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PAPERS ON CALIFORNIA ARCHAEOLOGY: 10-12

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The University of California Archaeological Survey
Department of Anthropology
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PAPERS ON CALIFORNIA ARCHAEOLOGY: 10 - 12

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10. A PREHISTORIC YUOK CEREMONIAL SITE (HUM-174)

Robert F. Heizer

During the late summer of 1949 the University of California continued, at Trinidad Bay, the investigation of the prehistory of Northwestern California begun the year before when the large shellmound at Patrick's Point State Park was excavated. Both sites lie in territory occupied by the coastal Yurok tribe. Site reconnaissance by James Bennyhoff and Ynez Haase on July 25, 1948 led to the discovery, about one-half mile south of Patrick's Point and one-quarter of a mile offshore, of a conical sea stack named locally Cone Rock or Sea Gull Rock (Pl. 1A) whose east slope was covered with a thin mantle of soil and which supported a thin growth of grass and nettles. Archaeological interest in the site derived from the finding on the surface of a number of sea lion skulls which usually had a round hole punched in the right or left or in both parietal bones. No long bones or mandibles of sea lions were seen.

On August 8, 1949 the author, accompanied by T. Bolt, A. Croft and J. Bennyhoff visited the rock in a rubber life raft and spent several hours studying the site. Visible on the surface were no fewer than 67 partial or complete sea lion skulls, and minor excavation showed that the 6000 square feet of surface of the west slope of the rock with a soil cover about 18 inches deep contained large numbers of additional skulls. We would estimate that the number of skulls on the island might run to 1000 or even more. No sea lion long bones, mandibles, or vertebrae were found, and it is clear that the skulls alone were brought here and left by Indians.

The Patricks Point site (Hum-118) yielded a large number of sea lion skulls with holes in the braincase, some with one perforation, others with two. These seemed to occur at random at all depths in the site, and except in one instance showed no evidence of having been specifically disposed of. The exception referred to was in Feature 30 (Pl. 1E) where a skull with one hole in the left parietal was buried with an incomplete dog skeleton and several minor artifacts. This aggregate could have been simply a storage or garbage pit in which a decapitated dog, sea lion skull and a few trivial artifacts happened to have been disposed of.

The Sea Gull Rock site is not an occupation site, and seemed to have served solely as a depository for sea lion crania. Of a sample of 16 complete skulls, 8 had one hole (5 in the left side, 3 in the right side), and 8 had 2 holes in the braincase. The holes were generally 2 to 3 inches in diameter, though 2 of the skulls with single holes had perforations only 1 inch in diameter (Pl. 1 B-D).

Our reasons for attributing some ceremonial motivation for the presence of the sea lion skulls on Sea Lion Rock depend upon the fact that only skulls were present. The absence of mandibles and atlas vertebrae must mean that the skulls were pretty well cleaned before they were brought to the Rock. Careful inspection of the foramen magnum and the mandible articulation areas showed no evidence of cutting marks which could be taken as evidence of the severing of the head from the neck, or the mandible from the larger skull mass. Possibly the skulls were exposed in the village and thus were well cleaned before being deposited on the Rock. None of the skulls at either Hum-118 or Hum-174 showed evidence of being gnawed by dogs or other carnivores. The excavation of site

Hum-169 the historic village of Tsurai in Trinidad Bay, although moderately extensive, failed to produce a single sea-lion skull, though numerous post-cranial bones of this animal occurred in the midden as food waste.

Some of the punched holes in the sea lion skulls from Hum-118 and Hum-174 are large enough to have permitted extraction of the brain from the interior of the skull. Many of the holes are, however, simply too small to have permitted brain extraction, and this does not seem to have been the primary purpose for which the holes were made. The special disposal on the slope of the Sea Gull Rock indicates ritual disposal of the skulls of slain sea lions, and the following references to similar practices among more northerly tribes may support this contention.

Several game animals, among them seal, sea lion and bear, are associated with certain beliefs among which is the ritual disposal of the animal's bones or skull. The special disposal of these osseous remains is explained as necessary to prevent dogs from gnawing them (Hallowell, 1926, pp. 136 ff.; Flannery, 1939, pp. 136-137; Frazer, 1935, Part V, Chap. 14, p. 259) and thus angering the spirit of the animal so that the hunter will have no success in later hunts. Thus, Hallowell (1926, pp. 136 ff.) notes numerous instances of special disposition of the bear's skull among Arctic and Subarctic tribes. The Haida and other Northwest Coast tribes show particular concern for the bear's skull (Swanton, 1908, p. 455, Drucker, 1950, el. 1494); on Unalaska the bones of the first sea lion secured in the hunting season were thrown back in the sea (Sarytchev, 1806-1807, pp. 57-58); and on Nunivak Island a similar practice for both seals and sea lions (?) is noted by Lantis (1947, p. 43.) Jochelson (1925, p. 118) observed that skulls of game animals did not occur in the Aleutian middens, and attributes this lack to their special disposal. Collins (1939, p. 248) observes that while walrus skulls were abundant in St. Lawrence Island middens, seal skulls were very rare "evidently having been disposed of in some particular manner -- no doubt thrown into the sea -- in accordance with a ceremonial custom still observed by the St. Lawrence and other Eskimos." Many of the tribes of Northwestern California, including the Yurok, ritually dispose of deer and bear bones (Driver, 1939, element 166). No ethnographer seems to have inquired specifically about how or whether sea lion skulls were disposed of, and whether the brain of this animal was extracted to be used for tanning hides or for food. On St. Lawrence Island at the Kukulik site Geist and Rainey (1936, pp. 337, 357, fig. 7) state that polar bear skulls from middens "with broken brain case... indicates the invariable custom of eating the brains of this animal by the ancient bear hunters", and describe dog skulls with holes in the parietal bone for removal of the brains for food. Collins (1939, p. 248) notes that "many dog skulls, particularly from the Old Bering Sea levels, had a large opening in the parietal region, evidently made for the removal of the brain, which must have been eaten." The Menomini remove the bear's brains through a hole made in the right temple (Hallowell, 1926, p. 140), though the purpose is not stated. Hallowell (1926, p. 143) cites similar data for the Goldi and Gilyak.

One is tempted to suggest that the perforated dog, and polar bear skulls from St. Lawrence Island, and the bear skulls of the Menomini, Goldi and Gilyak with artificial parietal openings mean the same thing as the holed sea lion skulls from Northwestern California. Possibly they do, but since the purpose of the opening of the braincase of these various animals is uncertain, we should perhaps admit several possible explanations such as removal of brains for food or hide dressing, or the ritual opening of the skull without brain removal.

Because of the strong connections of the Northwestern California culture with that of the Northwest Coast (cf. Kroeber, 1925, Chap. 59), the explanation of the ritual sea lion skull repository at Sea Gull Rock (site Hum-174) can probably be stated in terms of the southward diffusion of the idea of ritual disposal of game animal remains. So far as is ascertainable from the ethnographic literature, the coastal tribes south of the Yurok do not follow this custom, though the silence of published accounts cannot be taken as proof of such absence as witness the Yurok instance just discussed.

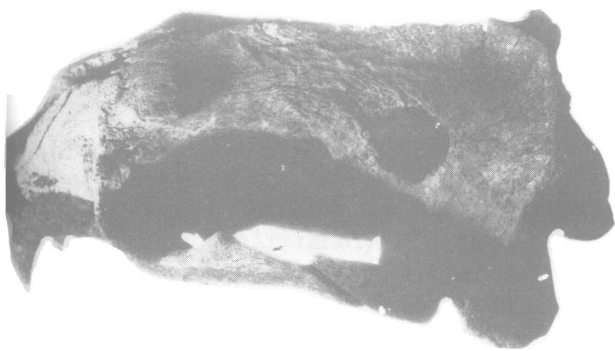
Robert F. Heizer
Director, UCAS

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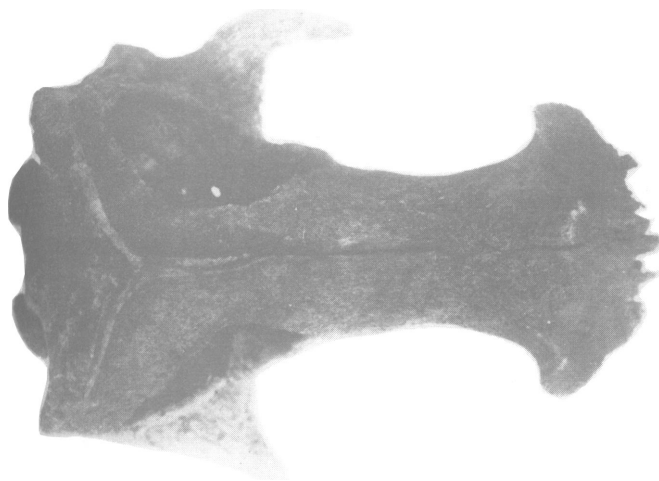
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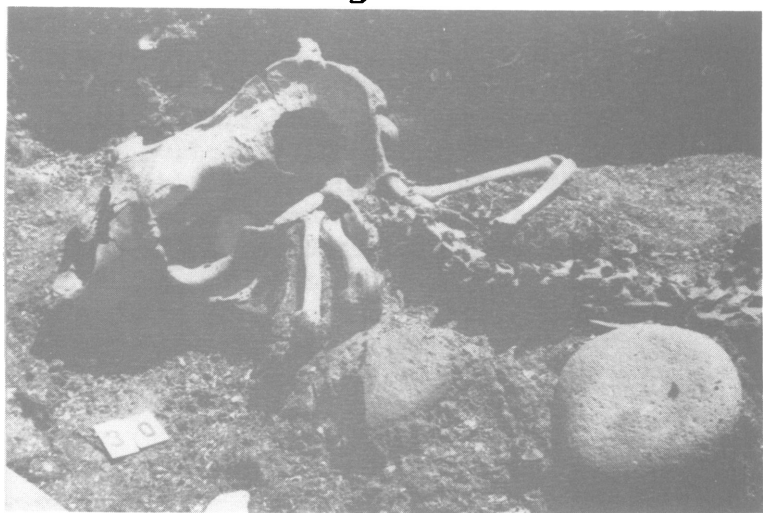
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PLATE I. SITE HUM-174; SEA LION SKULLS FROM HUM-174 AND HUM-118

11. AT THE BEDROCK OF HISTORY

Recent Remarkable Discovery of Human Remains Over Three Hundred Years Old in the San Joaquin Valley of California

A. L. Kroeber

[The following article first appeared in Sunset Magazine, vol. 25, no. 3, pp. 255-260, September, 1910. Because of its unusual interest and importance and general lack of availability, the UCAS feels that the article deserves reprinting. This same lot of Kern County material is described by E. W. Gifford and W. E. Schenck, "Archaeology of the Southern San Joaquin Valley," U.C.P.A.A.E., vol. 23, no. 2, 1926 from their site 15. The material, now in the UC Museum of Anthropology, is to be found under Accession No. 361 and is catalogued as nos. 1-14570 to 1-14598 and 12-1731 to 12-1752. Ed.]

