

a daughter of Hungry Bill of Hungry Bill's Ranch (see No. 6, below). This area has several large mesquite groves that provided food and was in close proximity to several well-watered canyons flowing from the Panamint Range. The Wilson family moved to the highlands in the heat of summer, as did other Valley residents.

6. Pumaitinggahni. 'Mouse's Cave,' Hungry Bill's Ranch. This is a site at about 5,000 ft. in Johnson Canyon on the east flank of the Panamint Range southwest of Bennett's Well. Its status as an early winter village site is uncertain, although it was occupied in the latter part of the 19th Century by several related families who had extensive gardens and orchards there (see III, #11 Traditional Sites). Steward (1938:93) was told that 17 persons lived there near the turn of the century, including Panamint Tom, his brothers Hungry John and Hungry Bill, and a sister and their families. Long Jim, who later moved to Pahrump, NV, was also from there. The people were said to speak both Shoshone and Kawaiisu. Other historical accounts indicate that Panamint Tom and his children had a similar ranch in Warm Springs Canyon to the south, where they also grew vegetables and fruit trees; but the antiquity of this site is also unknown [U.S vs. Grantham (1940); not shown on Map 3].

7. Haita. Warm Springs, Panamint Valley. Across the Panamint Range in northern Panamint Valley is a hot springs, and in the vicinity was a winter village area. Steward (1938:84) does not indicate the names of families who lived there in pre-contact times, but certainly as long as present-day Timbisha people can remember, this area has been held by George Hanson, who established a ranch (called Indian Ranch) a mile or so north of the spring. Steward (1938; 1941) interviewed Mr. Hanson who told him that he was born in Grapevine Canyon in Death Valley about 1845 (see Ethnohistorical Overview), but it is entirely possible that one or both of his parents were from Panamint Valley. He seemingly knew traditions about this area dating to the very first advent of Anglos (Irwin 1980:70). In addition to the floor of Panamint Valley which contains some mesquite groves, people from this area went into Wildrose Canyon on the western slope of the Panamint Range and into the Hunter Mountain district to the north of that. They were thus related to people in both of these directions.

8. Siinabadi. 'Willow Canyon.' This site, in Wildrose Canyon, is about 8 mi. north of Indian Ranch at about 4,500 ft. Steward (1938:84) was told that a few families wintered there, moving out from that location to hunt and gather, but also moving to temporary camps higher in Wildrose Canyon for the pine nut season. He does not give any kinship affiliations for persons from this area, but they were presumably related both to people elsewhere in Panamint Valley, as well as persons in Saline and Death valleys.

9. Ko'o. 'deep place,' Saline Valley. Although this is the name for the whole of Saline Valley, it was also used to refer to a winter village on the west side of the Valley at the mouth of Hunter's Canyon. People from this site went to the Inyo Range to the west as well as to the Hunter Mountain area to the southeast to hunt and gather, supplementing mesquite and other foods found on the Valley floor. There were five families or camps at this location ca. 1870, according to what Bill Dock told Steward (1938:78-9). They were

headed by Caesar, Caesar's father, Joaquin, Tom Hunter, and Patuku. Nelson (1891:371) visited this site in connection with the Death Valley Expedition of 1891 and reported that they had at that time about 100 acres planted in alfalfa, melons, squashes, corn, beans, barley, and wheat, and that they were supplying a borax company about a mile away with these products. Kinship connected people from this area to persons at Siigai to the south, as well as to people in Eureka Valley to the north.

10. Siigai. Hunter Mountain. This was an important region for gathering pine nuts and hunting, but also had at least two areas where people had established winter villages. One was at Goldbelt Spring (Tuhu, 'black'), and the other at Cottonwood Spring (see 11, below). Steward (1938:80) notes that one major family was remembered as living at the former, the family of Tuhutsugu ('Tuhu leader'), said to be Caesar's paternal grandfather. He had four daughters and one son. Bill Boland's wife was from this district, thus connecting it with Furnace Creek. Steward (1938:80) does not record any other kinship connections, but given the importance of the area, they seemingly go in most directions. Dutcher (1893) visited a temporary camp of nearly 100 persons gathering and processing pine nuts on Hunter Mountain in 1891.

11. Nabadi. 'canyon,' Cottonwood Canyon. This site is located on the east slope of Hunter Mountain and the adjacent Cottonwood Mountains, at a spring about half way down the canyon into Death Valley. People here were related to both Saline Valley people as well as to people at Surveyor's Well. The names associated with this site according to Steward (1938:80) were Pete Sam, his sons (Pete and Johnny) and daughter (May, or Esther Sam Chico). Jackass Sam from Ohyi also lived there with his family. The two senior men were related by marriage. In 1891 the people had small gardens of melons, corn and beans in this location, according to Nelson (1891:372).

In addition to these primary locations, which have the closest historic ties for the Timbisha people, Steward also lists other winter village sites in the Little Lake/Koso Mountain district (Steward 1938:80-81), particularly near Darwin, Little Lake, Coso Hot Springs, and Olanca; in Eureka Valley, at Waucoba Spring (Steward 1938:79); in Oasis Valley, a well-watered locality near the present town of Beatty, NV (Steward 1938:94); and near Lida, NV (Steward 1938:69). Merriam (Grosscup 1977) records some of these same, as well as a few others. All of these areas are important toward the larger definition of Panamint territory, and persons from them have family connections throughout the entire region.

