurements for the three flat anvils are: diameter, 13 cm.; thickness, 4.4 cm.; diameter of depression, 3.8 cm.; depth of depression, 4 mm. The odd piece in the collection is an unworked beach cobble 12 cm. long, 9.2 cm. wide, and 4 cm. thick, which has a pecked depression 3.4 cm. in diameter and 15 mm. in depth. The depression was probably an enlargement of a naturally formed hollow in the cobble. Three of the four anvils were found at depths between 36 and 60 inches; one is unlocated.

Net sinkers: Table 6 gives the numbers and depth distribution of objects called net sinkers. Three types have been distinguished: (1) side-notched (pl. 9d-g); (2) end-notched (pl. 9h); and (3) grooved (pl. 9b, c). The side-notched type, with flaked (and sometimes partially ground) notches in the centers of the two lateral edges, is by far the most frequently occurring of all the artifacts at site Hum-118, totaling 815 specimens in all. (Table 6 shows a total of 470, but this does not include 346 sinkers recovered from six caches; all of these except one grooved specimen were of the side-notched type.) They were all made from the flat beach pebbles—mostly of fine-grained igneous or metamorphic rock—which litter the northern ocean beaches of California. The conflicting picture of relatively few fish bones found in the midden deposit as against the great number of sinkers which presumably were used in fishing activities, is not peculiar to this site and will not be further commented upon. If the objects appeared individually in the deposit there could be some question about their exact use, but the occurrences in the caches (features 2, 14, 29, 37, 38, 39, table 2) leave little doubt that one of the main functions of these objects was that of net sinker. The nets themselves have long since disintegrated in the midden soil. Side-notched sinkers average about 5.6 cm. in length, 3.9 cm. in width, and 8 mm. in thickness; the notches themselves are about 19 mm. in length and 3 mm. in depth. Average weight is about 30 grams.

The end-notched specimens (pl. 9h) are probably but minor variants of the side-notched type. The small number recovered (11 specimens) does not give us a clue as to their exact function, if it did indeed differ from that of the more numerous side-notched type. Shapes of these sinkers range from tabular (circular) to sub-cylindrical. Two of these specimens (Nos. 1347, 1439) may have served also as hammerstones as their lateral edges show the characteristic battering of the latter kind of tool. The notches cut in the ends of all specimens, measuring about 5 mm. in length and 1 mm. in depth, were formed by pecking or pounding. The average size of these sinkers, as represented by specimen No. 273, is 4.5 cm. in length, 4 cm. in width, and 2 cm. in thickness. One end-notched sinker was found in the 84-96 inch level, two in the 36-48 inch level, and one each in every 12 inch level above the latter. Five specimens were without depth designation.

All three of the types of so-called net sinkers described here also occurred at Gunther Island site Hum-67. However, Loud (1918:428) referred to an example of the end-notched variety as a "problematical stone object" and to the specimens with circumscribed grooves as "girdled stones." The 15 grooved objects from site Hum-118 are sub-cylindrical in shape and all are about the same size, with an average specimen (No. 1840)

measuring 4.3 cm. in length, 3.5 cm. in width, and 2.5 cm. in thickness. The grooves average about 4 mm. in width and 2 mm. in depth. All of these stones have been pecked or ground to shape.

Tarring stones: In addition to the definite pestle fragment (No. 1624) with a tarred or carbon-stained distal end (see p. 30), five barely worked sandstone or quartzite objects, each showing a blackened surface on one end (pl. 2b), were recovered at site Hum-118. All of these stones also exhibit signs of pounding on the blackened ends, this evidently having occurred after the stone was chosen for use. We were told by a local resident that such stones were employed by the Klamath River Yurok who heated them in the fire and employed them as applicators, in the manner of a soldering iron, to melt and spread pitch over cracks in redwood dugout canoes.⁶

These stones are all roughly sub-cylindrical or barrel-shaped, with mean longitudinal measurements of 20 cm. and central diameters of 8.2 cm. The blackened areas or "tarring" ends extend from 2.5 cm. to 7 cm. back over the unworked but relatively smooth side surfaces. Four tarring stones were found above the 60 inch level and one was recovered in the 96-108 inch level.

Adze handles: Only two fragments of these fine-grained sandstone objects—which are directly identifiable as the type of handle used for historic Yurok adzes (Kroeber 1925:pl. 19)—were recovered at site Hum-118, at depths of 31 and 89 inches. One specimen (pl. 2d) is the smooth proximal tip of the curved handle, while the other has part of the tip missing but shows the lashing grooves located on the side opposite that where the blade was placed (pl. 2c).

Kroeber (1925) states that the Yurok anciently used shell blades for their adzes. No object which could be so described was found at site Hum-118, although one relatively crude shell specimen (No. 976) was recovered in the 96-108 inch level which could conceivably have been an incipient adze blade.

Zooform clubs: Loud (1918:366-375) called these pieces "slave-killers" and developed the idea that they may have been so used. It seems more probable that the animal-form clubs served as special wealth items or were of that class of items which Kroeber (1925:26-27) has called "treasure." The zooform clubs or fragments from site Hum-118 do not seem to cast any important new light on the problem of their function. Of the nine specimens which could be identified as zooform clubs or parts of these, only two fragments appear to be from "full-sized examples

TABLE 6
Depth Distribution of Some Ground or Pecked Stone Artifacts
at Site Hum-118

Depth (in.)	Stone Vessels		Pestles		Mauls	Hammer- stones	Sinkers		Zooform clubs
	St	O	F	Sm			N	G	
0-12	3			3		9	55	3	
12-24	4			7	3	16	39	1	
24-36	5	1		8	4	29	36	1	1
36-48	4	2	1	3		12	58	1	
48-60	4			3		5	41		2
60-72	2	2			1	3	47	2	
72-84	1	1				5	59		1
84-96	1	1				3	27	1	1
96-108				1		2	20		1
108-120			2				11		
120-132	1	1					1		
132-144					1		1		1
No provenience	7	4		8	2	21	75	6	2
Total	32	12	3	33	11	105	470	15	9

St = Steatite
O = Other stone

F = Flanged
Sm = Simple

N = Notched
G = Grooved

(see pls. 2e, 8i), that is, comparable in size to the larger ones reported at site Hum-67 by Loud. The remaining complete or fragmentary specimens (pl. 8g, h, j) are either small specimens or miniatures of the larger ones.

While it is perhaps not proper to refer to these small specimens as clubs, we can point to the miniature obsidian blades found at Hum-118 as small replicas of the larger blades found both in local prehistoric and

historic contexts and certainly highly valued by the historic Yurok. Zooform clubs of the type under discussion were absent from the historic cultures of the Northwest Coast, but the imitative parallel between the blades and the clubs is nevertheless fairly obvious. It appears perfectly justifiable to state that the clubs must have had a ceremonial function similar in some respects to that of the large obsidian blades. While neither miniature obsidian blades nor the zooform club specimens were found with burials at site Hum-118, this of itself may not bear significance, mainly because Hum-118 probably was not a regular burial site. Furthermore the occupants of the site may indeed have been like the abstemious historic Yurok, looking upon their ceremonial obsidian blades, and perhaps the miniatures as well, as of too great value to be disposed of forever in burials.

Slate was the material predominantly used in the manufacture of zooform clubs although some of the cruder fragments are of a kind of sandstone, like that of specimen No. 1387 (pl. 2e). This fragmentary specimen is in the doubtful category, although one end of it appears to be an attempt at shaping the usual kind of tail for these animal figures. Specimens Nos. 1387 and 320 (the latter shown in actual size in pl. 8i) are the two fragments which seem to be derived from full-sized zooform clubs. Projecting the drawing of these fragments, using as a model the complete specimens from site Hum-67, results in figures with estimated lengths between 35 and 40 cm. The two "large" complete specimens illustrated by Loud (1918:pl. 18) measure 32.2 and 41.6 cm., while his miniature specimen (ibid.) is 5.5 cm. in length. Since the small complete specimen from site Hum-118 (pl. 8g) measures 11 cm. in length, and the projected measurement of the headless specimen (pl. 8h) is about 15 cm. long, we can arbitrarily set the division line between "large" and "small" specimens at about 20 cm.

The depth distribution of zooform clubs (table 6) suggests that they were known during a good part of the time of occupation of the site. Their absence in the top layers perhaps foreshadows or directly reflects their disappearance among the late prehistoric-historic groups of the region.

Worked slate objects: Among the artifacts recovered from site Hum-118 are several classes of slate objects which resemble, and may possibly have been derived from, an early Northwest Coast culture. Borden (1951:45), for example, refers to the "slate grinding industry" as one of the important elements so derived in British Columbia, and illustrates one ground slate projectile point and several knives (1951:pl. II) which resemble slate specimens from Hum-118; for example, the projectile point (No. 181, pl. 8f) and the knife or blade (No. 220, pl. 2f).

Apart from the zooform clubs, there were 24 slate objects found in the midden deposit. These had been worked into various shapes—half of them rectangular, and the remainder square, semi-lunar, or of some other shape as indicated in Table 7. The flat surfaces of these specimens are mostly smooth, but there are additional scratching or pecking marks present on six of them.

On the basis of their having sharp edges, four specimens may be classified as knives or blades, one of which (No. 220) also has a notch on one edge. Two of these specimens with center notches on each long edge are possibly sinkers, and two with serrations may be incipient ornaments. One specimen (No. 1562) is square-shaped and has a notch on one edge only. The projectile point (pl. 8f) has minute edge serrations, is shouldered, and has a straight base. Although one otherwise unworked specimen has a centered hole in it, this appears to have been done by some rock-boring organism. On the other hand, the flask-shaped specimen (pl. 9a) has minute serrations, and one end appears to have been rounded off by chipping. The hole in this specimen is so placed as to leave little doubt that it was made deliberately, probably to serve as a suspension hole, and that the object was therefore intended to be a decorative pendant.

Three other slate specimens have flaked edges, and hence may be classified as scrapers.

These few suggestions about the possible function of the slate pieces cover most of the specimens. It is impossible to say precisely what the objects with the smooth edges (e.g. Nos. 1671, 2110) may have been.

Stone pipes: The two fragmentary tubular pipes found at Hum-118 resemble, in a way, specimens reported from the Gunther Island site, Hum-67. Neither of the Hum-118 pipes has a flared mouthpiece end (cf. pl. 8d), and neither fragment appears to have been more than about 10 cm. long in its original state. One of the specimens without provenience (No. 2276) is 4 cm. long and is made of a markedly low grade steatite. Probably its maximum length did not even approach 10 cm., although there is no evidence remaining of a bowl opening on its inside. Its diameter (1.8 cm. at mouth end, 2.5 cm. at the broken end) would allow a fairly large boring if the material of the pipe were more suitable, but there remains an even boring only 5 mm. in diameter at either end of the specimen.

The illustrated specimen (pl. 8d), found at a depth of 78 inches, is similar in form to that just described, but is made of a stronger,

TABLE 7

Worked Slate Objects Recovered from Site Hum-118

Spec. No.	Depth (in.)	Shape and Size (mm.) (length x width x thick.)	Remarks
300	-	Rectangular 216 x 50 x 27	Pecking distributed on lateral lateral and flat surfaces
315	-	Irregular 38 x 29 x 3	One side smooth, obverse rough
342	-	Rectangular 80 x 45 x 8	One long edge sharpened
484	-	Bottle-shaped 117 x 50 x 10	Numerous scratches on sides
2110	0-12	Rectangular 123 x 50 x 11	Edges smoothed
1671	12	Rectangular 104 x 27 x 8	Edges smoothed
2187	16	Rectangular 300 x 104 x 26	End and one long edge flaked
1547	24	Semi-lunar 40 x 18 x 5	One edge finely serrated
1209	24-36	Rectangular 52 x 26 x 3	Deep scratches on one side
1552	24-36	Rectangular 88 x 27 x 9	V-shaped centered notch on each long, rounded edge (pl. <u>2g</u>)
139	36	Semi-lunar 103 x 25 x 5	Pointed ends, portions of long edges ground flat or sharpened
183	36	Square 53 x 45 x 4	5 irregular serrations 1 mm. deep on one edge
181	38	Proj. pt. 98 x 32 x 3	Small serrations between shoulders and tip (pl. <u>8f</u>)
220	48	Leaf-shaped 64 x 20 x 3	Edges ground sharp, centered notch on one edge (pl. <u>2f</u>)
344	55	Rectangular 184 x 45 x 9	Sharpened edges

TABLE 7 [cont'd.]

Spec. No.	Depth (in.)	Shape and Size (mm.) (length x width x thick.)	Remarks
1762	60-72	Irregular 65 x 59 x 7	Scraper(?)
1791	73	Rectangular 254 x 176 x 19	Unworked except for centered hole (rock-boring organism?)
2188	79	Rectangular 413 x 135 x 34	Pecked areas on one side surface
1020	72-84	Irregular 75 x 48 x 6	Scratches on one side
1319	72-84	Rectangular 135 x 73 x 22	Flaking on edges
524	89	Net sinker 59 x 46 x 6	Notch cut in both rounded, long edges, 12 x 4 mm. deep
1885	84-96	Rectangular 153 x 53 x 14	Pecking on side surfaces
1446	102	Flask-shaped 150 x 50 x 5	Pendant with serrated edges, suspension hole (pl. 9a)
1562	108	Square 38 x 38 x 4	Crescentic notch cut in one edge

more fine-grained variety of steatite which has been ground down evenly and is well polished. It has a mouthpiece diameter of 1.3 cm. and is 2 cm. in diameter at its broken end. The tubular boring measures 7 mm. in diameter at its mouthpiece end, and this hole extends evenly through the specimen for 5.5 cm., at which point a flaring—presumably for a bowl—starts, reaching a diameter of 1.3 cm. at the broken end. These kinds of pipes are evidently atypical for site Hum-67, however, as Loud (1918:366, pl. 17) reports much longer specimens (one ca. 24 cm. long) equipped with flared mouthpieces.

Stone pendant: One of the few decorative pieces from Hum-118 is a stone pendant found at a depth of 8 inches. This is a small, biconically drilled object about 7 mm. thick (pl. 8e), evidently made from a fairly hard (in the range of nephrite), fine-grained pebble. This was the only

stone pendant found at the site apart from the polished slate pendant (pl. 9a); several other notched pieces of slate may also have served as pendants.

Miscellaneous stone objects: In this section will be described objects which are either extremely fragmentary or which show only a minimum of alteration or deliberate use by the occupants of the site, and which therefore cannot be assigned to a definite category or function. Some of these specimens may be incompletes or rejected pieces of the kind which have been described in preceding sections or, like the questionable awl-sharpener (No. 2203), may simply be unique among the artifacts recovered at site Hum-118.

The ground stone object (No. 2138, pl. 2h), found at a depth of 108 inches, is fragmentary. It appears to be one end of a carefully ground piece, perhaps a charmstone of the type found on the central California coast (Beardsley 1954). The pecked sandstone object (No. 2113, pl. 4c), recovered at a depth of 20 inches, is a fairly large boulder with pecking marks or smoothing distributed spottily about all surfaces. This specimen could have been a fragment of a unique type of tool, or the pecked surfaces, where most emphasized, could indicate incipient shaping of some implement like a pestle.

A flat sandstone cobble (No. 2203), about 10 cm. long and 6 cm. wide, shows a center groove on one side about 7.7 cm. long, 8 mm. wide, and 4 mm. deep. Since the groove is crooked near one end, an abrading or sharpening stone of some kind, perhaps an awl sharpener, is suggested. If the groove were straight and continued for the length of the stone, this specimen would have been classified as an arrow straightener or smoother.

Five flat or rounded fractured pebbles, noted in the upper 21 inches of the deposit, showed unpatterned red ocher stains on one side of each specimen. The irregular nature of the staining offers no clues as to the function, ceremonial or otherwise, of these objects.

Nine specimens appear to have had some association with grinding processes. Five of these are "natural" mortars, that is, boulders with rounded or conical (not flat) bottoms in which a natural concavity in the top surface has been slightly utilized, as shown by smoothing and wear. These specimens almost certainly could not have been used with basketry hoppers, although some crude kind of grinding of dried foods or bone may be indicated.

Four sub-rectangular or ovoid flattened boulders with pecking or

smoothing marks on one surface could have been used as working slabs or anvils (not acorn anvils), perhaps in the fabricating of other stone or bone tools. Alternately, these specimens could be looked upon as incipient slabs for a hopper type of mortar.

Bone and Antler Artifacts

Harpoons: Classification of antler or bone harpoons from archaeological sites in California was originally done by E. W. Gifford in 1940. According to Bennyhoff (1950:299), Gifford's typology is inadequate to deal with the variations exhibited by certain northwestern California specimens, hence Bennyhoff proposed a new typology for the simple harpoons, which are defined as those "with a head which retains its original position after striking an animal" (after Jochelson 1925:53). These are distinguished from toggle harpoons "in which the head assumes a transverse position when an obstruction is encountered" (ibid.). Evidence of composite varieties of the toggle type were also found, though in reduced number, at site Hum-118, but the previous typology referring to them was only partially modified by Bennyhoff. In any case the designations offered by Bennyhoff for both types of harpoon will be followed in the present paper, since the Hum-118 specimens, and especially the simple harpoons, played a strong part in his original establishment of these typologies (see pls. 6, 10, and 11 for illustrations).

The letter and numeral designations employed by Bennyhoff (1950) for the simple harpoons will be briefly reviewed here in order to make the discussion of types more meaningful.

I, large unilaterally barbed simple harpoons for hunting sea mammals in Northwestern California; II, small unilaterally barbed simple harpoons used for fishing and small game in Northwestern California; capital letters, method of line attachment (A, bilateral line shoulder; B, bilateral line guard; C, unilateral line guard; D, line hole); Arabic numerals, tip variations (1, simple tip; 2, slotted tip; 3, grooved tip with inset); lower case letters, barb variations (a, simple barb; b, hooked barb).

The symbols used in the toggle harpoon typology do not need repetition here since variations between the specimens are not crucial, and furthermore, only six specimens, representing two types, were found.

TABLE 8
Depth Distribution of Simple Bone and Antler Harpoons
at Site Hum-118

Depth (in.)	T y p e						F r a g m e n t	
	IA	IIA	IB	IIB	IC	IIC	Large	Small
0-12			1					
12-24			3	2	2			2
24-36			3	4 ^b			3	
36-48		1 ^b	3 ^{ab}	3 ^b	1 ^c	1 ^b	6	1
48-60	1		5	1 ^b				
60-72	1	1 ^b		2 ^b	1		3	1
72-84				1 ^b			1	
84-96	3						1	
96-108		1 ^b					2	2
108-120	2 ^a							
120-132	1						1	
132-144							1	
Total	8	4^d	15	13	4	1	18	6

a: Includes specimen(s) further classified as IA2a (pl. 6j) or IB2a (pl. 10k)

b: Includes specimen(s) further classified as IIA1a (pls. 6n, 10d, e) or IB1a (pl. 10j) or IIB1a (pls. 6c-e, 11a, b, d-f) or IIC1a (pl. 11j)

c: Specimen further classified as IC2b (pl. 11h), slotted tip inferred

d: Includes one specimen without provenience, Type IIA1a (pl. 6o)

The most important criterion employed for designating the different subtypes of simple harpoons is the form of the base which, in these harpoons, functions, as indicated, as a line attachment. Table 8 summarizes the occurrence of specimens representing three of the four base types found in northwestern California. The line-hole (subtype D) was absent at

Hum-118. Subtype B harpoons (bilateral line guards), with 28 specimens, were the most frequently encountered in the excavation. Subtype A (with bilateral line shoulder) was next, with 11 specimens, and subtype C (unilateral line guard) was the least often encountered, with only 5 specimens found.

Indicated in the review of the symbols used in description of simple harpoons is a justification for designating subtypes in part on the basis of size; that is, the larger specimens (I) were presumably used for hunting animals of different size than those for which the smaller harpoons (II) of the same form were intended. Since the harpoons from site Hum-118 were included with specimens from other parts of northwestern California in order to arrive at a final classification, it is desirable to give some average figures or ranges of size of each of the basic subtypes.

TABLE 9

Measurements of Simple Harpoons in Northwestern California
(after Bennyhoff 1950:299-300)

Type	Length Range (cm.)	Average Shank width (mm.)	Average Shank Thickness (mm.)
IA	12.0-20.0	12	17
IIA	5.5-10.5	5	7
IB	13.5-18.0	16	14
IIB	5.0-12.0	6	7
IC	14.5-20.0	13	17
IIC	7.5-12.0	5	7

All of the Hum-118 simple harpoons appeared to be unilaterally barbed, in keeping with the apparent norm for northwestern California, and two barbs seems to have been the preferred number. Only two complete specimens (No. 1051, pl. 6d; No. 2238, pl. 11b) appear as definite single-barbed specimens. No. 2174 (pl. 11j) probably had two barbs originally, but its tip was reworked after the top barb was broken. Four other harpoons, Nos. 2108 (pl. 6g), 44 (10g), 1678 (11i), and 1510 (pl. 11i), also show reworking, but these specimens all are either fragmentary or lack barbs, and the tips appear to have been modified so that the former harpoon

could serve as a punch, for example, with the base as a convenient handle (Bennyhoff 1950:301).

All of the barbs except one are simple; that is, they taper evenly to a fairly sharp point. The exception is seen on a Type IC specimen (No. 751, pl. 11h) which shows a hooked barb—one not smoothly tapering to a point on one side but giving the appearance of the beginning of a hook, as the name implies. Some of the large harpoons have barbs offset from the medial plane, as shown in Plate 11h and in the fragmentary specimen (No. 1292, pl. 11k). Bennyhoff (1950:299) states that it is usually the lowest barb (as in the examples shown) which is so twisted in northwestern California harpoons of this type, but occasionally both barbs exhibit some degree of torque.

Slotted tips for the insertion of chipped stone points (cf. pls. 1 and 15) are apparently typical of most large harpoons (pls. 10k, 11k). Only the Type IB harpoons were complete enough to allow this statement to extend with some certainty to any specific type, and one IB example (No. 1530, pl. 10j) does not have a slotted tip. Eleven of the 18 large harpoon tip fragments, unidentifiable as to type, have slotted ends.

There was evidently a preference in material used in the manufacture of different types of harpoon at Hum-118, as indicated by comparison of the two most numerous subtypes, A and B. Of the former (bilateral line shoulder base), eight specimens are of antler while four are of bone. In the B subtype (bilateral line guard), only seven are of antler while 21 are of bone.

Two subtype B harpoons (No. 44, pl. 10g; No. 270, pl. 11a) show design incising on their bases, while nine other specimens (seven subtype B, two subtype C) are incised, grooved, or scratched either on their bases or barbs. The basal marking consists mostly of series of parallel lines, probably meant as roughening for greater efficiency in attaching the harpoon head to the main shaft. Examples are shown in Plate 11c, e-g, i.

The six toggle spurs or barbs (three illustrated in pls. 6b, 11m, n) are of the kind which presumably were used on opposite sides of the harpoon head; that is, in pairs with their forked or squared ends serving as a socket for a polished bone or a chipped stone point. The spurs are designated as Type IIIa (with squared end) and IIIb (with forked end) by Bennyhoff (1950:306), who followed in general an earlier typology by Drucker (1943). The single Type IIIa spur (pl. 6b) was found at a depth of 124 inches, while the Type IIIb examples ranged from the 84-96 inch level (one specimen) to the 24-36 inch level (two specimens), with two additional

spurs found at undetermined depths. Bennyhoff (1950:312) points out that the historic Yurok employed toggle spurs with forked tips, and the occurrence of these specimens in the lower half of the deposit at site Hum-118 may possibly represent their first use in northwestern California.

A third type of bone projectile specimen, with a slotted tip, is represented by a fragment designated as a foreshaft or barbed arrow point (pl. 11p) which was found at a depth of 19 inches in the deposit. Like the forked tip toggle spur, this kind of foreshaft was also used by the historic Yurok (cf. Kroeber and Barrett 1960:pl. 19). Bennyhoff (1950:312) comments that the slotted tip for harpoons and foreshafts seems to be characteristic in northwestern California of the Yurok ethnographically, and in their territory archaeologically. The slotted tip harpoon was not found at the Gunther Island site not far south of Hum-118, which is in the territory of the historic Wiyot.

The bone point illustrated in Plate 11_o may also be designated as a bipointed gorge (No. 427, recovered in the 36-48 inch level). This object is included here because it conceivably could have served as a tip for the composite (toggle) harpoons. Bennyhoff (1950:306) classified this as a Type T1f point, which has been noted in other sites in central and northern California where it presumably was also used with harpoons. Since only a few spurs or toggles for a composite type of harpoon were recovered, it is not possible to make any definite statement about the place or time of their derivation, or even their developmental history at the site. On the other hand, the simple harpoons at site Hum-118 show a quite definite sequence of occurrence in the deposit (see table 8). Except for two unusual occurrences, there is a clear picture of an early predominant use (below 72 inches) of the large bilaterally shouldered type (IA), together with a few representatives of the small variety of this form.

The deposit lying between 48 and 72 inches possibly represents a transitional period during which Types IA and IIA were largely supplanted by harpoons with bilateral line guards (types IB, IIB) and, to a lesser extent, by the unilateral line guard types (IC, IIC). Although one Type IIA harpoon (No. 755) found in the 36-48 inch level, and one Type IIB example (No. 1267) in the 72-84 inch level, represent a survival and a precursor respectively from and to the transitional period, there is no mistaking the general trend as shown. This sequence of fairly well defined types has great importance in the interpretation of the course of cultural events at site Hum-118, and perhaps at other sites in northwestern California as well.

Modified antler and antler wedges: It has been suggested previously that the fibrous structure of deer or elk antler may determine choice of the latter among wood-working peoples as the proper material for wedges. The fact that the polls of such tools can be struck without being shattered by the flat end of a stone maul would make them ideal for aiding in the production of relatively straight redwood planks, such as those used by the historic Yurok for their rectangular-shaped houses.

Table 10 indicates that antler wedges were used by the earliest settlers of Hum-118 although the approximately parallel occurrences of pieces designated as "modified" does not necessarily imply that wedges alone were manufactured from antler. Other kinds of tools, such as flakers, may have been intended. Many of these fragments have been so modified or weathered as to make positive distinctions between elk and deer quite difficult. In the doubtful category, large pieces have been attributed to the Roosevelt elk and the small pieces to the California mule deer.

Of the 62 modified pieces recovered, 31 are of cut deer antler, 11 are cut sections of deer or elk, and 19 are split specimens, also of deer or elk. All of the cut deer antler pieces exhibit crude hacking on what appear to be the basal ends. These specimens vary from 3.9 to 16.2 cm. in length, and some of them have wedge-shaped distal or anterior ends, though there is no actual evidence of their use as wedges. Others are crudely notched or have partly smoothed surfaces.

In Plate 5a, b are shown two cut elk-antler pieces which probably demonstrate one stage of the approved manner of breaking the tough antler sections; that is, by making circumferential cuts and then snapping the section at the weakened point. The average measurements of sections of elk antler recovered are exemplified by one specimen (No. 1511) which is 11.3 cm. long and 5 cm. in diameter. Some of these sections have longitudinal grooves, perhaps indicating an intention to split them into two equal lengths. The side surfaces of one elk antler specimen, a proximal end (No. 1503), show cuts which suggest a use as a small butcher block.

The 19 split antler pieces are of varying lengths and diameters; an average specimen (No. 380) measures 10.8 cm. in length and is 2.9 cm. in diameter. These pieces were probably split in order to obtain small pieces of antler for the making of various tools, including wedges.

Sixty-three definite antler wedges were recovered, of which 41 are complete. Fifty-four of these were from elk and nine from deer. About half (30) of these wedges were manufactured from split fragments. Plates 5c-e and 12b show some examples of elk antler wedges. The wedge (No. 1496)

in Plate 5 has a damaged spot, almost a perforation, on its ground-down working surface which suggests the relative weakness of the inner cancellous tissue of antler. Complete elk antler wedges range from about 5 to 20 cm. long, 3 to 5 cm. wide, and 1.5 to 2.5 cm. thick, while the deer antler wedges range from 10 to 15 cm. long, 2.5 to 3.8 cm. in diameter, and 1.9 to 2.4 cm. thick. One complete split antler specimen (No. 962) has 14 parallel scratches cut on its body above the working end.

Bone gouges: These tools are mainly distinguished from wedges by a lack of battering on their polls. The large cannon bones (metatarsals) of mammals from which they were usually made are probably too brittle to receive prolonged hammering from a stone maul. In addition the cutting edges of these tools can receive sharpening superior to that of the "entering" edges of wedges, even though this characteristic is not always apparent when comparing the two classes of specimens. Bone gouges presumably were used in woodworking, and for gouging or grooving other bones or pieces of antler (i.e. they were employed as tools for manufacturing other tools). Several sea lion bones were recovered from the deposit which showed end gouging or notching, and this modification may have been done with the bone gouges. Unlike bone adze blades, which gouges may also resemble (cf. Loud 1918:pl. 21), they were evidently not meant to be hafted.

Only three definite gouges were found at site Hum-118, two in the 0-12 inch level and one at a depth of 50 inches. Two of these are complete. One of the latter (No. 581) is 24.7 cm. long, with the edges of the inner surface (the longitudinal surface where the bone was originally split) smoothed from about the midpoint of the specimen to the distal or gouging end. An incised line approximately 3 cm. in length extends across the outer surface of this specimen, about 4.8 cm. from the distal end. The other complete specimen (pl. 12a) is about 18 cm. long and it too is smoothed on its inside surfaces along about half of its length, on the distal end. This piece shows some chipping, perhaps representing attempts at shaping its proximal end. The incomplete specimen (pl. 7g) is about 13.8 cm. long, probably two-thirds of its original length before the distal end was broken off. It has smooth inner surfaces running its entire length.

Bone or antler flakers: Fifty-eight bone or antler implements with their ends bluntly pointed or rounded off were recovered at site Hum-118. Again, upon ethnographic analogy, these have been classified as flakers; that is, as tools used in pressure flaking, in the manufacture of stone tools. Table 10 summarizes the depth distribution of four types of flakers which have been distinguished, as follows: (1) Split (mammal) rib or antler, 45 specimens (pls. 7a, m, 12c). Five of these flakers are designated

TABLE 10
Depth Distribution of Some Bone and Antler Implements
from Site Hum-118

Depth (in.)	Modified Antler	Antler Wedges	F l a k e r s				Modified Bone**
			Split Rib or Antler	Ulna	Whole Rib	Bone Splinter	
0-12	1	1	5*				5
12-24	6	14	4	1	1		8
24-36	7	4	4			1	12
36-48	5	4	8	1	1		14
48-60	3	3	3		2		6
60-72	4	2	5*	1			4
72-84	6	6	1	1			5
84-96	6	8	3*				3
96-108	4	6	2			1	1
108-120	4	2	1*				2
120-132	2		1*				
132-144	4	1					
No provenience	10	12	8	2		1	18
Total	62	63	45	6	4	3	78

*Includes one "extra-long" specimen

**Including split and notched ribs

"extra-long," as they considerably exceed the mean length of the specimens as a group (ca. 10 cm.). Specimen No. 1341 (pl. 7a), for example, is more than 25 cm. long. (2) Proximal ends of mammal ulnae, 6 specimens (pl. 12f, g). (3) Whole (mammal) rib, 4 specimens (pls. 7n, o, 12d). (4) Mammal (long) bone splinter, 3 specimens (not illustrated).

Differences between the small number of flakers of Types 2, 3, and 4 are not at all marked so far as depth distribution is concerned, although

Type 3 specimens are possibly set apart in this respect from the former. Their lowest appearance, in the 48-60 inch level, may represent a later introduction of an implement which varied so little from the other forms that there was no question of the later type supplanting the earlier ones.