Recently, the Department of Anthropology of the University of California was able to secure, with the courteous assistance of the Miller and Lux Company, a collection of remains, left by a prehistoric California people, which are so unique as to be of unusual historical importance and general interest.

At some time in the past, a tribe in what is now Kern county buried a number of its dead with their belongings near the edge of a flat-topped hill cut by an arroyo draining into Buena Vista lake, now more properly Buena Vista reservoir. In the course of time the intermittent stream widened its cañon, until in the winter of 1908-09 that part of the upper surface of the mesa in which the burials had been made, slide down into the bottom of the gulch. Here part of the bones were uncovered and this led to the discovery of the collection.

These ancient people, whoever they were, cremated or at least partly cremated their dead, a custom which was also followed by the Indians living in the Tulare Valley within the historic period. The burnt or half-burnt remains were subsequently buried. Other individuals, for some reason, seem to have been buried without being previously placed on the funeral pyre. According to the habit of almost all Indians and prehistoric peoples, the principal belongings of the dead were consigned to the earth with them. The objects which were buried in this instance comprise articles of basketry, netting, string and rope, matting and wood. Implements of this sort that have been made and used by the modern Indians of the state are well known, and large collections of them repose in the University Museum for permanent preservation and the enlightenment of the future. The objects found in this discovery are remarkable in being of a perishable nature and yet by some fortunate chance preserved from a prehistoric period. The aboriginal inhabitant has left behind him innumerable remains of his work in hard or indestructible materials, so that mortars, pestles, arrow-points, flint-knives, pipes, charm-stones, sinkers, bone-awls, and shell-beads have been found in abundance in almost all parts of the state. But it is only once in a thousand times that articles made of fragile and delicate substances, such as vegetable fibers and hair, are preserved in the ground intact for centuries. When such are discovered they are consequently of special importance, because of the information they give as to those sides of the life of

ancient people of which the material evidences are usually destroyed by the lapse of time and the elements, so that the archaeologist is compelled to content himself with mere guesses.

In another respect this collection is unique. Almost every piece in it tells a story. This, however, is best made clear by an account of the actual objects. Probably the most interesting specimen is the human skull which is here illustrated (Pl. 2D). An arrow has penetrated clear through the head. The point entered the eye, destroying it, and piercing the thin socket of bone in which the eye rests. The arrow then continued downward and somewhat to the rear, through the interior of the nose and upper part of the mouth, striking no bones except some of the thin plates of the inner air-chamber of the nose. The point then passed below the joint of the left jaw, either coming to rest against the bone of the lower jaw, or perhaps piercing the softer tissues and emerging.

It is clear that the wound was inflicted at close range. The force of a good arrow is tremendous when it leaves the bow, but quickly diminishes in its flight on account of the resistance of the air. In this case only the thinnest walls of bone intercepted its progress; nevertheless, a considerable body of muscle and tissue was penetrated, so that the man behind the bow could not have been more than a few yards from the one he shot. Then the direction of the shot was downward and nearly from the side. The Indian habit in battle was to watch for the arrows and either receive them on a shield or avoid them by dodging, at which the warriors by long training were very expert. In the excitement of a fight all possible positions are likely to be taken and a lucky shot may catch a man in almost any attitude. The arrow must, however, have had a practically horizontal flight. If shot upward into the air and again descending, it would no longer possess the momentum to pass entirely through a man's head. The victim, dodging to the side to avoid one arrow, might have been caught by another; but if so, the part of the shaft that remains imbedded shows that he must also have been inclining his head, which seems an unlikely thing to do in battle.

Considering everything, it therefore seems probable that the wound was not inflicted in open fight but upon an unsuspecting victim. It has been an immemorial habit of the California Indians to kill such of their medicine-men as lost several patients in succession. Their faith in the powers of the shaman was so implicit that they endowed him with almost absolute power of curing disease. If a sick person died, they therefore argued that it must be through the neglect or malevolence of the medicine-man, and if ill-fortune brought him two or three fatal cases within a short period, suspicion became a certainty. The first opportunity was then sought by the relatives of those who had died under his care to destroy him. This custom is so deeply implanted that even to-day Indian medicine-men are sometimes killed, and there is little doubt that the majority of unexplained murders of Indians which are constantly occurring in all parts of the state are from the same motive, though fear of the white man's law prevents its public acknowledgement.

A favorite method of disposing of the marked medicine-man is to ambush him outdoors. At other times he is attacked while asleep. The direction which the arrow took through this skull favors the latter supposition. The position of the arrow and its penetrating power are explained perfectly if we imagine the murderer to have stood a few feet from the head of his unconscious victim, who was sleeping on his side. Very likely he approached so near that the point

of the arrow almost touched the head, and then shot downward at an angle. The fact that the arrow first struck the eye also favors this supposition, for the chance is but slight of this organ being struck in a fight, whereas, as everyone knows, it is the part that is instinctively and most naturally aimed at when there is opportunity for aim.

In any case, there is no question that the shot accomplished its purpose. Death was not instantaneous. The victim may have been dispatched by other wounds, or his friends may have had opportunity to try to remove the arrow. The barb of the point would, however, have prevented its being extracted by the way it entered, while if the point rested against the bone of the jaw, there was no possibility of pushing it through and out. Death certainly resulted soon. The body was then placed on a pile of wood for cremation, with the shaft, or part of it, still imbedded. The work of cremation was, however, hastily or imperfectly done, perhaps because suitable firewood was scarce. The charred portions of the skull, as visible in the photograph, show where the flame consumed the tissues and blackened and calcined the bone. The ends of the arrow were also burned off, as the blackened stubs prove. The section of the shaft which was most deeply imbedded, however, was so well protected by the surrounding tissues that the flame did not reach it, and it is not even charred. After the attempt at cremation, the remains were buried. The flesh and skin decayed, but the wooden arrowshaft offered more resistance to the elements and was preserved just as it had rested in the face.

Indian bones with stone arrow-heads imbedded have sometimes been found, and a greater number have been forged, but there is probably no case on record of part of an actual arrow remaining in position in a skull for centuries after decomposition of the flesh.

Another skull (Pl. 20) in the collection gives evidence of a different sort of death. There is nothing to show that this individual, who was also an adult male, came to a violent end. In his case preliminary cremation for some reason was not attempted. The eyes were covered with two square plates of abalone-shell. Into each nostril was inserted a long curved piece of shell taken from the lip of the abalone. Such curved pieces have been found in great numbers in the graves of the ancient California Indians, but usually as ornaments, and so far as known, they have never been observed used in this way. Finally, the head was wrapped in a beaver-skin. Time has also dealt leniently with this remnant of what was once a man. Part of the scalp and hair are preserved. The larger portion of the beaver-fur remains, pressed by the weight of the adjacent earth closely on the scalp and bone, so as to resemble a matting of felt. Tightly fitted in this matting are small shell-beads of the wampum type.

Several other human remains show remarkable features. The most interesting of these consists of the complete leg and foot-bones of an adult, apparently a man. The flesh has almost entirely passed away, but considerable portions of the skin remain, shrunk fast to the bone by the decomposition of the intervening tissues. Both limbs seem to have been entirely wrapped with string. In part the string enclosed masses of tule fiber, which were first laid along the leg. The photograph shows what remains of this string, and how about the feet and ankles, where the fleshy parts form but a thin covering over the bone, it was wrapped most closely and has best preserved its original position.

A similar set of limb-bones (Pl. 2B), lacking however, the feet, was found wrapped in masses of tule and tule fiber. These bones are from a youth or a young girl but yet fully grown. Of special significance is a mass of human hair, consisting of a dozen strands or locks, around which is wrapped one end of a long, fine net (Pl. 2A). Nets of this type were used by the recent Indians of the Tulare valley. They were made of very fine string. Either the net was twisted or folded into a sort of band or more frequently spread over the head and the long hair confined within it. The locks to which this net is attached are, however, identical with the coiffure of certain tribes of southern California, such as the Yuma and Mohave, who practice a peculiar style not followed among the Indians north of Tehachapi. The hair is allowed to grow full length, and is then rolled, plastered, and twisted, but without actual braiding, into from twenty to fifty or more long, slender, straight cylinders of about the thickness of a lead-pencil. The ends of these are trimmed off evenly at the waist-line or even lower. The fragment preserved shows that just such locks were worn by the people who made this burial.

Five basketry pouches or bags were found. In weave these are identical with the baskets of the modern Indians, but are entirely distinct in two respects. In the first place, the materials used are all soft, so that while the technique is strictly one of basket weaving, the product is as soft and flexible as thick cloth. All the modern basketry from California is quite stiff and hard in comparison, the only exception being certain large wallets or pouches among the Indians about San Diego. The photograph [not reproduced in this reprinting] shows the circular bottom of one of the five pouches found in the present discovery and part of the side. The remainder has been torn away or has rotted off and been lost.

The second distinctive feature of this work is that the ornamentation is practically all confined to patterns made by weaving in strands or strings of human hair, black, of course, as the Indian's always is. This is quite unexampled and unexplained. We know that all the California Indians, when in mourning, cut their hair short, and the hair that was cut off was sometimes preserved and made into belts or other objects of ceremonial or sacred use. There is no previous case on record of human hair having been employed for any such utilitarian purpose as ornamenting basketry. These ancient people, however, made an extensive use of hair, as is also evidenced by the finding of fragments of string of this material.

Other objects bearing a fascinating significance to the archaeologist, but which must be passed over here, comprise a sack of network with a draw-string to close it; fish-nets of various sizes and strength; a fragment of aboriginally hewn plank painted red, of which the ends and one side are charred by fire, and of which the purpose is entirely conjectural; string and rope of various thicknesses, made chiefly of shredded tule and of the fiber of the mescal plant of southern California; and finally, fragments of tule matting, some of them woven and some sewn through, of the same type that the Yokuts Indians of the Tulare valley used as bedding and for the walls of their huts until a few years ago. There are only two objects that it will be possible to describe separately.

One of these is the skull of an eagle, evidently carefully prepared. Both eyes were covered with circular disks of abalone shell nearly two inches in diameter, fastened in place with some sort of gum. Such treatment of the dead was usually accorded by the Indians only to human beings, and when applied to

an animal is therefore clear evidence of religious worship. A parallel comes from southern California. The Diegueño and Luiseño Indians of San Diego county practise what is called the Eagle Ceremony, which is a form of mourning ritual held in honor of a chief. The principal act of the worship is singing over a captive eagle, which is finally killed by pressure upon its heart. The feathers are then carefully kept for dancing regalia, to be used in future repetitions of the ceremony, while the body of the eagle is buried as carefully as if it were a man. Evidently this same ceremony, or something very like it, was anciently part of the religious worship of the Indians inhabiting the Tulare valley.