Temporary Camps. In addition to these larger winter village areas, the Timbisha and Panamint people had well over 100 other locations that they used for seasonal or temporary camps when on hunting or gathering trips. Some of these were on the valley floors in mesquite groves or in close proximity to particular patches of seed-producing plants. Some were in the foothills in proximity to other plants or near places where small game animals could be taken. Yet others were in the high country, frequent places to go in the summer

to escape the heat of the valleys and also places to establish pine nut harvesting camps. In addition, men made temporary camps in the high country to hunt large game, primarily bighorn sheep.

Seasonal or temporary camps might be occupied from a few days to several weeks, depending on the tasks required. Movement was thus cyclical from the winter village sites to these and then returning. Patterns also differed with each locality, although the move to somewhere in the high country for the summer was fairly standard. Most temporary camp areas, or the springs or other geographic features near them, were named, and both Steward (1938) and Merriam (Grosscup 1977) provide lists of them. Archaeological work in the region has substantiated the use of many environments in this region for subsistence and other purposes, although it cannot usually connect specific sites on the floors of the valleys with those in the foothills and highlands.

Subsistence

The Timbisha and other Panamint people made a living by hunting and gathering the animals and plants that occurred in their local areas. In historic times (probably after 1860), they also farmed (Wallace 1980; see III, Plants and Animals). In addition to the foods that were to be found in the immediate areas of their winter villages, they had the uplands and mountains surrounding them as resource localities. But given that animals and plants pattern themselves differently throughout the Mojave Desert, not all local areas had exactly the same resources to choose from. Concentrations of particular species varied geographically as well as from season to season and year to year, so that even if groups were able to find the same foods, they could not always count on them as being equally productive. The people had to have several alternatives to choose from in any given year, and there is good evidence that this approach served them well.

As with the data on other aspects of Timbisha and Panamint Shoshone life prior to contact, data in the published sources on subsistence are sketchy and probably cover about one-third of the resources once taken. Apart from the early and valuable observations of Coville (1892) and Dutcher (1893), most of the data come from the 1930s, and none involve detailed studies of subsistence, especially documenting quantities of materials taken or degree of dependence on particular species. The summaries that follow are based on what is actually documented in the sources, along with some additional information gleaned from adjacent groups that is probably pertinent to Timbisha and Panamint Shoshone uses. More detail on Timbisha uses is provided in Section III, Plants and Animals.

Animals. Although plant products probably provided more of the day-to-day subsistence needs of the people, animals were important and were hunted and/or trapped whenever an opportunity arose. People throughout the region valued desert bighorn sheep (*Ovis canadensis nelsonii*), which were probably reasonably common until the 1870s when rifles were introduced and non-Indians began to hunt them as well (Bailey 1940; Graham

1985). Nearly every range within broader Panamint territory contained sheep, and sometimes they could be found in close proximity to the valley floors. Habitats and habits of the bighorn sheep of Death Valley are particularly well known through the work of Welles and Welles (1961), who found evidence of them at most major spring sites within the region. Rock art motifs featuring bighorn are also quite common throughout the Mojave Desert, suggesting that these animals have been a focus of attention for many generations (Grant 1985).

According to Steward (1941:273-4) and Driver (1937:61), bighorns were taken by individual male hunters, as well as by several men cooperating to drive them to a fixed point or to surround them. In the latter cases, shooters were stationed near a pass or other place where the sheep were known to go for safety. The shooters had bows and arrows with stone points dipped in poison. The other hunters would then move the sheep in the direction of those waiting. Three to four sheep were taken at a time using this method (see also Irwin 1980:21). Another technique reported for the Koso district was to attach a noose snare to a spring pole and place it in a known sheep trail (Irwin 1980:22). Even if the sheep succeeded in pulling up the pole, it would not go far as it would be dragging the pole.

Wallace (1976) reports on numerous rock blinds located throughout Death Valley, particularly in the vicinity of Furnace Creek, as related to bighorn hunting. He also provides some early historic accounts as to their use by waiting hunters, as well as in conjunction with drives past waiting hunters (see also Hunt 1960:190-91).

Sheep were usually field butchered and the meat returned to camp where it would be divided among the families. It was roasted on the coals and occasionally dried for storage. The hides might be retained by the shooters or given to others depending on need. Little is noted in the literature about ritual disposal of bighorn skulls, although it is known that other Mojave and Sonoran desert peoples made piles of these in special locations (Nabhan 1993).

Deer (Odocoileus hemionus) were apparently not as common as bighorn sheep in the region, but there were some concentrations primarily on the western periphery in the Inyo and Coso mountains (Steward 1938:77). They were taken occasionally on Hunter Mountain and in the Panamint Range, but were rare to absent in the Grapevine and Funeral mountains.⁶ When taken, it was by individual hunters using stone-tipped arrows (Steward 1941). Irwin (1980:22) relates a story of a large communal hunt for deer with fire as told to Mark Kerr in the 1930s by George Gregory of Olancho. The location was not specified, but it seems to have been in the Sierran foothills. Deer meat was treated in the same ways as bighorn sheep meat.