Worked bone objects: Seventy-eight bone fragments, modified in varying degrees, were recovered from all levels above 120 inches in the deposit. No definite function can be attributed to any of these bones and it may be assumed that some of them, at least, represent the incipient stages of manufacture of more readily identifiable tools. Sixty-eight pieces were split and/or notched ribs (for example, as illustrated in pl. 7j-1), and ten were other bones, such as cannon bones or an elk scapula, which had some evidence of working on them. The notched ribs ranged from 4.8 to 24.3 cm. in length, 1.5 to 2.5 cm. in width, and 5 mm. to 9 mm. in thickness. In most cases the notches were roughly produced and show little sign of wear. One specimen (No. 2269) has definite rectangular-cut notches about 5 mm. deep and 14 mm. in length. Notches on other specimens are irregular and average about 3 mm. in depth and 7 mm. in length. These bones may conceivably have been used for wrapping cordage, either for storage or for actual use in fishing or sea lion hunting.

Split ribs without notching often have smoothed sides and tapered, squared, rounded, or partly pointed ends. Some of these specimens may have been crude "sweat-scrapers," which, however are not mentioned by Driver (1939) as being used by the historic Yurok. He does note, however, that wormwood leaves were used by head shamans to rub sweat off their bodies, and von Loeffelholz (see Heizer and Mills 1952:141) mentions the use of bone pendants by the Yurok for sweat scrapers.

The two distal ends of cannon bones (pl. 7b, c) probably were rejects, with the main shafts of the bones being sought for some utilitarian purpose.

The elk scapula (pl. 7i) is crudely cut on one side, and has a long scratch paralleling the cut.

The perforated object (pl. 7d) and the smoothed bone (rib?) peg-like object (pl. 7h) may represent finished tools for some unknown specialized purpose, perhaps also connected with fishing. The three cut bones shown in Plate 7j-1 are evidently partly shaped, incipient tools of some sort which possibly demonstrate the method of breaking or chipping the edges of bone fragments before they were ground to their final form.

Bone awls: The usual function of awls in California Indian cultures

TABLE 11
Depth Distribution of Bone Awls at Site Hum-118

Depth (in.)	Type 1 (splinter)	Type 2 (split rib)	Type 3 (artic.end)	Type 4 (split bone)	Tips	Total
0-12						
12-24	2		1		1	4
24-36	3	2			1	6
36-48			1	1	3	5
48-60	2	1	1		3	7
60-72	1		1	3	3	8
72-84	2			1	1	4
84-96	1	1		1		3
96-108	3	1			1	5
108-120	2	1	2	1	1	7
120-132						
132-144	2					2
No provenience	3	2	2			7
Total	21	8	8	7	14	58

is in connection with coiled basketry. Since the historic groups of northwestern California almost without exception did not manufacture or utilize coiled basketry (Driver 1939:333), it seems safe to assume that the occupants of site Hum-118 likewise did not. As an alternative, it may be suggested that the 58 awls or fragments found (table 11) represent tools which were used as "eel slitters" (Kroeber and Barrett 1960:pl. 20; Gifford 1940:168), or in working the soft redwood, or perhaps with animal skins, for garments. "Perforating implements," the designation employed by Gifford (1940:161) for single-pointed bone tools, is perhaps an even less committal term and, except for the seemingly general acceptance of the word "awl" for these tools in California, would serve as well for the Hum-118 examples.

Awls are divided into four different types, as follows: Type 1

(pl. 13a, b), manufactured from irregular splinters of mammal bone, with mean dimensions of 8.5 cm. in length, 1.2 cm. in width at the proximal end, and 7 mm. in thickness (21 specimens); Type 2, from split ribs, with mean measurements of 8.4 cm. in length, 1.3 cm. in width, and 5 mm. in thickness (8 specimens); Type 3 (pls. 7e, f, 13c, d), made from bones with articular ends present, with mean measurements of 10.4 cm. in length, 1.9 cm. in width, and 1.5 cm. in thickness (8 specimens); Type 4 (pl. 13e-g), from usually evenly split sections of mammal bone, and with mean measurements of 10.7 cm. in length, 1.2 cm. in width, and 8 mm. in thickness (7 specimens).

Obviously there are not very significant differences between these types, either in their form or in their depth distribution. The bone splinter awls are the simplest type of the four, and were evidently the most commonly used. Perhaps this is in keeping with the idea of a non-specialized use for these implements—if they were not used for the comparatively delicate processes involved in coiling baskets, not much care would have to be given their manufacture. There is no evidence in the site deposit of any artifacts which would definitely have required awls in their fabrication, but there can be no doubt that they nevertheless had some importance. It will be recalled that several of the bone harpoon heads which had lost their barbs (cf. pl. 11i) were reworked to the form of an awl.

The long bone specimen shown in Plate 13h (No. 1633), found at a depth of 28 inches, is sharply pointed at either end, and may have served, for example, either as a hair pin or an awl. Driver (1939:396) notes that sharp, bipointed pins were reported to have been worn in war by some historic Yurok so that the enemy would not grab their hair.

Head scratchers: Three decorated bone objects were recovered in the excavation (pl. 14a-c) and have been identified as head scratchers. Similar implements have been observed among the Yurok and other groups in northwestern California, where they were used mostly by girls at the age of puberty (cf. Loud 1918:383, pl. 20). The triangular designs on the Hum-118 specimens correspond quite closely with those on head scratchers from the Gunther Island site excavated by Loud, and the perforation or grooved arrangement at one end of these specimens suggests that they were attached to cordage, perhaps to be worn around the neck, as among the ethnographic Yurok. One of these specimens was found in the south talus slope of the site, hence does not have usable provenience data. Specimen No. 1293 is broken at both ends and may have had a perforation at its grooved end. It was found at a depth of 98 inches, while the perforated object (No. 686) was recovered from the 12-24 inch level.

Perforated bone needles: Three objects which were possibly used as needles were found. Two of these, both from the 24-36 inch level, are vestigial metapodials, probably of deer (pl. 14d, e). They are both partially smoothed and biconically drilled on their proximal ends. Their relatively irregular shape and the fact that the proximal knob is not smoothed down suggest that these specimens were not very effective needles. They may as well have served as necklace pendants or even as headscratchers, though there is no sign of decoration upon them.

The fragmentary specimen found in the 0-12 inch level (pl. 14f), with a perforation near its notched end, offers more certainty about its identity as a needle. It is polished all around and has a longitudinal groove on one side, extending from the end-notch to the perforation and slightly beyond.

Modified bird bone: Of three incised bird bone fragments recovered, two, from the 12-24 inch level, appear to be whistle fragments (pl. 14g, h). These specimens are polished and each has one end square-cut. The longer specimen (pl. 14g) has a design consisting of encircling and spirally cut lines, and the broken end shows slight evidence of the former presence of a hole. The shorter specimen (pl. 14h) has quite definite evidence of a whistle hole at one end. The edges of this probable opening are smoothed, except for a series of five nicks along one side.

At a depth of 48 inches was recovered a small piece of bird bone with a spirally incised line near its center. Its small size suggests that it may have served as a bead, even though there was little evidence of other types of beads, even shell beads, found in the deposit.

Worked sea lion teeth: Twelve worked teeth, eight canines and four incisors, were recovered from the deposit. These were all from sea lion (Eumetopias jubata), and the canines at least suggest animals of varying ages, as indicated by the development and size of the pulp cavities, which have a large, hollow appearance in young individuals. The teeth range from 3.8 to 7.9 cm. in length, with an average of 4.8 cm. for the incisors and 6.8 cm. for the canines. They were found scattered throughout the deposit, three from the 72-84 inch level, two from the 48-60 inch level, two above the 36 inch level, and five either on the talus slope or otherwise without provenience.

The canine teeth are all almost complete, except for one split specimen which is polished and slightly incised (pl. 14k). All show various polishing, grinding (pl. 14i), or incising marks on their surfaces. These specimens may have been used as gaming dice or perhaps merely as

good luck pieces. There is no indication that they served a practical function as tools.

The incisors (probably all upper laterals) are all split specimens with inside edges polished or lightly incised, and one specimen (No. 222) has numerous scratches on its outer surfaces. Although the incisors may also have been used as small dice or charms, at least one of them (No. 1712) has apparently artificially smoothed edges on its distal end, suggesting use as some kind of tool.

Curved bone fishhooks: Heizer (1949:93) has already described the four curved bone ("C"-shaped) hooks from Hum-118. Two of these specimens were recovered at depths of 20 and 22 inches, and the others were without depth data. Heizer comments as follows:

These are all rather similar, and differ from those of Hum-67 [Gunther Island] in being consistently smaller and having more incurved tips. They approximate the subcircular form of the south central coast hooks. The Hum-118 hooks are made of some land animal (probably elk), bone and sea lion tooth. They range from 0.75 to 1.0 inch in diameter. They either bear a rudimentary knob [No. 1582, pl. 141] resembling some ...hooks of the south central coast, or they have a plain shank which has been slightly roughened by incised cross-hatched lines to assist in firmly attaching the line.

Incised bone and antler fragments: Three specimens, two of bone and one of antler (pl. 14n-p) all show crude incising, in linear or triangular form, on their surfaces. The bone specimens are both pointed at one end, and hence may have served as some kind of decorative pin. The antler piece (probably of deer, pl. 14p) is broken at both ends, and it cannot be determined whether it was a decorative or a practically useful object.

Cut whale bone slab fragments: It has already been noted that whale bone fragments, slightly modified or unmodified, were found at all levels in the deposit. Five pieces will be mentioned here, found in the 120-132, 84-96, 72-84, and 12-24 inch levels, which were retained and numbered because they all show marked smoothings, notchings, or roundings of their ends. These pieces were all fairly large, averaging 17 cm. long, 9.6 cm. wide, and 2.5 cm. thick. Two of the pieces could be identified as coming from the scapula or rib of the whale. One specimen (No. 35) appears

to have been designed as a wedge, but the working on the other pieces gives no definite clue as to their intended function.

Shell Artifacts

In spite of the fact that the spot on which site Hum-118 is located has been given the modern name of Abalone Point and notwithstanding the shell-rich midden deposit of the site, only a few shell artifacts were found. Evidently the turbulent water below the site and the jagged, rocky character of the small inlet to the beach, may have discouraged the inhabitants from taking abalone since only occasional pieces were noted in the deposit, and no artifacts of this material were noted. The mussel-shell ornament found with burial No. 3, at a depth of 72 inches, was unique for the site, and in any case was not a highly worked specimen.

Olivella beads of two types—the small circular (disk) examples (Beardsley 1954:116, type 3d) and small whole shells with the spire ground off square (ibid., type 1a)—were found with Burial 2 at a depth of 40 inches. Two other finds in the midden, at a 20 inch depth and in the 36-48 inch level, each consisted of spire-lopped beads like that found with Burial 2.

Historic Artifacts

When we consider that site Hum-118 was presumably abandoned before it could have been perceived by early European travelers—which was not the case with Tsurai (Hum-169) and the Gunther Island site (Hum-67)—a surprisingly large number of historic artifacts were recovered from the upper levels of the deposit. Fragments of glass, probably from bottles of various shapes, were most frequently recorded (about 80 pieces). All of these were found above the 24 inch level, with the exception of three pieces found at different places, horizontally, in the site (units 5L6, 15L7, and 50L3) but at approximately the same depth—one at 38 inches (15L7) and the other two in the 24-36 inch level. When such a small percentage of historic pieces is found below expected depths, it is possible to attribute these occurrences to some kind of accident; rodents may have been responsible for transporting the specimens downward, or they may conceivably have fallen out of the side walls during excavation, to be found later at a lower level. In the Hum-118 example, the small distance of possible secondary displacement may not in any case be significant. Perhaps the glass fragments were properly in place and, at that depth, truly represent the early beginnings of contact with Europeans.

Five fragments of white chinaware and two unidentified metal pieces were found in different parts of the midden, all above the 12 inch level.

Two of the features noted in the deposit contained historic objects. From Feature 12, at a depth of 19 inches, came a few fragments of metal, glass, and chinaware. Feature 18 was mainly a concentration of historic objects mixed with artifacts of prehistoric type: obsidian and chert points, chert blades and cores, notched stone sinkers, cobble choppers, and some bone implements. The entire feature extended from 3 to 28 inches in depth from the surface of the deposit. Besides ten glass fragments like those already described, there were several bits of charred cloth and three chinaware fragments, including one cup handle. Eight varied metal pieces included a blade, two buttons, and one disk. There were two halves of a decorated gun powder flask, typical of those used in the nineteenth century in the United States. According to an identification by Mr. Arthur Woodward, formerly of the Los Angeles County Museum, the design on both pieces is known to collectors as the "lotus pattern," and the specimen probably was manufactured in the general period of 1840-1850.

Mr. Woodward also examined the remains of a double-barrelled percussion lock pistol found with Feature 18. He stated that it was manufactured either in Britain or Belgium, and also dated from about 1840-1850.

In Feature 18 and in several other parts of the upper levels of the site, glass trade beads were found. The Feature 18 occurrence was of but one blue bead. All of the 20 or so beads can be described as tubular, with faceted, hexagonally molded exterior decoration, of different colors and sizes. These types of beads have been found in Indian sites in central California, generally north of San Francisco Bay, and Mr. Woodward believes that they date from 1840-1860. Comparison with beads in the collections of the R. H. Lowie Museum of Anthropology, University of California, Berkeley, leads one to believe that they are probably of American manufacture. Some of the beads have been found with brass military buttons, and it seems likely that the Hum-118 beads came to the site as an aftermath of the Gold Rush in northern California. The beads range in length from 6 to 9 mm., and average about 7 mm. in diameter; perforations are from 3 to 5 mm. in diameter.

As already indicated, the historic objects do not present any insuperable problems in their depth distribution. Barring the minor exceptions noted, which are not far removed from expected depth in the deposit, these specimens all reinforce the idea that the deposit may have built up in a

relatively uniform way, without a great deal of mixture or disturbance in the lower levels of any part of the site. If the dating estimates of some of the historic specimens are correct, we seem to have evidence that the occupants of the site had some sort of contact with Euro-Americans, probably until well after the middle of the nineteenth century. It will never be known whether the local Yurok living in 1920 did not know of the existence of the site or simply did not want to tell T. T. Waterman its exact location. Unless new evidence comes forth about the significance of the site to the local historic Indians, it can be suggested that Hum-118 was abandoned at some time in the latter half of the nineteenth century and was not well enough known to later Yurok to be remembered either as an important village or camp site.

Summary

Accompanying the descriptions of all the artifacts recovered at site Hum-118 have been indications of the depths at which they were found, regardless of the horizontal location of the excavation unit. Defense of this procedure lies in the smallness of the site and in the resultant possibility of excavating virtually in one large block, from which the great majority of artifacts were recovered. Map 1 shows only a limited part of the site examined apart from the main excavation in its center and southern portions. The fact that two isolated small series of units in the northern sector were relatively shallow probably does little to affect the impression of layering of materials inherent in the tabular presentation. Some errors are certain to creep in because of the sloping contours of the site, but at least the observation of layering can hardly be subject to error arising from the chance that different areas of the site were occupied at widely separated periods in its history.

If we assume that the deposit represents a steady accretion of living refuse over the years, essentially in one spot, we are faced with the picture of a fairly uniform group, possibly composed of several allied families and their descendents, being responsible for the midden deposit from bottom to top. In the limited amount of soil deposit below the 12 foot depth were found only pebble choppers and scrapers, but immediately above that depth appear elements diagnostic of northwestern California prehistoric culture, such as elk antler wedges, notched sinkers, bell-shaped mauls, zoomorphic clubs (or miniatures of these), evidence of simple harpoons in the form of bone or antler tips, and two types of projectile points (types 3 and 4), both thought to have been used in connection with the simple harpoons. Between the latter depth and the 72 inch level, which should be designated the effective midpoint of the deposit,

most of the other important archaeological elements of northwestern California are seen to emerge. These include probable arrow points (type 6), grooved sinkers, flanged and unflanged pestles, artifacts of slate, toggle harpoon spurs, tubular steatite pipes, stone adze handles, steatite dishes, bone head scratchers, and bone awls and flakers. Above 72 inches, new increments to the site seem to decrease in number, with only miniature obsidian blades, bone gouges, worked sea lion teeth, and stone acorn anvils appearing for the first time, all below the 30 inch level. This level perhaps represents a time of minor change in the life of the Patrick's Point people. In addition to a limited number of historic artifacts (e.g. bottle glass fragments and glass beads) excavated in the upper 30 inches of deposit, aboriginal types of artifacts such as the barbed (and slotted) arrow foreshaft, bone whistles, "C"- shaped bone fishhooks, and bone needles were found to be confined in or near this upper portion.

Even allowing for the possibility that Hum-118 was not an important village, and therefore did not contain the full complement of what may be called prehistoric Yurok culture elements, we can judge with Bennyhoff (1950:311) that much of the northwestern California culture pattern had already been established before the site was occupied. Only the simple harpoons show variation through time at the site (table 9). While these typological variations may represent an amazingly quickened and sustained interest in sea lion hunting on the part of the original occupants of the site, we are still faced with a possible contradiction when considering the length of occupation of the site. Perhaps the other types of artifacts listed are not so susceptible to change, but in any case the uniformity of culture reflected by them would not suggest long-time occupation. On the other hand, the change in harpoon types does point to a relatively long duration of occupation by a well integrated group.

In comparing the probable course of events at site Hum-118 with those at the Gunther Island site, we are struck with the general similarity of the artifact assemblages between the two sites. Although we are not positive about the sequence of simple harpoon types at Hum-67, it may be noted that all of the major types from site Hum-118 also appeared at Hum-67. However, as Bennyhoff (1950:312) has commented, there are some slight differences in the harpoons from the two sites; for example, the slotted tips of large specimens as well as hooked barbs present at Hum-118 were not found at site Hum-67.

Other differences are seen in the lack of large ceremonial obsidian blades at Hum-118. These are an important feature in the burial complex at Hum-67, and their absence at Hum-118 is perhaps another indication that the site did not have the status of a permanent village. On the other hand,

The presence of both miniature obsidian blades and miniature zooform clubs at Hum-118 suggests the importance of these classes of artifacts to the prehistoric cultures in the Yurok region. Characteristically, no zooform clubs were found above the 24 inch level at site Hum-118, and the finding of seven miniatures in a total of nine specimens lends credence to the idea that these animal-form figures served a ceremonial or magical purpose, rather than some such practical use as clubs for killing slaves.

The radiocarbon date of about 1310 A.D. for the early levels of Hum-118 does indeed seem late, especially since a date of about 900 A.D. has been secured for site Hum-67. Although the charcoal from Hum-118 was not collected during the 1948 excavation, the site is so small in horizontal area as hardly to allow the possibility of finding charcoal in a part of the site occupied separately and perhaps later than the main portion which represented the original occupation. If the charcoal had been collected at the same spot in 1948, it is believed that it would have been equally usable as material for dating of the significant or central part of the deposit.

In the event that the date is accurate, there are several explanations which permit its acceptance without particular strain on the evidence from elsewhere. First of all, the allowed error for the Hum-118 date is ± 90 years (see End Note 2) while that for site Hum-67 is ± 200 years (Crane and Griffin 1961:119). This means that there is a possibility of a gap between the first occupations of the two sites of about only 120 years. Without placing too much confidence in this remote contingency, we may nevertheless point out that the great bulk of artifacts (and all but one burial) from Hum-67 were recovered from above the 60 inch level, while the charcoal sample was taken at a depth of 104 inches (ibid.) Since the main reason for assuming contemporaneity of the two sites was originally based upon the similarities of their artifact assemblages, it could be argued that Hum-67 was indeed the first occupied, at the indicated date, and that at a later time, when the culture there had developed its characteristic form, the Patrick's Point site was founded.

Subsequently the peoples from the two sites must have had contact with each other, and their manner of living would have varied only in some relatively minor details. It is remarkable that such similarities as have been noted could have come about in view of the postulated differing circumstances of the two sites. Hum-67 seems to have been primarily a favored burial site, while Hum-118 was most likely an intensively used, but seasonal, camp spot.

II. THE HISTORIC SITE OF TSURAI (HUM-169)

The historic Yurok village known as Tsurai is located on the north shore of Trinidad Bay, about five and one-half miles south of Hum-118 and about one-quarter mile due east of a small, rocky point known as Little Trinidad Head. It has already been stated that Tsurai is, in a way, not typical of Yurok village locations insofar as it does not lie at the mouth of a large stream, nor does it overlook a quiet-water lagoon. In spite of these irregularities, however, Tsurai was indeed a major Yurok village, and has the distinction of best illustrating a Yurok habitation spot which was seen by Europeans in the eighteenth century and which continued to be occupied well into the twentieth century. Its strategic location in a small natural harbor resulted both in its early discovery by Europeans and its ultimate downfall, since Trinidad Bay served as a supply port to the placer miners of the Trinity River after 1850.

Heizer and Mills (1952) collected numerous historical documents which refer in one way or another to Hum-169, and they divided the native occupation of the site into four periods (or ages) as follows: (1) Pre-historic, A.D. 1620(?) - 1775; (2) Discovery and Exploration, 1775-1800; (3) Exploitation, the Fur Trade, 1800-1849; and (4) Decline and Fall, the American Invasion, 1850-1916. These periods are enumerated because they are intimately related to the archaeology of the site as here described.

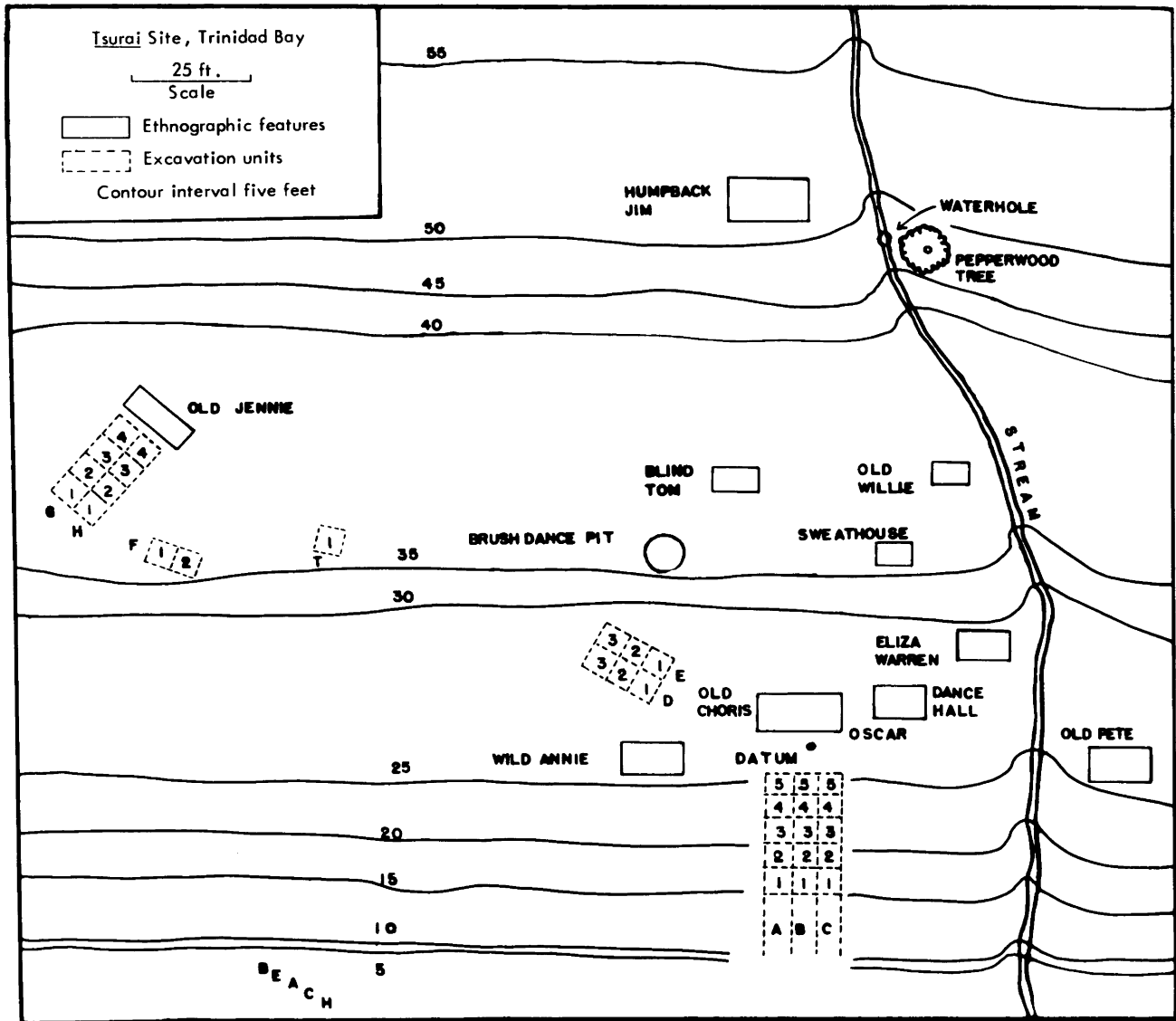
For the purpose of setting forth the entire history of Hum-169 Heizer and Mills merely summarized the prehistoric aspects, and it will be the purpose of the present report to add substance to these aspects. Since Tsurai is in approximately the same ecological zone as site Hum-118, it will not be necessary to repeat the account of the general setting of the site on the north coast of California, and the following sketch by Heizer and Mills (1952:13) attests to the similarity in the economy of the two sites.

Some aspects of the economy of the ancient Tsurai people can be recovered from archaeology. Thus the great abundance of bivalve shells tells us that mussels (Mytilus californianus), cockles (Cardium corbis), and clams (Saxidomus nuttali), razor shell (Siliqua patula), and rock oyster (Hinnites multirugosus) were important dietary resources. Abalones (Haliotis rufescens), sea urchins (Strongylocentrotus purpuratus), sea snails (Polinices lewisii), and barnacles from the sea helped fill the larder. Fish bones were abundant, and it may

be supposed that rockfish and salmon comprise the bulk of these remains. Bones of the Roosevelt elk (Cervus roosevelti), seal (Phoca callorhinus), and sea lion (Eumetopias jubata) were very common and probably furnished the main meat and fat resources, together with white-tailed deer (Odocoileus virginianus) and racoon (Procyon lotor). Acorns were used, if we are correct in assigning a function to the stone mortars and pestles, and various edible roots, bulbs, and berries must have been eaten. Bones of the sea otter (Enhydra sp.) are fairly common, and we know from the accounts of the early visitors to Trinidad Bay that these animals were hunted for their superior fur.

Today the portion of shoreline where Hum-169 is located, although undoubtedly much more overgrown than it was when continuously occupied and not now having any standing living structure, otherwise seemingly varies little from its aboriginal condition. In support of this view, we have an account by William Shaler (reprinted in Heizer and Mills 1952:75-81) which gives an excellent description of the area of the site in 1804.

This bay is bordered by a rocky shore, with sandy beaches at intervals; behind this, the land rises very quick for about one hundred yards, which space is thickly covered with brakes, nettles, strawberry [blackberry?] vines, clover and other herbage, and shrubbery. The top of this elevation is a plain, gently rising, and covered with a thick forest of cedars, fir, hemlock, and spruce. A little way in, the trees grow to an enormous height and size, particularly the cedars [redwoods], many of which shoot up like beautiful columns, above eighty feet, without a limb or twig. Behind these, the mountains rise to a great height, and are covered with evergreen forests, that are probably coëval with the soil that nourishes them. This high land is split at intervals of about a quarter of a mile, by deep gullies, down which flow streams of excellent water, into the bay. These gullies are impenetrable by reason of the thick growth of underwood and timber; the former is principally alder, which may be cut at the entrance of the gullies, and is the only wood that can be procured at Trinity. A little within, the forest is pierced in every direction



Map 2. Site Map of Hum-169⁷
 Section X-Y (Trench A) Refers to Profile Drawing in Chart 2

by paths made by the moose deer [elk], which seem to abound here.

On the side of the hill, about the middle of the bay, stands the Indian village; it consists of about a dozen huts, built of a very rude kind of planks, made by splitting the ancient trunks of the fallen cedars with wedges.

Map 2 gives a clear picture of the gradual slope upon which the site was located—between the upper part of the beach and the level plain at the top. Small streams which in effect delimit the site on the east and west both run all year at the present time. They are fed by springs, and the stream at the east side especially must have provided the original inhabitants with an adequate water supply. Unlike the Patrick's Point site, Tsurai has a sheltered position, and the beach below the site is sandy, usually with but gently breaking waves, in contrast to the jagged rocks and crashing surf at Patrick's Point. In all, Tsurai gives the impression of a permanent village oriented to an open coast economy, but not occupied solely because the sea mammal hunting or the collecting of molluscs was particularly desirable there, as seems to have been the case at Patrick's Point. Tsurai was evidently a pleasant place to live for a variety of reasons.

Since the site was occupied until about 1916, it appears unlikely that the shell midden deposit would have been greatly disturbed by vandals or treasure seekers before that date. After 1916 some forays were made by casual excavators, and certain specimens in local collections are known to have come from the site. In the summer of 1948 a field class from the University of California, under the direction of R. F. Heizer, spent a few days testing in several portions of the site, and in August, 1949, a field crew from the University, under the direction of R. F. Heizer and J. E. Mills, conducted a large scale excavation there. Most of the specimens described herein were found during this latter expedition, although some were added to the lot by continued excavation by members of the University of California Archaeological Survey in September, 1949. Unfortunately, it was not possible to excavate in certain areas of the site or anywhere else in the neighborhood of the town of Trinidad where Yurok cemeteries were known to be located. The only trace of a burial at Hum-169 was encountered fortuitously in the historic level of the site, and little or nothing not already known about local burial practices in historic times could be added from this information. Nothing whatever can be set forth on the burial customs during the prehistoric occupation of the site.

Excavation

The estimated 80 per cent sampling of the Patrick's Point site could not, for various reasons, be duplicated at site Hum-169. It has been roughly estimated that about 350 cubic yards of midden soil were excavated at Patrick's Point, and the artifact yield from this mass consisted of about 2300 stone and bone specimens. It would indeed be difficult to estimate the percentage of the deposit of Hum-169 investigated by the several University of California groups, since there was so much dense plant growth on the site. Probably not more than 15 per cent of the site has been examined so far. If the surface area shown in Map 2 were covered by a midden deposit which was uniformly deep from the center to the eastern border of the site, then the figure of 15 per cent would evidently be far too high.

Whatever the size of the sample relative to the total size of the deposit, it is certain that Hum-169 is a richer site than Hum-118. The calculation of about 150 cubic yards of deposit soil excavated at Tsurai, with about 3300 artifacts found, allows a fair picture of the comparative richness. The incidence of historic items of metal and glass at Hum-169 was high. Discounting these, it is true that there were about twice as many artifacts per cubic yard at Tsurai than at Patrick's Point.

In the descriptions of the artifacts which follow, it will be seen that the upper levels of the site are invariably included in the depth distribution tables for aboriginal (i.e. prehistoric type) artifacts. Table 12 indicates that in all excavation units plotted on Map 2, historic artifacts were found in the upper levels; hence it is recognized that a definite mixture of ancient and modern types is present in these levels. We have chosen in general to touch but lightly upon historic type artifacts here, partly because these have already been adequately summarized by Heizer and Mills (1952), and partly because the chief purpose of minutely describing historic artifacts is to aid in providing approximate chronological end points to a site having its beginnings in the late prehistoric period or earlier. In the case of Hum-169, this end point is already known.