The last piece which can be mentioned consists of a blanket. This fact is in itself remarkable, for no Indians within California have ever been found to possess the knowledge of weaving cloth, nor have even fragments of cloth of any sort been discovered in their graves or among their remains. This piece is of plain white cotton, about six feet square, and preserved almost completely. Its last possessor, however, had strange notions of the purpose of a blanket, for he cut or tore in it two large holes, through which he could pass his arms, and then wore the blanket as a cape or coat. The piece was clearly not made for such a purpose, for in that case it would have been woven of the proper shape, or the armholes would have been smoothly cut out and edged, instead of being frayed. A comparison of this blanket shows it to be identical in material and appearance with the textile goods manufactured by the cliff dwellers and ancient Pueblos of New Mexico and Arizona. The Pueblo Indians as known in historic times have made no cloth of this nature, preferring instead heavy goods of a very different texture. There can be no question but that this piece was made by an ancient cliff-dweller or Pueblo of New Mexico or perhaps eastern Arizona, was carried in the course of trade as far as central California, and there fell into the hands of some less civilized aborigine and was converted by him into a garment by the rude process of punching out two armholes. This is the first clear evidence of prehistoric communication between the Southwest and that part of California which lies north of Tehachapi.

Who were the people that left these remarkable remains, what were their affiliations, and how long did they roam over the plains and hills of the southern San Joaquin valley? The age of the objects can only be estimated. A prematurely hasty supposition, based only on the perishable nature of many of the materials, might put the age at only a century or less. It must be remembered, however, that much of the west side of this valley, especially at the upper end of the San Joaquin-Tulare valley, is exceedingly arid. The burials were made on an elevation, in firm yet porous soil, so that the drainage conditions as regards rainfall were almost ideally perfect. It is doubtful if the objects were even damp more than a few days in the year. As articles of hair, wool, cotton, fibers, and wood have been found well preserved after thousands of years' burial in Egypt and Peru and other desert regions, there is no reason against the assumption of a high antiquity for this discovery, if other circumstances so demand. And such circumstances there are.

In the first place, no article of European manufacture, or made from a substance imported by Europeans, or showing the influence of European civilization, occurs in the collection. All the twine and rope, with the exception of one extra-heavy fragment, is two-ply. The rope and string of civilized peoples is almost always three-ply; but it is regularly two-ply if of aboriginal Indian manufacture. Then, most of the objects are in a fragmentary condition, and this in spite of the favorable situation and protection. The basketry pouches,

the string made of mescal fiber, the decorated eagle skull, the style of wearing the hair, are all unexampled in the interior of the state and find parallels only in southernmost California. It is therefore necessary to suppose either that a people allied to the Indians of southern California, or perhaps their very progenitors, lived in the Tulare valley at the time these articles were made; or at any rate, that the customs and habits which are now characteristic only of southern California extended at the time in question much farther north.

In either case a long period of time must have elapsed. The California Indians are noted for being vehemently attached to the particular locality where they have been born. They can be induced only with difficulty to remove from their homes, and ethnology, history, and the evidences of language show that they have all been for a very long time sedentary and stationary. Movements of population undoubtedly must have occurred, as they have taken place everywhere else, but they were slow and gradual shiftings of bodies of people, not true migrations. Such a gradual shifting from Buena Vista lake to southernmost California would have occupied at least centuries.

On the other hand, if the people themselves did not move, but if the customs which were once widespread died out in the north through the importation of new habits and manners of life and became gradually restricted to the southern area, a long period must also have been requisite to bring about such a change. Indians, like all uncivilized races, are notoriously conservative when left to follow their own inclinations. Their father's way is good enough for them. That customs and fashions alter among them as well as among ourselves is of course not to be doubted, but it is necessary to assume at least several centuries as the shortest period within which so many characteristics of the life still found in the south could have been completely obliterated in the north by mere evolution and gradual change of habits.

Finally the character of the cloth blanket shows clearly that it must have been carried from the Southwest prior to the historic period. As the Pueblo Indians have been under Spanish influence for more than three centuries, it is necessary to assign at least this age to the bones and objects in the burials. How much older they are, it is only possible to conjecture by judging of their state of preservation. In any event, it is clear that we have in this discovery, which will remain permanently preserved for the people of California in the Museum of their State University, the concrete evidence that at some period going back into the centuries there lived in the great central valley of the state an aboriginal people, differing from those found there is historic times, in some way connected or affiliated with the ancestors of the more recent tribes of the southern part of California, and maintaining communication with the ancient Pueblo Indians of the Southwest.

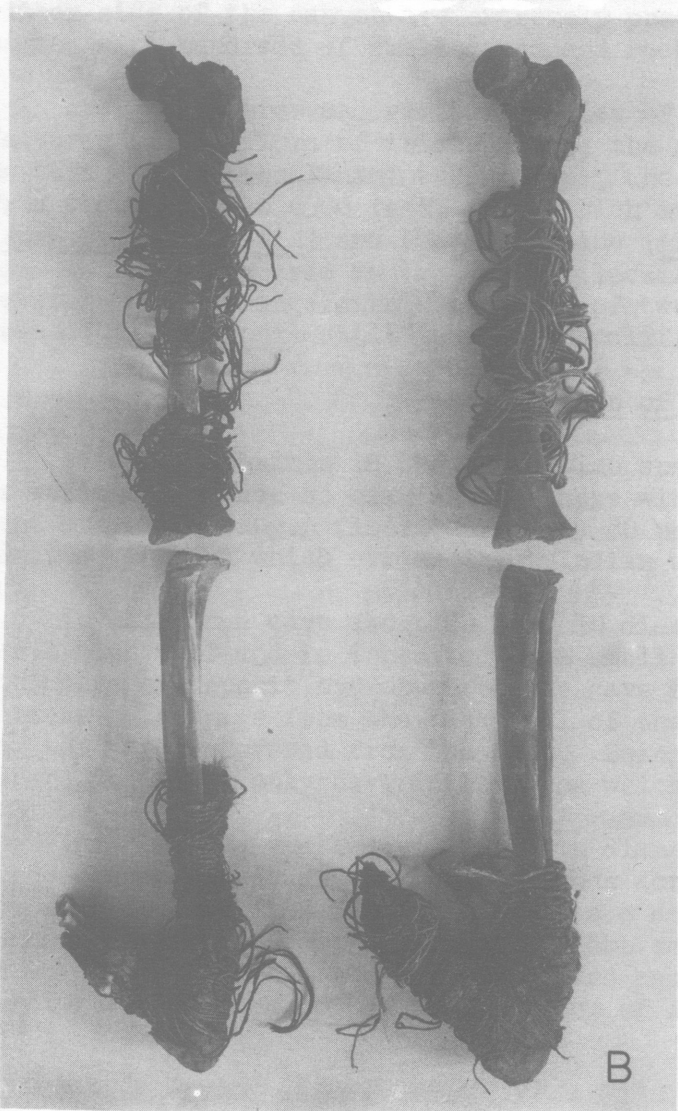
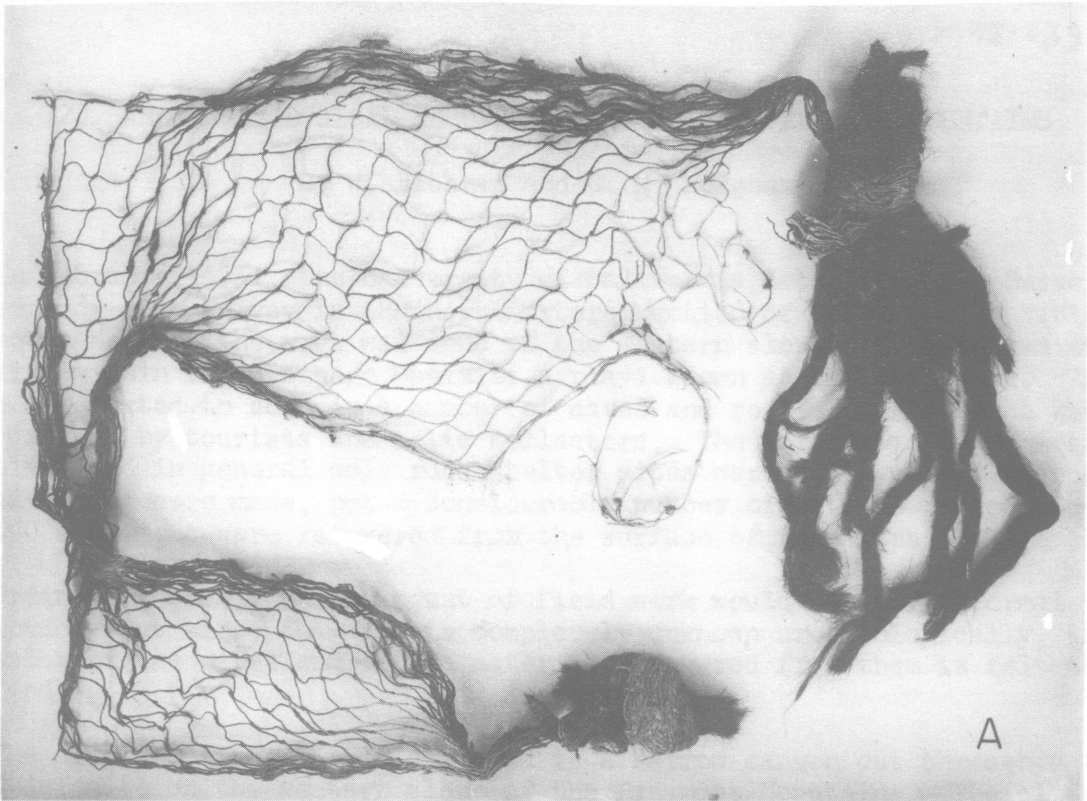


PLATE 2. BUENA VISTA LAKE REMAINS.

12. AN ARCHAEOLOGICAL RECONNAISSANCE IN THE PANAMINT MOUNTAINS

D. W. Lathrap and C. W. Meighan

In February, 1951, the University of California Archaeological Survey made an emergency site survey in the northwestern section of Death Valley National Monument. Most of the work was done on the western slopes of the Panamint Mountains within the drainage basin of a playa known as the Racetrack. This area had been reported to contain a number of caves and rock shelters which were likely to be damaged by tourists and relic collectors. The survey was by no means intensive, and in general only rock shelter sites were systematically sought. No excavations were made, but a considerable number of sites were recorded, and over 150 specimens were recovered from the surface of the sites.