Pronghorn (Antilocapra americana) were equally rare in the region, being found in sufficient numbers for communal hunts only south of Little Lake (Steward 1938:81-2). They

were sometimes taken individually in the northern part of Saline Valley and at Sarcobatus Flat, north and east of Death Valley, in Nevada (Steward 1938:90). They apparently were absent in Death and Panamint valleys.

Although all large game except bighorn sheep were seemingly rare and could not be depended upon for a good meat supply, small game often filled the gap as a protein source. Most small game was trapped with deadfalls, although desert cottontails (Sylvilagus audubonii) could also be snared with nooses set in a trail, and black-tailed jackrabbits (Lepus californicus) were shot with bow and arrow. Jackrabbits were also taken in communal drives in some localities, including Saline Valley, northern Death Valley, Panamint Valley, and the Koso and Little Lake districts (Steward 1938). These drives were accomplished using nets made of native fibers, measuring in excess of 300 ft. long by 3 ft. high. They were strung in a large semi-circle, and then beaters drove the rabbits toward the nets from some distance behind. Jackrabbits were retrieved from the nets and killed with sticks. Communal drives were done primarily in the fall when the pelts were in good condition, as one of the by-products would be skins to make rabbitskin blankets.

Other small mammals documented as taken for food by the Timbisha and other Panamint people when found, either on the floors of the valleys or in the higher ranges, include: desert woodrat (Neotoma lepida), western gray squirrel (Sciurus griseus), pocket gopher (Thomomys bottae), golden-mantled ground squirrel (Spirmophilus lateralis), kangaroo rats (Dipodomys spp.), Townsend's ground squirrel (Spermophilus townsendii), badger (Taxidea taxus), marmot (Marmota flaviventris), and occasionally porcupine (Erethizon dorsatum) (Irwin 1980:19). Steward (1941:277) reports as well that bobcats (Felis rufus) and skunks (Mephitis mephitis) were eaten, according to what he was told. Most small game was roasted whole in the coals or boiled in a boiling basket.

Waterfowl and other birds played some role in the diet, although the former did not occur everywhere or in all seasons. "Ducks" of unidentified kinds were taken by shooting them from blinds constructed of tules near ponds (Wallace 1976). Geese [probably Canada goose (Branta canadensis)] were taken in this manner as well. Tule blinds placed near water holes were also used to shoot quail [both mountain (Oreortyx pictus) and Gambel's (Callipepla gambelii)] as well as other small birds, according to Wallace (1976:153) who cites an account of hunting with this technique in the Grapevine Mountains in 1875. Mourning doves (Zenaida macroura) were taken in deadfall traps or with snares in mesquite groves. Irwin (1980:26-7) describes shooting doves from blinds near springs and also catching them live by hand from these same structures. Other birds eaten include the American robin (Turdus migratorius), the northern flicker (Colaptes auratus), and, where found, sage grouse (Centrocercus urophasianus). Birds listed as specifically not eaten include eagle, crow, vulture, owls of all kinds, hawks, and roadrunner (Irwin 1980:19). Birds were prepared for eating as were small mammals.

A favorite food source among the reptiles was the chuckwalla (Sauromaulus obesus), known to once have been found quite commonly throughout Timbisha and larger Panamint

territory. They occur in rocky places, up to an elevation of roughly 5,000 ft., and were commonly taken from rock crevices with a special hooked stick. They could also be captured by hand when out feeding, but were fast runners and could both bite and whip captors with a heavy tail (Wallace 1978:190-110). Chuckwallas were roasted between heated rocks in an earth oven to prepare them as food, as were other "large lizards" (Grinnell 1937:34).

Desert tortoises (Gopherus agassizi), although of much more restricted distribution in this region, were also a source of food for some but not all Timbisha and Panamint people. Steward (1941:277) was told by George Hanson that they were not eaten, although the three individuals Driver (1937:62) interviewed claimed that they were (see also Irwin 1980:19; and Section III, Plants and Animals). They were probably always of limited occurrence in Death Valley. Individual preferences in some areas of the region also varied as to whether poisonous and non-poisonous snakes were eaten, as well as caterpillars, cicadas, crickets, ants and ant eggs, and other insect larvae or pupae (Driver 1937; Steward 1938; 1941). Nearly all insects are high in protein and were much collected in the desert as well as other areas of the West (Sutton 1988).

Plants. Plant products were likely of more significance to the people of this region than most from animal sources. Particularly important were the various products of the mesquite (Prosopis glandulosa) and pinyon (Pinus monophylla), but also those of the various yuccas, some of the cacti, and a variety of herbaceous plants that produce seeds or greens. The first person to document plant uses in this region was Frederick Coville (1892), a botanist with the U.S. Biological Survey's Death Valley Expedition of 1891. Other ethnographers added to the record in the 1930s, but Coville's account remains the most important. Again, given that plant distributions vary throughout the region, not all groups or winter village localities depended on the same resources or in the same proportions. The data that follow are largely from the published record. Additional details are added in Section III, Plants and Animals.

Mesquite and, where it occurred, the related screw bean (Prosopis pubescens) were particularly favored by Timbisha and other Panamint people as staples. Both produce pods or fruits that are rich in sugars. Processing for mesquite, according to what Coville (1892:355) was told, was done in the spring from beans cached from the previous year.⁷ The pods were placed in a wooden mortar and ground into flour with a stone pestle. The hard seeds within the pods were usually not ground, so that the meal came more from the pod itself. The sweet flour was made into small cakes or loaves and either eaten in that state or stored for later. Coville (1892:355) does not talk about the other uses of mesquite (in the green state, as a drink, etc.), although other authors have since added these details (Bell and Castetter 1937; Bean and Saubel 1972), and also documented the parallel uses of screwbeans.