Heizer and Mills (1952:13) have suggested that since no definite evidence was found of the visit to Trinidad Bay of the Hezeta expedition in 1775, any objects received from the Spanish by the occupants of the site were either buried with the dead or discarded when broken or worn out. It may be assumed also that the Indians obtained such things as metal knives, axes, needles, and scissors, as well as glass bottles and beads, at a later date, but that, in general, these objects were secured intermittently,

TABLE 12

Depth Distribution of Historic and Prehistoric Types
of Artifacts at Site Hum-169 (see Map 2)

Trench	Levels	Depths from surface (in.) in Excavation Units				
		No. 1	No. 2	No. 3	No. 4	No. 5
A	Historic	12-36	6-18	6-12	13-24	0- <u>24</u> *
	Prehistoric	36- <u>39</u>	18- <u>66</u>	12- <u>81</u>	24- <u>87</u>	24- <u>90</u>
B	Historic	6-18	30-48	0-12	12-36	6-24
	Prehistoric	18- <u>42</u>	48- <u>66</u>	12- <u>78</u>	36- <u>78</u>	24- <u>84</u>
C	Historic	8-22	0-6	0-6	6-18	6-48
	Prehistoric	22- <u>39</u>	6- <u>42</u>	6- <u>55</u>	18- <u>72</u>	48- <u>96</u>
D	Historic	18-24	13-24	12-18		
	Prehistoric	24- <u>58</u>	24- <u>60</u>	18- <u>60</u>		
E	Historic	0-20	18-24	12-18		
	Prehistoric	20- <u>60</u>	24- <u>60</u>	18- <u>60</u>		
F	Historic	0-6	6-12			
	Prehistoric	6- <u>69</u>	12- <u>69</u>			
G	Historic	12-24	18-24	24-30	4-24	
	Prehistoric	24- <u>52</u>	24- <u>54</u>	30- <u>48</u>	24- <u>54</u>	
H	Historic	18-24	0-18	24-36	12-30	
	Prehistoric	24- <u>56</u>	18- <u>52</u>	36- <u>52</u>	30- <u>48</u>	
T	Historic	19-32				
	Prehistoric	32- <u>66</u>				

*Underlined figures represent total depth of excavation units.
Thus total depth of Trench A, Excavation Unit No. 1, was 39
inches.

and probably not in large quantity, during the fur trading period of 1800-1849 (ibid., 74). The European objects probably could not have had a great effect upon the local culture patterns at this time, although some of these items may be represented in the 36-48 inch level; for example, in excavation units B-2 and C-5 (see table 12). The finds in other units, of the base of a Sandwich glass vase or lamp (ibid., 86) and some metal objects, including iron swords—which were probably utilized as trade goods to the Indians—may also date from the pre-1849 period.

The great majority of historic specimens seem to have derived from the last period of the site's occupation, after 1850. Evidence in support of this statement may be seen in part in the sheer quantities of metal and glass artifacts in the upper 36 inches of the midden deposit, and by the nature and continuous occurrence of some of these artifacts. A good example of the kind of objects expected in the historic levels is provided by the excavation of the sweathouse, located about 35 feet northeast of Trench E (see map 2). The old pit was excavated to a depth of 36 inches and the following artifacts were recovered:

Artifacts of native manufacture, similar or identical to late pre-historic types: 20 side-notched net sinkers, 18 chert scrapers, 2 hammerstones, 1 anvil, 1 pestle, 1 chopper, 4 concave-base projectile points, 17 abalone ornaments, 1 steatite bowl fragment, 1 chipped stone drill, 1 bone splinter awl, 8 whole Olivella beads, 7 end- and face-ground pine nut beads, 34 end-ground pine nut beads. Included in this category are several examples of doubtful classification, such as glass scrapers and whetstones (e.g. pl. 17d). Another example of this adaptation of old techniques to modern materials is seen in the so-called Desert Side-notched projectile point (Baumhoff and Byrne 1959) manufactured of bottle glass.

Glass or metal specimens or fragments from objects not originally of native manufacture: 1 iron file, 4 iron spikes, 1 metal hoe blade, 1 iron knife blade, 2 metal spoons, 1 iron nail, 1 iron bracelet, 5 brass buttons, 1 metal shoe grommet, 1 brass thimble, 1 metal suspender buckle, 1 metal can lid, 1 broken cast iron stove door, 10 glass fragments, 2 bottle bases, 4 bottle tops and necks, 9 chinaware fragments (cups and plates), 1 white clay pipe bowl, 15 white glass buttons. The following trade beads were found: 10 blue glass, unfaceted; 142 blue glass, hexagonally faceted; 5 white glass, translucent; 3 blue-green glass; 16 red glass with white center; 2 gray glass.

It will be noted that the most frequently encountered glass beads in the collection are the hexagonally faceted blue glass variety, which are identical with those found at Patrick's Point, and which have been noted as probably having been imported during the period 1840-1860. Some of the other types may indeed date before this time, but we cannot be sure that they do not represent survivals from the relatively short time before 1850 when they could have been brought to the site.

In the discussion on the building up of the midden deposit at Patrick's Point, it was suggested that the smallness of the site plus the fact that historic materials were in all cases found in the upper levels only of the deposit, point to a minimum of mixing of ancient and modern

materials. Thus it appears that the ordinary procedure of attributing greater age to specimens occurring at lower depths at site Hum-118 would in this instance have a certain justification. At site Hum-169 there can be no such argument, although the generally upper level occurrence of historic artifacts (table 12) may well indicate a relatively even layering of the deposit through time. Unfortunately, however, the area of Hum-169 is too great to allow the supposition that the occupation soil aggraded steadily in any given place on the site. A cross section of the total slope of Hum-169 would reveal the presence of three separate, level terraces (indicated in map 2 by greater distances between contour lines) upon which occupation must have been heavier than elsewhere on the site.

On the other hand, Chart 2 (the reproduced profile of the west wall of trench A) shows that the slope of the subsoil was less than that of the surface of the site at the time of the excavation. This suggests that at least the lowest terrace of the three, in which trenches D and E were dug, may have attained its level state partially by being built, in effect, on occupation midden. The soil at the south ends of trenches A-C in fact was the result of talus deposits, with the midden worked down or slipped down from above. It was in this part of the excavation that the depth recordings of artifacts could not be depended upon. Accordingly, this factor, plus surface finds, largely explains the presence of so many specimens in the "no provenience" category in the depth distribution tables which accompany the artifact descriptions.

While considering the manner in which the various components of the midden soil may have been deposited, the features excavated (summarized in table 13) should not be neglected. Each of the 25 features recorded (9 rock concentrations, 7 artifact caches, 6 fire pits, 2 rock walls, and 1 definite house floor) probably reflects some kind of occupation specifically, rather than mere undifferentiated midden or refuse. Even the relatively formless rock concentrations may have been corners of former houses, the putative hard clay floors of which have simply disappeared with the passage of time. All three of the major excavation trenches contained some features. If the supposition that the features represent the remnants or adjuncts of some kind of dwelling place is correct, then we can further assume that the pattern of dwelling location in the eastern edge of the site observed in the twentieth century (shown in map 2) was not always the same. The depth of the midden deposit in trenches G and H, on the western edge of the site, perhaps bears this out, even though no positive house floors were located there during the excavations.

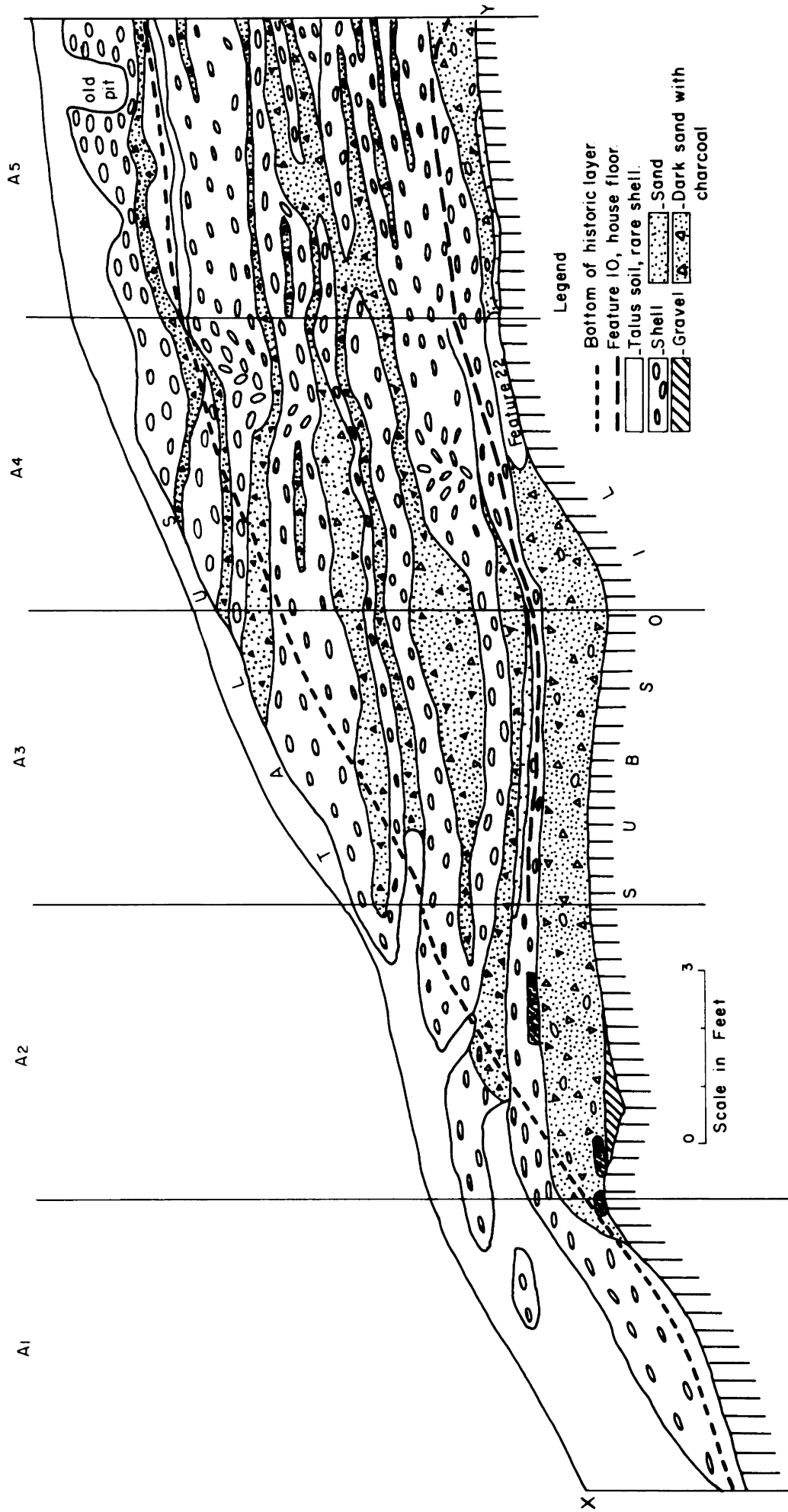


Chart 2. Hum-169. North-South Profile, along Section X-Y

TABLE 13
Features Excavated at Site Hum-169

Feat. No.	Description	Location (Map 2)	Depth (in.)	Assoc. Objects Remarks
1	Fire pit (partially slab-lined) possibly assoc. with clay house floor. 22 in. diam., 10 in. deep	Tr. A, S. end	51	1 harpoon barb Steatite dish & redwood frags. scattered about
2	Section of rock wall (slabs and cobbles) 51 in. long, 30 in. deep	Tr. A, S. end	40	1 antler wedge 1 pestle frag. Redwood board frags. between cobbles
3	Cache of stone, bone, and antler tools. 21 in x 11 in. area	D-3	16	2 antler wedges 1 bone flaker 16 stone scrapers Unworked bone and stone
4	Fire pit, 17 in. diam., 6 in. deep	E-1	44	Defined by heavy layer of charcoal
5	Cache of bone and antler tools 14 in. x 9 in. area	D-2	26	3 antler wedges 3 worked ribs 1 bone awl
6	Pile of rocks, possibly a wall 30 in. long, 10 in. deep	A-2	15	
7	Fire pit, 48 in. diam, 14 in. deep	E-2 D-1, 2	24	Steatite rocks in ash layer
8	Rock concentration with artifacts. 51 in. x 43 in. area, 13 in. deep	A-2 B-2	50	1 pestle frag. 2 maul frags. 1 <u>Olivella</u> bead 1 scraper Redwood frags. scattered about
9	Cache of stone and glass artifacts. 19 in. x 16 in. area	D-1, 2	24	3 steatite bowl frags., 1 adze handle, 1 glass object (candle stick base). Found below redwood plank, above layer of red- wood bark

TABLE 13 [cont'd.]

Feat. No.	Description	Location (Map 2)	Depth (in.)	Assoc. Objects Remarks
10	Segment of house floor, flat slabs & boulders resting on sand layer. Ca. 15 x 15 ft. area	A-2, 4 B-2, 3	63	Arrow straightener Hammerstone; elk antler and bones (unmodified)
11	Fire pit with assoc. unmodified bone, scattered chert chips; 85 in. diam.	G-1, 2 H-2	30-36	3 side-notched sinkers, 1 sandstone pestle frag. 1 bone wedge 1 pointed bone tool 1 schist blade 7 hammerstones 1 pestle, 1 bone needle, 2 historic artifacts
12	Rock (unburnt) concentration, chert chippage & much fish bone included. 45 x 26 in. area	C-3, 4	54-82	4 stone scrapers
13	Rock concentration, with artifacts & unmodified land and sea mammal bones. 12 x 5 ft. area	A-4 B-4 C-4	2-57	2 pestle frags. 1 toggle harpoon spur, 1 net sinker 1 pecked steatite bowl, 1 steatite anvil, 1 chopper 1 hammerstone 3 hist. artifacts
14	Cache of chert chips, 12 in. diam.	G-2	20	Ca. 200 flakes
15	Concentration of hist. glass artifacts, 12 in. diam., 6 in. deep.	H-2	6	
16	Concentration of rock and mammal bone	B-4 C-4	20-42	1 bone implement 1 net sinker 2 sect. cut antler 1 maul frag. 1 steat. dish frag. 1 hammerstone

TABLE 13 [cont'd.]

Feat. No.	Description	Location (Map 2)	Depth (in.)	Assoc. Objects Remarks
17	Fire pit with large rock lining 19 in. diam.	H-3	16	In shell layer above clay house floor remnant
18	Concentration of rocks 15 x 5 ft. area	A-4 B-4 C-4	53-80	2 blade frags. 1 cobble chopper Sea mammal scap.
19	Concentration of rocks 74 x 27 in. area	G-3 H-3	41	1 pestle frag.
20	Concentration of rocks 40 x 38 in. area	G-4	37	1 bone tool 2 chert scrapers
21	Concentration of rocks 24 x 8 in. area	G-3	24	2 historic arti- facts, glass
22	Fire pit, stone, charcoal, small bone frags. assoc. 7 x 5 ft. area	A-4 B-4	76-87	1 side-notched net sinker
23	Cache of steat. bowls, no evidence of use (4). 15 ft. diam., 9 in. deep	Tr. C	39	
24	Concentration of crude side- notched net sinkers (11) 30 x 12 in. area	B-4	80	
25	Rock concentration with historic artifacts 32 x 20 in. area	C-5	18	1 steatite cobble 1 clay pipe 1 metal tube 1 crumpled mass of metal

Despite the inconsistencies indicated by the size of the site and the fairly steep slope of the terrain, we may assume that the gradual growth of the deposit was not unbalanced; that is, one part was not built up like a volcanic cone while an adjacent area remained low and level. The mean depth of the midden in the excavated portions of the site is about 62 inches, and this depth (except in two instances) does not differ by more than 24

inches from the depths of any individual excavation units. In addition, the mean lowest depth of occurrence of historic artifacts is 23 inches, and here in only two instances are differences much greater than one foot (lower) noted in the individual pits. These figures, of course, are not startling, but taken by themselves they present a picture which suggests that Heizer and Mills (1952:8) were not too far off when they estimated that the site was originally occupied in about A.D. 1620.

In the following descriptive section on artifacts recovered, the same order will be adhered to as was used to present the Patrick's Point data, so that comparisons between the two sites may be facilitated. In view of what has been said about the possibly irregular nature of the building up of the deposit, the depth tabulations for the various kinds of artifacts are presented with the qualification that again the crudeness of the device is fully realized by the writers. One reason for this can be plainly seen in Chart 2, which shows the extremely complicated profile of the longest trench excavated. Similar drawings for all excavation units are almost equally uneven, and explain why the midden deposit was excavated in arbitrary levels. There is no easy explanation thus far of the sequence of events which could have been responsible for this formation at the site.

Artifacts Recovered

Chipped Stone Objects

Projectile points: Ninety-two points were recovered at Hum-169, slightly more than half the number of specimens of this kind found at site Hum-118. All but two of the types noted earlier for northwestern California were present, with materials and approximate sizes as follows:

Type 1: Leaf shape, with convex base (pl. 15a); six specimens, three chert, three jasper. Large specimen 5.8 cm. long, 3.3 cm. wide, 10 mm. thick; small specimen 2.7 cm. long, 1.4 cm. wide, 5 mm. thick.

Type 2: Leaf shape, with pointed base (pl. 15b); four specimens, three chert, one jasper. Large specimen 7.6 cm. long, 2.7 cm. wide, 10 mm. thick; small specimen 2.7 cm. long, 1.4 cm. wide, 5 mm. thick.

Type 3: Triangular, with straight base (pl. 15c-f); 18 specimens, 13 chert, 5 jasper. Large specimen 6.6 cm. long, 3.8 cm. wide, 8 mm. thick; small specimen 2.6 cm. long, 2 cm. wide, 5 mm. thick; selected average specimen 4.4 cm. long, 2.3 cm. wide, 6 mm. thick.

Type 4: Triangular, with concave base (pl. 15g-o, b'); 37 specimens, 27 chert, 9 jasper, one bottle glass. Large specimen 6.8 cm. long, 3.5 cm. wide, 8 mm. thick; small specimen 2.7 cm. long, 2.7 cm. wide, 4 mm. thick; selected average specimen 4.8 cm. long, 2.8 cm. wide, 5 mm. thick.

Type 5a: Short barb, round or square stem (pl. 15p, q); five specimens, all chert. Selected average specimen 3.3 cm. long, 1.8 cm. wide, 4 mm. thick.

Type 5b: Same base form as Type 5a but with long, extended tip (pl. 15r, s); four specimens, three chert, one obsidian. Obsidian specimen 3.7 cm. long, 1.7 mm. wide, 3 mm. thick; selected chert specimen 2.7 cm. long, 1.5 cm. wide, 4 mm. thick.

Type 6: Long barbed with short stem, basal notched (pl. 15t-z); 15 specimens, 13 chert, 2 jasper. Large specimen 4.2 cm. long, 2.1 cm. wide, 4 mm. thick; small specimen 2.8 cm. long, 1.5 cm. wide, 3 mm. thick; selected average specimen 3.3 cm. long, 1.7 cm. wide, 4 mm. thick.

Type 7a: Sloping-shouldered (pl. 15a'); one chert specimen 4.3 cm. long, 1.2 cm. wide, 4 mm. thick.

Type 7b: None found at site Hum-169.

Type 8: None found at site Hum-169.

A single example (pl. 15c') of a Desert Side-notched type of point (Baumhoff and Byrne 1959) manufactured from bottle glass was found at the site, without provenience. This type of specimen is characteristic of late prehistoric and historic time levels in central California and its presence at Hum-169 was not unexpected.

Apart from the observation that almost twice as many points were found at the Patrick's Point site as at Hum-169 (see table 14), and that three types of points (types 2, 5a, b, and 7) were found in small number at Hum-169 but not at Hum-118, the only notable difference between the two sites with regard to projectile points is seen in the frequency of Type 6. All of the other point types shared by the two sites tend to follow a pattern; for example, Types 4, 3, and 1 are most numerous, in that order, at Hum-118 (see table 4), and taken together, number 135 specimens, as against 61 specimens of the same types at Hum-169. However, only nine Type 6 examples were recovered at Patrick's Point, while 15 were

TABLE 14
Depth Distribution of Chipped Stone Projectile Points
from Site Hum-169

Depth (in.)	Type 1	Type 2	Type 3	Type 4	Type 5 _a	Type 5 _b	Type 6	Type 7	Total
0-12		1	3	3	1		4		12
12-24	1	1	1	5	1	1	1		11
24-36			3	9	1	1	4		18
36-48	2	2	3	4			1		12
48-60			1	2	2	1	1		7
60-72			4	3			3		10
72-84			1	2					3
84-96				3					3
No provenience	3		2	6		1	1	1	14
Total	6	4	18	37	5	4	15	1	90

recorded at Tsurai. In the discussion of the probable function of projectile points (and knives) at Patrick's Point, it was suggested that Type 6 points were used primarily in the hunting of land mammals. The greater frequency of occurrence at Tsurai may further indicate that it was less specialized than at the Patrick's Point site; that is, in addition to the sea mammal hunting there may have been more attention given to other kinds of hunting.

Blades: Twenty-seven specimens were found at site Hum-169 (table 15), 18 chert and 9 jasper; this compares to the 81 blades recovered at Patrick's Point. The Tsurai blades are approximately like those of site Hum-118 in size and shape, except that at the latter site no such finely made specimen as that illustrated in Plate 17n was found. This blade has excellent secondary flaking all around, on both of its sides.

The blade shown in Plate 17p is fairly close to the average size of the Tsurai blades. It is 6.8 cm. long, 2.8 cm. wide, and 11 mm. thick. This specimen is of jasper and, although it does not show any central constriction, it resembles the miniature obsidian ceremonial blades found at Patrick's

TABLE 15
Depth Distribution of Some Chipped Stone Implements
from Site Hum-169

Depth (in.)	Blades	Cobble Choppers	Scrapers
0-12	6	8	40
12-24		3	41
24-36	4	6	36
36-48	4	13	39
48-60	2	7	30
60-72	2	4	10
72-84			8
84-96	1	3	7
No provenience	8	11	31
Total	27	55	292

Point. It is noteworthy that neither miniature nor large obsidian blades were found in the excavation of Tsurai.

Choppers: The simplicity of these implements makes it impossible to distinguish between the specimens found at Patrick's Point and those recovered at Hum-169. The 55 choppers from Tsurai (pl. 16b-f), which were fairly evenly distributed in the levels of the deposit (table 15), are all of beach cobbles, mostly of hard metamorphic rocks, and average about 9.3 cm. long, 8 or 9 cm. wide, and 4 or 5 cm. thick. All but two of the choppers are chipped on one face only. The two bifacially chipped specimens (one shown in pl. 16b) are equally crude, however, and the chipping on one of the faces may have been produced accidentally. Some of the specimens designated as unifacial show occasional scars opposite the deliberately flaked face.

Scrapers: As at site Hum-118, the scrapers from Tsurai represent the most numerous type of chipped implement found. The 292 scrapers from Tsurai are divided about equally between slightly chipped ("use-retouched") specimens and those with relatively refined unifacial flaking along one or

several edges. Material is predominantly chert, with jasper well represented. Among the crudest specimens are two obsidian and three milk quartz examples, the latter of extremely low grade material and classified as scrapers with some reservation. One scraper (pl. 18k) is of a high quality, almost translucent flint. This was found at a depth of 13 inches, in the historic level of the deposit, and may actually be a gunflint of Euro-American manufacture. Hamilton (1964:54) illustrates French gunflints known to have been manufactured in the nineteenth century, one of which resembles the Tsurai specimen.

The pointed scraper shown in Plate 18j may originally have been intended as a projectile point. It is steeply ridged on one side and flat on the other, however, and in spite of its markedly pointed end would serve admirably as a scraper or small plane.

Average sized specimens measure about 5.4 cm. long, 4 cm. wide, and 1.2 cm. thick.

Drills and saws: Four drills, of which three have an expanded base (type 1), were found at site Hum-118. The latter are all of chert and were found in the 48-60 inch level (one) and in the 24-36 inch level (two). They are not essentially different from the corresponding examples of the type recovered at site Hum-118 (pl. 17q, r).

One specimen, possibly of the so-called "nail-type" (type 2) found at Patrick's Point, was without provenience (pl. 17s). This drill, with its delicate and widely flaring finger grip(?), seems unique for the region of the historic Yurok. Perhaps, however, the nail-type at Patrick's Point was originally like this specimen but later had its grips broken off at the point where they became the shank of the drill.

One specimen only has been identified as a saw. This is a tabular chert flake 3 cm. long, 1.2 cm. wide, and 4 mm. thick, with slight, chipped serrations on both long edges.

Ground Stone Objects

Steatite vessels: Fourteen steatite vessels complete enough to be measured were recovered (table 16), although four of these were miniature specimens evidently not intended to serve as grease-catching dishes, the function postulated for the large specimens found at Hum-118. The ten larger specimens were either round (four) or oval in shape, the three of the latter carved to resemble the shapes of the wooden canoes of the historic Yurok. Thirty-three fragments of steatite vessels were recovered,

from all but the 84-96 inch level of the deposit, and these seem largely to be parts of round or oval vessels. One specimen, however, is a corner of what must have been a large rectangular-shaped vessel, like several of those from Patrick's Point (pl. 3a).

All of the round vessels do not have evidence of carbonized organic matter adhering to them, such as would be produced if the specimens were used as dishes for catching grease from salmon in the process of its being smoked over a fire. This does not mean that the round-shaped vessels were not intended for this purpose, however, as three of the specimens were not in a finished state (cf. pl. 20f), and one (pl. 20d) was found in a cache (feature 23, p. 69) containing finished vessels, none of which obviously had yet been used for any purpose whatsoever; they were in "mint" condition.

The four miniature specimens also present some question as to original use. One of these (pl. 21b) is a finished replica of the larger vessels, while the others (pl. 21a, c, d) appear to be in an incipient state of manufacture. Perhaps they were intended as toys to be used by children, in anticipation of a particular domestic chore which played an important part in the lives of the occupants of the site.

Additional details of the steatite vessels are as follows:

(1) Round specimens: two with rounded bottom, two with flat bottom. Mean measurements are 13 cm. in diameter, 9 mm. wall thickness (complete specimen only), 6.2 cm. height, and 3.3 cm. basin depth (examples shown in pl. 20d, f).

(2) Oval specimens: one with flat bottom, two with rounded bottom. Mean measurements are 14.3 cm. length, 9.7 cm. width, 1.5 cm. wall thickness, 4.3 cm. height, and 3 cm. basin depth (examples shown in pl. 20b, e; note that vessel in pl. 20e shows a crudely incised design on its edge).

(3) Canoe-shaped specimens: one with rounded bottom, two with flat bottom. Mean measurements are 19.6 cm. length, 11.5 cm. width, 1.9 cm. wall thickness, 5.7 cm. height, and 3 cm. basin depth (examples shown in pl. 20a, c).

(4) Miniature specimens: one with flat bottom, three pebble-like, with rounded bottom and shallow depression on top. Mean measurements are 7.8 cm. length, 5.6 cm. width, 3 cm. height, 11 mm. wall thickness (shaped, flatbottomed specimen only), and 15 mm. depth of bowl (examples shown in pl. 21a-d).

Mortars and pestles: Five hopper mortar slabs were recovered at site Hum-169. None of these differed essentially from the Patrick's

Point examples and are therefore believed to have been used primarily for grinding acorns. These specimens are all relatively thick slabs of sandstone, flat on the surfaces which contain the depressions and slightly rounded or flat on the opposite or lower surface. One specimen only has depressions on both upper and lower surfaces. The slabs are subcircular, subrectangular, ovoid, and polygonal (one 4- and one 5-sided) in shape. In spite of this variety of shapes, however, the slabs are all almost equal in size, with mean measurements of about 45 cm. in length, 35 cm. in width, and 10 cm. in thickness. The grinding depressions likewise do not vary between specimens either in shape or in location near the centers of the slabs. The depressions are ovoid rather than round, with mean measurements 15.5 cm. long, 12 cm. wide, and 3 cm. in depth. Two of the hopper slab mortars from site Hum-169 are illustrated in Heizer and Mills (1952:86).

Twenty-two pestles were excavated at Hum-169, of which 18 are the simple type, three the "offset" type (found at Hum-67 on Gunther Island but not at Patrick's Point), and one a fragmentary flanged specimen. A fine complete example of the latter type from Tsurai (but without other provenience data) is in the collections of the R. H. Lowie Museum of Anthropology of the University of California, Berkeley, and is illustrated by Heizer and Mills (1952). This specimen is 54 cm. long, 5.8 cm. in diameter, with its ring or flange extending out 4 mm. from the sides of the specimen. The flange is 14.5 cm. from the distal end. The excavated fragment, from the 36-48 inch level, probably was not originally as long as the complete one, although it is almost identical in other respects. It is 21.5 cm. long, 6.2 cm. in diameter, and its flange, 13 cm. from the distal end, also extends out 4 mm. from its sides. Like the complete specimen, it had been symmetrically shaped and finely polished.

The simple pestles are represented by 11 complete specimens and 7 fragments (table 16). The largest of the complete specimens measures 25.6 cm. long and 8 cm. in diameter, the smallest is 11 cm. long and 5 cm. in diameter. The mean size of the simple pestles is 18.5 cm. in length and 6.7 cm. in diameter. All were manufactured from hard sandstone. One specimen, which may be designated as a simple pestle-hammerstone (pl. 19d), is 10 cm. long and 7 cm. wide. Its flattened, or hammerstone, end seems to have been used most frequently, but its proximal end is also pecked in the form of a conventional pestle.

Of the three examples of the so-called offset type of pestle, the smallest (pl. 19c) may not be a good representative of the type as its offset, or expansion, shoulder occurs at only 4.5 cm. from the proximal end. The outlines of this pestle are complete; it is 16 cm. long, with a

TABLE 16
 Depth Distribution of Some Ground Stone Implements
 from Site Hum-169

Depth (in.)	Steatite Vessels		Slab Mortars	Pestles		Mauls
	Fragments	Complete		Simple	Offset	
0-12	4	3	2	1	1	
12-24	6	1	1	1		2
24-36	5	2		2		
36-48	4	4	1	4		2
48-60	4	4		1	1	1
60-72	2				1	
72-84	1			1		
No provenience	7	2	1	8		4
Total	33	14	5	18	3	9

maximum diameter of 6 cm. and the diameter on its reduced portion is 4.7 cm. Two fragmentary specimens resemble the distal ends of similar specimens found at site Hum-67. These two fragments (pl. 19g, h) are 19.5 cm. and 8.3 cm. long, 7 and 7.5 cm. in diameter at the shoulders, which are located 7 and 6 cm. respectively from the flattish distal ends of the specimens.

Mauls: Nine specimens, identifiable either by flattened distal or wedge-pounding ends, or by markedly or slightly constricted necks near their presumed proximal ends, were recovered (table 16). Only two complete specimens (pl. 19a, b) were found, and neither of these shows the characteristic pear-shape of the type described for other archaeological and ethnographic sites of northwestern California. The maul shown in Plate 19a is of hard sandstone and is almost rectangular in cross section. It is 16 cm. long and 7 and 8 cm. in diameter at its flattened pounding end. Its proximal extremity shows evidence of a break, but below this break is a shallow, pecked encircling groove. This seems to have been at least a gesture in the direction of providing the maul with a constricted neck. The smaller complete specimen, also of sandstone, is 12.5 cm. long, 3 cm. in diameter at the proximal end, and 5.5 cm. in diameter at the distal end,

which has a slightly concave pounding surface. The pecked encircling groove below the intact proximal end is more marked on this specimen than on the larger maul.

The two fragmentary "handles" shown in Plate 19e, f are of steatite and sandstone respectively. These are the typical proximal ends of the northwestern California pear-shaped mauls.

The remainder of the mauls are of sandstone; they are distal end fragments which, in view of what has been shown, may have had one of the two kinds of handles described, or some other perhaps plain, handle portion. The maul shown in Plate 19i is unusual in that its original handle surface had obviously been broken off, but the spot of the break had been reworked by pecking and perhaps grinding so that the maul was still in usable condition. Its smoothed flat pounding surface is 10 cm. in diameter.

Hammerstones: The 51 hammerstones excavated at site Hum-169 do not differ in any marked way from the Patrick's Point specimens already described, either in material, size, shape, or number of edges which show battering (see table 17). One sandstone specimen, 9 cm. long, 6.6 cm. wide, and 3.6 cm. thick, is of about average size for hammerstones, and shows secondary use as an anvil as well. It has pits averaging 11 mm. in diameter and 5 mm. deep on both faces. Another specimen (pl. 19d) has been described as a pestle-hammerstone.