Ordinarily such a small amount of field work would not merit formal description, but since the area is completely unknown archaeologically, the discussion of the sites and of the material recovered from them is felt to be justified.¹

The area most intensively surveyed is a narrow canyon cut through a thick bed of dolomite on the western slope of the Panamint Mountains. The cliffs on either side of the canyon are extremely precipitous and broken, and are honey-combed with hundreds of small caves and rock shelters.

The Joshua tree and various species of cacti are the most noticeable features of the flora of this section, the altitude of which is about 5000 feet. On this part of the Panamint Mountains, the range of the Joshua tree extends from about 5000 to 6500 feet, above which it is replaced by the juniper (Juniperus utahensis) and the piñon pine (Pinus monophylla). In general, the area is extremely arid and completely lacking in surface water, but there are several small springs within a radius of two miles from the canyon. Mountain sheep (Ovis nelsoni) still inhabit the cliffs in considerable numbers.

Description of Sites

It was impossible in the short time spent to enter all of the caves, but an attempt was made to examine all those within about 150 feet vertically distant above the canyon floor. Probably 80 per cent of such caves were actually visited, in 13 of which evidences of Indian utilization were found.

Iny-217 is a cave about 20 feet in diameter with an irregular floor. It has a high roof and is inhabited by a small colony of bats. There is up to 18 inches of deposit over part of the cave floor, but the deposit is not dry because of seepage from the back wall of the cave. Three fragments of slab metates were recovered from the cave. Being just above the level of the canyon floor, it is the only cave in the area which can be described as easy to enter.

Iny-218 is a small cave 5 feet in diameter on the cliff above Iny-217. A one course dry-laid stone wall extends across its mouth. Behind the wall the floor is covered with dry deposit up to a depth of 12 inches. The material recovered from this site included a flake scraper and a fragment of a cannon bone (Ovis?). An almost complete coiled parching tray had been collected here earlier and donated to the U. C. Museum of Anthropology.

Iny-220 is a cave which is rather difficult to enter. It is 35 feet vertically distant above the canyon floor, and most of the 35 feet must be negotiated by hand over hand climbing. The cave is small in size, measuring 8.5 by 5 feet with a ceiling so low that it is impossible to sit erect within it. At least 16 inches of dry deposit has accumulated behind the single course rock wall which extends across the mouth of the cave. The artifacts found on the surface here include a piece of diagonal twined basketry, a winnower fragment, and several coils of material for basketry weft. A quantity of Joshua tree bark and dried beavertail cactus was noted lying on the surface. The dried cactus joints were probably the remains of a food cache, for Coville made the following observation on the Panamint Shoshone:

One of the prickly pears (*Opuntia basilaris*) is used by the Indians, prepared in a peculiar manner. In May and early June, the flat fleshy joints of the season's growth, as well as the buds, blossoms, and immature fruit are fully distended with sweet sap. They are broken off with sticks and collected in large baskets. Each joint having been carefully rubbed with grass to remove the fine barbed prickles, is exposed to the heat of the sun. When they are thoroughly dry they will keep indefinitely and are prepared for eating by boiling and adding salt.²

About 50 feet higher on the cliff another cave, Iny-221, was examined. It was found to be filled with vegetable matter but no artifacts were noted.

Iny-222 is the most important site located during the trip, and the only one with sufficient depth and extent of deposit to warrant full scale excavation. It is a rock shelter which extends 44 feet from east to west along the face of the cliff and extends back under the cliff for a maximum distance of 114 feet. The roof of the shelter is high and it is possible to stand erect at any point except against the back wall. The shelter is more than 100 feet above the canyon floor, and the talus slope which must be climbed in order to reach the site is extremely steep and unstable. Against the back wall, there are 2 pits about 2 feet deep and roughly 8 feet in diameter, with large rocks piled around their edges. These are evidently house pits and the majority of the artifacts recovered here were found within the pits. The depth of the dry cultural deposit is greater than 2 feet. There has been considerable rock fall in the center section of the shelter, burying the cultural deposit under some large boulders.

A peculiar feature was noted on the backwall behind the rock fall. Five sticks and three stones, one of the latter an artifact (no. 20A), had been wedged into a narrow cleft in the shelter. Campbell noted many similar features in her survey of the caves in the Twentynine Palms area, and she has good reasons for believing that such aggregations of sticks served to guard the contents of the cave against robbing.

This site, like all those previously described, has a northern exposure and is in the shade all day. A number of artifacts were found on the surface, including five pieces of basketry, a wooden artifact, a wad of shredded juniper bark, and a large stone knife.

Sites Iny-223 and 224 are insignificant caves below Iny-222. An examination of Iny-223 produced only a flake of obsidian and a piece of cane (*Phragmites* ?), while no definite artifacts were found at Iny-224.

The remaining cave sites in the canyon are very small and in no particular way different from the smaller caves already described.

Iny-234 is the only cave in the canyon in which pottery was found. The cave immediately adjoining it, Iny-235, was distinguished only by having a large stick wedged in a cleft in its rear wall.

The caves on the north side of the canyon, with southern exposures, were less frequently occupied than those on the south side. Only four showed evidence of aboriginal use. Iny-236, a small rock shelter a short distance above the canyon floor, had been used as a chipping station. Numerous flakes of white and red flint were found on its floor, but no finished artifacts were recovered. A pile of trimmed willow twigs was discovered in a small cave (Iny-237) near the eastern end of the canyon.

Iny-238 and Iny-239, both of small size and within 10 feet of each other, were investigated. Iny-238 was found to contain some dry deposit and considerable charcoal. A few warps from a basket destroyed by rats were collected on its surface. A slab metate was noted in Iny-239.

Of the three other areas more superficially surveyed, one is a wide shallow arroyo higher up on the western slope of the mountains. The northern side of the arroyo is bounded by a ridge of conglomerate which stands about 40 feet above the bed of the wash. In the top of the ridge are three small caves, Iny-228-230. Against the backwall of 228, a cache was discovered. It was photographed, recorded, and then carefully dismantled. It consisted of a fairly neat pile of branches from some large bush, on top of which were piled several large rocks. There were no other contents. Iny-229 contained only a slab metate. The ceiling of Iny-230 exhibits considerable smoke-blackening, and there is some dry deposit covering the floor. It also contained a metate.

On the floor of the wash immediately below the three rock shelter sites, there is an open site (Iny-231), including a house circle in the shelter of two large boulders. It is a cleared area about 9 feet in diameter, ringed three-fourths of the way around by a row of stones about a foot in diameter, and on the north side by the two large boulders which stand about 3 feet high. Several flakes of flint were found within the circle.

In a saddle in the crest of the Panamint Range, two surface sites were recorded at an elevation of more than 7000 feet. A fairly dense grove of juniper and piñon grows on the sites and the piñon grove is probably part of the reason for their existence. Steward shows a photograph of a similar location in the White Mountains and comments, "Winter camps were often made near pine-nut caches in such localities, snow perhaps being used for water."⁴

The most easterly site, Iny-226, extends along the ridge of the divide and down the eastern slope a short distance. Its position affords a magnificent view of Death Valley. Large quantities of chipped flint are scattered on the surface, and several flint implements and a small incised slate slab were collected. Iny-225 is slightly west of and below the ridge. Chipping refuse covers the surface of the site. A few pieces of worked stone were collected in addition to several potsherds, including one fragment of corrugated pottery.

Several small arroyos drain west into the extensive flat on the 5000 foot summit of the pass between Tin Mountain and Dry Mountain. Cutting through beds

of conglomerate, they have formed escarpments 40 to 200 feet in height, along the tops of which are many small caves. A most hurried survey of this area was rewarded with the discovery of 8 cave sites. Iny-241 is a rock shelter about 22 feet long and 6 feet deep. A one course stone wall extends across the mouth, behind which considerable fill has been deposited. The shelter is not completely dry and the deposit is composed largely of gravel. The artifacts recovered at this site were a mano, a wooden mortar, and several sherds which were restorable into a nearly complete bowl. Immediately adjoining this shelter is a smaller one (Iny-240) in which a mano was found.

In the next wash to the north, 5 cave sites were recorded. Iny-242 was a small cave which had developed a hole in the roof sometime after it had been abandoned, so the deposit was not completely dry. The cave contained several badly eroded potsherds, fragments of two flint points, and a number of flint flakes. Iny-243 is a small dry cave in which were found a few flint chips. Iny-244-246 are three small caves across the wash from Iny-243. The floor space of Iny-244 had been increased through the construction of a one-course stone wall behind which dirt fill was dumped. A large boulder stands in the center of the mouth of Iny-245. A three-course stone wall had been erected to partially close the gap between the rock and one of the cave walls, thus increasing the protection from the wind. A metate was found in the cave. Iny-246 contained charcoal; Iny-247 was distinguished only by a three-course stone wall which blocked one of its two entrances.

Iny-249 is a small cave near Death Valley Scotty's Castle. It measures about 20 by 12 feet and contains an enormous quantity of white flint flakes, as well as considerable deposit which is dry toward the rear of the cave. A large area of the talus in front of the cave is also scattered with flaking refuse and two slab metates were found on the talus. The cave appears to be a major site for the area and excavation might be profitable both inside and outside.

Description of Artifacts

Basketry

The collection includes nine specimens of basketry from four sites (Iny-218, 220, 22, 238). Three types of baskets are represented by the specimens: large, flat, circular, coiled parching trays made with three rod foundation; flat, oval trays (winnowers) woven in non-spiral twining on parallel warps, and containers woven in spiral twining on converging warps.

Coiled parching trays. There are three fragments of this type. A nearly complete tray (UCMA 1-77978) had been collected from Iny-218 previous to the UCAS field trip and is now in UCMA. Specimens nos. 13 and 15 were collected by the UCAS party. All three pieces are manufactured on a triangular three rod foundation. Each stitch is passed around the three rods of its own coil and through a split in the top rod of the coil beneath. Willow consistently forms the weft material.

Specimen 1-77978 (Plate 3, N) is the center section of a tray, the present maximum radius of which is 24 cm. There is no rim present, so the original diameter must have been at least 49 cm. Stitches are non-interlocking with only an occasional stitch accidentally split. When viewed from above (from the side which has been scorched by use in parching), the coiling is clockwise. The rods,

all of willow, are of fairly uniform size, ca. 2 mm. in diameter. The weft is 1 to 2 mm. wide and .2 mm. thick. There are 39 stitches and 26 coils per 10 cm. Decoration is achieved by the use of a dark red-brown weft to sew the 59th and 64th coils, forming two dark concentric circles on the straw-colored background of the natural split or scraped willow.

Specimen 13, found at site Iny-22, (Plate 3, H) is a fragment, 6.6 by 0.6 cm., from near the rim of a large tray. The stitches are carefully and consistently split on one side. If the side with the split stitches is considered the inside, the coiling is in a clockwise direction when viewed from the inside. Each stitch is passed between two stitches of the preceding coil on the back side, through a split in the top rod of the preceding coil and through a split in a stitch of the previous coil on the inside. The top rod, of willow, is consistently larger than the other two rods which are of some other material. The diameter of the top rod is about 3 mm. while that of the lower rods ranges from 1 to 1.7 mm. The weft is 2 mm. wide and .7 mm. thick. There are 34 stitches per 10 cm. The work is very neat and even.