Coville's (1892:353) data on the collecting and processing of pine nuts were based on his observations made in the Panamint Range. As he noted, in early autumn, before the nuts have been released from the cones, the cones were knocked from the trees with long

harvesting poles. The cones were then returned to a central camp and there spread on prepared ground, so that the heat of the sun would open them and release the nuts. [Coville apparently did not observe the roasting of cones to release the nuts as did his companion Dutcher (1893:379) in the Hunter Mountain area.] If the nuts were not released easily, the cones were hit with a stick or twisted by hand to further facilitate the process. They were then prepared for eating by roasting them with coals in a flat basketry tray, or cached in dry places among the rocks to be used at a later time. For roasting, the basket was tossed lightly to keep the nuts and coals moving and the basket from burning. The nuts were then shelled and either eaten as is or ground on a stone metate with a mano and made into soup (Coville 1892:353). Storage insured a good supply of pine nuts for other times of the year, something that was very important in the region with its unpredictable weather patterns affecting other resources (Steward 1938).

Coville (1892) also documents the processing of several plants for their seeds, including Indian ricegrass (Oryzopsis hymenoides), ephedra (Ephedra nevadensis), evening primrose (Oenothera brevipes and O. spp.), and Echinocactus polycephalus. Some of these were taken with a seed beater (Indian ricegrass), but others were carefully picked by hand, most often by women. According to him, all were roasted in a basketry tray like pine nuts, but then were ground on the metate with a mano. Other seeds added to the list in the 1930s by Steward (1938) include those of chenopods (Chenopodium spp.), chia (Salvia columbariae), white-stemmed blazing star (Mentzelia albicaulis), Great Basin wild rye (Elymus cinereus), wheat grass (Agropyron sp.), big sagebrush (Artemisia tridentata), and tansy mustard (Descurania spp.). Botanist Mark Kerr (Irwin 1980) added seeds from Coreopsis begelovii, alkali sacaton (Sporobolus airoides), and sunflower (Helianthus annuus), while also confirming several of those told to Steward. Kerr also added details as to the use of the seed beater with white-stemmed blazing star, tansy mustard, and chia, and to the processing of ricegrass, and sacaton by first cutting the stems and then flash burning them to obtain the seeds (Irwin 1980:11-16).

Several plants in the region provided leafy greens in the spring season, or fleshy stalks or tubers. Coville (1892) learned of the use of the leaves of prince's plume (Stanleya pinnata, S. elata), and Caulanthus crassicaulis as they came up fresh early in the year. In order to remove bitter elements, they all had to be boiled and the water discarded. Less elaborate processing attended the use of the fleshy stems of broomrape (Orobanche californica), the stems of desert thistle (Cirsium mohavense), the flowers and leaves of fiddle-neck (Amsinkia tessellata), or the roots or tubers of desert parsley (Lomatium nevadense), blue dicks (Dichelostemma pulchellum), or sego lily (Calochortus nuttallii, C. kennedyii) (Irwin 1980). Most of these could be eaten raw, or after roasting in a pit of hot sand. Most were spring foods, but some could be found through summer in the higher country.

Another spring food documented by Coville (1891) was Joshua tree buds. In the spring, as the growth tips of the branches of the tree yucca (Yucca brevifolia) swell with young leaves and what will be the flower stalk, the rosette was deftly twisted from the

branch and then trimmed of any older, mature leaves. The tips were also discarded, "leaving an egg-shaped, solid, cream-like, juicy mass" (Coville 1892:355). This was then roasted on the hot coals and eaten, or allowed to cool. The growth tip is filled at this time with sugars and other carbohydrates and is very nutritious. Other yuccas were apparently treated similarly where they occurred, and later in the season, their flowers and fruits were eaten (Bean and Saubel 1972).

Berry-producing plants are not common in the Mojave Desert, but Coville (1892) documented the use of wolfberry (Lycium andersonii), and others have added wild grapes (Vitis girdiana), and elderberries (Sambucus caerulea) (Irwin 1980:10). All could be eaten raw, or the fruits dried and stored for later use in soups or stews. Coville (1892:355) also discusses the use of the stalks of the common cane (Phragmites australis) as a sweetened flour. He notes that the stalks were pounded to reduce them to a form that could be sifted and that this material was then molded by hand and placed near a fire until it became brown and taffy-like. It was then eaten in this form. The sugars contained on the cane are actually produced by aphid (Hyalopterus pruni) (Sutton 1988:73-5).

Coville (1892) also documented the use of the pads, buds and fruits of the beavertail cactus (Opuntia brasilaris), and Kerr (Irwin 1980:12) added the fruit of Echinocereus engelmannii. These fruits could be eaten raw, after first removing the small spines, but pads and buds were usually roasted in the coals to make them edible. None of these plant foods was reported to be stored.