Anvils: There were ten hammerstones recovered at Patrick's Point which had evidence of secondary use as anvils, and only four sandstone specimens which presumably could have served only as anvils. The occurrences at site Hum-169 follow a slightly different pattern, probably because of the easier availability of steatite at the site. Of 12 anvils recovered at Hum-169, 5 are of steatite and 7 are of sandstone. Three of the steatite examples are shown in Plate 21f, i, j. Two of the latter are like sandstone specimens from sites Hum-118 and Hum-169 (pl. 21f, i) in that they are simply rounded pebbles with small depressions in their centers (on one face only). The odd specimen (pl. 21j) has numerous round holes drilled on its surface, obviously produced by some kind of drill or specially shaped stone. One of the holes, however, is several centimeters deep and its sides are irregularly shaped, thus giving rise to the supposition that it was made fortuitously by some kind of rock-boring organism.

Net sinkers: The 331 side-notched sinkers found at Tsurai (table 17) vary so little in size, shape, and material from those of Patrick's Point that the specimens shown from the latter site (pl. 9d-g) will serve as well to illustrate examples from Hum-169. Perhaps the only significant variation

TABLE 17
 Depth Distribution of Some Additional Ground Stone Implements
 from Site Hum-169

Depth (in.)	Hammer- stones	Anvils		Net Sinkers		Arrow Shaft Smoother
		sand- stone	stea- tite	side- notched	end- notched	
0-12	4			51		2
12-24	6			44		3
24-36	12	1		61	1	6
36-48	7	1	2	33		
48-60	8	2	1	9	1	
60-72	3			8		
72-84				2		2
84-96				5		1
No provenience	11	3	2	118	2	
Total	51	7	5	331	4	14

between the two sites in the matter of sinkers is that where six caches or features at Hum-118 indicated an ancient storing or hiding of fish nets already equipped with sinkers, no such concentrations were found at Tsurai. Sinkers were recovered in some features there, but not in numbers suggesting the presence of a net.

Four end-notched specimens were excavated at Hum-169 (pl. 18e, f) and these are similar to the Hum-118 sinkers of the type, except that none of them appeared to have been used secondarily as a hammerstone.

The single grooved sandstone fragment (pl. 18g) from site Hum-169 is 4.5 cm. long, 4 cm. wide, 1.8 cm. thick, and has a groove 4 mm. wide and 3 mm. deep evidently girdling the specimen. The presence of this one example, found at a depth of six inches in the deposit, allows us to state that at all of the sites discussed in detail in this report—Hum-67, 118, 169—the same types or subtypes of sinkers were found.

Adze handles: Two fragmentary handles, one of fine-grained sandstone and another of a schistose, slaty material, were found in the 36-48 inch level of the deposit. One complete specimen, of sandstone, was found with Feature 9 (p. 67) at a depth of 24 inches (pl. 18c, d). None of the specimens differ in any important respect from those recovered in archaeological sites or those known ethnographically in northwestern California. For example, the complete specimen from site Hum-169 shows the typical curve of the handle and, on the distal end, the recessing on one side and grooving on the other, designed to receive and secure the (shell) blade. The complete specimen (pl. 18c) has a small "spur" on the outer side of the curved handle; both of the handles illustrated have well executed grooves or depressions running along the inner parts of the curve.

Steatite pipe bowls: Although relatively long tubular stone pipes are common in northwestern California, and one specimen from Hum-169 is known to be in the collection made in 1793 by the Vancouver expedition (see Heizer and Mills 1952:15), none of this variety of pipe was recovered in the recent excavations. However, three steatite bowl inserts (two fragmentary and one complete specimens) were found, one at a depth of 60 inches (pl. 17e), one in the 0-12 inch level, and one without provenience (pl. 17f). The latter specimen still retains evidence of dottle in its bowl, and roughening or knurling is discernible on its base. The roughening, plus some kind of mastic, would provide a tight fit of the bowl into the wooden tubular shaft. Goddard (1903:pl. 17) illustrates both detached and fitted bowls in use by the historic Hupa and Yurok, and these seem to be identical with the specimens from Tsurai.

Worked slate objects: Apart from the adze handle fragment and the slate pendants described on page 81, the only noteworthy pieces of slate from Tsurai are one incised tabular piece and two club fragments. The decorated piece has smooth edges and faces, with crudely incised lines on one surface only (pl. 17a). The most prominent of these lines are four parallel, transverse scratches extending the width of the object, with spacing between them varying from 2.1 to 4.9 cm. This specimen is 11.2 cm. long, 5.9 cm. wide, and 10 mm. thick. It was found at a depth of 79 inches.

Plate 18a shows a whale bone specimen (described on p. 95) which is mentioned at this point to draw attention to the fact that even though no zooform clubs were excavated at Hum-169, other types of clubs were present at the site. Two clubs, one an object of polished slate and one of a slate-like, fine-grained sandstone, both fragmentary, probably could fit Kroeber's (1925:50) description of the type of club used (for "cracking heads") by the historic Yurok—short, spatula-shaped, and blunt edged.

The bone object could almost fit the type except for its material; also Driver (1939:371) reports the nonuse of whalebone clubs among the Yurok.

The probable club fragment of gray, slate-like material (pl. 18b) was found at a depth of 69 inches in the deposit. It was obviously crudely shaped by flaking, and parts of its flattish surface and one edge have been smoothly ground. It is 2.5 cm. in thickness at a point near the break. Another similar specimen (without provenience) is also broken at one end—apparently the proximal end since the specimen has a shoulder and consequently a reduced portion which would serve as a sort of handle. This piece is 22.2 cm. long, 7.4 cm. wide, and 1.9 cm. thick at its center.

Several finished slate clubs are known from site Hum-67, of a type to which the Tsurai specimens could also correspond. These probably indicate that the type was not necessarily a late introduction into north-western California, and almost certainly coexisted, in some sites at least, with the so-called zooform clubs.

The observation that no spatulate stone clubs were found at Patrick's Point further illustrates the differences in the slate working industry at sites Hum-118 and Hum-169. Table 7 shows that many more and various types of slate specimens were excavated at Hum-118 than at Tsurai.

Stone pendants: Seven pendants (pl. 17g-m) were found at Hum-169, four of them steatite and three slate. Two of the steatite pendants were recovered without exact provenience, one was found at a depth of 22 inches, and the other at 32 inches. One of the steatite pieces (pl. 17f) is questionable. However, even though it shows no evidence of a perforation, and is less thick (measuring only 4 mm. in thickness) than the other steatite examples, its general shape suggests an incipient pendant. The three remaining steatite pieces all show biconical drilling of their perforations and all were made from fairly heavy fragments of steatite, averaging 15 mm. in thickness. As may be seen in Plate 17, two of the pendants are quite crude in shape and finish, but the example shown in Plate 17h is relatively symmetrical in shape, well finished, and has in addition an incised design on one of its faces. This specimen was found at an undetermined depth in the historic sweathouse (map 2). It is also illustrated in Heizer and Mills (1952:12).

One of the three slate pendants was recovered without exact provenience, and the remaining two were found at depths of 30-36 inches and 40 inches respectively. The examples illustrated in Plate 17i, j are both complete, biconically drilled, and about the same thickness—4 and 3 mm.

respectively. The remaining piece is broken in the area of the suspension hole and perhaps broken longitudinally as well, thus giving its perforation merely the appearance of having been drilled conically. In its present form the pendant is 6 mm. thick.

Arrow shaft smoothers: In contrast to the Patrick's Point site where no grooved arrow shaft smoothers were recovered, 14 specimens were excavated at Tsurai, in the lower as well as the upper levels (see table 17). Although most of these specimens are broken at one end, all of them would have been usable in the state in which they were found, assuming that the function assigned to them is correct (cf. Driver 1939:327: historic use by Yurok, Wiyot, and other groups in northwestern California of stone "straightener," 2 piece, longitudinal groove, of abrasive stone). They were all manufactured from a distinctive, coarse grade of sandstone, and all have similar grooving. Judging from the sizes of the fragments and the complete specimens (pl. 16g-i), an average arrow shaft smoother would be about 8 cm. long, 4.2 cm. wide, and 2.5 cm. thick, with rounded grooves 6 or 7 mm. wide and 2 or 3 mm. deep. The grooved surface on most of the specimens is rectangular in shape, and the sides are either straight or incurving to a rounded or flattish bottom, narrower than the upper grooved portion. These implements, if used in pairs on opposite sides of a slender wooden shaft, would serve admirably to shape and smooth it.

Miscellaneous stone objects: In all of the sites so far excavated in northwestern California, numerous unshaped rocks, having various abrasions, irregular grooves, or odd pits or depressions, have been found. Site Hum-169 is no different from the other sites in this respect, except that it seems to have more than its expected quota of steatite specimens of doubtful function. The large, grooved steatite chunk shown in Plate 16a, for example, seems too small to be an anchor and too large to be a sinker. It is 13 cm. long, 8.5 cm. wide, and 8 cm. thick, with a groove encircling its long dimension, and another groove half-circling its short dimension. The large groove is 12 mm. wide, 5 mm. deep, while the short one is 6 mm. wide and 2 mm. deep. There is little question that these grooves were meant to secure some kind of line, running around the specimen, probably for a maritime purpose. The piece was found at a depth of 24 inches.

Two grooved steatite specimens (pl. 21g, f), both found in the 12-24 inch level of the site, superficially resemble the grooved arrow straighteners of the southern Sierra Nevada (Elsasser 1960:33; cf. Driver 1939:371: one piece, steatite, transverse groove straighteners, denied by all informants in northwestern California). Upon closer inspection these objects are found to be unsuited for the purpose of straightening

arrows since the grooves, which appear on one surface only, show no sign of wear from use. They are "V"-shaped, and in their present form (4 mm. wide, 4 mm. deep) would be far too small to receive any such object as a cane or wooden arrow shaft. If these objects were manufactured from an abrasive material like sandstone, there would be little hesitation in assigning to them some such function as an awl-sharpener.

A chunk of steatite 7 cm. long and about 3.8 cm. in diameter, recovered at a depth of 36 inches (pl. 21e), is shaped and polished all over but shows no sign of use whatever. Perhaps it was intended to be a gaming stone or even a charmstone. If the latter, it should be noted that there is no means of suspending it—such as a hole or a neck constriction—and it therefore cannot be readily compared with charmstones from archaeological sites in central California.

Seven pieces of steatite—three from the 0-12 level, one from the 18-24 inch level, and three without provenience—appear to merit more than assignment to the category of casually worked stones. These are all subglobular or subcubical chunks from 4 to 8 cm. long, and are ground or polished on parts of their surfaces as if some definite implement was intended but never shaped up to an identifiable form. Grooves and scratches may be fortuitous, but may also represent markers, for example, where the steatite was intended to be cut or ground later.

Among the non-steatite rocks, there were two examples, found in the 24-36 inch level, which had red ocher stains on their surfaces. Ordinarily, one would surmise that such rocks would be associated with burials; neither rock, however, was found in the vicinity of an interment.

One sandstone piece, with evidence of pecking near its center, was found at a depth of 79 inches and was classified tentatively as a small, unfinished mortar. This specimen is 18 cm. long but only 11 cm. wide; hence it seems unlikely that it could have been intended for use as a hopper mortar, which evidently was the preferred type at site Hum-169.

Bone and Antler Artifacts

Simple harpoons: Table 18 discloses that fewer simple harpoons were recovered at Hum-169 than at Hum-118 (see table 8). In keeping with this smaller number, it is observed that the harpoons with the bilateral line shoulder bases (types IA and IIA) were not found at all at Tsurai. It has been suggested that these two types of harpoon may represent an early type in this part of California, and the guess that Tsurai was initially occupied at a later date than site Hum-118 thus seems to be

TABLE 18
Depth Distribution of Simple Bone and Antler Harpoons
from Site Hum-169

Depth (in.)	Simple Harpoon Types				Barbs, Tips, or Other Fragments
	IB	IIB	IC	IIC	
0-12		1	3		1
12-24			1		
24-36		1	4 ^b		3
36-48			7		
48-60		1			1
60-72	2 ^a	2			1
72-84					
84-96					2
No provenience			3 ^c	1 ^d	5
Total	2	5	18	1	13

a: One specimen classified as Type IB2b; Walker Coll., Trinidad, Calif.

b: Two specimens classified as Type IC2b (see pl. 22_b, _d)

c: Two specimens classified as Type IC2b (see Bennyhoff 1950:fig. 6_a, _b)

d. Classified as Type IIC1a (see pl. 22_e)

borne out in part by evidence provided by harpoons. The relationship between numbers of subtype "B" (bilateral line guard) and subtype "C" (unilateral line guard) simple harpoons is also approximately reversed at the two sites: 28 subtype "B" and 5 "C" at Hum-118 as against 7 subtype "B" and 19 "C" at Tsurai. This also points to another postulated sequence ("B" preceding "C" in time of introduction) which in turn is supported by difference in depths of the two subtypes at Tsurai (table 18). Bennyhoff (1950:310) suggests that the sequence "A"- "B"- "C" is substantiated also by the wider geographical distribution and ethnographic occurrence of the subtype "C" specimens.

The relative proportions of antler to bone specimens may refer only to local preferences, but the figures of 18 antler to 8 bone specimens at Tsurai do not correspond to proportions in materials for the two most frequent types of harpoons at Patrick's Point.

In spite of these differences in the harpoon assemblages from the two sites, it is clear that we are dealing with the same general kinds of

projectiles. All of the simple harpoons recovered at site Hum-169 are unilaterally barbed, as are those from Hum-118. Judging from the near-complete or complete specimens, two barbs on each harpoon seem to have been the preferred number at both sites. Hooked and simple barbs (pl. 22d, e) are present on specimens from both sites, and the large harpoons from both seem, with but few exceptions, to have slotted tips. Finally, reworking of harpoons into some such tool as a flaker (pl. 22f) was practiced at both sites.

Among the minor differences we may note that none of the Hum-169 specimens recovered had either roughened or incised bases or barb tips, such as are seen on some Patrick's Point specimens. The possible occurrence of the line-hole at the base of the harpoon is exemplified by the specimen shown in Plate 22k. This object was found in the upper portion of the midden deposit (0-36 inches). It is waterworn and of doubtful form at best, but its base does have an unmistakable depression which appears to be one side of a biconically drilled hole. The remainder of the base was presumably broken off, and the area of the break was subsequently worn down. No line-hole harpoons were found at site Hum-118, and the Hum-67 specimen with a line-hole is also in the doubtful category. It was not even classified as a harpoon fragment by Loud (1918); however, Bennyhoff (1950:fig. 6j) shows it as a part of a Type ID harpoon.

No marked example of the practice of offsetting the barb from the medial plane of the harpoon—such as that shown for Patrick's Point specimens (pl. 11h, k)—is seen among the Tsurai examples. However, when a specimen was manufactured from a slightly bent piece of antler, like the one shown in Plate 22d, the barb tends to appear offset. The torque effect thus is present to a small degree on four Hum-169 harpoons, two showing slight twists to the right and two to the left, when viewed from the proper angle.

Five examples of hooked barbs were noted on the simple harpoons from Hum-169. Only one such barb was recorded from Patrick's Point.

Composite harpoons and fish spears: Bennyhoff (1950:306), in employing an expansion of an earlier typology of toggle spurs by Drucker (1943), has drawn distinctions between types based upon several factors, including size, shape of socket and barb ends, and, most significantly, the form and extent of the central channel. Thus Type I examples have central channels broken by a medial ridge (example shown in pl. 22t), while Type III specimens have central "V" shaped channels extending from three-quarters to full length of the objects (pl. 22s). Type II toggle spurs (with scarfed tips) have not been found in California. Type III

examples alone were recovered at Patrick's Point, while at Tsurai both Types I and III appeared. In both of these types there is a further subdivision, designated by "a" (with rectanguloid socket end) and "b" (with forked socket end, see pl. 22s). The Hum-169 specimens fall within the length range given by Bennyhoff (1950:306) for northwestern California types, as follows: Ia (5.5-7.5 cm.); Ib (5.5-9.0 cm.); IIIa and IIIb (4-6 cm.).

Table 19 shows an irregular distribution of these various toggle spurs at site Hum-169. As at Patrick's Point, there were not sufficient numbers of toggle spurs recovered to allow meaningful conclusions to be drawn concerning their stratigraphical relationships. All of the types except IIIa are represented in the 60-72 inch level or below by one example only, and all types are found in the upper levels of the site as well.

The toggle spurs just described are the most easily identified parts of the three-piece composite harpoons used ethnographically in northern California and found there in archaeological sites. The stone or bone point or tip components for these specimens are not readily recognized when excavated as being specifically related to composite harpoons; hence the assigning of certain bone specimens to this role is here done with reservations.

At site Hum-118 one bipointed bone pin, labeled as a Type T1f composite harpoon tip (pl. 11o), was found. Bennyhoff (1950:306) explained that this classification was based upon the assumption that these artifacts were needlessly specialized for use as gorges or in composite hooks, hence they might well serve in certain types of toggle harpoons. One such specimen, practically identical to that from site Hum-118, was found at Tsurai at a depth of 66 inches. In addition, 12 pins (table 19) were found at Tsurai which differ from the T1f pins in not being bipointed and in having flat-elliptical rather than cylindrical cross sections. The blunt-based pins or composite harpoon points are designated Type U1, and also fall within the length range of 5 to 8 cm. observed for these objects from northwestern California (*ibid.*). Examples are shown in Plate 22m-q.

The type of barbed foreshaft or arrow point fragment from the Patrick's Point site, shown by Bennyhoff (1950:fig. 5w) and reproduced herein in Plate 11p, was represented at Tsurai by two specimens, one complete (pl. 22l) and one fragmentary. These delicate objects have small slots at their ends, evidently designed to receive small stone points. The complete specimen is virtually identical with the two "double-barbed foreshafts" illustrated by Kroeber and Barrett (1960:pl. 19e-h) and

TABLE 19

Depth Distribution of Toggle Harpoon Spurs, Bone Harpoon Points,
and Barbed Spear Points from Site Hum-169

Depth (in.)	Spur Types				Point Type U1	Bone Barbed Spear Point
	Ia	Ib	IIIa	IIIb		
0-12		1			3	1
12-24	1	1	1		2	
24-36				3	2	1
36-48					1	
48-60						
60-72	1			1		
72-84		1				
84-96						
No provenience	1		1		4	
Total	3	3	2	4	12	2

attributed to historic northwestern California. These foreshafts were both recovered from the upper 36 inches of the midden deposit (table 19).

Modified antler and antler wedges: Eighty-nine pieces of antler, which had been cut circumferentially at either one or both ends (cf. pl. 23a, b), irregularly polished, hacked, or split, were found at Hum-169 (table 20). Fifteen of the specimens were simply fragments with one end (tip?) slightly ground or polished and the other apparently showing where the terminal was hacked off the larger piece of antler. Both elk and deer were represented among the specimens, although, as has already been mentioned, the identification is not easily made on broken specimens. Judging from the sizes of the fragments encountered, it seems reasonable to suggest that about 85 per cent of the antler pieces came from the Roosevelt elk. Since the modified antler collection from Hum-169 strongly resembles that from site Hum-118, it is not thought necessary to itemize here the several minor variations shown between the specimens.

The antler wedges from Tsurai also tend to follow the pattern of the

TABLE 20
Depth Distribution of Some Bone and Antler Implements
from Site Hum-169

Depth (in.)	Worked Antler	Antler Wedges	Flaker Types			
			Split rib or Antler	Ulna	Whole Rib	Bone Splinter
0-12	9	2	2			2
12-24	11	9	6			3
24-36	16	12	12	3	2	1
36-48	13	9	2	1		2
48-60	3	3	5			2
60-72	4	1	1			5
72-84	2		2			2
84-96		2		1		1
No provenience	31	13	7	2	1	1
Total	89	51	37	7	3	19

Patrick's Point assemblage. Fifty-one specimens (table 20) were recovered; of these 27 are complete while the rest are in variously damaged conditions, that is, some are broken at one or both ends and others are simply broken in half longitudinally. Twenty of the 27 complete examples are of elk antler, while the remaining 7 are either doubtful or were made from deer antler. The sizes of these specimens are approximately the same as those of similar objects from Patrick's Point. They range from 7 to 20 cm. in length, 2 to 7 cm. in width, and 1.5 to 3 cm. in thickness (near their centers). The specimen illustrated in Plate 23e provides a good example of the battering at the poll, probably by a stone maul, resulting in a bending aside of the fibrous tissue of the antler.

Bone gouges: The function of bone gouges has been discussed along with the description of the specimens from Patrick's Point (p. 46) where three bone gouges were excavated. At Hum-169 one complete and three fragmentary specimens were found, the former without provenience, and the latter distributed in each of the three 12 inch levels, from 12 to 48 inches.

The complete specimen was manufactured from an elk cannon bone. It is 22 cm. long, 3.7 cm. wide, and 1.5 cm. thick, with grinding and polishing marks on almost the entire length of its inner edge (pl. 23k). Two of the fragments have their cutting or gouging edges missing, but it is clear from the thinning and polishing of the split cannon bone from which they were made what kind of tool is represented. The tip or cutting edge fragment evidently corresponds to a specimen of about the same size as the complete one.

Bone or antler flakers: The collection of flakers from Tsurai totaled 66 specimens (table 20) compared with 58 found at Patrick's Point. Examples are illustrated in Plate 23h-j. The numbers of each type of flaker (split rib or antler, ulna, whole rib, bone splinter) from each site tend to correspond, except that more of the bone splinter type were found at Tsurai than at Patrick's Point—19 specimens compared to 3. Since the flakers are all of about the same quality of workmanship and also average about the same size (ca. 10 cm. long), the difference in number shown by one type is probably not significant in terms of chronological reckoning at either site.

Two worked penis bones, probably of seal, are not included in the tabulations for flakers from site Hum-169, mainly because they are really in a doubtful category and are only mentioned here because they resemble flakers more than they do any other kind of implement found at the site. One was without provenience, and the other was excavated from a depth of 60-66 inches. Both specimens are about 9 cm. long and are ground or polished about one-third of their lengths, measuring from the distal ends (pl. 23l).

Worked bone objects: Although more unidentifiable worked bone specimens were recovered at Tsurai than at Patrick's Point, the kinds of objects represented are about the same at both sites. Thus, of the 115 examples (table 21) at Hum-169, 56 pieces are evidently from long bones of mammals—split, notched, splintered, or irregularly ground. This number includes 6 definite fragments of elk cannon bones with evidence of cutting upon them. There are 36 split rib fragments, notched, hacked, or, like the long bones, irregularly ground; 16 whole (unsplit) rib fragments with the same kind of working upon them as upon the split specimens; 5 irregularly cut bird bones, and 3 pieces of cut whale bone. Since the various objects which make up this assortment approximate in size and general crudeness the similar specimens from Patrick's Point, the assignment of such labels as "incipient tools," "broken tool fragments," or merely "crude, unidentifiable bone objects" should suffice here as well. If selected specimens were illustrated, they would surely resemble the examples from Hum-118 shown in Plate 7.

TABLE 21
Depth Distribution of Miscellaneous Bone Objects
at Site Hum-169

Depth (in.)	Modified Bone	Grooved Pendants	Spatulate Objects	Needles	Whistles
0-12	16		1	3	
12-24	11		2	2	2
24-36	26	1	3	8	2
36-48	19		2	1	
48-60	4		1	1	
60-72	7	1			
72-84	9				2
84-96	4	1			
No provenience	19	1	2	1	
Total	115	4	11	16	6

Bone awls and bipointed pins: The function of single-pointed bone objects as eel-slitters or perforators has been discussed in the section on the Patrick's Point specimens (p. 49). At Tsurai, the awls, like other classes of bone implements, tend to correspond in number found, type, and size to the Hum-118 examples (table 22). The only notable difference in occurrence is that only one split rib awl was excavated at Tsurai while eight were found at site Hum-118. Apart from the observation that the awl assemblages from both of these sites correspond closely to each other, we note that there are three specimens from Tsurai which are unusual and therefore merit further description. One is an object 17 cm. long (pl. 23m) which resembles a fairly long Type 3 awl (with articular end of bone present) in most respects. However, it shows evidence of a perforation near its proximal end, and its tip is roughened by numerous transverse scratchings. The awl shown in Plate 23n is a split and polished bone with a remarkably sturdy point. It is certainly too heavy to have been used in the tasks for which most of the other pointed specimens were designed. The final anomaly among the awls is illustrated in Plate 23p). This is a pointed object, unlike other awls in that it was made from elk antler. Two longitudinal grooves on one surface suggest that attempts were made to thin the original

TABLE 22
Depth Distribution of Bone Awls and Bipointed Pins
from Site Hum-169

Depth (in.)	Awl Types				Awl Tips	Bipointed Pins
	Splinter	Split Rib	Artic. End	Split Bone		
0-12	1					
12-24	4		1		3	3
24-36	9		1	1	2	4
36-48	3	1			1	
48-60	2			1		1
60-72	2		1	1	1	3
72-84	2					
84-96						
No provenience	3		4	3	2	3
Total	26	1	7	6	9	14

antler so that it could serve the same purpose as the more usually encountered bone awls.

At the Patrick's Point site, only one bipointed pin, which possibly could have been used in the same manner as what have been here designated as awls, was found. Tsurai presented a different picture in this regard since a greater number of such pins was recovered, although these specimens vary considerably in size. It has been suggested that these objects may have served as hair pins. To this, may be added the supposition that gorge fishhooks are represented, at least by the shorter pins. While it is difficult to draw the line of separation, it can be stated that the shorter pins average about 4.5 cm. in length (see pl. 24k). Four of the 14 bipointed pins from Hum-169 (table 22) are in the short category. These were excavated from the 60-72 inch level of the deposit and above. If the larger pins (pl. 24h, i) are indeed hair pins, it remains only to account for the thin bird bone pin shown in Plate 24j. This is evidently too delicate to serve as a gorge hook and its use as a hair pin may be questioned on the same grounds.

Headscratchers, pendants, and spatulate objects: Although there is only a tenuous relationship between these three classes of objects, they are considered together here because of their probable ceremonial function, or at least because they cannot readily be assigned a direct part in the subsistence economy. The one Hum-169 specimen (pl. 24w) which most closely resembles the kind of bone object referred to as head scratchers at both Hum-67 and Hum-118 was recovered without provenience in the upper 36 inches of the midden deposit. It is fragmentary, and does not contain the same kind of incised decoration noted on specimens from the two other sites. Two spatulate specimens show perforations at one end and incised decoration as well. These are approximately the same size, averaging 10.7 cm. in length, 1.8 cm. in width, and 5 mm. in thickness. The decoration on one of these consists of straight parallel lines, incised transversely near the biconically drilled hole, but only on one surface of the bone. The second specimen has but slight evidence of a conically drilled hole. Since these two specimens are larger and certainly more crudely decorated than the objects call headscratchers from the Gunther Island and Patrick's Point sites, it may well be that they represent a kind of decorative pendant, without any other function. They were found at depths of 42 and 49 inches respectively in the deposit.

Four objects of uniform length (ca. 6 cm.), having notches or constrictions near one end (pl. 24s-v), have been classified as grooved pendants. Three of these are short pieces of mammal bone and one is a fragment of what appears to be a sea lion tooth. The grooves or constrictions suggest a place for attachment of cordage, but what the objects were attached to is not known—perhaps they were meant to be fastened to a dance skirt in the manner of a "tinkler." Although the specimens are undecorated, the main reason for not assigning to them a practical use—as in fishing, for example—is that such a small number of them was found. If they were items of everyday use, presumably more of them would have been recovered in the deposit. On the other hand, the fact that they were not found all together (table 21) clouds the idea that they may have been used for any single purpose or in a group.

As may be seen from the illustrations (pl. 24a'-d'), "spatulate objects" is evidently a catch-all term for ground and polished bone specimens which may have served any of several different functions. Two of the large pieces (pl. 24a', b') are finely worked and may have been used as mesh gauges in the manufacture of fish nets. Although the usual form of ethnographic mesh gauges in the Yurok region is a tabular piece of bone, rectangular in form with constrictions on its long sides, some of the pieces shown by Kroeber and Barrett (1960:pl. 17) do not have, or show but slight suggestions of, thinning or constrictions on their sides. Perhaps

the Hum-169 specimens would be called simply "spatulate or tabular bone objects" if found in an inland site where fish were not known to be an important part of the economy. The piece shown in Plate 23b', furthermore, has one end ground to a fairly sharp edge, in the manner of a modern putty knife. This kind of edge is certainly not necessary in a mesh gauge.

The large single-pointed specimen shown in Plate 24d' resembles in plan view one of the possible composite harpoon points (see pl. 22p) but has been eliminated from the latter category both because of its length (10.9 cm.) and its thickness (6 mm.), which are too great and too little respectively to allow such a classification. Perhaps this object was intended to be a pendant or headscratcher but somehow never received a perforation or neck constriction for suspension.

The remaining seven specimens in this group are fragmentary and are exemplified by the polished, round-ended example shown in Plate 24c'. The average thickness of these fragments, which may have been ends or mid-sections of pendants or headscratchers, is about 4 mm.

Bone needles: The total of 16 bone needles listed in Table 21 includes four short tip fragments which need no further description. Three of these were in the 0-12 inch level and one was in the 12-24 inch level. Four of the needles, or at least four of the specimens deemed to be needles, are vestigial deer metapodials with sharpened, polished tips, three from the 24-36 inch level and one from the 36-48 inch level. Only one of these is perforated at the proximal end, although two are broken and may once have had perforations (e.g. the specimen shown in pl. 24r). The object shown in Plate 24q is a highly polished metapodial which had its original knobbed end rounded off evenly and was provided with a small groove encircling the lower part of the knob (also illustrated in Heizer and Mills 1952:fig. 1). The arrangement would have been suitable to receive thin cordage, thus allowing the piece to function most effectively as a perforated needle.

The remaining eight specimens, three of which are illustrated in Plate 24x-z, are all perforated and have small longitudinal grooves above and below the drilled holes, usually only on one side of the needle itself. They closely resemble the bone needles from Patrick's Point. These needles were all manufactured from ribs, and even though six of them cannot be entirely reconstructed, the two specimens (pl. 24y, z) which are complete, or almost so, probably give an excellent idea of the approved length (ca. 20 cm.) of this type of implement in the region.

Bird bone beads, tubes, and whistles: Two short bird bone tubes,

cut at each end and averaging about 3.8 cm. in length and 4 mm. in diameter, were recovered at site Hum-169, one at a depth of 38 inches, the other in the 60-72 inch level. These objects (pl. 24c, d) are presumed to be beads even though they bear no decoration, like one of the specimens from Hum-67 which is called a bead by Loud (1918:pl. 20). Since bird bone beads were relatively rare even in the numerous burials at Hum-67, and only one specimen was found at Patrick's Point, it is not surprising that but two of them were recovered at Tsurai where burials play no part in the final computation of artifacts.

Four larger pieces of bird bone, averaging about 8 cm. in length, were found; two were in the 0-12 inch level, one was at a depth of 35 inches, and another was recovered from the 72-84 inch level. All of these specimens were fragmentary but showed at least one end with a square cut, and all had some evidences of polishing. One specimen has lightly incised lines near its cut end, but the others were totally undecorated. These objects are approximately the size of whistles, but none of them has any evidence of holes on them.

Table 21 shows that six bone whistles or flutes were found in the upper and lower levels of the deposit. Three of these specimens are whistles with square-cut holes (pl. 24o, p) found in the 72-84 inch level and at a depth of 20 inches. A whistle with an ovoid hole (pl. 24n) and the two specimens designated as flutes (with two or three holes) were found in the upper levels of the site. None of these objects was decorated, unless the two minor incisions on either side of the ovoid hole in the specimen shown in Plate 24n could be called decorations. There were no evidences of deflectors, either of asphaltum or pine pitch, in any of the whistles or flutes. Whistles in other parts of California often have remains of asphaltum deflectors opposite the holes or stops.

The trait of square-cut holes in whistles was noted in specimens from Hum-67 but did not occur at Patrick's Point, where only two whistle fragments of any description were recovered. Its appearance as the dominant type at Tsurai, with two of the specimens found in the lower level, may indicate a change in custom, although unfortunately not enough specimens were found in all to allow the observed occurrences to carry much weight in this regard.