Specimen 15 from site Iny-222, (Plate 3, E) is a fragment, 8.5 by 1.5 cms., from near the rim of a large tray. The stitches are consistently interlocking. If the side from which the stitches emerge is considered the inside, the coiling is in a clockwise direction if viewed from the inside. The individual stitch is passed between stitches of the previous coil on the outside, through a split in the top rod of the previous coil and between the stitch of the previous coil on the inside, through the space to the right of the one through which it entered. The rods are of willow. The top rod, 3.5 mm. in diameter, is larger than the lower rods which are 2.5 mm. in diameter. The weft is 3 mm. wide and 1 mm. thick. There are 20 stitches to 10 cm. The coils are filled out with grass and the work is more coarse and irregular than that of the other two specimens.

Large, flat, circular trays manufactured by coiling on a three rod triangular foundation and used for the parching of seeds have a wide archaeological distribution in the Great Basin area. Fragments of such baskets were recovered from Tommy Tucker Cave in Lassen County, California.⁵

Large numbers of these baskets were recovered from both Lovelock Cave (site 26-Ch-18)⁶ and Humboldt Cave (26-Ch-35)⁷ in the Lower Humboldt Valley where they were the second most common type of basketry. Both Loud and Krieger describe these trays as having a foundation consisting of a bundle of rods and slats. Loud specifies that the coils contain 2 to 3 rods side by side with a slat above, while Krieger is of the opinion that the pattern is not so consistent. Several specimens from both caves were examined in the U. C. Museum of Anthropology, and in every case the baskets were woven on a three rod triangular foundation with an occasional slat or bunch of grass added to fill out a skimpy coil. The element identified by Loud and Krieger as a slat is probably in some cases part of the top rod of a bundle which has been partially split off by the stitches of the preceding coil after it was sewed into the basket. Robson independently reached the same conclusion in his analysis of a large number of trays from another cave in the lower Humboldt Valley,⁸ finding them all basically of three rod coiling.

The upper levels of Paiute Cave near Las Vegas also produced several fragments from trays of this type.⁹ Trays manufactured in the same technique but not specified as to use were made in the Anasazi area starting in the Pueblo III period.¹⁰ They certainly were made at a much earlier time in the Nevada Humboldt

area, for they are found in the lowest levels of Lovelock Cave,¹¹ the earliest level of which has been dated at 532 B.C.¹²

The use of such trays was much more restricted in historic times. They were not made by the Northern Paiute¹³ or the northern Shoshone bands of Northern Nevada,¹⁴ and their almost complete absence has been noted in the top 20 inches of Humboldt Cave.¹⁵ Steward discusses this point at some length:

As coiling was common in all surrounding areas, has a much wider distribution than twining, and was virtually the only Basketmaker weave, it must once have been general in the area. It is still the main weave of the Ute, Southern Paiute, and the Southwestern tribes. Among Shoshoni of northern Nevada substitution of twining for the older coiling in all baskets may have occurred because the former is much easier to make and is equally serviceable for a utilitarian basket. The elaborate coiling complex of the Basket Makers declined in the hands of the Pueblo who gave their attention to pottery. Elsewhere, coiling, unless it be the only technique, is often employed only for fine products, especially for decorated bowls and trays. Shoshoni, except those in the Death Valley-Little Lake region who have made coiled basketry an exceptionally fine art, were not producers of art objects and took little pride in the aesthetic merit of their work.¹⁶

The use of coiled trays for parching has survived until recent times in the southern part of its ancient range. UCMA has in its collection several such circular trays obtained from the Panamint and Little Lake Shoshone which have been used for parching. Steward confirms the practice for the Death Valley and Panamint Shoshone.¹⁷ The Southern Paiute have made circular coiled trays in recent years.¹⁸

If the three archaeological specimens just described are compared with descriptions of the recent basketry of the immediate area, it is noted that there is complete correspondence. Weltfish says of Southern California coiled basketry:

In flat tray-like shapes as well as in shallow bowls, the direction of the coiling is clockwise, the work surface, the concaved side and the direction of the work toward the right of the worker.¹⁹

According to Coville the Panamint Shoshone used as foundations two or three stalks of Epicampes rigens and one willow rod.²⁰ Specimen 13 is probably of this type. Coiling on three willow rods is as common, if not more common for these Shoshone,²¹ and the other two specimens are of this type. To sum up, although these specimens are of a very ancient and widespread type of artifact, there is no reason for assuming that they were not made by the rather immediate ancestors of the present Panamint or Death Valley Shoshone.

Winnowers. There are at least three fragments of winnowers in the collection,²² The twining in all specimens is up to the right, and willow is the material used for both warp and weft.

Specimen 8 (Plate 3, L) is a fragment 6.2 by 5.0 cm. from Iny-220. It is badly disintegrated and therefore the statements concerning it are somewhat tentative. The weave is open diagonal twining. There are 24 warps to 10 cms.

and one weft row every 2 cm.²³ The warps are about 3 mm. in diameter; the weft is 4 mm. wide and 1 mm. thick. A piece of the rim remains and the rim construction can be determined. A rod of willow, 6 mms. in diameter, is bound beside a bundle of 4 warp elements by a thicker piece of split willow which repeatedly encircles the rod and the bundle. At the end of each weft row the weft elements are passed between the rod and the bundle.

Specimen 12 (Plate 3, D), a fragment 16 by 13 cm. from Iny-222, is woven in diagonal twining. The start is present and is identical to one described by Kelly for a similar Surprise Valley Paiute tray: "Warps are placed at right angles to two rods and bent back on themselves enclosing the two outer rods."²⁴ In the present specimen there are only three warps which are bent double. One end of the center warp terminates immediately after it is engaged by the first weft row, but both ends of the other two warps extend well into the body of the basket.

The first weft row is simple twining and is of a strip of leather. It is tied around the two rods, is twined around the three pairs of warps and then tied to the two rods again. The rods are bent into a position parallel to the other warps and become the rim of the tray. The rim is nowhere present except at the start.

The remainder of the piece is woven in diagonal twining. The warps are 3 mm. in diameter. Each weft element is double, consisting of 2 strips 3 mm. wide and .5 mm. thick lying one above the other. The warps are almost contiguous, having a count of 30 per 10 cms.

There is no consistent pattern to the addition of new warps. The spacing of the weft rows is not uniform. Starting at the handle there are 8 almost contiguous weft rows, after which the spacing is as follows: .8 cm., .4 cm., 1.3 cm. 3 contiguous weft rows, .1 cm., .4 cm. This arrangement is quite carefully done and appears to be decorative in intent. That the tray has been used for parching is shown by several burned spots on one surface.

Specimen 14 (Plate 3, G), also from Iny-222, is a fragment 15 by 13 cm., including part of the handle and the left rim. The start receives no special treatment. The first 2 weft rows are over 2 under 2 twining on the same pairs of warps. The third is over 2 under 2 twining on the alternate pairs of warps. The fourth weft row is over 4 or 5 and under 4 or 5 twining. The fifth and sixth weft rows are over 3 under 3 twining on different groups of warps. The seventh through the tenth are diagonal twining, and the eleventh through the sixteenth are simple twining. The result of this variation in weave is the progressive spreading of the warps as the center of the tray is approached. Up to the sixth weft row warps are added in no fixed pattern, but beyond this point they are added only at the rim, at the rate of one new warp for every four weft rows.

The rim is a slightly heavier twig, which is secured at the handle by one of the weft elements of the first weft row which is looped three times around the rim and the two adjoining warps and then becomes a weft element in the third weft row. Beyond the fourth weft row the following rim treatment is invariable: when the wefts of the odd-numbered rows have been woven as far as the rim they are passed around the rim from opposite sides and cross each other on the outer edge of the rim, the weft element then on the inside surface of the tray always passing over the element from the outside surface. The pair of weft elements

is then woven back in the opposite direction as an even-numbered weft row. The twining progresses from left to right²⁵ in even-numbered weft rows and from right to left in odd-numbered weft rows. The spacing of the weft rows is as follows:²³ 1, 2 (1.1 cm.); 2,3 (.7 cm.); 3,4 (1.9 cm.); 4,5 (1.2 cm.); 5,6 (1.2 cm.); 6,7 (.6 cm.); 7,8 (.9 cm.); 8,9 (.9 cm.); 9,10 (.8 cm.); 10,11 (.6 cm.); 11,12 (.7 cm.); 12,13 (.7 cm.); 13, 14 (.9 cm.); 14,15 (.9 cm.); 15,16 (1.0 cm.).

At the sixth weft row there are 32 warps per 10 cm., and at the 15th weft row there are 22 warps per 10 cm. The warps are ca. 2 mm. in diameter; the wefts are 3 mm. wide and 1 mm. thick.

Containers of spiral twining on converging warps. A single specimen (no. 7) is certainly from a basket of this type, and specimens 16 and 43 may also be. Again the twining in these specimens is always up to the right.

Specimen 7 (Plate 3, K), a fragment 11 by 24 cm. from Iny-220, is woven in close diagonal twining. Neither start nor rim is present, so that no definite statement can be made concerning the original shape. It appears to be from the side of a piece with a pointed bottom, so that either a water bottle or a conical burden basket would be a reasonable guess. The warp is of small peeled twigs, ca 2 mm. in diameter, which are almost certainly not willow. The weft is of split willow, 2 mm. wide and .5 mm. thick, which is light yellow brown on one side and red brown on the other. It is manipulated so that the interior of the basket is red brown while the exterior is yellow brown. The darker surface is most likely the unscraped exterior of the willow shoot, while the yellow brown is the split interior. Warps are added at irregular intervals and new warps are sharpened at the bottom so as to fit more closely against the adjoining warps. The work is extremely neat and even.

Specimen 16 (Plate 3, F), a small fragment, 10.8 by 2.8 cm. from Iny-222, includes only one weft row and three warps. The weave is simple open twining. The material of both warps and wefts is probably willow. The warps are 3.8 mm. in diameter and the weft elements 3 mm. wide and 1 mm. thick. One of the weft elements is double, the strips lying one above the other as in specimen 5. It is probably part of a conical burden basket, but could also be part of a winnower.

Specimen 43 consists of five warp elements from a completely disintegrated basket, which still show the marks of the wefts. The weave was probably twining, but it would be unsafe to say more.

A large willow branch, which had been split, trimmed, and bent into a broad arc, was recovered from Iny-222. It may once have been the rim of a large basket.