Seasonal Round. Collection of these and undoubtedly other plants, as well as small mammals, birds, reptiles, and insects, was accomplished by following a seasonal round that took people through the various resource areas from the valley floors to the foothills to the highlands and back again each year. During the winter, most camps lived on materials that the people had been able to store from the previous season, including mesquite flour, pine nuts, seeds of various kinds, dried greens, fruits and berries, and the dried meat of large game such as the bighorn sheep. Men also hunted from winter camps as supplies became low, always being careful to avoid taking female animals in the season when they were carrying or raising young. Small game could also be trapped during the winter season, either by men or women setting figure-4 rock traps or noose snares, depending on the quarry. By the time spring came, depending on the year, stores were sometimes exhausted and the people were ready to move out of winter locations to begin gathering fresh plant materials.

Spring found people in temporary camps in the foothills, collecting greens and also obtaining small mammals and birds where possible. Depending on elevation, mesquite might also be ready to harvest in a green pod stage by April, and the main body of the crop by June (later in some locations). At this time, the people moved to the mesquite groves for ease in processing the crop, especially if it were large, and preparing it for storage. After caching as much as they could in storage pits in the valleys or in the foothills, they were

then ready to move to the mountains to harvest some of the roots. While there, they also took small game, and the men again hunted the bighorns.

August began the pine nut season when most of the highland camps would be well occupied, although the exact locations would depend on the crops that particular year. Festivals might take place at this time as well, or just proceeding the move to the pine nut camps. Pine nuts were also cached for the winter in the mountains, or might be returned to the winter village camps for storage, depending on proximity. People usually moved back to the winter village sites around November to begin living on stored food, but some might also hold rabbit drives in that season (Steward 1938).

Without doubt, subsistence was difficult in most of the areas of Timbisha and Panamint country, and people had to be ever watchful to have enough food stored or on hand to sustain their families. If times were particularly hard, as for example in drought years, some families might have to move to other locations where they had relatives--if these locations were experiencing better times. But for those who knew the land and its resources extremely well and were not lazy in their food-getting habits, the Mojave Desert could yield an adequate living. For those less skilled or ambitious, the desert could be unforgiving. For these reasons, the number of people in this region was probably never very high. Although exact figures cannot be obtained for the immediate pre-contact period, largely because of the devastating toll that introduced diseases had on the people even before sustained contact, it is unlikely that the population of the region exceeded 500 people--and it could well have been less (Kroeber 1925:590).

Material Culture

The people approached their food-getting tasks with a flexible and portable tool kit designed to accomplish specific goals. Most of the items included within it came from local plant, animal, and geological resources, although a few raw materials were imported on occasion. Coville (1892) documented the construction of several items based on his observations in 1891.

Baskets. Among the most useful of tools were baskets, made in many shapes and kinds for general as well as specific tasks. Basketry manufacture was women's work, although men and children sometimes helped collect the materials needed. Basic to the foundation of all baskets was willow (Salix lasiandra), which was ordinarily used for both warp and weft. An alternative in some areas was three-leaved sumac (Rhus trilobata), which is known from the Panamint Range (DeDecker 1984:5). Another material used by some for foundations in coiled baskets was deer grass (Muhlenbergia rigens) (Coville 1892:359). Plants used for decoration included bulrush root (Scirpus robustus) for dark brown or black, Joshua tree root for red, and in historic times (ca. 1860), devil's claw (Proboscidea parviflora) for black and juncus rush (Juncus cooperi, J. textilis) for yellow.

Timbisha and Panamint Shoshone weavers used the techniques of twining and coiling in constructing their baskets, the overall shape and purpose dictating the weave. Twining involves the interlacing, usually with a half-twist, of two or more flexible weft elements between rigid warp elements. Coiling involves sewing a single flexible weft over a spiraled foundation of semi-rigid warps. It requires an awl to make holes in the foundation for passage of the weft. In the Timbisha and Panamint region, an awl made from a thick spine of the cottontop cactus (Echinocactus polycephalus) set in a small head of hard pitch from creosote (Larrea tridentata) served this purpose (Coville 1892; Kirk 1952).

Traditional baskets made in open twining (rows spaced 1/4" to 1/2" apart) included the large conical burden basket (Figure 6), a winnowing-parching tray (Figure 7), seed

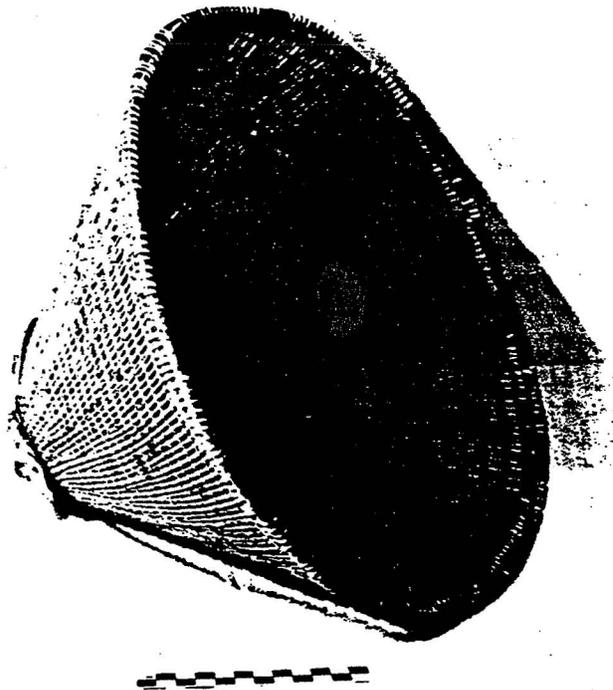


Figure 6. Open twined burden basket, maker unknown. Cat. # DEVA 892. October, 1993.

beater, and roasting scoop. Baskets made in close twining (rows less than 1/4" to 1/8" apart) included a conical gathering basket, winnowing-parching tray (Figure 8), woman's hat, water bottles, and necked treasure basket. Coiled baskets, all with stitches close together, included the shallow circular winnowing tray, an eating bowl, boiling basket, woman's hat, and a necked, jar-shaped form (Fowler and Dawson 1986:716). Women spent many hours making baskets or repairing them, as they were among the most useful items in their daily work.