Worked sea lion teeth: In contrast to the Patrick's Point site where 12 worked sea lion teeth were found, only one example was excavated at Tsurai. This is a split canine tooth (pl. 23g) with only slightly rounded or polished inside edges, and no other evidence that it had been deliberately utilized by the occupants of the site. It was recovered at a depth of 14 inches in the deposit.

Whale bone club: The single example of a bone club from Tsurai was found at a depth of 18 inches (pl. 18a). It was probably manufactured from a whale rib, and its weight, length (44 cm.), and general shape would allow it to be used as a club probably more effectively than a piece of slate. In spite of this, slate or some similar stone was possibly preferred material for clubs in northwestern California in both prehistoric and historic times, even though clubs of wood or bone would have served better as fighting implements (cf. Kroeber 1925:50; Driver 1939:371 reports that his informants denied use of whale bone clubs).

Bone fishhooks: Bipointed objects which may have been utilized as gorge hooks have already been discussed. The only other type of specimen which may have served as a fishhook is the curved bone object illustrated in Plate 24b (see also Heizer and Mills 1952:fig. 1). This was found at a depth of 69 inches in the deposit. It resembles some of the specimens (those with rudimentary knobs and simple points) from Patrick's Point, hence is classified as of Type 2, following Heizer's (1949:90) typology of curved single-piece fishhooks.

Antler spoons: Three delicately modeled fragments of antler which correspond to the kinds of elk antler spoons used by the historic Yurok and Hupa (Kroeber 1925:pl. 20; Goddard 1903:pl. 16; Kelly 1930:pls. 103-108) were found, one in the 36-48 inch level (pl. 24e'), one at a depth of 54 inches, and another in the 0-12 inch level. The illustrated specimen is the most complete of the three since the other examples consist of a fragment of the bowl only, and of a bowl with two separate extensions, each about 4.5 cm. long, which when originally joined at the upper end no doubt represented a kind of openwork spoon handle similar to those shown by Kroeber, Goddard, and Kelly. The nearly complete specimen is 13.1 cm. long. It has two drilled holes near the end of the bowl, close to the break, and it seems likely that the missing fragment had a corresponding pair of holes which would indicate that "crack-sewing" was once employed to prolong the life of the spoon.

An odd specimen, a partially worked antler tip (pl. 23f), was found at a depth of 16 inches. It is placed in the category of spoons simply because it could conceivably be used in eating some kind of thick meal, for example. One end and the inner edges, extending almost to the midpoint of the object, are roughly ground and a sort of soup spoon effect is thereby produced. Kelly (1930:pl. 105a) shows a small object not unlike this specimen, which is designated as a Yurok "woman's spoon." In view of the elegant forms of spoons used in historic times by the local natives, it would be presumptuous to suggest that this crude specimen was their precursor. If the depths at which the spoons were found are a true

indication of the first appearance of one type or another, then the finely made specimens would take precedence. In any case it seems likely that the elaborate spoons noted in historic times must have had some fairly long period of local development; hence the relatively early occurrence at the site, indicated by a find of a fragment of one of these pieces at a depth of 54 inches, is not unexpected. What is unusual is that such delicate pieces should have been preserved at all, assuming that they are at least more than fifty years old.

Netting shuttle: A single specimen (pl. 24a), found in the 12-18 inch level of the deposit, is unquestionably a fragmentary shuttle used to pay out cordage in the manufacture of fish nets. Kelly (1930:pl. 119a) shows a similar object attributed to the Yurok, and Kroeber and Barrett (1960:pl. 12) illustrate a series of such specimens, all used in northwestern California. The Tsurai fragment, even though broken at both ends, clearly corresponds to some of the smaller examples described by Kroeber and Barrett. It is about 24 cm. long in its present state, and the extensions at each end, which would make up its "slotted eyes," are the portions missing. One of them is reconstructed in Plate 24a.

Decorated pins or labrets: Three decorated pins (pl. 24e-g), resembling modern metal nails in shape, were excavated, one from the 12-24 inch level and one each at depths of 32 and 39 inches. The specimen illustrated in Plate 24e (shown in better detail in Heizer and Mills 1952:fig. 1) has extremely delicate triangular designs incised on its sides, and the surface of its head is further incised with a fine cross-hatch design. The specimen shown in Plate 24f has encircling lines incised at two places on its shank. The remaining example (pl. 24g) is slightly different in shape from the two just described in that it is not so markedly nail-like in form, and is flattish or tabular rather than round in cross section as are the other two.

These objects are evidently uncommon in northwestern California sites. None was found at Patrick's Point, but one has been reported from site Hum-67. Although their function is not recorded ethnographically among the Yurok, Dall (1884:88) describes "a slender bone or wooden peg, shaped like a small nail or long tack" worn through the lower lip below the nasal septum, by the Tlingit and Haida. Both de Laguna (1934:pl. 51) and Heizer (1956:pl. 79w, x) show objects of stone from archaeological sites in Alaska which are similar in shape to the specimens from Tsurai. In each case these authors refer to the objects as "labrets." However, both Bodega and Mourelle (in Heizer and Mills 1952:22, 47) refer to decorated "bone pins" or "bone screws" worn in the ears of the people at Tsurai; hence it seems more likely that these objects were used as ear

decorations rather than as true labrets worn through the lip. Another possibility is presented by de Laguna (1960:122, pl. 10K) who describes a broken bone pin with a T-shaped end as one which "may possibly have been an ornament worn in the nose." This specimen closely resembles the Tsurai examples, although it was recovered in the Angoon area in ethnographic Tlingit territory.

Shell Artifacts

Olivella beads: The beach at Trinidad Bay is littered with Olivella shells with spires ground off, evidently by the combination of surf and moving sand. There is no way of telling whether the 40 shell beads found in the site were picked off the beach or were deliberately ground for use as beads. There is little doubt that spire-ground specimens were so used since this is a common type, used ethnographically by the Yurok and found in other archaeological sites in association with graves. The relatively small number of beads found in the deposit can best be explained by assuming that their principal use was in burial practices. It is assumed that if burials in the lower levels of the site were excavated, they would be found to contain Olivella beads.

One small gastropod shell (Thais lamellosa) with the spire ground off in a manner similar to that observed on the Olivella shells was found in the upper levels of the site.

Abalone ornaments: Table 23 shows that all of the four types of Haliotis ornaments were found in the upper levels of the site. A few fragments of abalone which were probably once ornaments but which cannot now be classified, three other cut fragments, and one practically whole shell of Haliotis were found either in the upper levels (above 27 inches) or were without depth provenience in the site. Of the fourteen specimens illustrated in Plate 25a-n, five (pl. 25a-d, n) were recovered from the historic sweathouse. All of the four types of ornaments have been found in archaeological contexts in California (Gifford 1947) and all have likewise been found in use in historic times among the Yuork, Hupa, or Karok (ibid.). Again, the lack of these ornaments in the lower levels may be related to the possibility that the prehistoric occupants used Haliotis ornaments but that they were, with few exceptions, originally deposited with burials. The species of Haliotis used for the ornaments could not be determined, although the one whole shell was readily identified as of the red abalone Haliotis rufescens.

Mussel shell objects: Plate 25o, p shows two pieces of Mytilus californianus, one circular, the other shield-shaped, and both unperfo-

TABLE 23

Depth Distribution of Some Shell Artifacts from Site Hum-169

Depth (in.)	Olivella Beads	Haliotis Ornament Types*			
		Q1aIII	S2aIII	Z2aII	Z3aI
0-12	15			4	1
12-24	4				1
24-36	4	2		4	1
36-48	6				
48-60	2				
60-72					
72-84					
84-96					
No provenience	9		1	2	
Total	40	2	1	10	3

*After Gifford (1947)

rated. Although both of these may be incipient ornaments, they could as well have been designed to serve as gaming pieces or scorers. Goddard (1903:61, pl. 19), for example, describes and illustrates an almost exact duplicate of the Tsurai circular specimen in use among the Hupa: "woman's dice game, disks of mussel shell." The shield-shaped piece was recovered from the 84-96 inch level, while the round disk was in the 0-12 inch level.

Perishable Artifacts

Apart from the pine nut beads already mentioned in the discussion of finds in the historic sweathouse at Tsurai, the only other items of a readily perishable nature which were found are two wooden pillows of the same form as those used by the historic peoples of northwestern California. Kroeber (1925:92, pl. 10) shows such an object located in a sweathouse and implies that this was the accustomed place among the Yurok for the pillow. Neither of the pillows found at Tsurai has any exact depth data. One was

found in the historic sweathouse, however, and the other was excavated from the upper levels of the site, in a disturbed area. These pillows are rectangular blocks of redwood. Each has a concavity in the top which was intended to accommodate the head of the reclining person. They average 31.5 cm. long, about 9 cm. wide, and stand 9.6 cm. high, with the center of the recess or concavity measuring 7.5 cm. from the bottom of the pillow.

Artifacts Probably Not of Native Design

In the discussion of finds in the historic sweathouse, artifacts of indubitable European or Euro-American manufacture were noted. Most of these artifacts, such as glass beads and metal files, were evidently acquired in trade with the whites. Another class of objects which should be considered is that which includes specimens which may have been manufactured and used by the Indians but which ostensibly were patterned after certain objects which the Europeans possessed upon arrival. Thus a three-tined iron fork has a bone handle which may have been fitted or replaced by a local Indian using local bone. A relatively crudely designed bone object, with numerous small holes on a flat surface, appears to be a tooth or hair brush, with the bristles and handle missing. The back of this putative brush is marked by four incised triangles. Finally, there are three stone specimens of micaceous schist or shale (pl. 17**b-d**) which have all obviously been shaped and ground, especially on their flat surfaces. These are presumed to be whetstones, probably for sharpening the blades of the introduced metal knife blades. These objects were found in the historic sweathouse, and elsewhere in the deposit in the 0-12 inch level.

Summary

While it was not possible to recover any data from burials at site Hum-169, it is believed that occurrences of artifacts throughout the deposit may serve adequately to reflect the essence of the manner of living at the site. Unlike the Patrick's Point site, Tsurai was evidently a large, relatively important village rather than a restricted, seasonally occupied camp spot.

The very size of the deposit at Tsurai must dictate caution in placing too much trust in the idea of regular stratification of artifact types suggested by the tabular presentation of finds. Nevertheless, certain other considerations give some justification to this method. Comparison of elements with finds from other sites, such as Patrick's Point

and Hum-67, leads to the observation that the lower part of the living deposit at Tsurai tends to correspond with the middle levels at these localities. This means that the prehistoric time column for Tsurai is relatively restricted, especially if the C-14 dating discussed in the preceding section on Patrick's Point is correct. There seems little reason to believe that within the short period of time allowed by the postulated beginning date of the site and the termination of the prehistoric period there were enough discrete "centers of occupation" to essentially change the picture of the site's building up fairly regularly, that is as a single unit rather than as a series of small enclaves, each perhaps differing in time of occupation. Continuity from the beginning of the historic period directly to the twentieth century Yurok inhabitants is fairly regularly expressed over the extent of the area excavated (table 12), and this also lends support to the "single unit" concept.

The lower five feet of the Hum-169 deposit, irregular as they are from one excavation trench to another (table 12), show, with some exceptions, the beginning finds of what we have come to recognize as "matrix" elements in prehistoric northwestern California culture: stone projectile points for simple harpoons; pebble choppers; flake scrapers; chipped blades of chert; steatite vessels (grease catchers); simple pestles; side-notched sinkers; (decorative) objects of slate; bone and antler simple and composite harpoons; antler wedges; bone flakers and awls; and bone whistles. All of these kinds of objects occur in the "basal" levels of the deposit, that is from depths of 96 to 72 inches. Above the 72 inch depth and up to what may best be called the "proto-historic" level (at about 36 inches) are encountered for the first time additional matrix traits: bone gouges, needles, bipointed pins, and beads; unshaped hammerstones, offset pestles, slab mortars, slate clubs, and stone drills. Flanged pestles and stone adze handles in the 36-48 inch level and bell-shaped mauls in the 48-60 inch level are included in the latter category. Perhaps the relatively shallow depths at which these objects were found should be attributed to chance in excavation rather than to the possibility that they were introduced later than the other diagnostic or matrix elements. The curved bone fishhook found in the 60-72 inch level probably corresponds to the similar specimens found in the upper levels of the Patrick's Point site. It is noteworthy that this type of hook has not been reported for the historic groups of northwestern California and does not occur in the historic levels of Tsurai.

The finding of two distinctive types of artifacts used by the historic Yurok—steatite pipe inserts and elk horn spoons—in the 48-60 inch level of site Hum-169 suggests more specifically than the other kinds of

artifacts enumerated the direct prehistoric roots of the ethnographic groups of the region. Other traits, such as the barbed bone spear point, the bone or antler netting shuttle, the wooden pillow, pine nut beads, and Haliotis ornaments—all recovered from above the 36 inch level—are identical to types found among the Yurok, and are therefore not unexpectedly found in the historic levels. Olivella beads occurred, apparently for the first time, in the 48-60 inch level; hence on this evidence they cannot be included with the Haliotis ornaments and pine nut beads as late-comers to the site. Nonetheless, it is thought that all three classes of artifacts would, if excavation were permitted in the local prehistoric cemetery, probably be found to occur with burials representing the earliest occupation of Hum-169.

Worked sea lion teeth, head scratchers, a whale bone club, and a Type III toggle spur were also found in the deposit only above the 36 inch depth. While the club may be a late intrusive or trade piece at the site, the recovery of the other three types of specimens only in the historic level probably was fortuitous since these are types which were found in lower levels at Hum-118.

In equating the lower levels of site Hum-169 with the middle or upper levels of either Hum-118 or Hum-67, the chief exceptions are presented in the observation that at Hum-169 no evidence was found either of obsidian blades of the miniature or large ceremonial type, or of the so-called zoomorphic clubs. Since Hum-169 was almost certainly an important village where some fragments at least of these objects should have been found had they been commonly in use, we must assume either that such specimens were handed down as treasures, relatively intact, to succeeding generations or were deposited with burials. Again the importance of excavating prehistoric graves is indicated.

Additional gaps in comparisons of Hum-169 with the other sites were noted. Thus, no offset pestles were recovered at Hum-118, but several examples were found at Tsurai. Arrow shaft smoothers were found in both upper and lower levels of Hum-169 while none were found at Hum-118. It may be suggested that this latter absence could be associated with the relatively reduced importance of land-mammal hunting (hence use of the bow and arrow) as expressed by the comparatively small number of projectile points assumed to have been used with Type 6 arrows found at Hum-118. Tsurai showed a much larger proportion of Type 6 points to its total number of projectile points than did Hum-118—17 per cent as against 6 per cent. Finally, no Dentalium beads were found at Hum-169. Again the possibility exists that such beads did occur with burials, but here we may note that no Dentalium was recovered at Hum-118 either, where

some burials, even though few and poorly endowed, were recorded. Offset pestles, arrow shaft smoothers, and Dentalium beads were all found at site Hum-67.

It is not our intention to suggest that there was much diagnostic culture change observable at Tsurai other than that represented by the obvious prehistoric-historic transition. As at site Hum-118, the great majority of the aboriginal types of artifacts are believed not to have undergone any significant morphological changes during the whole course of the known prehistoric and historic periods, that is in the period denoted by the entire depth of the midden deposit. The only observable indications of distinct types of changes through time occur with bone whistles or flutes, and with simple harpoons. Whistles with square-cut holes were recorded from both upper and lower levels, while whistles with ovoid holes and flutes (bone tubes with more than one hole-stop) were found only in the upper levels. Unfortunately, too few specimens of each of these varieties were found to allow much weight to be given this observation.

On the other hand, the occurrence of harpoons seems to be clear and forthright. Table 18 shows that subtype "B" harpoons (bilateral line guard) were recorded from the 60-72 inch level, while subtype "C" appeared only in and above the 36-48 inch level. This evidence of typological change is about what would be expected in view of the finds at site Hum-118, and tends to further bear out Bennyhoff's (1950) original concept of sequences of harpoon types in northwestern California.

All of the evidence from site Hum-169 seems to be in agreement with the estimate of Heizer and Mills (1952:9) for the first occupation of the site at around A.D. 1620. This date could still stand as correct even though no radiocarbon date has been secured for the site, and even though the early occupation of the Patrick's Point site described in the preceding section is later than was first estimated by about 300 years.

END NOTES

1. Kroeber (1917:391) guessed that over 1000 years "seem demanded for the particularity of these Algonkian [Wiyot, Yurok] and Na-Dene [Haida, Tlingit] fragments." He subsequently suggested (1934:21) that "the 'Algonkian'-speaking Wiyot-Yurok need not be derived [directly] from the great Algonkian body east of the Rocky Mountains. They may more likely represent a branching off from the also 'Algonkian'-speaking Salish-Wakash, drifting south along the coast. This would go far to explain the strange local focus of northwest coast culture in northwest California."

2. Two samples were submitted to the Geochron Laboratories, Inc., one from, or slightly above, the clay subsoil of the deposit (in unit 15L2, map 1) and another from a point about 36 inches above the subsoil in the same excavation unit. Sample No. GX0181 (from clay subsoil) was dated at 640 ± 90 years (A.D. 1310), while No. GX0182 was calculated at 545 ± 115 years (A.D. 1405). Although the original excavation of the site has greatly changed its contours, it has been estimated that the samples were taken from depths of 7 to 10 feet below the land surface as it was at the time of abandonment of the site.

3. Carbon-14 dating in western Oregon-northwestern California:

<u>Site or Region</u>	<u>Approx. C-14 Date</u>	<u>Reference</u>
Site Ti-1 (Tillamook, Oregon)	1400 A.D.	Newman, 1959
Ethnographic Kus region, Oregon	1500 A.D.	Olson and Broecker, 1959
Site Hum-67, California	900 A.D.	Crane and Griffin, 1961

4. Jasper and chert are distinguished throughout the artifact description sections even though, mineralogically speaking, there are but slight differences between these two siliceous materials. Jasper is usually reddish in color while chert may be mottled gray green or brownish. Both materials are usually considered under the general heading of chalcedony (Loomis 1948:106-107). Apart from the color difference, chert may display a more splintery fracture characteristic than jasper.

5. This practice is reported both archaeologically and ethnographically in the Napa region (Heizer 1953:251).

6. This practice was paralleled in the Santa Barbara region where asphalt was applied in this fashion.

7. Map 2 represents a portion of Tsurai village, about three-quarters of the area of Heizer and Mills' Map 5 (1952:99). The ethnographic features are mainly house locations (with names of owners) existing about 1900. In excavated areas, capital letters refer to trench designations and Arabic numerals to pits within trenches.

EXPLANATION OF PLATES

[Numbers shown in Plates 1 through 14 are field numbers assigned by the University of California which have been retained for specimens on display or in storage at Patrick's Point State Park, California.]

Plate 1. Chipped stone specimens from Hum-118

- a-d Projectile points or knives, Type 1. Nos. 2094, 56, 1198, 238.
- e-j Projectile points, Type 3; probably used in bone harpoon heads for securing sea lions. Nos. 1906, 2212, 527, 786, 1274, 821.
- k-s Projectile points, Type 4; suggested use same as for Type 3. Nos. 848, 562, 1351, 1871, 1892, 655, 257, 1265, 1210, 226.
- t,d' Drills, Type 1. Nos. 226, 1719.
- u-y Projectile points, Type 6; used predominantly as arrow points(?) Nos. 1008, 2051, 1850, 867, 881.
- z-c' Miniature facsimiles of ceremonial obsidian blades. Nos. 192, 131, 572, 541.

Plate 2. Stone implements from Hum-118

- a Anvil stone. No. 435.
- b Quartzite cobble with burnt end. No. 1357.
- c,d Stone adze handle fragments. Nos. 1491, 1875.
- e Pecked stone object, fragments; large zooform club(?). No. 1387.
- f Polished slate blade. No. 220.
- g Notched slate object. No. 1552.
- h Ground stone object. No. 2138.
- i-l Chert, flint, and jasper blades. Nos. 1282, 274, 10, 2067.
- m,n Chert and jasper scrapers. Nos. 1257, 616.
- o Chert blade blank. No. 481.
- p-s Unifacial cobble or pebble choppers. Nos. 1789, 1696, 2206, 1948.

Plate 3. Stone dishes from Hum-118

- a Steatite grease dish. No. 1786.
- b,c Steatite dishes. Nos. 746, 1953.
- d Stone dish. No. 1321.

Plate 4. Stone dishes and pestles from Hum-118

- a Sandstone grease dish. No. 1647.
- b Incipient steatite dish. No. 1961.
- c Pecked sandstone object. No. 2113.
- d Sandstone pestle, proximal end. No. 43.
- e Flanged pestle. No. 1925.

Plate 5. Antler and stone artifacts from Hum-118

- a Broken base of antler with circular cut. No. 1923.
- b Cut fragment of elk antler base. No. 2195.
- c-e Elk antler wedges. Nos. 1185, 1496, 212.
- f,g Simple stone pestles. Nos. 2146, 1409.
- h Flanged pestle. No. 328.
- i,j Stone mauls. Nos. 80, 1822.

Plate 6. Simple harpoons or fragments and toggle spurs from Hum-118

- a Simple harpoon, Type IIC. No. 2099.
- b Toggle spur, Type IIIa. No. 1372.
- c Simple harpoon, Type IIB1a. No. 1205.
- d Simple harpoon, Type IIB1a. No. 1051.
- e Simple harpoon, Type IIB1a. No. 1267.
- f-i Simple harpoons, Type IB; note that "g" is reworked to form an awl-like implement. Nos. 1679, 2108, 2132, 1829.
- j Simple harpoon, Type IA2a; small size of remaining portion of line shoulder on non-barb edge allows identification of base form. No. 1464.
- k-m Simple harpoons, Type IA. Nos. 289, 188, 262.
- n,o Simple harpoons, Type IIA1a. Nos. 656, 747.

Plate 7. Bone and antler tools and worked fragments from Hum-118

- a Rib flaking tool, extra long. No. 1341.
- b Cut artiodactyl metatarsal. No. 1517.
- c Same as "b." No. 811.
- d Worked antler object with perforation. No. 1426.
- e Bone awl, Type 3. No. 1458.
- f Same as "e." No. 518.
- g Metatarsal gouge fragment. No. 1610.
- h Worked rib. No. 1524.
- i Worked artiodactyl scapula (elk). No. 1244.
- j Worked mammal bone fragment. No. 584.
- k Same as "j." No. 1943.
- l Same as "j." No. 890.
- m Split rib flaker. No. 2159.
- n Whole rib flaker. No. 399.
- o Antler flaker. No. 2246.
- p Notched rib. No. 1485.
- q Notched long bone fragment. No. 391.
- r Notched rib. No. 1501.

Plate 8. Chipped and ground stone artifacts from Hum-118

- a Chipped chert drill, Type 2. No. 1359.
- b Chipped chert drill, Type 2. No. 2095.
- c Chert saw. No. 683.
- d Ground stone pipe fragment. No. 1680
- e Ground stone pendant. No. 1585.
- f Polished slate projectile point. No. 181.
- g Miniature zooform figure. No. 301.
- h Small zooform figure fragment. No. 792.
- i Fragment of zooform club (leg?). No. 320.
- j Worked slate fragment (zooform club?). No. 1881.

Plate 9. Various stone artifacts from Hum-118

- a Perforated slate pendant. No. 1446.
- b,c Grooved stone sinkers. Nos. 2092, 887.
- d-g Side-notched stone sinkers. Nos. 233, 2190, 1360, 472.
- h End-notched stone sinker. No. 1213.
- i Hammerstone. No. 2267.

Plate 10. Simple harpoons from Hum-118 (after Bennyhoff 1950)

- a-c Type IA. Nos. 1465, 2057, 409.
- d,e Type IIA1a. Nos. 1453, 755.
- f Type IIA, No. 862.
- g-i Type IB. Nos. 44, 402, 576.
- j Type IB1a. No. 1530.
- k Type IB2a. No. 1066.

Plate 11. Simple harpoons and toggle spurs from Hum-118 (after Bennyhoff 1950)

- a-f Simple harpoons, Type IIB1a. Nos. 270, 2238, 1417(?), 1275, 283, 1805.
- g-i Simple harpoons, Type IC. Note that "i" has been reworked to form an awl-like implement. Nos. 1995, 751, 1678.
- j Simple harpoon, Type IIC1a. Evidently reworked after loss of first barb. No. 2174.
- k Slotted head of large harpoon; side and front views, showing torque. No. 1292.
- l Small harpoon tip, reworked into awl(?). No. 1510.
- m,n Toggle harpoon spurs, Type IIIb. Nos. 1688, 1777.
- o Possible toggle harpoon tip, Type T1f. No. 427.
- p Barbed bone arrow point fragment. No. 544.

Plate 12. Bone and antler implements from Hum-118

- a Bone gouge. No. 2222.
- b Antler wedge. No. 1449.
- c Split rib flaker. No. 2252.
- d Rib flaker. No. 2021.
- e Worked bone implement (flaker?). No. 1216.
- f,g Ulna flakers. Nos. 130, 223.

Plate 13. Bone implements from Hum-118

- a,b Awls, Type 1. Nos. 651, 1290.
- c,d Awls, Type 3. Nos. 796, 1388.
- e-g Awls, Type 4. Nos. 2161, 424, 460.
- h Bone pin or awl, pointed at both ends. No. 1633.

Plate 14. Bone and antler objects from Hum-118

- a-c Decorated head scratchers. Nos. 2, 1293, 686.
- d,e Perforated deer or elk metapodials. Nos. 1589, 1581.
- f Perforated needle fragment. No. 1898.
- g,h Bird bone whistle(?) fragments. Nos. 1983, 1142.
- i-k Sea lion canine teeth, partially worked. Nos. 453, 224, 199.
- l "C"-shaped bone fishhook. No. 1582.
- m Incised bird bone fragment. No. 334.
- n,o Incised mammal bone fragments. Nos. 1478, 1013.
- p Incised antler fragment. No. 1214.

[Numbers indicated for Plates 15 through 25 are those of the Robert H. Lowie Museum of Anthropology, University of California, Berkeley, and are preceded, on the specimens, by 1-.]

Plate 15. Chipped stone projectile points from Hum-169. All specimens are of chert or jasper unless otherwise indicated.

- a Type 1. No. 116203.
- b Type 2. No. 98908.
- c-f Type 3. Nos. 90124, 98937, 98910, 98925.
- g-o Type 4. Nos. 98934, 90128, 98928, 97838, 97832, 98936, 98933, 98935, 115789.
- p,q Type 5a. Nos. 115791, 98916.
- r,s Type 5b. Nos. 97836 (obsidian), 98918.
- t-z Type 6. Nos. 90092, 98920, 97828, 98917, 98922, 97826, 90102.
- a' Type 7a. No. 97816.
- b' Type 4 (historic), made from green glass (bottle). No. 115984.
- c' Desert Side-notched point (historic) made from green glass (bottle). No. 98927.

Plate 16. Chipped and ground stone implements from Hum-169

- a Heavy grooved steatite sinker or anchor(?). No. 98808.
- b Bifacial cobble chopper (cutting edge at top in photograph).
No. 98842.
- c-f Unifacial cobble choppers. Nos. 90009, 115807, 98814, 98867.
- g-i Sandstone arrow shaft smoothers. Nos. 115778, 90096, 90090.

Plate 17. Chipped and ground stone implements from Hum-169

- a Incised slate object. No. 98532.
- b,c Smoothed schist objects (whetstones?). Nos. 115858, 115781.
- d Worked shale object (whetstone?). No. 99116.
- e Steatite pipe bowl insert fragment. No. 98436.
- f Steatite pipe bowl insert. No. 90081.
- g Steatite pendant fragment (perforated portion missing?).
No. 98938.
- h Incised steatite pendant. No. 99086.
- i,j Slate pendants. Nos. 90206, 90100.
- k Steatite pendant. No. 98438.
- l Steatite pendant fragment. No. 90083.
- m Slate pendant fragment. No. 98538.
- n-p Jasper blades. Nos. 98434, 116143, 99392.
- q,r Chert drills, Type 1. Nos. 98335, 99530.
- s Chert drill, Type 2(?). No. 97837.

Plate 18. Artifacts of bone, chipped stone, and ground stone from Hum-169

- a Shaped whale bone club. No. 98896.
- b Fine sandstone club fragment(?). No. 98961.
- c Stone adze handle. No. 97825.
- d Stone adze handle fragment. No. 90082.
- e,f End-notched sinkers. Nos. 99177, 97839.
- g Grooved sandstone object (sinker?). No. 99261.
- h-m Chipped scrapers; all chert except "m," flint, and "n," jasper.
Nos. 99360, 99639, 98909, 99678, 99405, 99397.

Plate 19. Ground stone implements from Hum-169. All sandstone unless otherwise specified.

- a,b Mauls. Nos. 98894, 90112.
- c Small offset pestle. No. 99141.
- d Pestle-hammerstone. No. 90161.
- e Steatite maul handle. No. 98893.
- f Maul handle fragment. No. 99132.
- g,h Offset pestle fragments. Nos. 98891, 98864.
- i Fragment of large maul. No. 98890.

Plate 20. Steatite vessels from Hum-169

- a Canoe-shaped. No. 90158.
- b Ovoid (slightly raised ends, approaching canoe-shape). No. 90157.
- c Canoe-shaped. No. 90156.
- d Round. No. 90155.
- e Ovoid. No. 98807.
- f Round (incipient). No. 115775.

Plate 21. Steatite artifacts from Hum-169

- a Incipient miniature bowl. No. 98848.
- b Finished miniature bowl. No. 115779.
- c Incipient miniature bowl. No. 98963.
- d Miniature (toy?) bowl. No. 98852.
- e Shaped steatite object. No. 98834.
- f Acorn anvil(?). No. 90159.
- g,h Grooved objects. Nos. 98836, 99713.
- i,j Anvils(?). Nos. 99726, 98825.

Plate 22. Bone and antler artifacts from Hum-169

- a Simple antler harpoon fragment, Type IC. No. 98327.
- b Simple antler harpoon, Type IC2b. No. 98508.
- c Simple antler harpoon fragment, Type IC (slotted tip). No. 98415.
- d Simple antler harpoon, Type IC2b. No. 90015. (Illustrated in Bennyhoff 1950:fig. 6c.)
- e Simple antler harpoon, Type IIC1a. No. 90014. (Illustrated op. cit., fig. 6h.)
- f Simple antler harpoon fragment, Type IC, with reworked tip forming a flaking tool. No. 115763.
- g Simple antler harpoon fragment, Type IB. No. 98504.
- h Simple bone harpoon fragment, Type IIB1. No. 115766.
- i Simple antler harpoon fragment, Type IIB. No. 98462.
- j Simple bone harpoon fragment, Type IIB1. No. 98316.
- k Small waterworn fragment of simple harpoon, Type IID(?), showing evidence of line-hole near base. No. 90045.
- l Barbed fish spear with slotted tip (bone). No. 115764.
- m-q Probable bone points for composite (toggle) harpoons, Type U1. Nos. 98399, 98383, 98404, 98369, 98301. ("m," "p" illustrated op. cit., fig. 5r, s.)
- r Incipient toggle harpoon spur, of antler, probably like Type IIIa but larger. No. 115770.
- s Bone toggle harpoon spur, Type IIIb. No. 90016. (Illustrated op. cit., fig. 5e'.)
- t,u Bone toggle harpoon spur, Type Ib. Nos. 97819, 98516.
- v Bone toggle harpoon spur, Type Ib. No. 115762. (Illustrated op. cit., fig. 5a'.)

Plate 23. Bone and antler artifacts from Hum-169.