Basketry material: Specimen 10 (Plate 3, M) consists of 3 coils of weft material from Iny-220. These are strips which have been peeled off the outside of willow shoots, coiled up and held in coils by having strips of juniper (?) bark wrapped around them. The material in the smallest of the coils had been trimmed and scraped. The material in the other two coils still retains the bark.

A large wad of shredded bark (specimen 19) was found at Iny-222. This is tentatively identified as juniper, but it may be some species of Artemisia; this is the material used for binding up the basketry coils referred to above.

A group of 19 decorticated, trimmed and sometimes pointed willow twigs was found on the floor of site Iny-237. These had probably been cached for use as warps in a projected basket.

Additional basketry from Death Valley. For comparative purposes, it might be well to include a description of some baskets in the Park Headquarters Museum at Death Valley. Their provenience is given as from an Indian cave just north of the Landing Field at Furnace Creek. This site was not visited by the writers, and its exact location is uncertain. There is a photograph of the site on file at Death Valley Headquarters, however, so that it would be possible to relocate the site. This cave has been designated as site Iny-256.

Seven fairly complete baskets were recovered from the cave, as well as a number of fragments. The baskets were photographed by the writers and some hasty notes were made. The fragments were not carefully examined, but they do not appear to present any features not present in the more complete specimens.

The basketry material is willow in all cases. The warps are of whole peeled willow shoots; the wefts are of split willow shoots usually scraped. In places where the weaver desired to introduce a design, however, the outside of the shoot was left on the strip. This produced a weft which was the usual straw color on one side and red-brown on the other.²⁶ The seven specimens are considered individually as follows:

Basket 1 is an oval winnower measuring 66 by 38 cm. The weave is simple open twining, up to the right in the center of the tray, and diagonal twining, at the two ends where the warps are brought closer together. At the center there are about 20 warps per 10 cm, and the weft rows are 1 cm. apart. The handle is reinforced by a weft row of blue gingham cloth. The center is reinforced by a large willow rod extending across the back at right angles to the warps. This is secured by a piece of weft material which passes around the rod, around 3 or 4 warps and then around the rod, this pattern being repeated for the length of the rod. The end opposite the handle is reinforced with several more transverse willow rods. The rim consists of a heavy willow rod. The weave of this piece is very irregular.

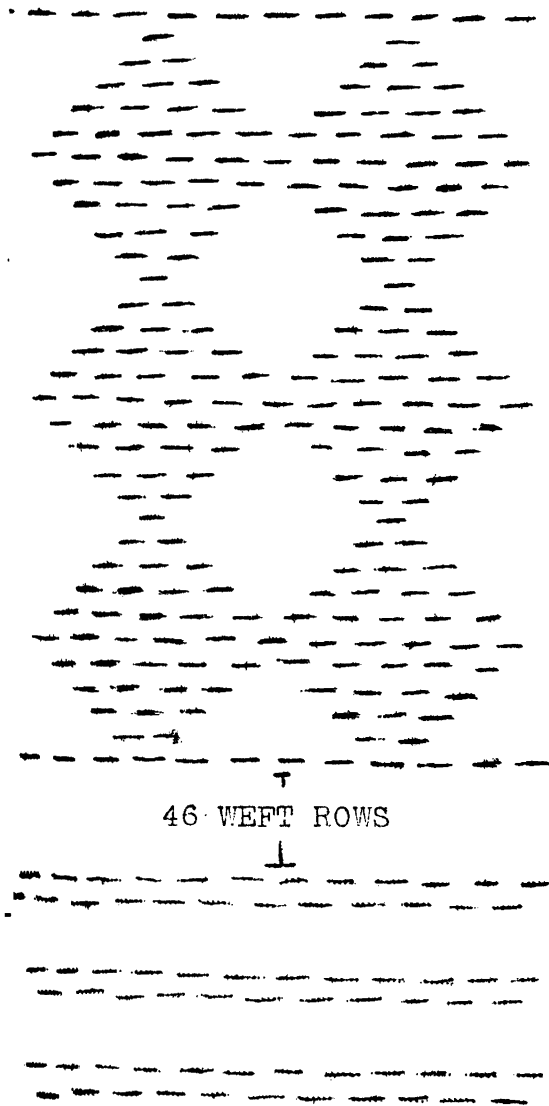
Basket 2 is also an oval winnower, 29 by 23 cm. The weave is consistently open diagonal twining, up to the right. At the center there are about 40 warps per 10 cm, and .8 cm. between wefts. The handle is reinforced with a weft row of white canvas. The rim is a willow rod extending all the way around the piece. The weaving is even and neatly done.

The remaining five baskets are conical burden baskets. The rim treatment is the same for all. A heavy willow rod lies above and is bound to a bundle composed of the warps which have been bent at right angles to their previous direction and bunched.

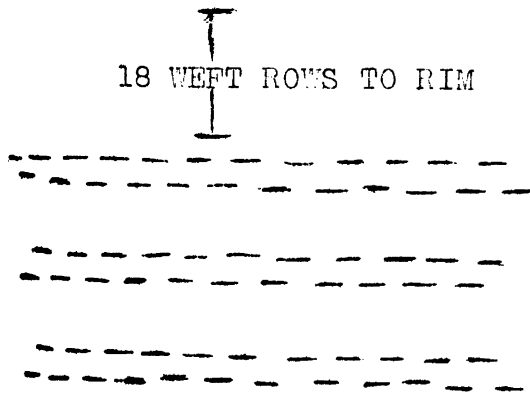
Basket 3 is 45 cm. in diameter at its mouth and measures 38 cm. along its side from rim to bottom. It is woven in open diagonal twining up to the right. The bottom is reinforced with a piece of white canvas sewn on with brown twine.

Basket 4 is 56 cm. in diameter at the mouth and 51 cm. from rim to bottom. The weave is simple open twining, up to the left. A bent willow rod is secured to its inside with strips of rawhide.

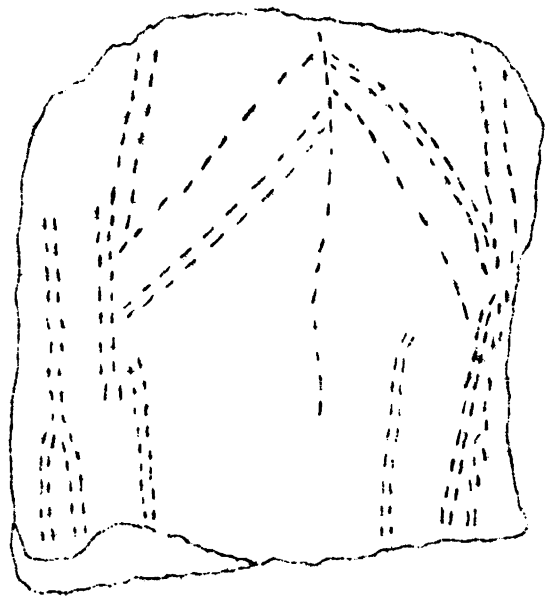
FIG I



A.



B.



C.

- A. Pattern from basket 5, Iny-256.
- B. Pattern from basket 7, Iny-256.
- C. Incised slate object, Iny-226, (natural size).

Basket 5 is 56 cm. in diameter at its mouth and 51 cm. along the side from rim to bottom. It is closed diagonal twining, up to the right. A design of vertical rows of diamonds (Fig. 1A) encircles the basket. The design is achieved by using the unscrapped split willow described earlier. The weft element is twisted a half turn when it passes from a light area to a dark area so that the negative of the design appears on the inside of the basket.

Basket 6 is 38 cm. in diameter at its mouth and 33 cm. along its side from rim to bottom. It is woven in open plain twining, up to the right. The warps are not straight but spiral up in a clockwise direction (if viewed from the inside). The bottom is reinforced with a piece of rawhide.

Basket 7 is 74 cm. in diameter at its mouth and 64 cm. along its side from rim to bottom. It is woven in open diagonal twining, up to the right. A design consisting of 3 dark bands encircles the basket (Fig. 1B). The bottom is reinforced with a piece of a cloth hooked rug.

From the amount of Caucasian material included in these baskets, it is apparent that they were woven within the last century. They were almost certainly made by the band of Shoshone which now lives at the rancheria just south of Furnace Creek Ranch. There are no major points of difference between the Furnace Creek baskets and those from the Panamint Mountain caves save for the introduction of Caucasian materials and the single occurrence of up to the left twining in the former. These types of twined basketry are so widespread in the Great Basin area as to be almost completely universal.²⁷ There is no reason to doubt that the specimens from the Panamint caves were made by members of the Death Valley or Panamint Valley Shoshone, but on the other hand such baskets could have been made by any group in the Great Basin.

Wooden and Horn Artifacts

A wooden mortar was found at site Iny-241 (no. 46; Plate 3, C). The exterior surface has been worked, and the shape of the piece is fairly symmetrical, being that of a truncated cone standing on its smaller end. Its walls are quite thin, 1.1 cms. in thickness at a point 2 cms. below the rim. The cavity has a pointed bottom. A small piece of the rim is missing, and a hole has developed in the bottom due to shrinkage in the course of drying. The dimensions are: diameter at top, 17.5 cm.; diameter at base, 9.5 cm.; height 24.5 cm.; depth of cavity, 21.5 cm. R. A. Cockrell of the University of California Forestry Department made the following identification of the wood:

The large specimen is wood of the genus Pseudotsuga, represented by two species in California; Pseudotsuga taxifolia, the Douglas fir that occurs in the Central Sierra; and the big cone spruce P. macrocarpa found in the Los Angeles area.

This particular artifact must therefore have been traded in from a considerable distance. According to Coville, the Panamint Shoshone ground pine nuts and mesquite beans (Prosopis juliflora) in wooden mortars, but used a mano and metate for grinding all other seeds.²⁸

Specimen 17 is a piece of wood from Iny-222 which has been worked down to a parallel-sided object of oval cross section, with one end neatly squared off and the other end hacked off irregularly. It was originally well smoothed. Its general appearance is that of a modern knife handle, but there is no reason to

doubt its aboriginal origin. Its dimensions are: maximum diameter, 2.5 cm.; minimum diameter, 1.8 cm.; length, 9.0 cm. R. A. Cockrell identified the wood as "a hardwood (angiosperm), possibly a piece of willow."

A single fragment of sheephorn was found (no. 18, 10.8 by 5.4 cm.) It is considerably damaged by insects, but has one end cut and ground. This may be a fragment of a spoon or scoop, similar to a specimen illustrated by Harrington.²⁹ Loud and Harrington also report similar objects from Lovelock Cave,³⁰ and Campbell illustrates an almost identical specimen from the Twentynine Palms region.³¹

Pottery

Only four of the 25 sites located in the Panamint Mountains yielded pottery, and sherds were scarce in all of these. A few sherds were obtained from sites Iny-225, Iny-234, Iny-241, and Iny-242. Iny-241 contained a broken bowl which could be reconstructed into a whole specimen (see Pl. 3, A).