Collecting and processing plant foods, especially seeds and nuts, involved the extensive use of baskets. Close twined conical seed collecting baskets, used with or without the twined seed beater, were important in taking all seeds and berries. Open-twined burden baskets were used to transport pine nut cones and mesquite beans to camp for processing, and pine nuts or mesquite beans to storage places. Open twined trays were used for parching and winnowing pine nuts and large seeds, and for sifting pine nut and mesquite bean flour. Close twined trays were used for winnowing and parching small seeds, as were on occasion the circular coiled trays. The coiled boiling basket served those groups without pottery (of scattered distribution) as a cooking container. In it were boiled small game

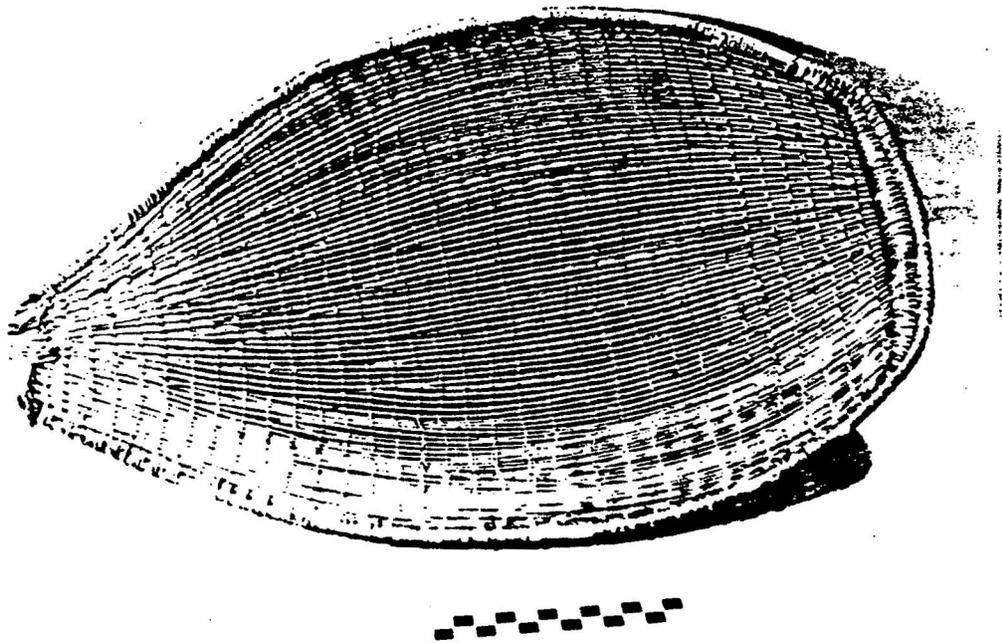


Figure 7. Open twined winnowing/parching tray, collected at Hungry Bill's ranch, probably in the 1950s. Cat. # DEVA 16089. October, 1993.

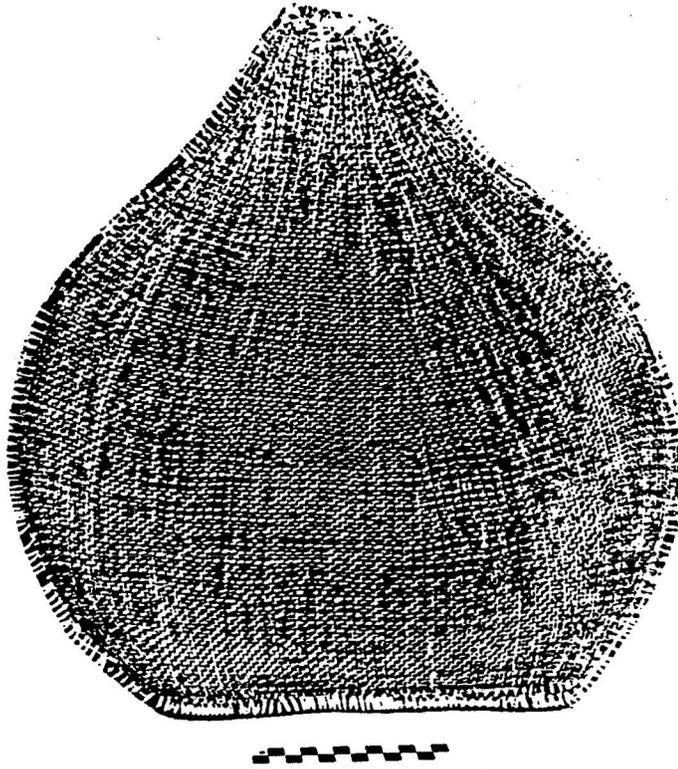


Figure 8. Close twined winnowing/parching tray, maker unknown. Cat. # DEVA 906. October, 1993.

animals, and a variety of mushes and stews of plants or of mixed plant and animal origins. Meals were served in individual coiled eating bowls from this communal boiling basket, or from the roasting fire. The twined water bottle, made in several sizes, served the water needs of camp members, as well as those of individuals on the trail. It was among the most indispensable items in a camp.