- a,b Cut elk antler sections. Nos. 90060, 90052.
- c-e Elk antler wedges. Nos. 90207, 98897, 99068.
- f Spoon-like antler implement. No. 98410.
- g Split sea lion canine. No. 98732.
- h Bone flaker, Type 2. No. 97821.
- i Bone flaker, Type 4. No. 97824.
- j Bone flaker, Type 1. No. 97827.
- k Elk cannon bone gouge. No. 97840.
- l Penis bone implement (punch?). No. 98384.
- m Pointed bone implement with evidence of perforation at one end. No. 97817.
- n Heavy pointed bone implement (perforator?). No. 98488.
- o Bone awl, Type 3. No. 90024.
- p Pointed antler implement with longitudinal grooves. No. 90073.

Plate 24. Bird and mammal bone artifacts from Hum-169.

- a Matting shuttle, with broken ends. No. 98417.
- b Curved fishhook. No. 97833.
- c,d Bird bone beads. Nos. 116117, 98288.
- e-g Decorated labrets(?). Nos. 97823, 97829, 115772.
- h-k Bipointed bone pins. Nos. 97831, 90079, 98405, 98293.
- l,m Bird bone flute fragments. Nos. 90148, 97822.
- n Bird bone whistle with ovoid hole. No. 115757.
- o,p Bird bone whistles with square cut holes. Nos. 115755, 115756.
- q Polished metapodial needle(?). No. 98452.
- r Vestigial metapodial (deer) needle fragment. No. 98287.
- s-u Cut bone pendants. Nos. 98294, 115773, 90064.
- v Cut sea lion canine pendant. No. 115774.
- w Incised, perforated headscratcher. No. 98385.
- x,y Needle fragments. Nos. 98390, 90036.
- z Complete needle. No. 90204.
- a',b' Incised tabular implements (net gauges?). Nos. 98389, 90087.
- c' Grooved tabular fragment (headscratcher?). Nos. 98297.
- d' Pointed bone object (hair pin?). Nos. 90088.
- e' Bone spoon fragment. No. 115771.

Plate 25. Haliotis and mussel shell specimens from Hum-169

- a,b Haliotis ornaments, Type Q1aIII. Nos. 98784, 98779.
- c-j Haliotis ornaments, Type Z2aII. Nos. 98781, 98780, 98448, 98289, 98291, 98444, 98443, 98445.
- k Haliotis ornament, Type S2aIII. No. 90050.
- l-n Haliotis ornaments, Type Z3aI. Nos. 98785, 98542, 98798.
- o,p Mussel shell pendant(?) blanks, unperforated. Nos. 98793, 115792.

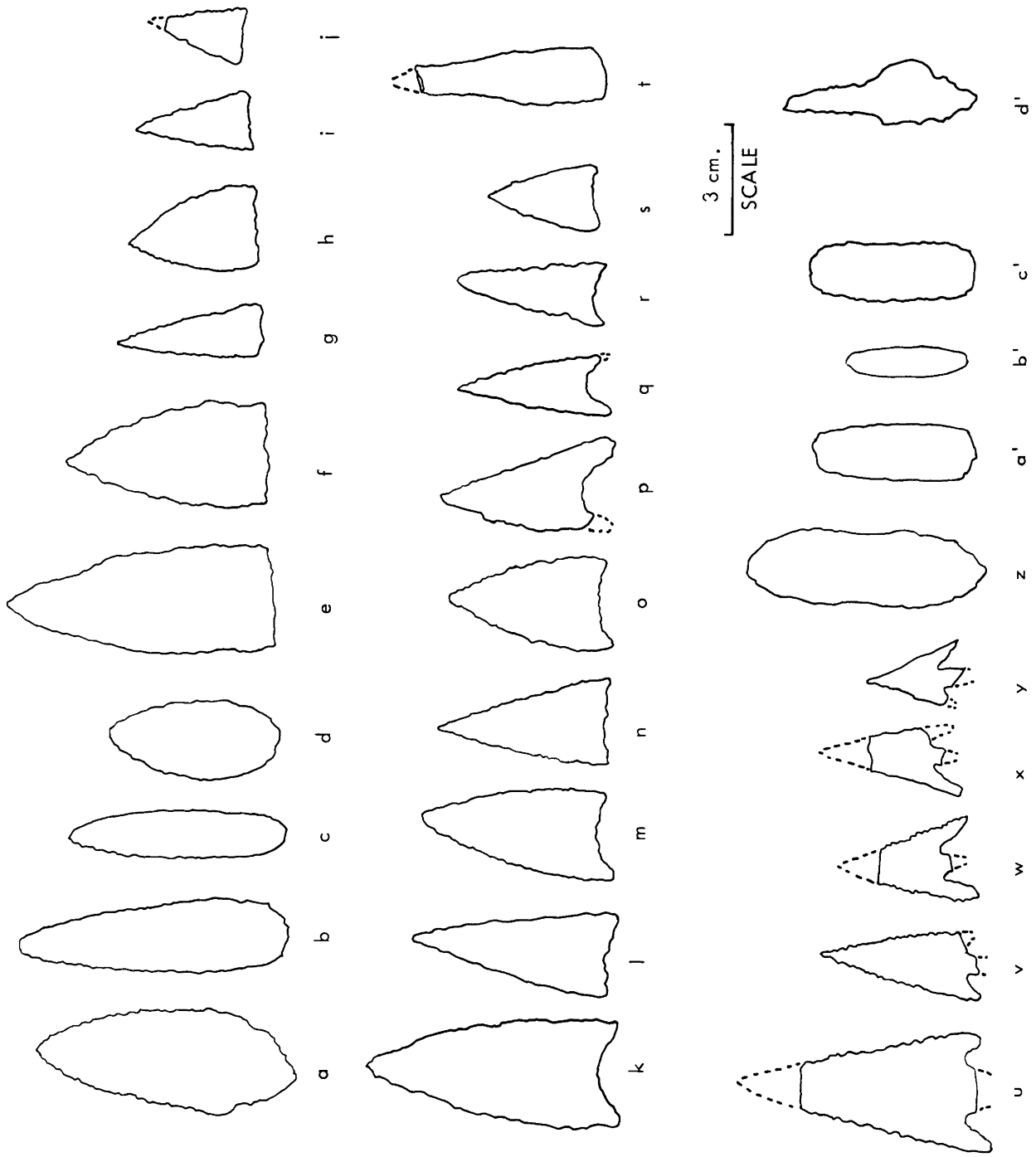


Plate 1

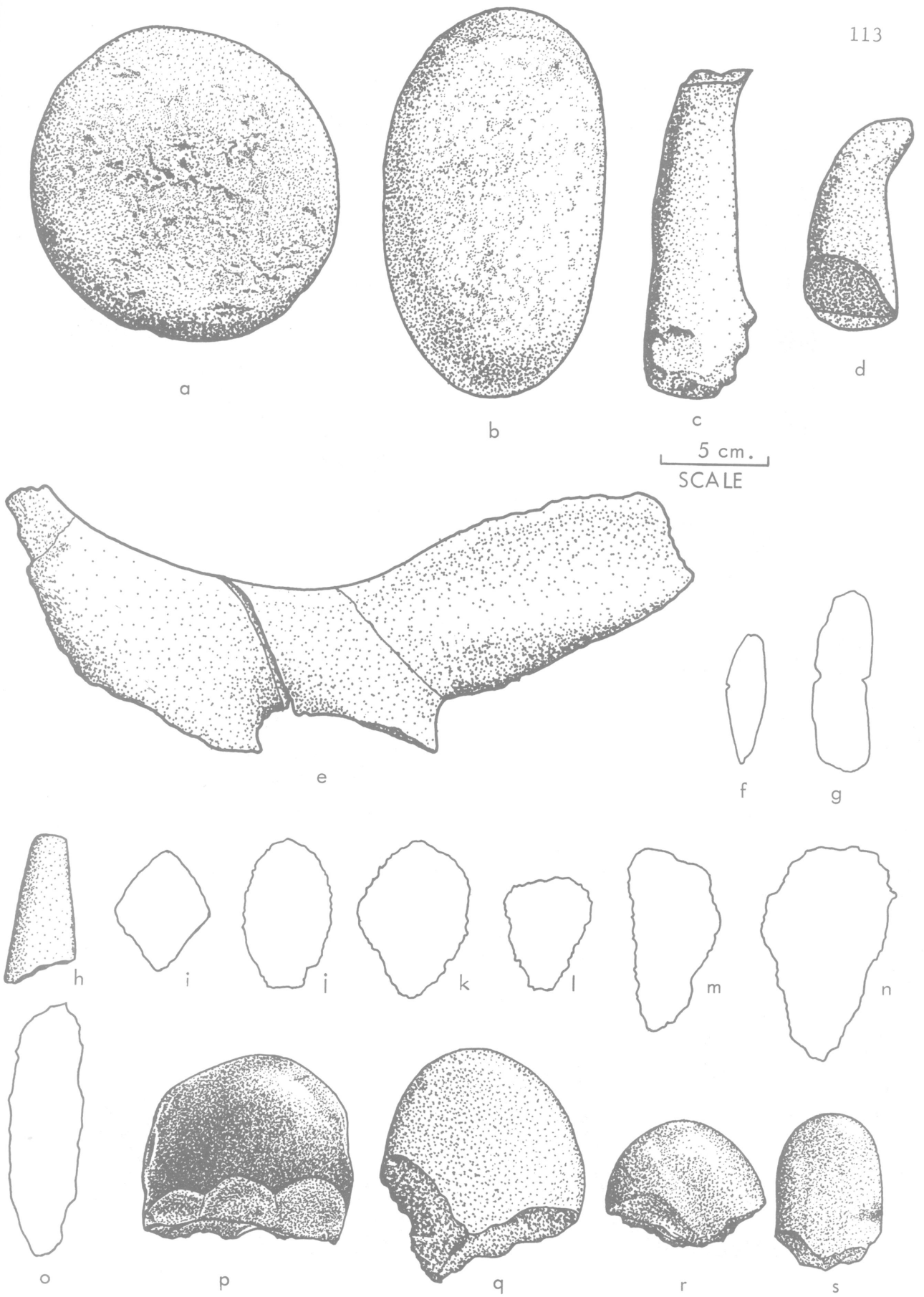


Plate 2

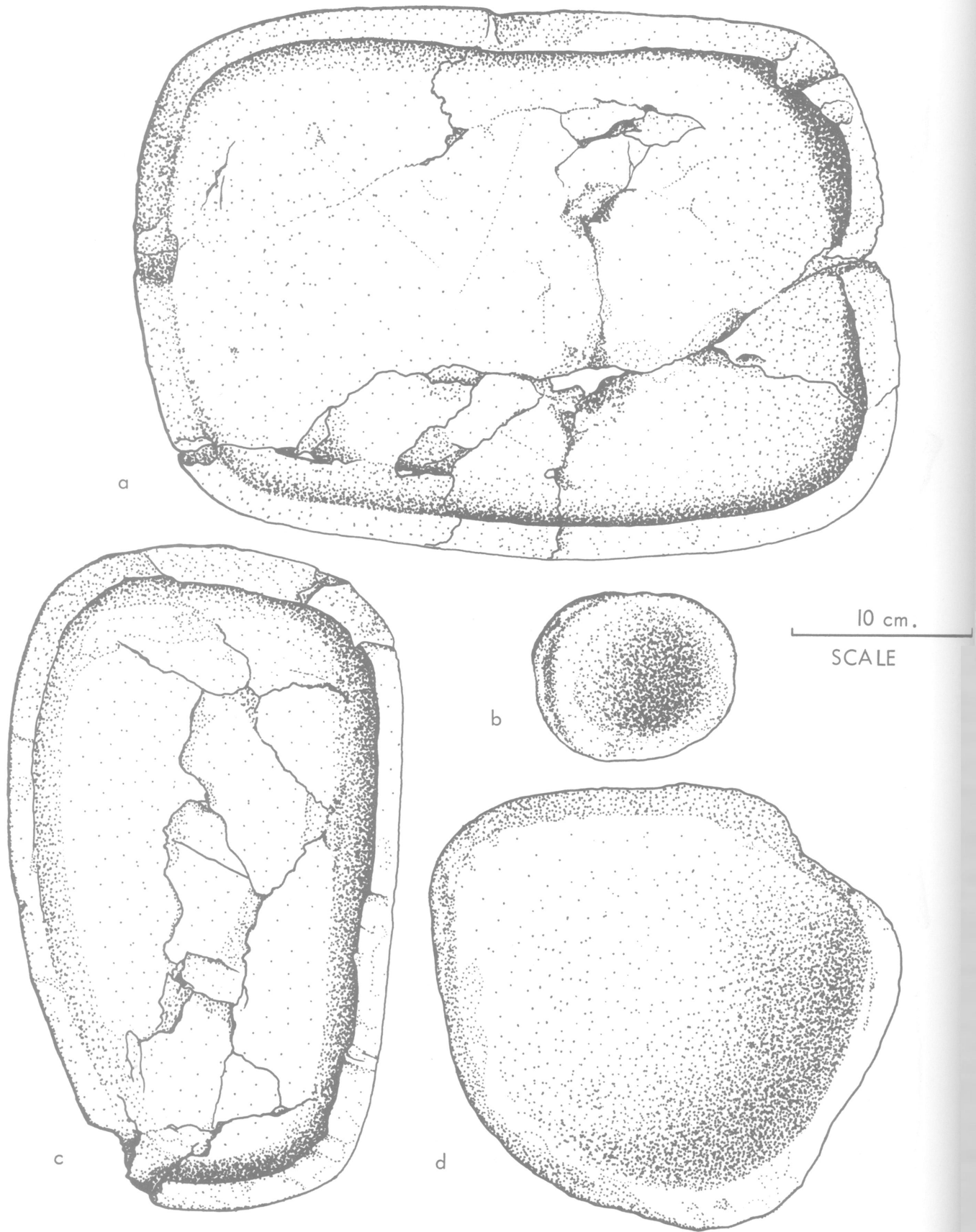
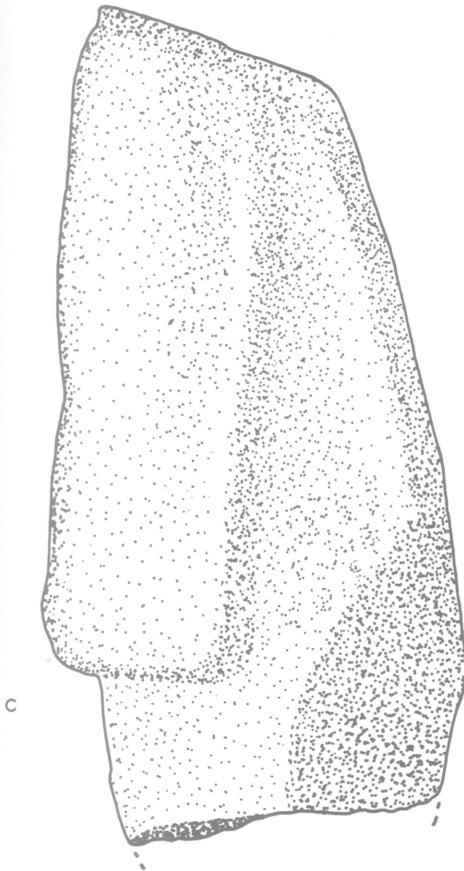
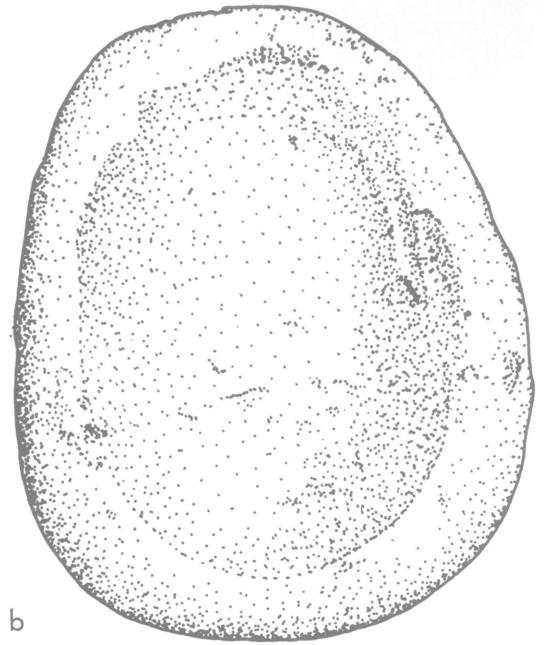
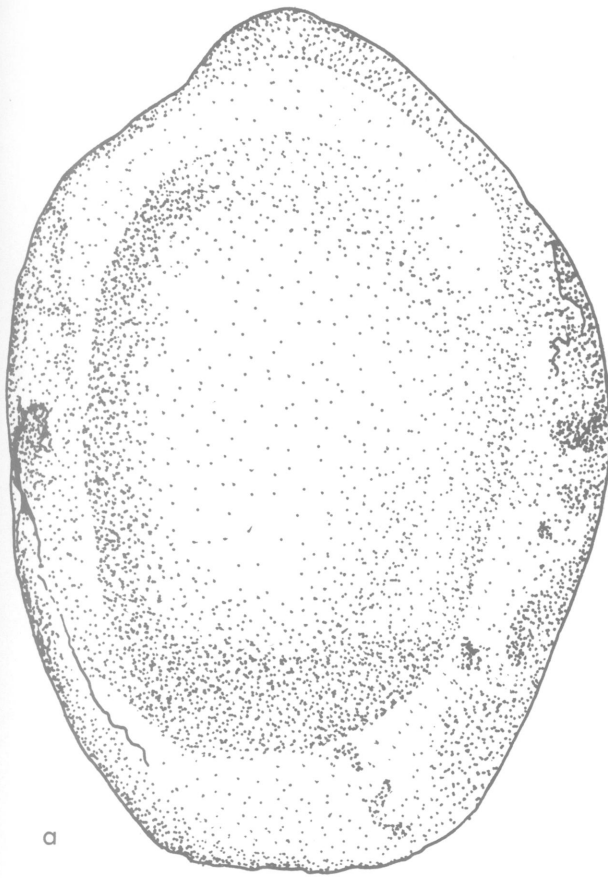


Plate 3



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SCALE

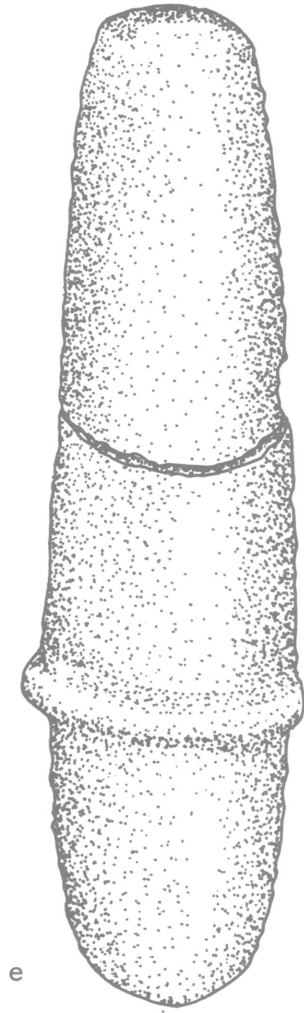


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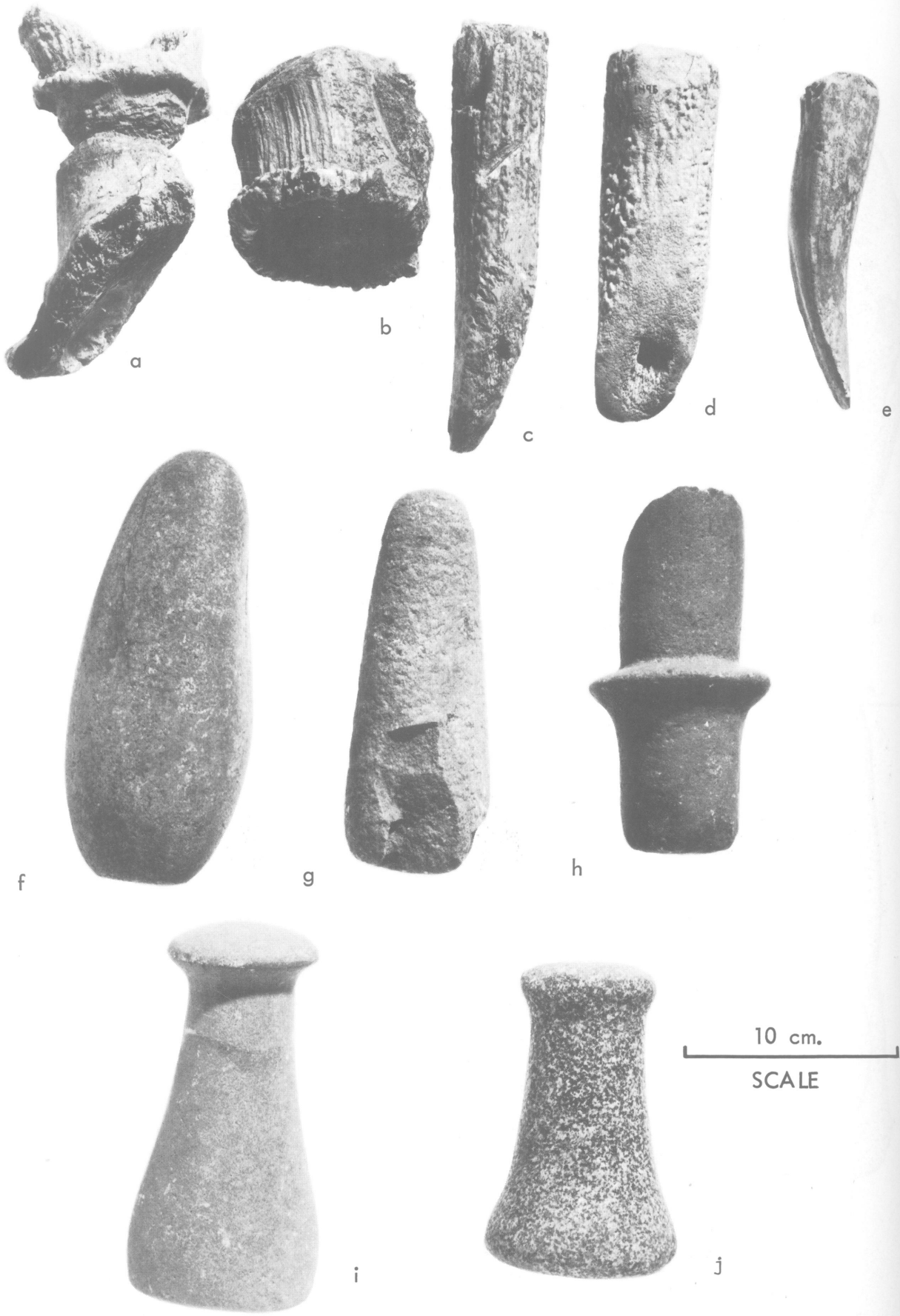


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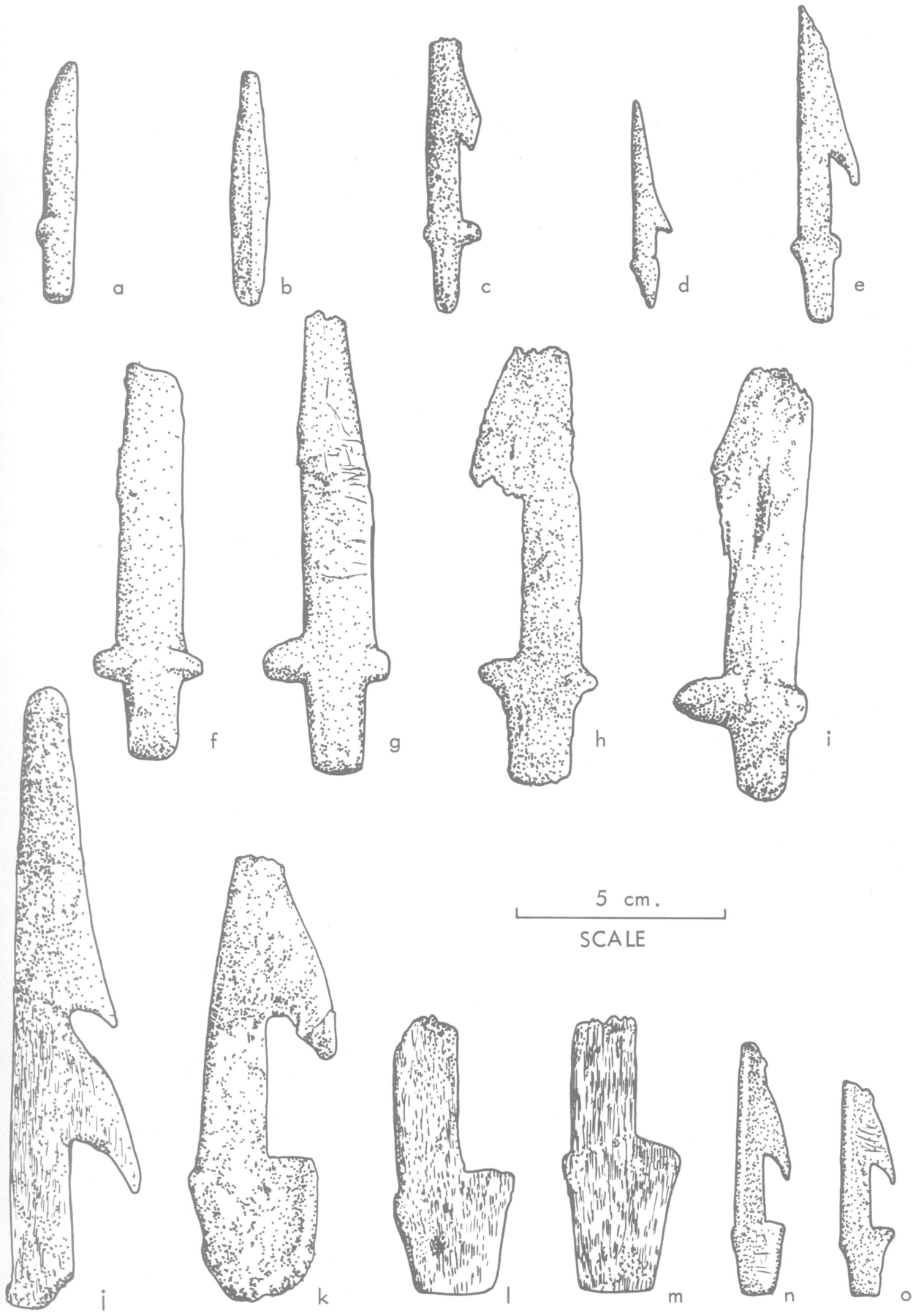
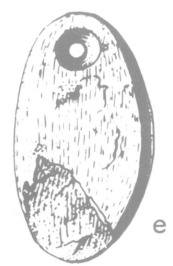
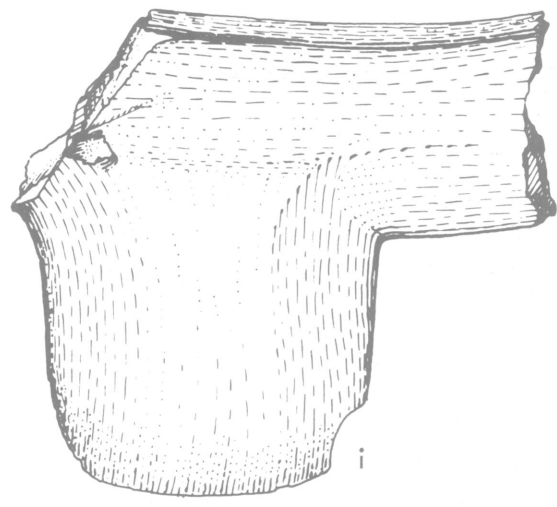
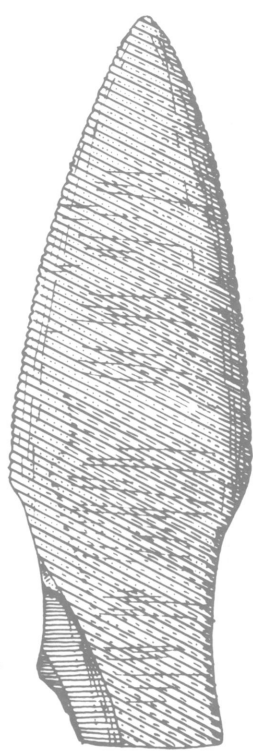
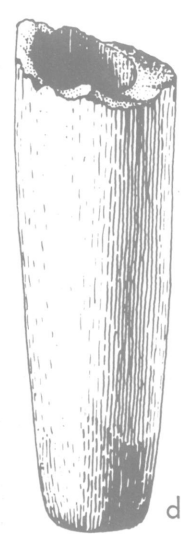
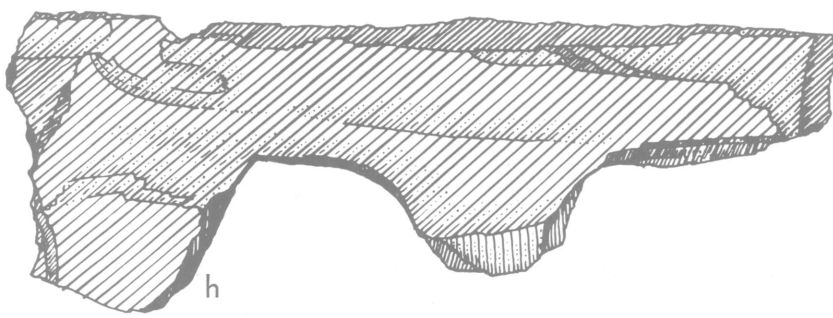
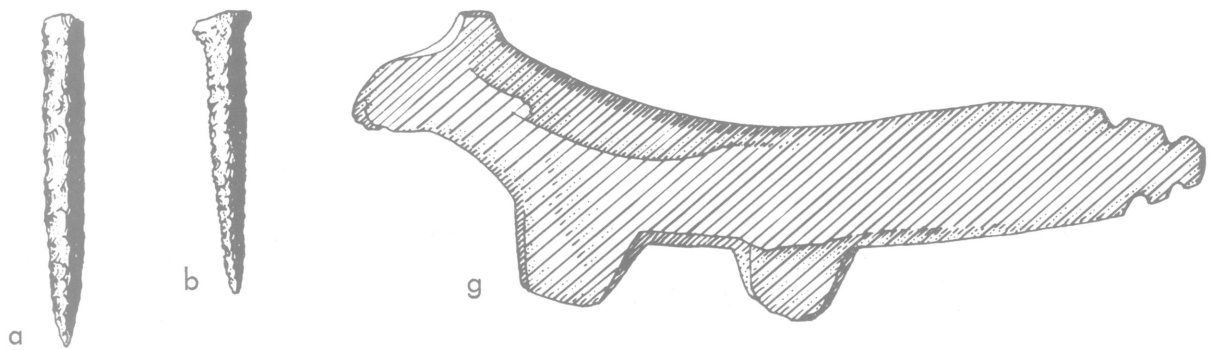


Plate 6





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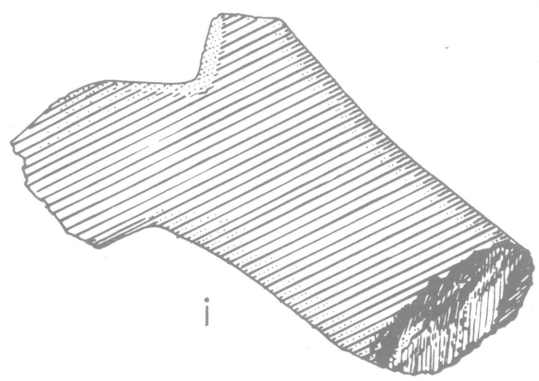