The bulk of the sherds recovered are of the same general type. This type of ware does not appear to have been comprehensively described, and a preliminary description is given below. No name is assigned to the type at this time, as the sample is too small and the distribution is too little known.

Sites: Iny-225, Iny-241, Iny-242

Period: Unknown, but presumably fairly recent, since no pottery of this region appears to have any great antiquity.

Construction: Coiling and thinning by scraping. No evidence of paddle and anvil technique. The vessel from Iny-241 appears to be built up of about seven coils, as shown by cracks and fractures on coil lines.

Firing atmosphere: Uncontrolled, but mainly oxidizing. Vessels were fired inverted, so exterior is oxidized, interior reduced.

Core color: Exterior margin brown, interior margin black. Individual sherds may be entirely black in core color.

Firing clouds: Yes

Temper: Small to medium rounded grains of quartz sand. Very little mica visible, although one or two flakes may be found by searching. Individual sherds may appear to lack mica entirely.

Texture core: Medium

Fracture: Crumbling

Surface finish: Smoothing has been done on interior and exterior. Surface irregularities are present due to finger indentations. Exterior surface tends to flake (as shown on whole vessel, two sherds from Iny-225, and base sherd from Iny-242).

Luster: Dull

Surface color: Reddish brown; some gray to black areas.

Forms: Whole vessel from Iny-241 is a small bowl with a rounded bottom and slightly incurving rim. Iny-225 sherds indicate a fairly large olla form with a short neck.

Vessel size: The complete bowl is 15 cm. in diameter by 10 cm. in height. The olla form must have been larger, but no accurate estimate of dimensions can be given.

Base: Slightly thicker than walls. Rounded, slightly flattened on bottom.

Bases were probably molded out of a lump of clay rather than coiled.

Thickness of vessel walls: Body sherds are 6 to 8 mm. thick. Bases are slightly thicker, ranging up to 10 mm. Body sherds of the olla form are 7-8 mm. thick.

Rims: The whole bowl has a rounded and even rim which is slightly incurving.

The olla rim is rounded, uneven, with a flaring neck 1.5 cm. high.

Handles or lugs: None

Decoration: None

Slip: None

Paint: None

Range: At present known only from sites in Panamint Mountains at north end of Death Valley.

Remarks: Future study in the region will undoubtedly extend the distribution of the type, as well as indicating variability in size, shape, and decoration. The present description is given as a starting point because of the differences between this ware and that of the Southern Paiute³² and Yokuts-Mono.³³

Comparisons: This pottery differs in many respects from the Southern Paiute pottery described by Baldwin.³⁴ Firing is mainly oxidizing instead of reducing, temper is small to medium in texture, and flaking occurs on exterior instead of interior surface. In addition, the vessel form does not have the pointed base characteristic of Southern Paiute ware.

There is a possible correlation between this pottery and some of the plain wares from Mesa House in Southern Nevada. However, most of the plain ware from Mesa House is described as having a sharp fracture, which does not conform to the pottery under discussion.³⁵ An adequate comparison cannot be made until more detailed analysis is made of the Nevada pottery.

Yokuts-Mono pottery has not been analyzed from a technical standpoint, but the forms seem to be different and the illustrated Mono pottery appears to be more crudely made than the Death Valley specimens.³⁶

Owens Valley pottery should show different tempering material, at least in part, since Steward records the use of crushed decomposed granite for the Owens Valley Paiute.³⁷

The two sherds from Iny-234 are distinct from the type just described. The former are red-brown in color (interior, exterior, and core), have a coarse quartz sand temper and a moderately sharp fracture. The exteriors are smoothed but interiors are unfinished. The single rim indicates an olla form with flaring neck and rounded rim. Thickness is 5-7 mm.

The only other type of pottery found was a single small sherd of corrugated ware from site Iny-225 (Pl. 3 B). Corrugated pottery occurred in quantity at Mesa House and at Lost City in southern Nevada.³⁸ The specimens illustrated by Harrington do not have the same type of corrugations as the Iny-225 sherd, however, and lacking detailed information on the corrugated wares from Nevada, it is not possible to assign the present sherd to the Nevada types. Dick Shutler, Jr. of the University of California Museum of Anthropology, has called our attention to a very close similarity between the Iny-225 sherd and Linden Corrugated, described by Colton and Hargrave as follows:

Linden corrugated: (Mogollon brown ware). Coiled: oxidized; core, dark gray to light gray, tan, brownish; brick red. Fairly regular vertical indentations. Temper: very fine to coarse round or angular quartz with fragments of crushed rock rare. Pueblo III, 1050 to 1250 a.d. Range: White Mt. region, Arizona, and south to and including the Tularosa Valley, New Mexico.³⁹

The sherd under discussion is brownish in core color with temper of medium-sized rounded quartz grains. If it is actually Linden Corrugated, the occurrence

of this Pueblo III sherd in the Panamint Mountains is of some interest because it is about 300 miles outside the normal distribution for this type of pottery.⁴⁰

U.C.M.A. has two pottery vessels collected in the area west of the Death Valley Monument. One of these vessels is a pointed-bottom specimen which fits Baldwin's description of Southern Paiute Utility Ware (UCMA No. 1-19759). It was found in the Alabama Hills near Lone Pine, California; a location which is some distance west of the distribution given for this type of pottery.⁴¹ The vessel is complete except for the upper portion of the rim. The walls are 6 mm. thick and the dimensions are: 21 cm. dia. at top, 9 cm. dia. at bottom, 18.5 cm. tall (incomplete measurement due to missing rim).

The second vessel, found in the Koso Hills, is a very small cup or dipper with a rounded bottom and a vertical rim (UCMA No. 1-19755). It is crudely coiled, oxidized, brown in color, with rough surfaces marked with finger indentations. There appears to be a one-piece base with three coils of clay used to build up the walls. The dimensions are: 10.2 cm. diameter, 7.5 cm. height, 5 mm. wall thickness. Nothing closely similar has been described for this region. Small bowls of this size were made by the Yokuts and Mono, but the form of the latter vessels differs in having a flat bottom and slightly flaring sides.⁴²

Descriptions of other vessels found in Owens Valley are given in Steward.⁴³

Artifacts of Stone

Manos and Metates: Metates were noted at sites Iny-217, Iny-227, Iny-229, Iny-230, Iny-239, Iny-241, Iny-245, and Iny-248. In all cases, these were roughly rectangular slabs of hard gray dolomitic stone. All were used on one side only and were virtually flat on the used surface. One specimen from Iny-217 had a basin-shaped concavity with pecking apparent in the center of the basin.

Two manos were recovered in the course of general collecting. A rectangular granite mano (no. 55; 12 by 8 by 6 cm; one surface used) was not recovered from a site, the other specimen was a badly weathered subrectangular mano of black conglomerate (12 by 10 by 6 cm; one surface used), from Iny-241.

Problematical Stone Object: Site Iny-240 yielded a mano-shaped object which would be classed as a mano except that the used surface is concave, the center being 3 mm. below the ends. It would be impossible to use this object as a mano without grinding the ends down. The specimen is of a granular white stone with black crystal inclusions (13 by 7.5 by 4.0 cm.). Edges and ends are shaped. One end has a pecked pit 1.5 cm. in diameter and 0.4 cm. deep. The function of this artifact is unknown, but it would have served efficiently as an abrader for shaping wooden objects such as wooden mortars, one of which was found in the same cave.

Core Tools: Site Iny-222 contained two crude core specimens. The first is a large stone knife, made of a natural angular piece of gray-black dolomite with one edge chipped (no. 11; 17 by 10 by 2 cm., long edge chipped). The second piece is a natural piece of gray dolomite which shows battering on one end (no. 20A, 12.5 by 3 by 3 cm.). This specimen as related above, was found sticking in a cleft in the cave wall.

One core of white flint (no. 54) was recovered from Iny-246, a cave which showed evidence of much flint-chipping activity. This site also yielded a white flint core chopper (no. 1A; 9.9 by 5.5 by 6.4 cm.) and a core scraper of gray dolomite (no. 1H; 10.1 by 7.0 by 3.7 cm.).

The only other core tool was a large chopper (no. 56) of heavily patinated dolomite, picked up below Iny-234 (15 by 10 by 8.5 cm.).

Projectile points and flake implements: With two exceptions, all projectile point fragments and flake implements were of white, red, or yellow flint. A single small chip of black obsidian, used as a scraper, was recovered from site Iny-242. Unworked obsidian flakes were observed at Iny-223 and Iny-225, but no other obsidian was found. The scarcity of obsidian is surprising in view of the quantity of obsidian available to the Owens Valley Paiute who traded obsidian with other tribes to the west.⁴⁴ At site Iny-236, a flake scraper of quartzite was found (no. 41A; 3.2 by 2.2 by 1.1 cm.).

A total of 17 tools made of red, yellow, and white flint flakes were recovered. Most of these were small flakes used as scrapers. Some had secondary chipping, but several simply show use retouch along one edge. A few blade or projectile point fragments were recovered. All basal fragments indicated a rounded base; no stemmed or notched bases were found. These artifacts are tabulated as follows:

No.	Definition:	Site:	Dimensions:	Remarks:
32	Blade frag.	Iny-225	4.7 by 3.1 by 1.4 cm.	Red and yellow flint
33	" "	"	5.2 by 2.4 by 0.7 cm.	gray flint
37G	Proj. pt.	Iny-226	4.3 by 1.8 by 1.0 cm.	complete, very crude, red and yellow flint
37H	Blade frag.	Iny-226	3.3 by 2.3 by 0.8 cm.	red and yellow flint
50A	Proj. pt. frag.	Iny-242	2.3 by 1.5 by 0.4 cm.	red flint
50B	" " "	Iny-242	2.0 by 1.6 by 0.3 cm.	yellow flint

Fragments of worked slate were recovered from sites Iny-225 and Iny-226. Five small pieces were chipped along one edge and were presumably used as scrapers:

No.	Site:	Dimensions:
28A	Iny-225	6.1 by 3.5 by 0.5 cm.
28B	Iny-225	4.5 by 2.7 by 0.3 cm.
28C	Iny-225	3.7 by 3.3 by 0.3 cm.
31D	Iny-225	3.1 by 2.3 by 0.7 cm.
36	Iny-226	5.7 by 3.5 by 0.3 cm.

One surface of specimen 28A shows many shallow longitudinal scratches.

Incised slate tablet. Site Iny-226 also yielded a small tabular piece of slate bearing an incised pattern (see fig. 1-c). The piece (no. 34) has the edges ground and one end is missing. Similar objects have been described by Rogers as occurring in the Amargosa I horizon of the Mojave Desert.⁴⁵ Steward describes a pendant of steatite bearing an incised pattern which was found in Inyo Co.⁴⁶ The present specimen is not closely similar in pattern to the pieces illustrated by Rogers, but the general form and treatment are the same. The decorative lines applied to the Iny-226 specimen were made with an implement which left a sort of dotted line.