Other items made from basketry but not used in food gathering or processing were women's twined and coiled basket hats (they often protected the forehead from the tumpline of the burden basket), and twined and coiled narrow-necked treasure baskets. The latter were hung from house poles and contained important items such as shell beads, feathers and feathered bands, and other small things that could be easily lost. They are common among a number of tribes in southern California and the southern Great Basin, where, on occasion, they are also used in conjunction with funerals to honor the deceased.

Other items made with basketry techniques and out of plant fibers included cradles for infants and young children, sometimes of the forked-stick type similar to those of the Kawaiisu and Yokuts (Driver 1937:79) and sometimes on a more oval foundation (Steward 1941:295, 341), and various shapes of traps and cages for birds. Most of the latter were open twined conical structures that might contain a pet mockingbird, or temporarily an eagle to obtain his tail feathers (Steward 1941). Some were made by men.

Woodworking. A number of implements used for subsistence as well as more generally were made of wood. Among them were a man's bow and arrows, a woman's digging stick, the fire-making kit, and the large mesquite mortar. Coville (1892:360) describes the manufacture of a bow from a stout juniper (Juniperus osteosperma) limb, one from a tree that "has died and seasoned while standing." The bow stave was strengthened with deer or bighorn sheep sinew attached with horn glue and was roughly 3 ft. in length [Steward (1941) says 4 ft.]. Its string was made of plied sinew or Indian hemp (Apocynum cannabinum). The arrows were made either of cane or willow [and possibly arrowweed (Pluchea sericea)] straightened by placing the shaft in a heated stone with two parallel grooves across the face, and then holding the shaft between the teeth and bending the ends to form (Figure 9). Coville (1892:360) remarked at what a "marvelously straight arrow" was produced by repeating this process. Arrows were kept in quivers made of either bobcat or skunk hides (Steward 1941:338). Men were the primary makers of bows and arrows.

A woman's digging stick similarly served her as an important companion as did a man's bow and arrows. Usually made of mountain mahogany (Cercocarpus ledifolius) or perhaps mesquite, and about 3 ft. long with a fire-hardened tip, it was used to dig roots and bulbs and, on occasion, to excavate burrows and nests of small mammals. It was also a walking stick, a probe, and an all-purpose tool.

The fire-making kit was usually kept in a man's quiver, as part of the composite shaft used with it was usually an untipped arrow. Normally the hearth of the kit (said to have one hole according to Steward [1941:286]) was made of softer big sagebrush wood, and the drill of harder wood such as greasewood (Sarcobatus vermiculatus). The greasewood tip was fastened to a shaft with sinew or Indian hemp, and then the shaft rotated in the pit (a little sand included) to create the friction necessary to ignite fire in shredded bark or grass tinder (Steward 1941:286). Driver (1937:70) was told that a straight rather than a composite drill shaft was used, but in either event, the idea of friction created by contrasting woods probably held. Given that fire was not easy to kindle, most camps carefully tended it and carried it when moving camp within a slow match made of juniper bark.

Large wooden mortars to be used with stone pestles to grind mesquite bean flour and other foods were commonly made of mesquite wood. A segment of a dead tree was secured and shortened with fire and then hollowed out with fire and stone tools to the desired shape, usually by a man. When finished, it was normally buried in the ground a foot or so to bring its height within the convenient reach of a woman seated on the ground and pounding with

the long, cylindrical stone pestle. In some areas within Panamint country the use of stone mortars (either bedrock or free-standing) is reported (Driver 1937:68).



Figure 9. Tom Wilson with cane arrow shaft and grooved shaft straightener, 1930s. Neg. # DEVA4331.

Stoneworking. In addition to stone pestles and mortars, stone tools included the various projectile points, knives, scrapers and drills made by flaking chert, chalcedony, jasper and obsidian. Little is known of the manufacture of any of these from ethnographic sources, as by the time observers were present, most hunters had made the transition of metal implements. Steward (1941:288) reports the use of an antler flaker for Death Valley. Nothing is known for certain about quarries for the stone, although obsidian was thought to have been traded into the area. Archaeological sites in the region contain ample evidence of stoneworking from the past (see Archaeological Overview).

Similarly, little is known of the manufacture or quarrying of grinding equipment, including the flat, slightly hollowed metates and the smaller, rounded manos. They were important items of equipment for processing plant materials for food, and most households had them (Figure 10). Driver (1937:69) was told that naturally-shaped slabs were usually sought and that the hand stones were either naturally rounded or oval. Again, these are of common occurrence on archaeological sites.



Figure 10. Annie Shoshone using a mano (hand stone) and metate (base stone) to grind. However, this is a posed picture, as she is grinding mesquite beans which should be ground in a wooden mortar. 1930s. Neg. # DEVA 4333.