Plate 8

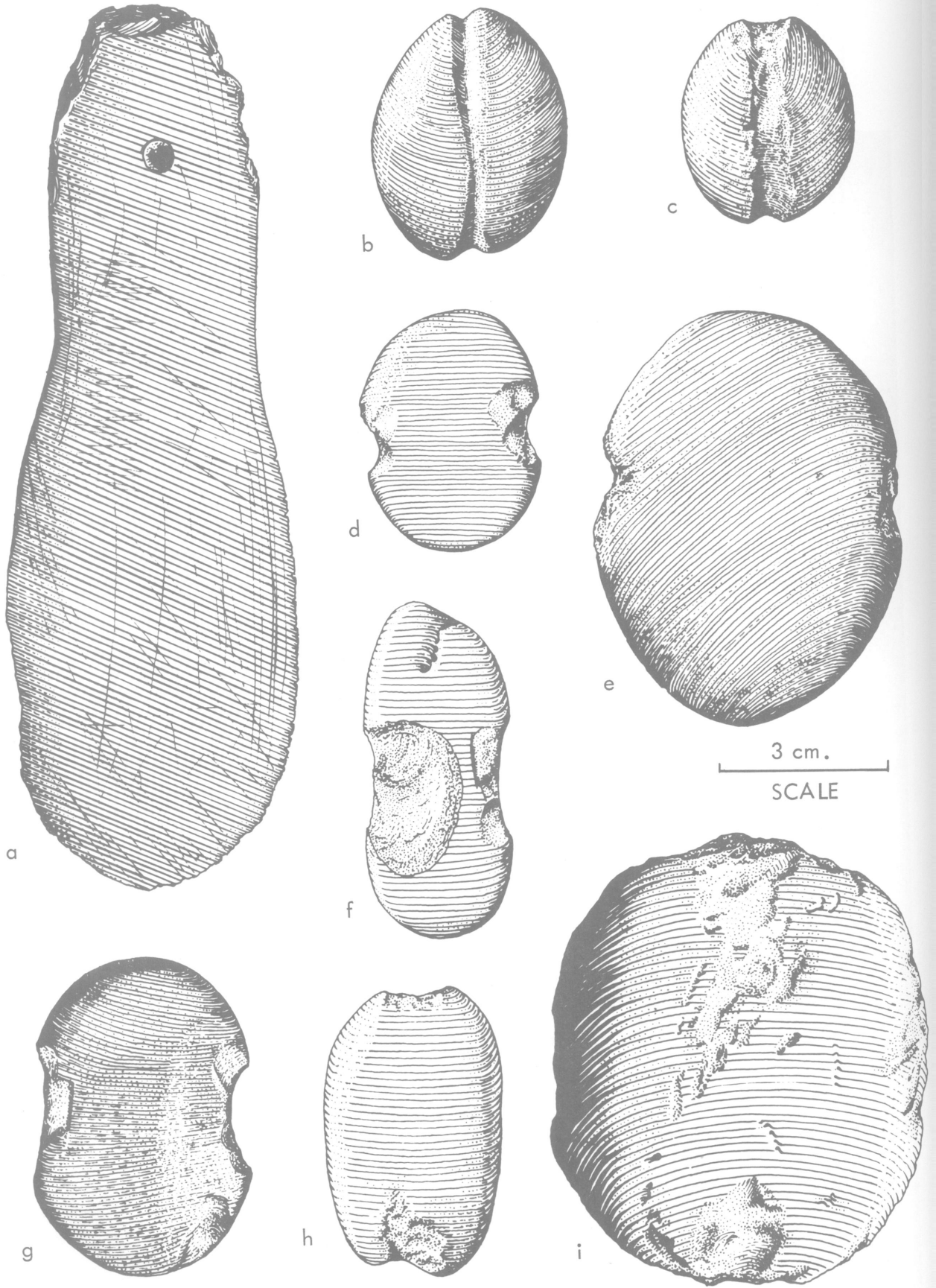


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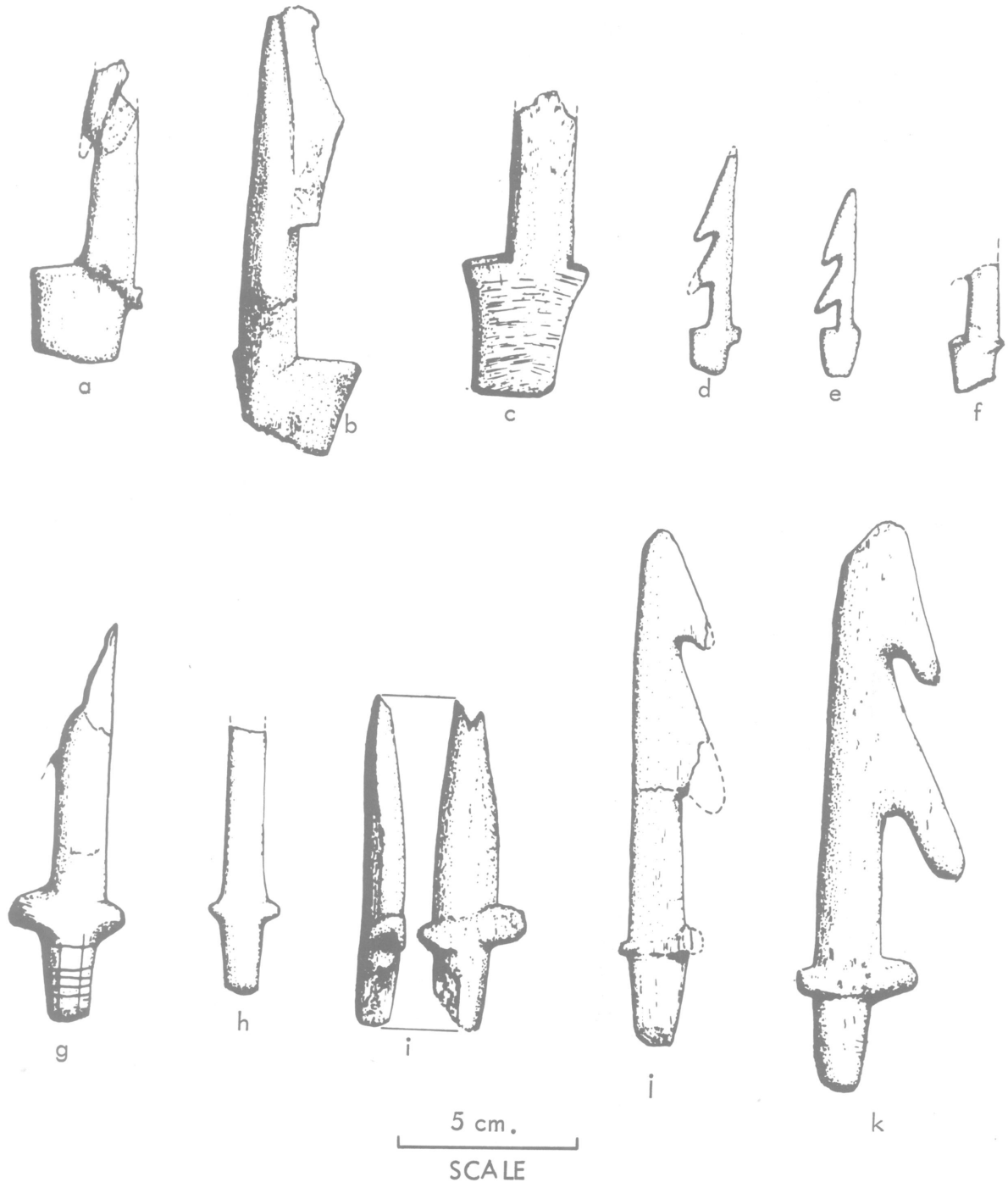


Plate 10

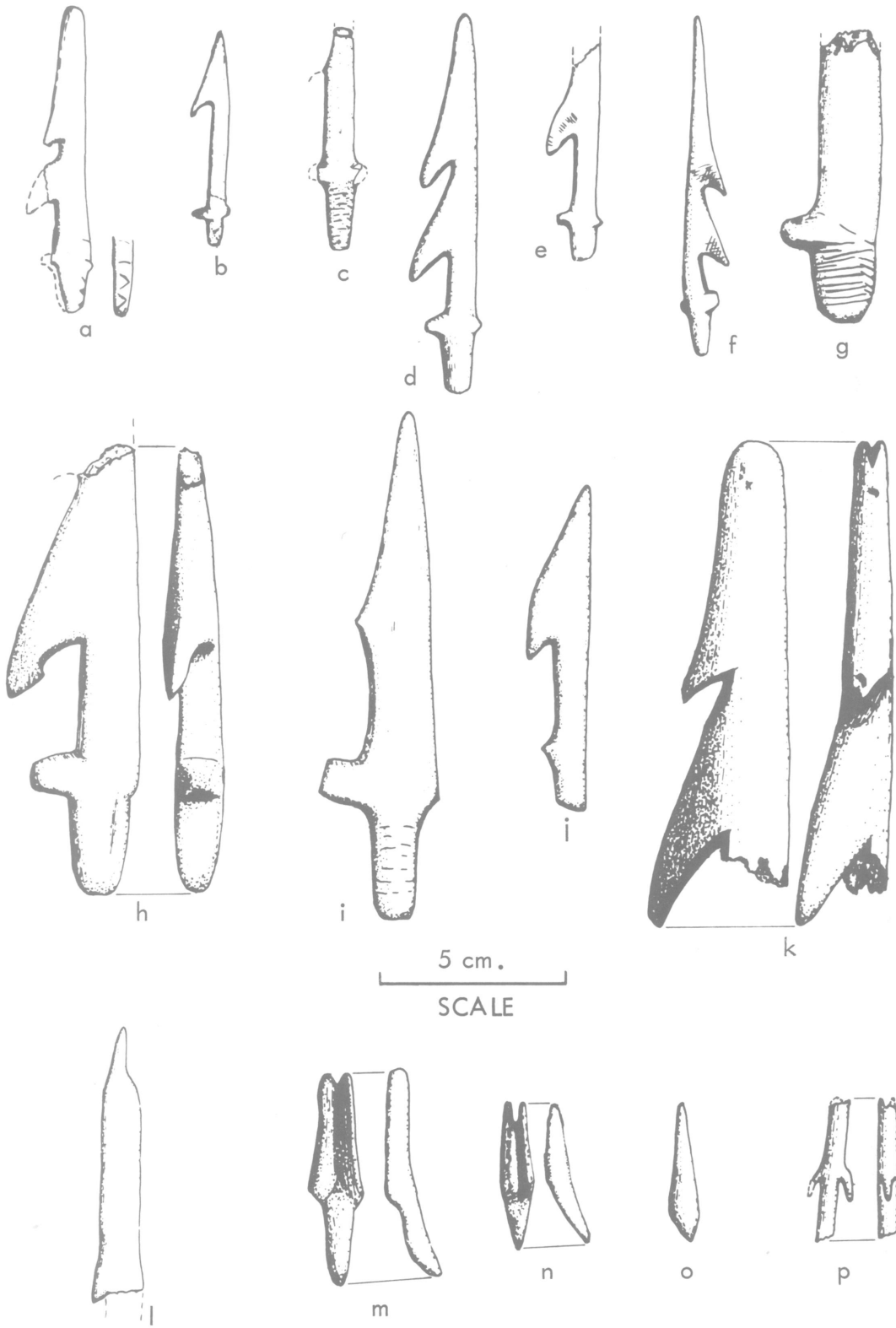
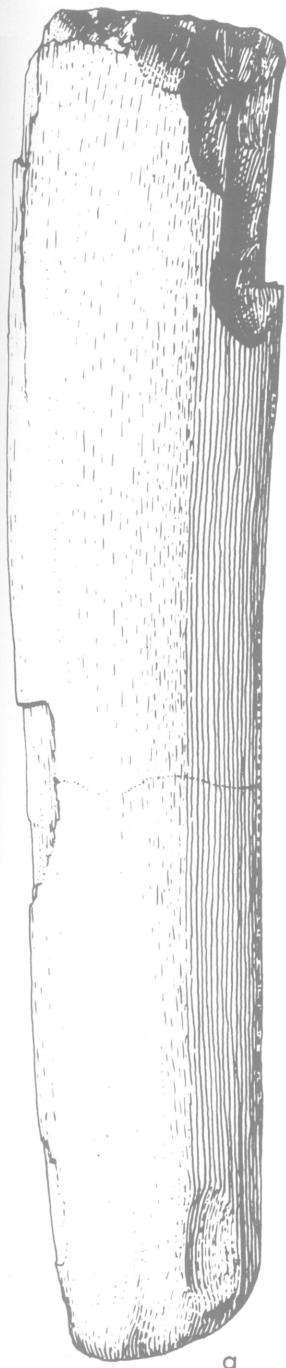
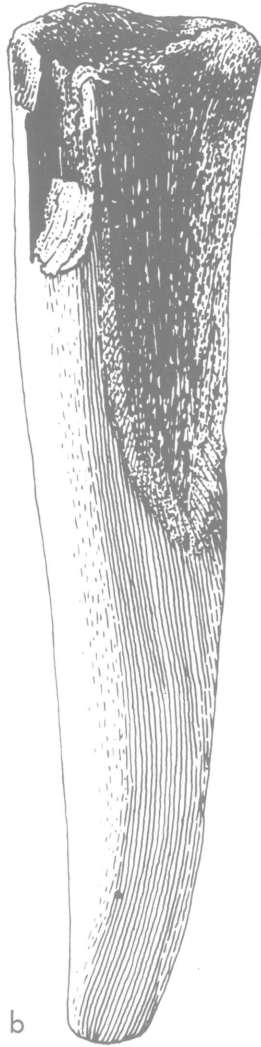


Plate 11



a



b



c

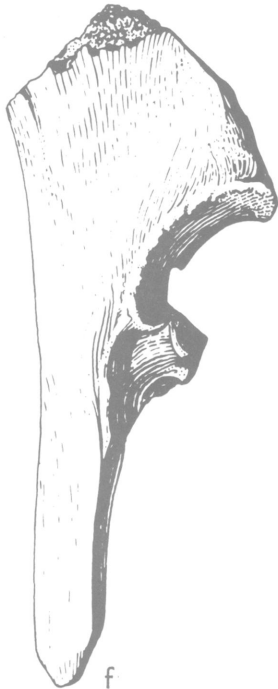


d

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SCALE



e



f



g

Plate 12

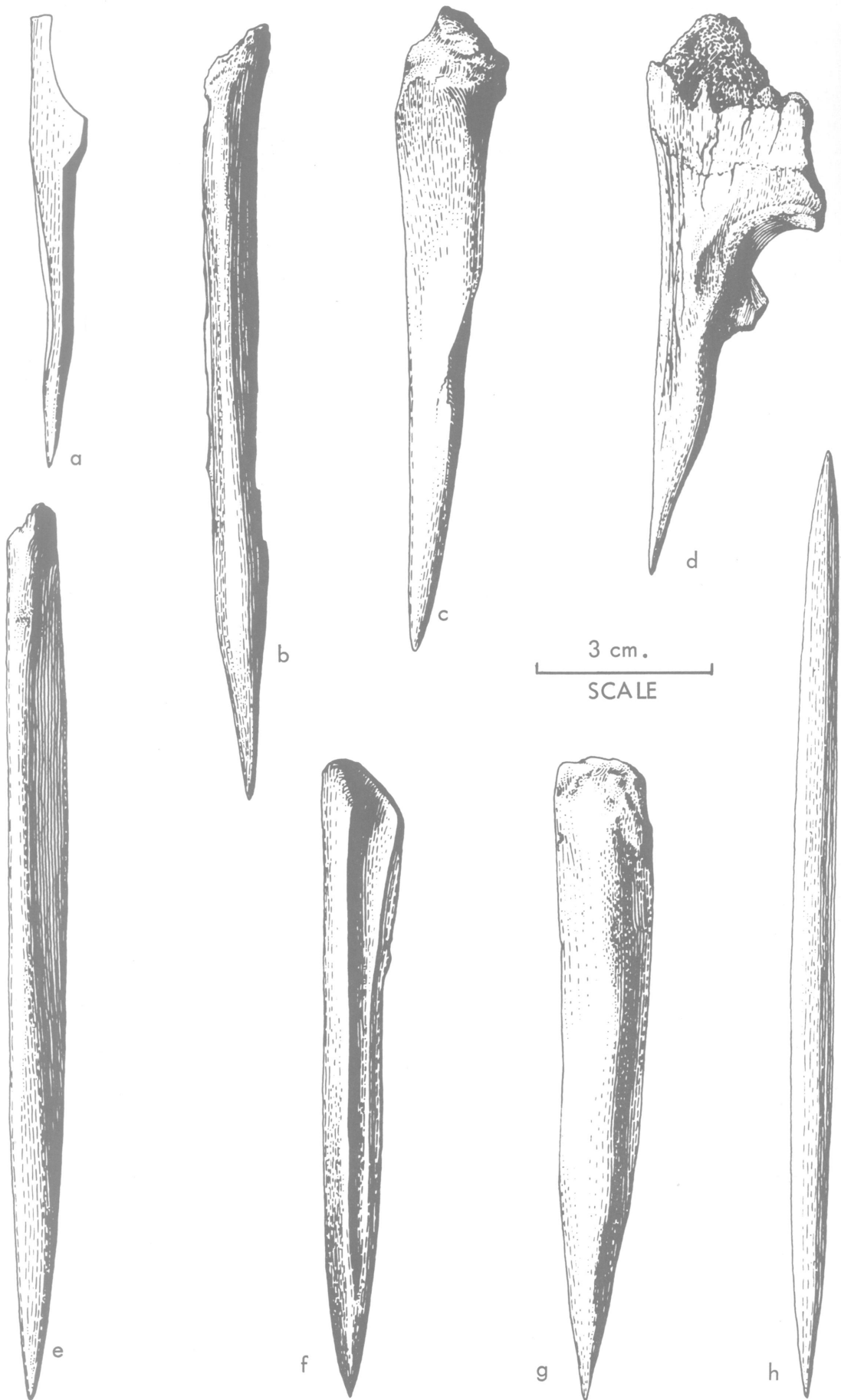


Plate 13

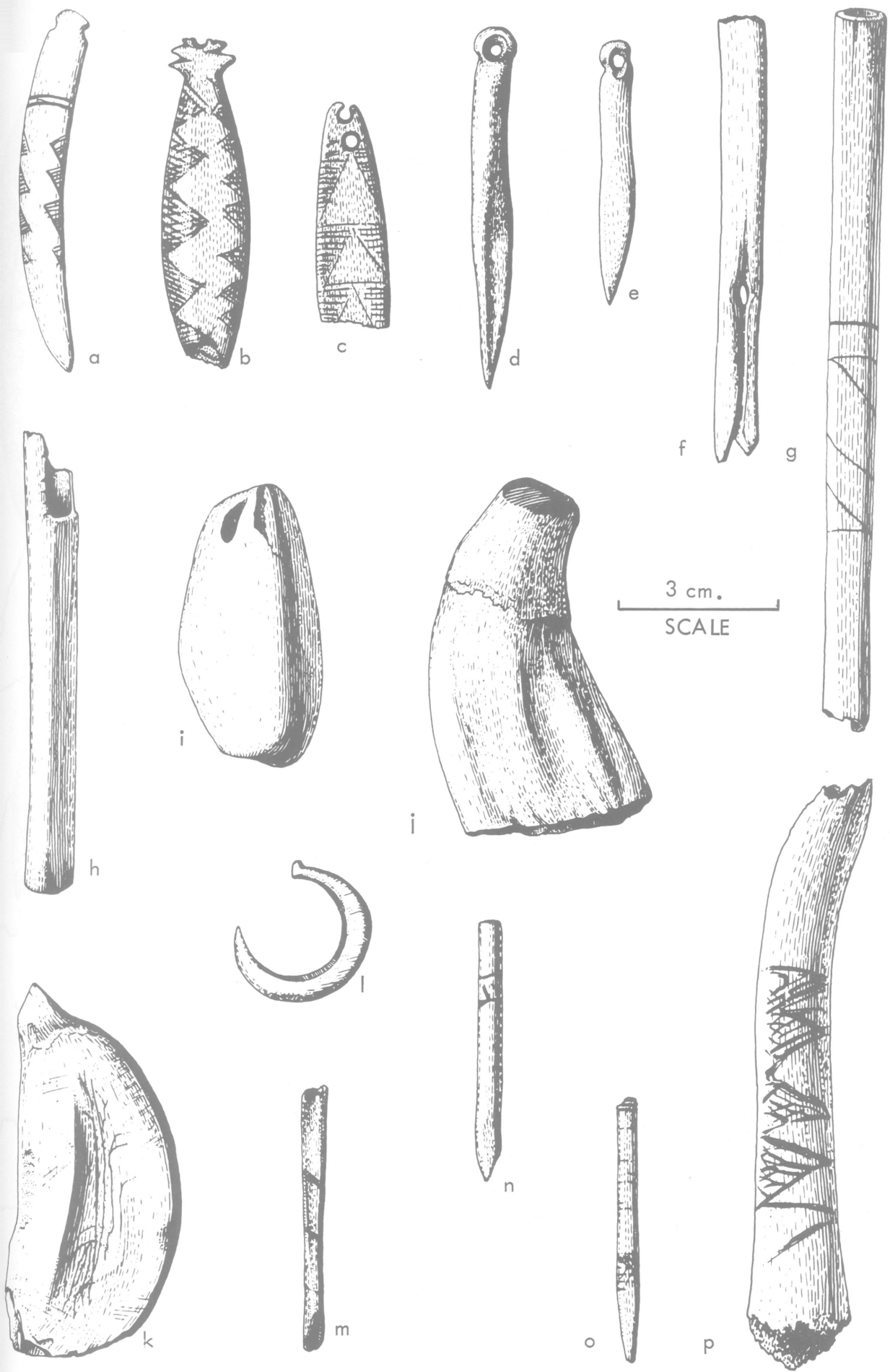


Plate 14

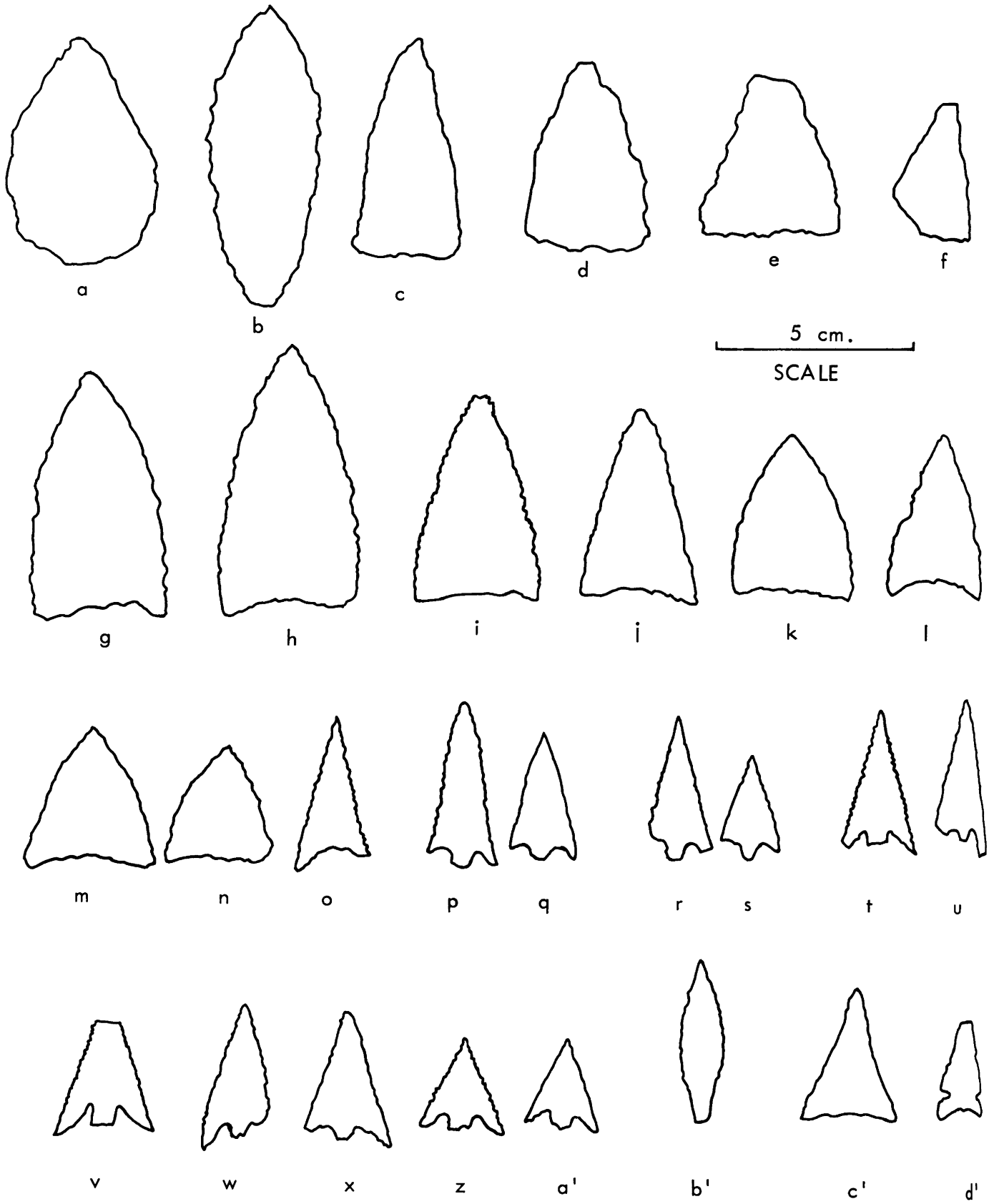
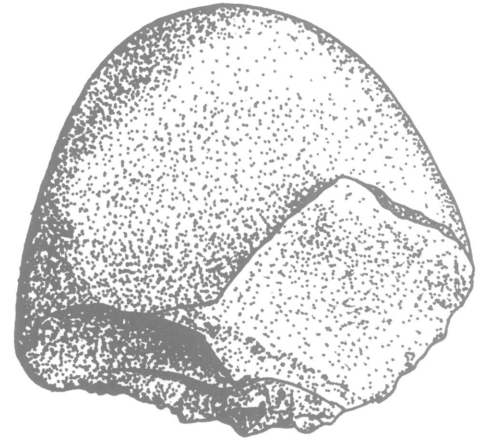
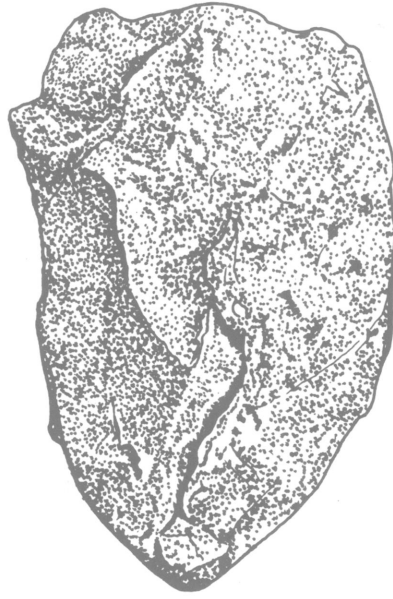
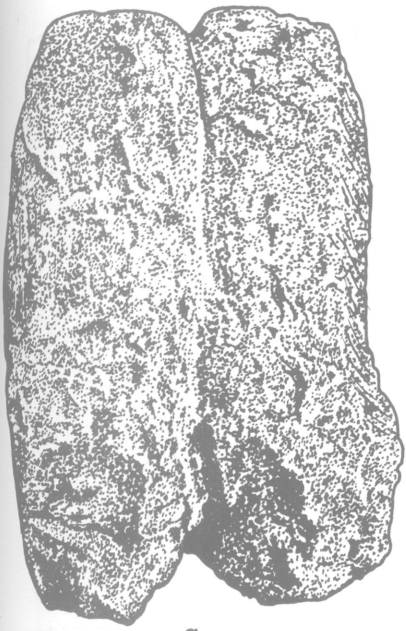


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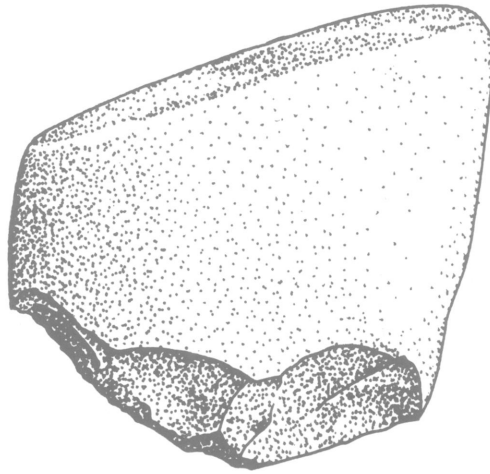


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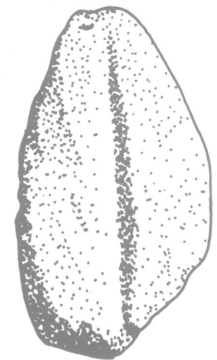
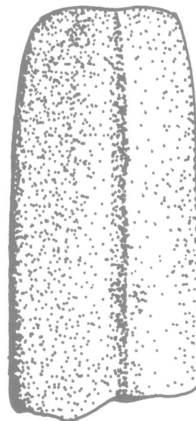
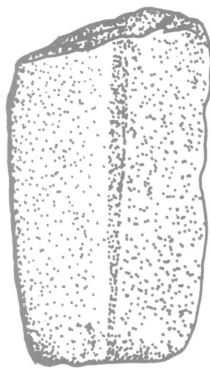
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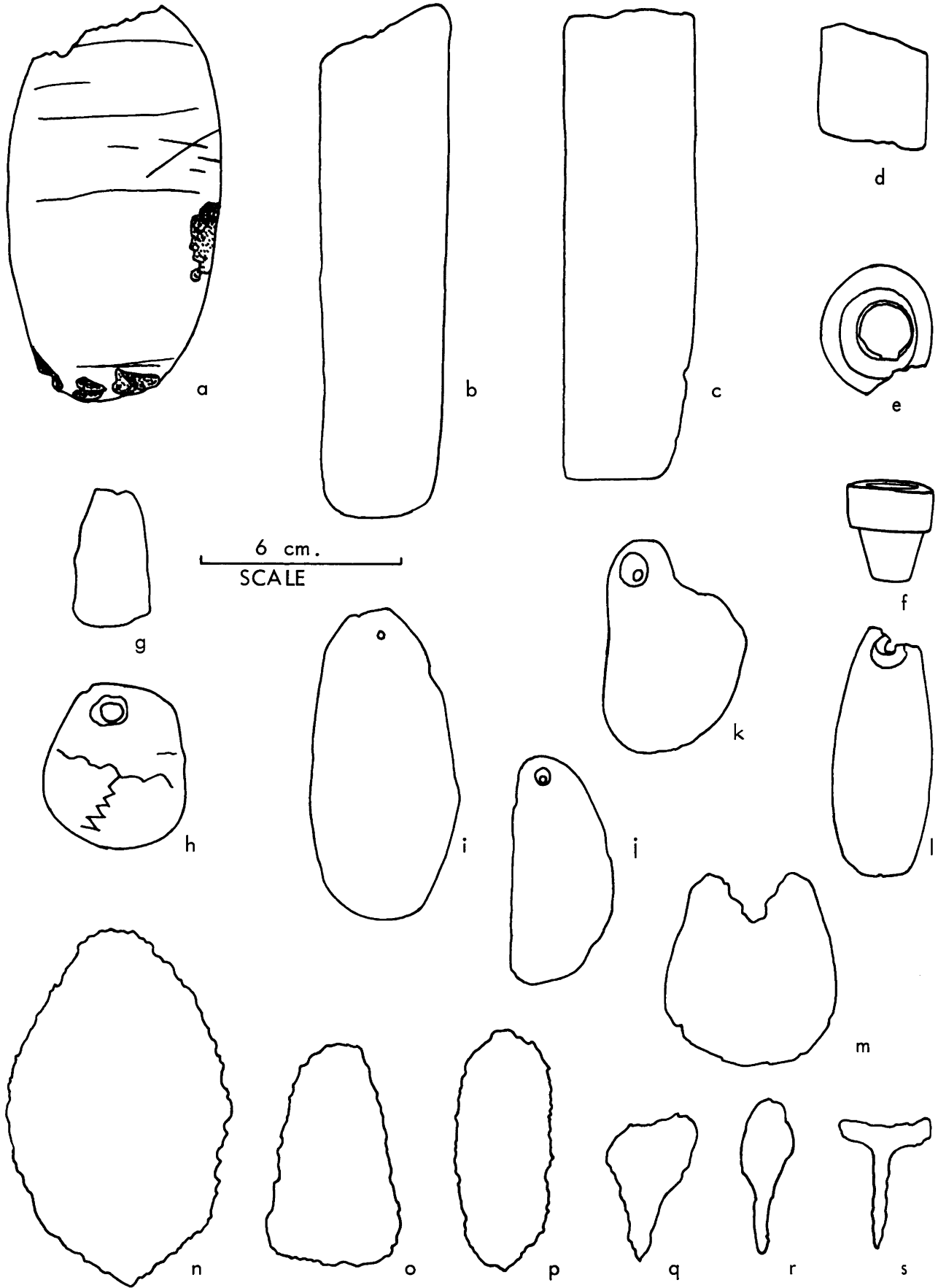