Conclusions

This preliminary survey of northern Death Valley has yielded data on several sites in the Panamint Mountains. Most of the sites recorded appear to be temporary camps, and only one site (Iny-222) has had enough occupation to cause the accumulation of any depth of midden deposit. The archaeological remains indicate an economy oriented toward seed-gathering and migratory habitat. For example, metates seem to have been cached at each place where they would be used.

Most of the artifacts recovered are closely comparable to ethnographic Paiute and Shoshone specimens, and present evidence does not indicate any great antiquity for these sites. Sites Iny-225 and Iny-226 may possibly be older than the other remains, since they yielded a Pueblo III sherd and an Amargosa-like incised slate object. As the present report is based on surface specimens, further study and excavation are necessary before a more detailed archaeological report of the area can be written.

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NOTES

- 1 Appreciation is here expressed for the many courtesies extended to the UCAS archaeologists by Dr. Aubrey Neasham of the National Park Service and by Mr. T. O. Goodwin and Mr. L. F. Keller of the Death Valley National Monument. The artifacts recovered by the UCAS are permanently stored at the Park Headquarters, Death Valley National Monument. The material was kindly loaned to the UCAS for preparation of the present report.
- 2 Coville, 1898, p. 354. Barrows noted the same practice for the Coahuilla. See Barrows, 1900, p. 67.
- 3 Campbell, 1931, pp. 24-30.
- 4 Steward, 1938, p. viii. Steward also comments on site locations as follows: "In the southern end of Eureka Valley, near the northern end of Death Valley, California, is a site bordering a playa and extending several miles. Thousands of flint flakes with relatively few artifacts mark it as predominantly a workshop, though the source of the flints is several miles distant in the mountains. The nearest water is a spring 3 to 5 miles away. There is no apparent reason why anyone should choose a place lacking water, having virtually no vegetation, and, in fact, devoid of anything of apparent use to man or beast, for a workshop or other purpose. Nevertheless, the presence here of large spherical stone mortars of the type used by Death Valley Shoshoni and at least one arrow point of the Shoshonean type is presumptive evidence that the Shoshoni visited the site, though it does not, of course, prove that they used it as a workshop. Although Mr. and Mrs. Campbell have never found a camp site more than 3 miles from a water hole in southern California..., the writer has repeatedly received accounts from Shoshoni and Paiute informants of camps maintained by entire families and groups of families for days at a time 10 and even 20 miles from water when seeds, salt, flints, edible insects, or other important supplies made it worth while to do so. Water is used sparingly and when the ollas in which it is transported are empty one or two persons make the long trip to replenish them. Remoteness from present water, then, is not, per se, the slightest proof that a site dates from the pluvial period." (Steward, 1935, p. 105)
- 5 Fenenga and Riddell, 1949, p. 206; fig. 56 i, j. Specimens 1-74844, 1-74845 in UCMA.
- 6 Loud and Harrington, 1929, p. 65.
- 7 Heizer and Krieger, n.d., ms. on Humboldt Cave.
- 8 Robson and Baumhoff, n.d.
- 9 Harrington, 1930, p. 118.
- 10 Morris and Burgh, 1941, p. 14.
- 11 Loud and Harrington, 1929, p. 26.
- 12 Arnold and Libby, 1950, p. 11 (sample no. 276). The oldest basketry from Humboldt Cave consisted of a coiled parching tray. Samples of this tray have recently been determined by W. F. Libby to have a radiocarbon date of 1953 \pm 175 years old (letter to R. F. Heizer, April 2, 1951).

- 13 Kelly, 1932, p. 120.
- 14 Steward, 1941, p. 338.
- 15 Heizer and Krieger, n.d.
- 16 Steward, 1941, p. 338.
- 17 Steward, 1941, p. 339.
- 18 Stewart, 1942, p. 276
- 19 Weltfish, 1930, p. 465.
- 20 Coville, 1892, p. 359.
- 21 Steward, 1933, p. 271.
- 22 See Steward, 1933, pl. 10, fig. d, e, for whole specimens of this type.
- 23 Distance measured from an edge of a weft row to the corresponding edge of the next weft row.
- 24 Kelly, 1932, p. 128, fig. 8.
- 25 When viewed from the top side with the handle toward the viewer.
- 26 For ethnographic description of same practice see Coville, 1892, p. 359.
- 27 Gifford, 1932, p. 26; Cressman, 1942, p. 47.
- 28 Coville, 1892, pp. 353, 355.
- 29 Harrington, 1930, pp. 120, 121.
- 30 Loud and Harrington, 1929, pp. 42, 43; pl. 15, b, i.
- 31 Campbell, 1931, p. 72; pl. 426.
- 32 Baldwin, 1950.
- 33 Gayton, 1929.
- 34 Baldwin, 1950.
- 35 Harrington, 1930, p. 78.
- 36 Gayton, 1929.
- 37 Steward, 1933, p. 266.
- 38 Harrington, 1930, pp. 71, 72.
- 39 Colton and Hargrave, 1937, p. 60. Information cited is an abstract, not a quotation.

- 40 Harrington, 1928, p. 239, plots the distribution of Pueblo wares. His boundary runs along the Nevada border between Beatty and Stump Springs, placing the edge of the Pueblo area just about 50 miles from the area covered in the present report. Pueblo sherds might be expected to occur much further west of this line, as occasional trade pieces must have entered California. There is nothing particularly unexpected in finding Pueblo wares in the Death Valley Monument, since this is just west of the area of Pueblo settlement.
- 41 Baldwin, 1950, p. 54, lists the western boundary of the Southern Paiute Utility Ware at the Fahrump Valley in Southern Nevada.
- 42 Gayton, 1929, pl. 99A, b; pl. 102 e, g.
- 43 Steward, 1933, p. 267.
- 44 Sample, 1950, p. 19.
- 45 Rogers, 1939, pp. 63-64, pl. 17.
- 46 Steward, 1933, p. 275, pl. 7.

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Archaeological Specimens from the Panamint Mountains

(catalog numbers given in parentheses)

- A. Reconstructed pottery bowl from Iny-241 (47).
- B. Corrugated sherd from Iny-225 (24).
- C. Wooden mortar from Iny-241 (46).
- D. Winnower fragment from Iny-222 (12).
- E. Fragment of coiled parching tray from Iny-222 (15).
- F. Twined basketry fragment from Iny-222 (16).
- G. Winnower fragment from Iny-222 (14).
- H. Fragment of coiled parching tray from Iny-222 (13).
- K. Twined basketry fragment from Iny-220 (7).
- L. Winnower fragment from Iny-220 (8).
- M. Coil of basketry material from Iny-220 (10).
- N. Coiled parching tray from Iny-218 (UCMA 1-77978).

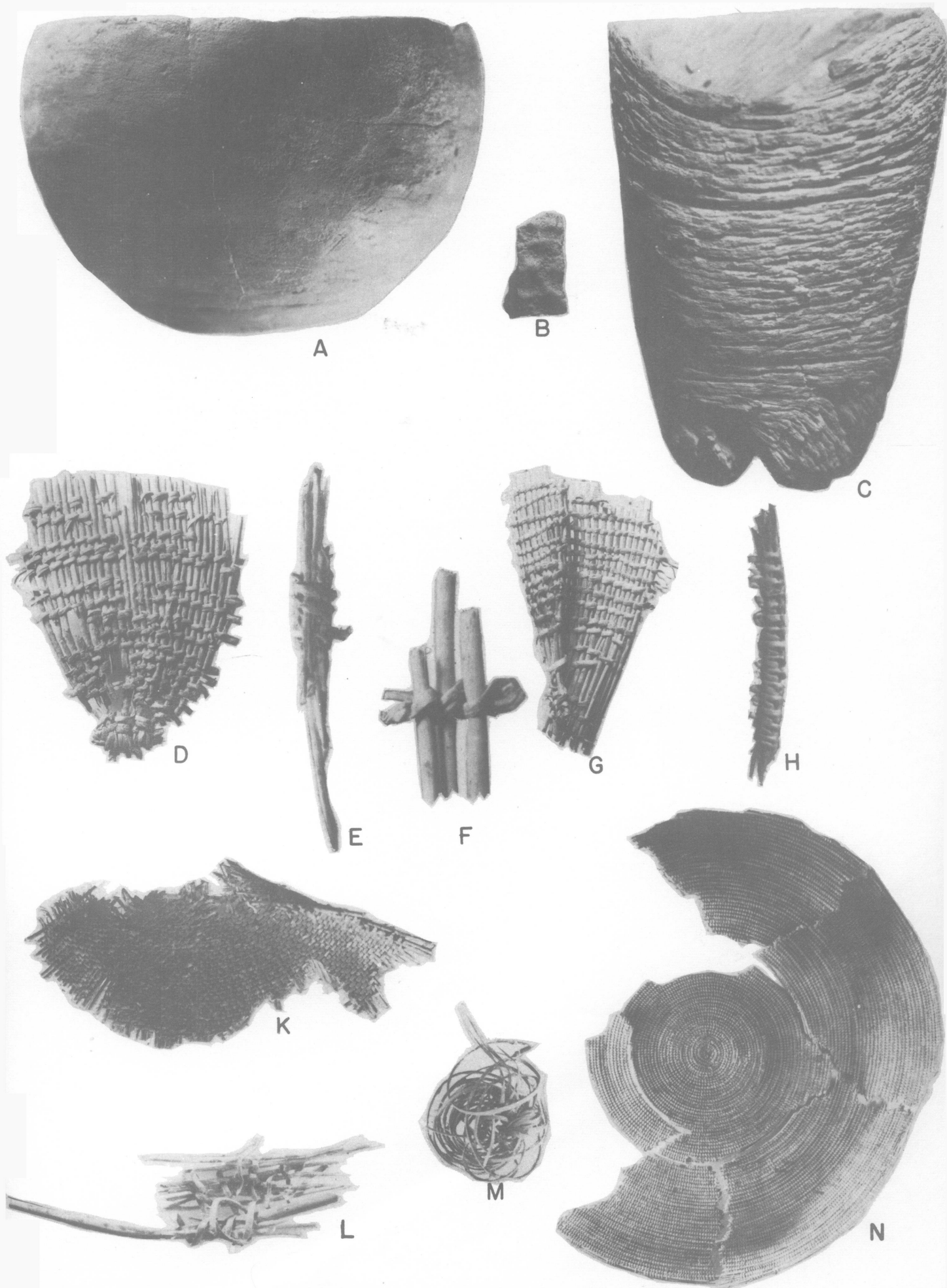


PLATE 3. ARTIFACTS FROM THE PANAMINT MOUNTAINS.