Pottery. Steward (1941:294) obtained a few notes on pottery manufacture from George Hanson. According to Mr. Hanson, the clay for pottery was ground on the metate, and tempered with the juice of either globe mallow (*Sphaeralcea* sp.) or cactus (*Opuntia* sp.), and formed into a continuous coil to construct the pot. The surface was then scraped with a stick, and the pot fired in an open fire. The only decoration Mr. Hanson could remember was the use of thumbnail impressions. Mark Kerr's (Irwin 1980:28) brief note from Charlie Wrinkle confirms most of the above. Shapes included truncated cones, and hemispherical bowls with flat bases (Driver 1937:80). The gender of pottery makers is not noted. Again, pottery occurs on late period archaeological sites throughout the region (see Archaeological Overview; Figure 11).



Figure 11. Clay pot, attributed to Nellie Doc, on exhibit at Borax Museum, Furnace Creek Ranch; probably 1930s or 1940s. March, 1993.

Skin Dressing. Skins of bighorn sheep, deer or bobcats were usually made into robes and blankets rather than other items of clothing, according to what Steward (1941:299) was told. Deerskin was preferred for a man's breechclout, but other materials might be used. Skins were dressed by soaking them to remove the hair (if that were desired) and then scraped with a bone scraper made from the rib of a bighorn or deer. Smaller skins, such as those from marmots or badgers, were used without much preparation for footwear, or occasionally to make a woman's front and/or back apron. Rabbitskins could also be cut into

long narrow strips, twisted into cordage, and woven on a frame to make rabbitskin blankets. The weft was of Indian hemp. These skins did not require dressing either. Both men and women were involved in skin dressing.

Cordage. Cordage of several sizes was exceedingly useful for a number of purposes: in weaving rabbitskin blankets, making bow strings, rigging traps and making snares, making nets, and merely tying all manner of items together. Most all cordage was two-ply, made from Indian hemp, and produced in large quantities in the fall or winter. After stripping the fibers from the stems of the plant, these were worked between the hands to remove any bark or other matter and then rolled on the leg to produce the string. Usually both strands were rolled at once, being slightly separated under the worker's (usually a man) palm. A roll down the leg completed the string, with plying accomplished by rolling the two strands together with an upward motion (Steward 1941).

Other Raw Materials. Other materials known to have been used locally were salt, red ocher, tobacco, several medicinal plants, and various shells. Of these, the first four were obtained locally, and the latter came in through trade. Salt occurred naturally within Death Valley, as did red ocher. Tobacco (*Nicotiana attenuata*) was gathered wild, although most groups recognized that it was a fire follower, and thus burned over small patches of country to encourage its growth (Steward 1938). Very little is known of the medicinal uses of plants among the Timbisha and Panamint peoples, although more is known for surrounding areas (Train, Hendrichs and Archer 1941), and uses were probably parallel. Shell beads seemingly were traded into the region from California coastal areas, as olivella, clamshell and haliotis were all known to occur as ornaments and also media of exchange (Driver 1937:84).

Housing. When constructing shelters, the Timbisha and Panamint Shoshone people again turned to various natural products for primary construction materials. The houses they built varied with the season, and whether they were in more permanent or temporary camps. All were meant to house the extended family, which commonly included parents and children as well as grand-parents and perhaps another relative or two. Shelters were primarily for sleeping and storage, with cooking, work and visiting usually taking place outside in the shade of trees.

Winter houses needed to be weather tight and warm, even in Death Valley where winter temperatures on the Valley floor were usually quite moderate. To construct these, two large mesquite poles were felled and each placed in a hole opposite the other and leaned to the center where they were connected. Other thinner poles were placed between to complete the circular framework, and then arrowweed, willow, or tule or cattail were added and tied in place. There was a central fire pit and a hole above the doorway to allow the smoke to exit. The interior might be excavated to about 1 ft. in depth. Mats of brush or tule covered the floor (Steward 1941:282). If such a house were constructed in the mountains, it would be made on a juniper pole foundation (four poles), and might also be partially earth covered (Figure 12). Driver (1937:66) reports a house type, apparently built

in the valleys, with a horizontal ridge pole supported by two end posts. This house was more elliptical or elongated in shape, but was apparently covered with the same materials as the regular winter house.



Figure 12. Remains of a winter house in Wildrose area, March, 1960. Neg. # DEVA 2199.

The summer house was apparently domed and made on a framework of willow, with arrowweed and other brush or tule filling in the framework (Figure 13). This house was also circular in ground plan, but did not have an excavated floor. It did have a central fire pit, but this was used for warming rather than for cooking. Other houses during summer could be circular windbreaks open at the top and made of a framework of small poles of various types and filled in with arrowweed. These have been reported and photographed in Death and Panamint valleys in various locations (Grosscup 1977; Kirk 1953). Dutcher (1893:377-78) described such a structure on Hunter Mountain in use at the temporary pinyon camp. During the mesquite season, people might live without building a special shelter in the midst of a mesquite thicket, which provided shade and natural cooling from breezes.

Cooking, eating, and other daily activities generally took place outdoors. Sometimes a circular windbreak was used as a kitchen, especially in a sandy area (Figure 14). Personal

belongings and other hunting and gathering equipment were stored around the periphery of a house or shelter, either inside or outside, depending on whether there was room (Steward 1941).



Figure 13. Johnny Shoshone in front of his summer house, probably in Wildrose in the late 1930s or early 1940s. Neg. # DEVA 3018.