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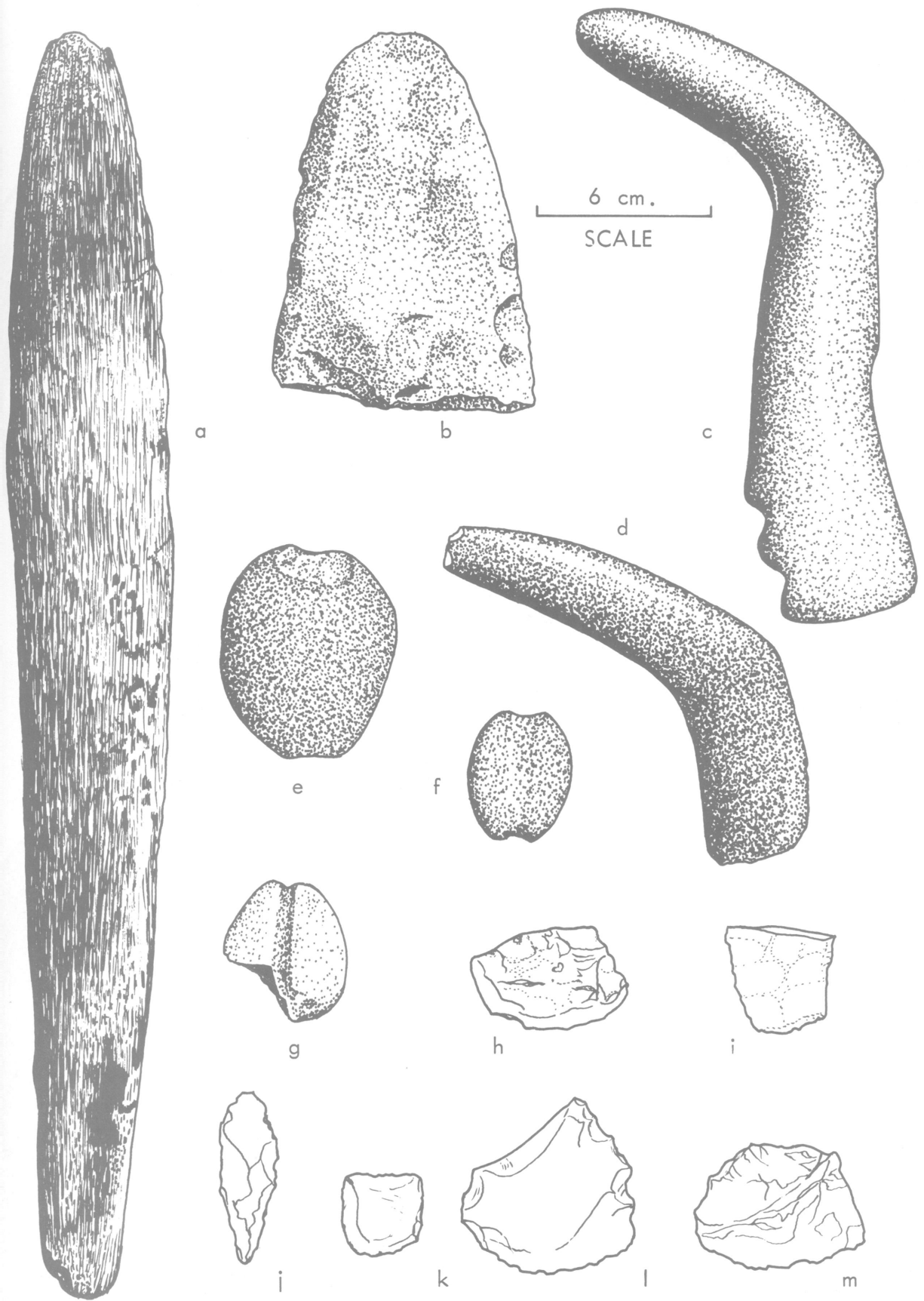


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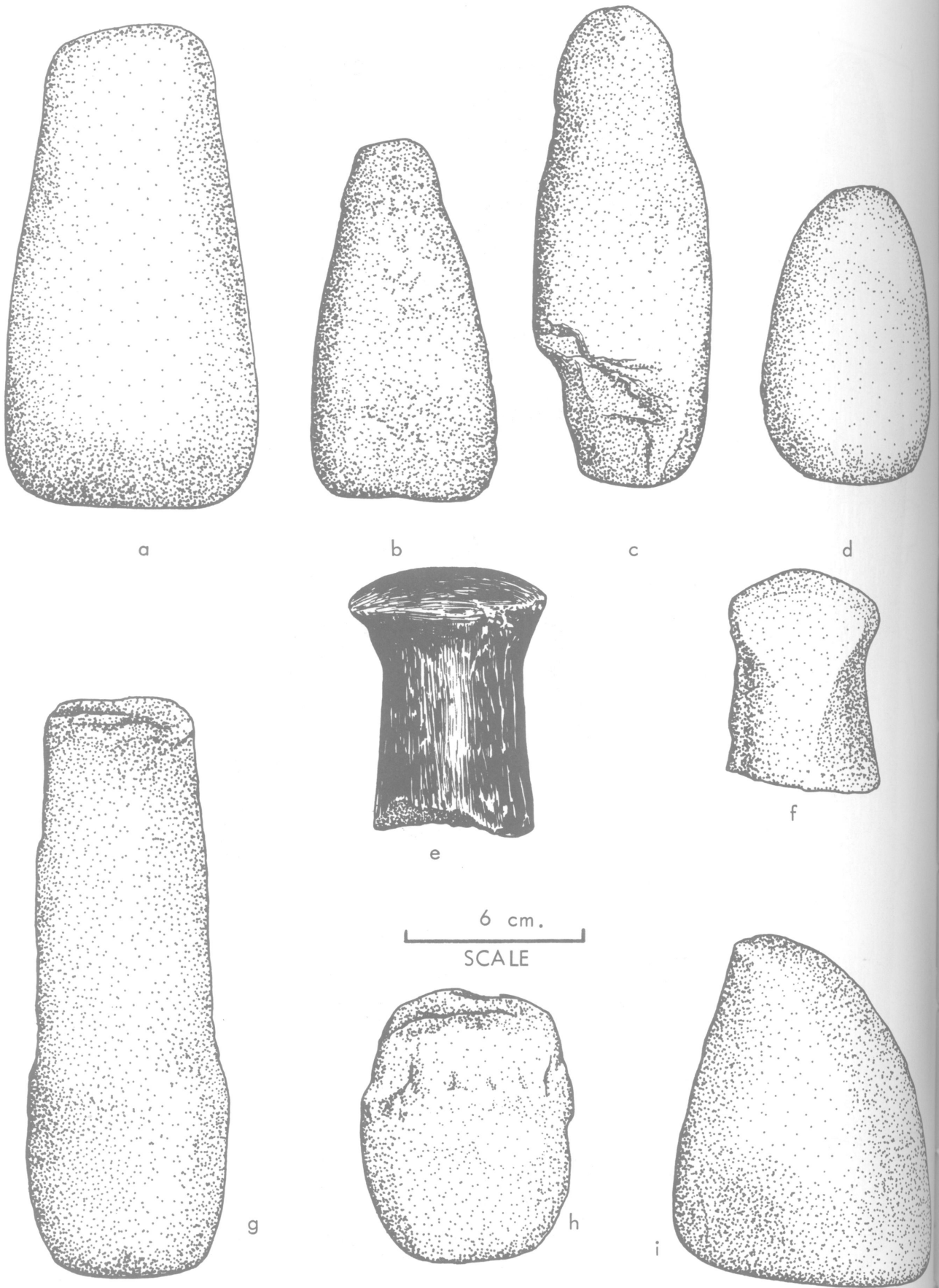


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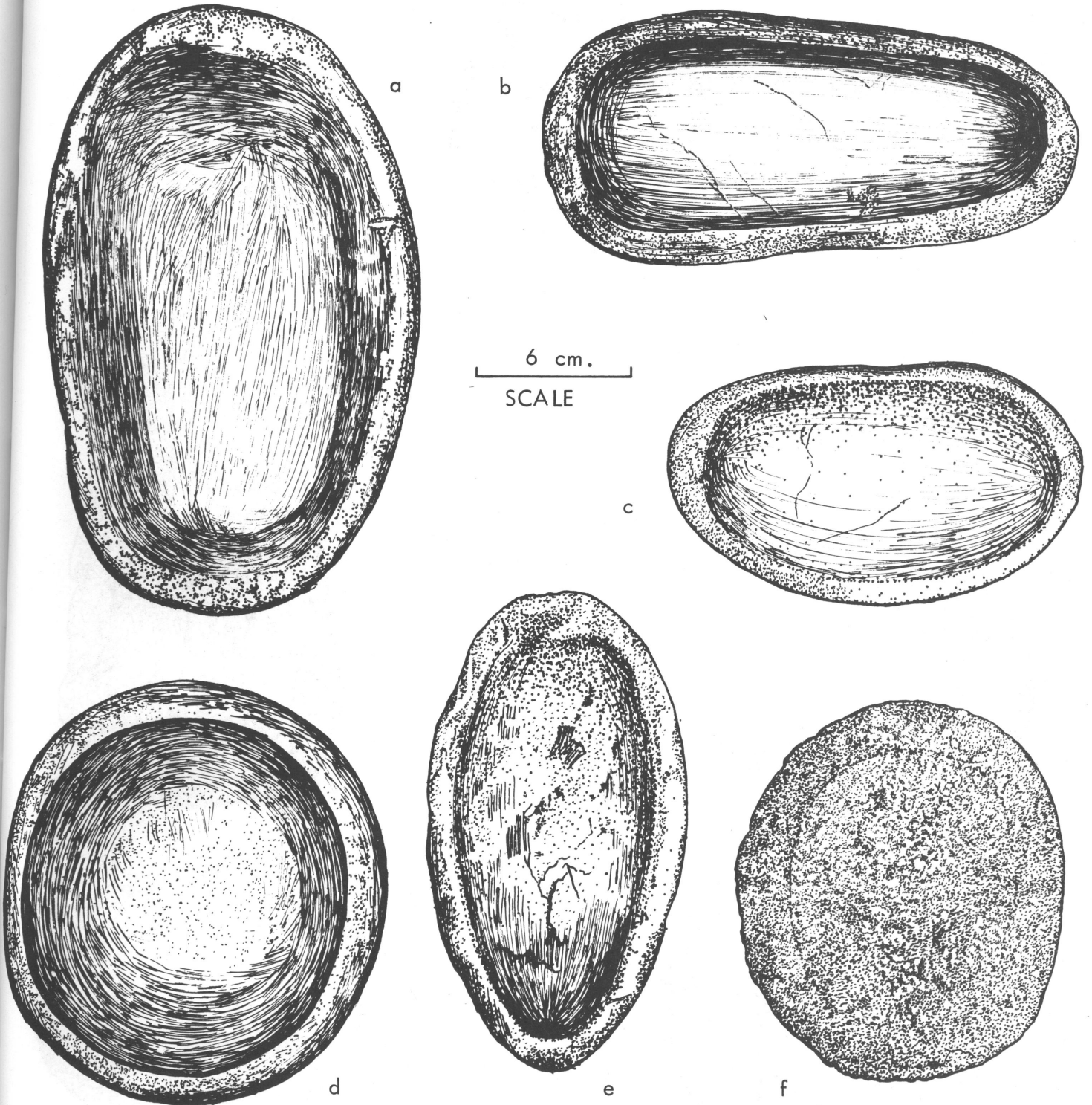


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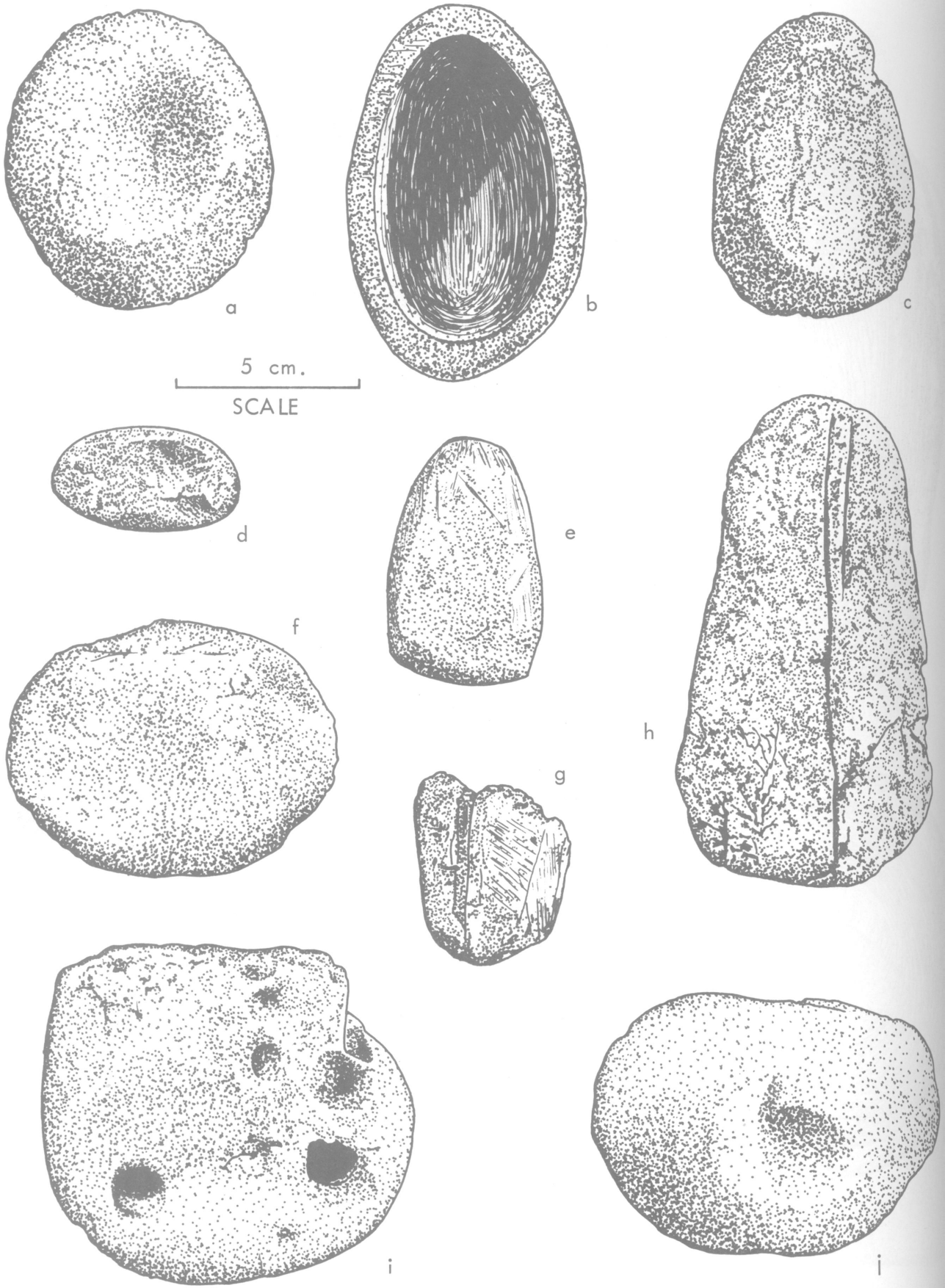


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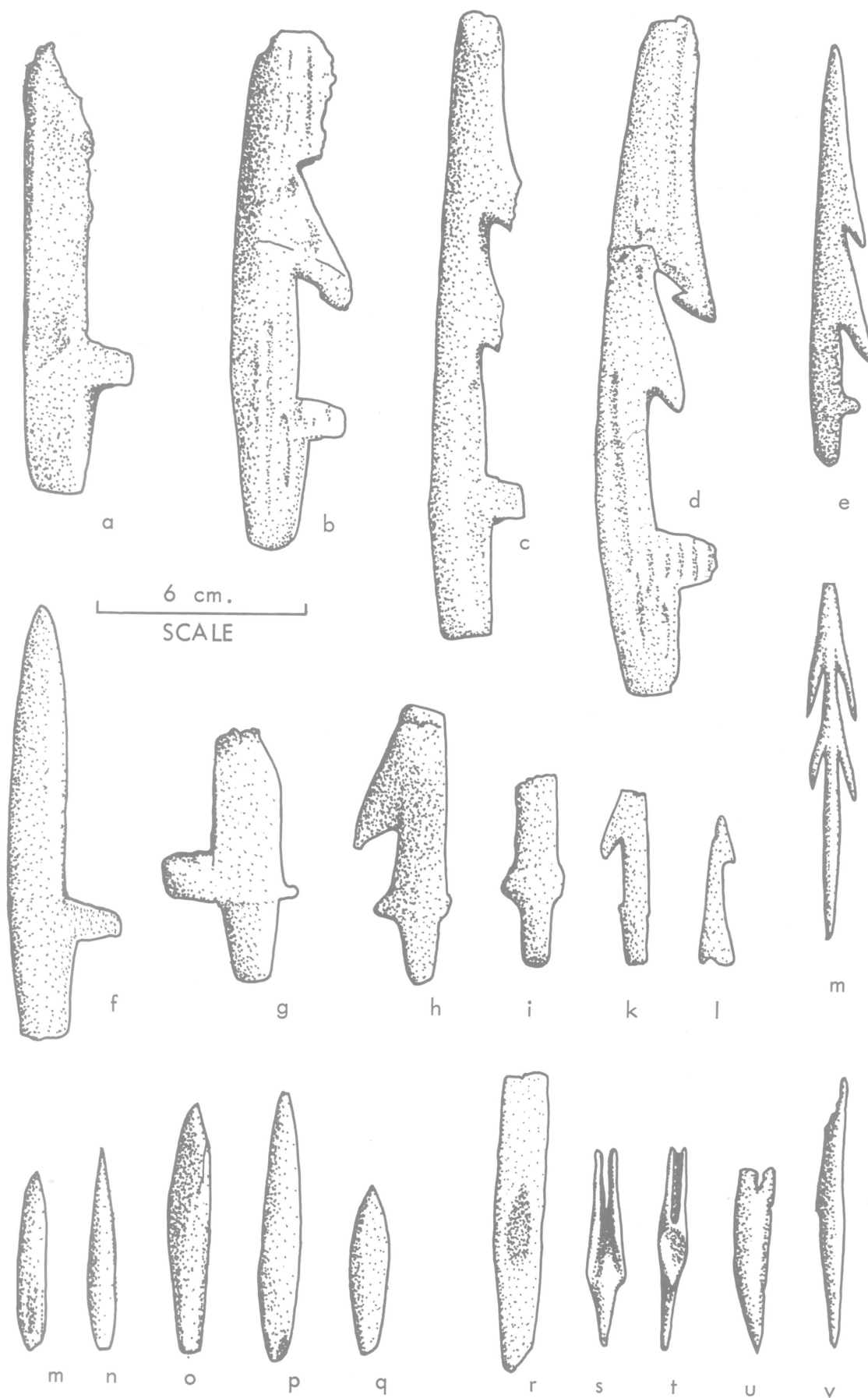


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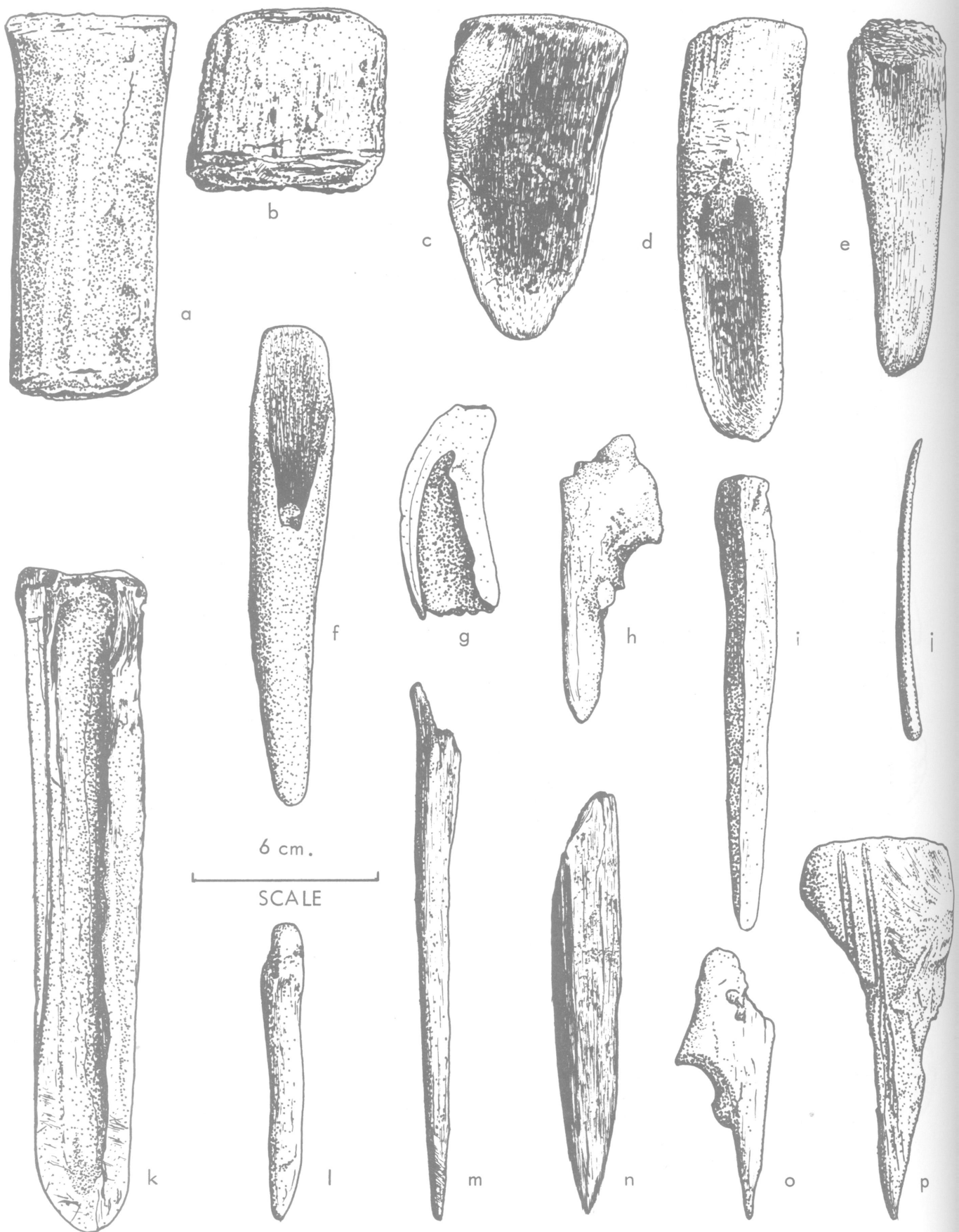


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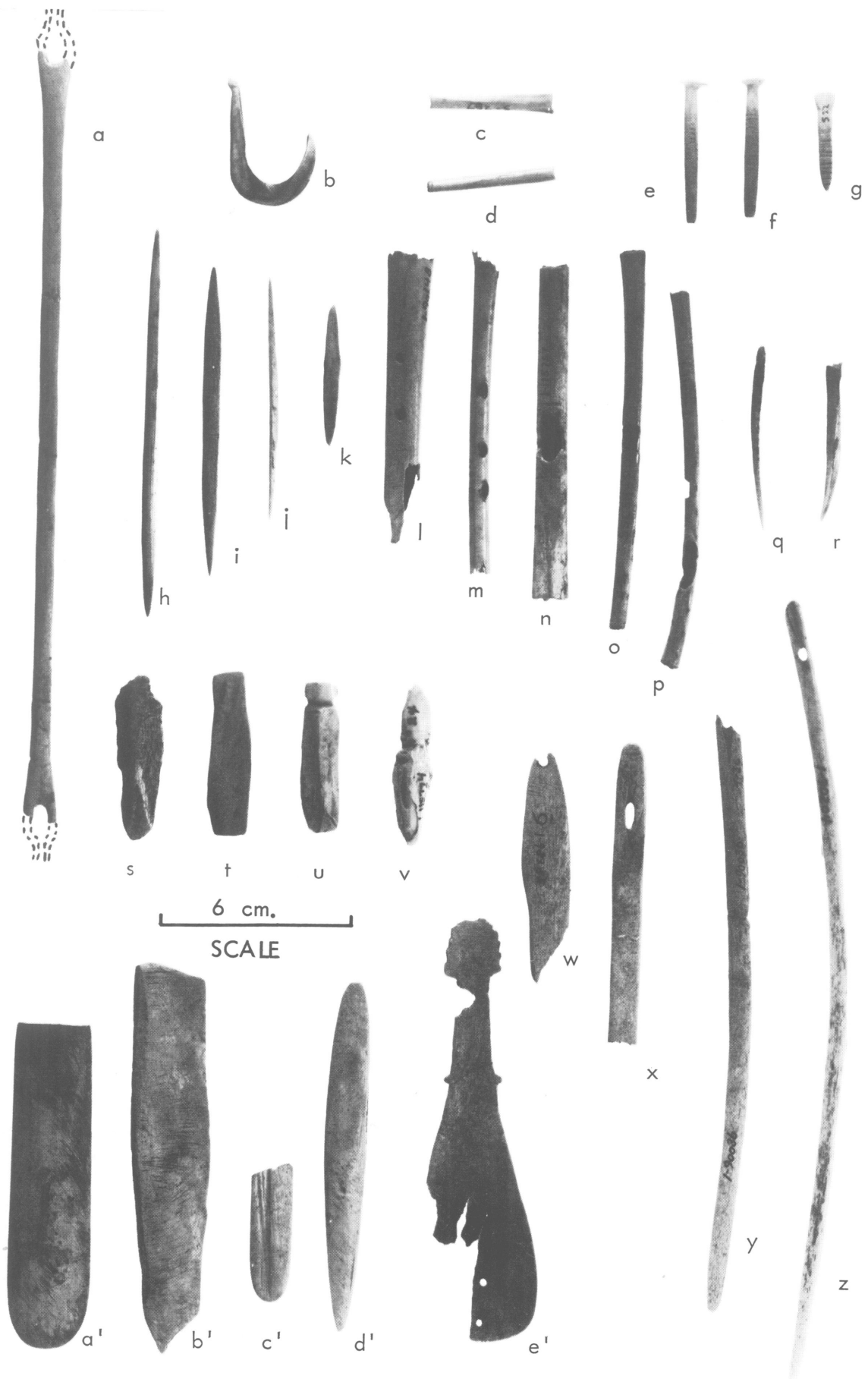


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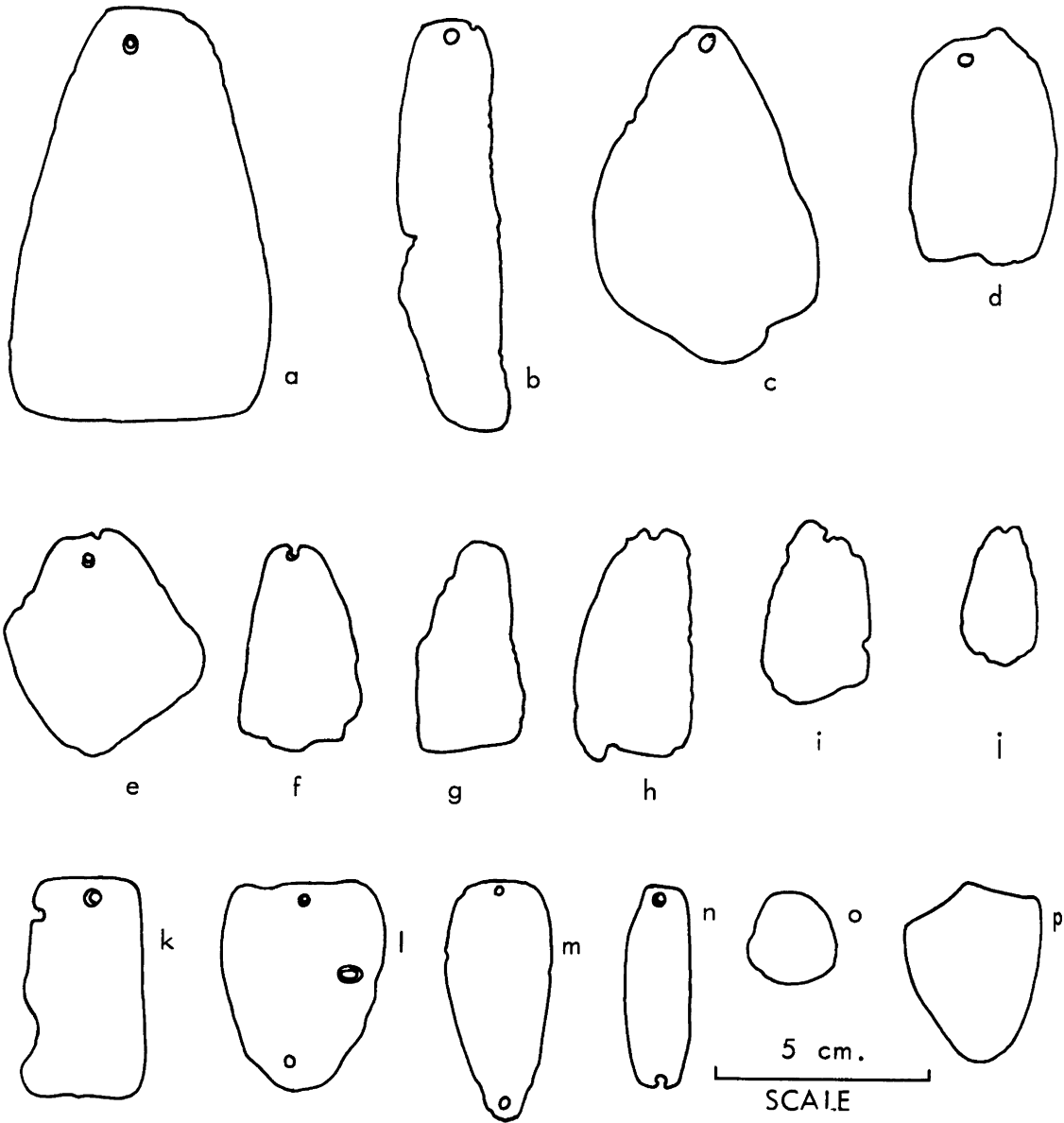


Plate 25

BIBLIOGRAPHY

Abbreviations Used

AAA	American Anthropological Association
-M	Memoir
AA	American Anthropologist
AAnt	American Antiquity
AMNH	American Museum of Natural History
-B	Bulletin
-H	Handbook
ABC	Anthropology in British Columbia
AINA	Arctic Institute of North America
BAE	Bureau of American Ethnology
-B	Bulletin
IJAL	International Journal of American Linguistics
SI	Smithsonian Institution
-AR	Annual Report
-CK	Contributions to Knowledge
-MC	Miscellaneous Collections
SAA	Society for American Archaeology
-M	Memoir
SWJA	Southwestern Journal of Anthropology
UC	University of California
-AR	Anthropological Records
-ASR	Archaeological Survey Report
-PAAE	Publications in American Archaeology and Ethnology
UW	University of Washington
-PA	Publications in Anthropology

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