

Archaeological Investigations in Death Valley

National Monument 1952-1957*

W. J. Wallace

The Natural Setting

Death Valley National Monument, embracing nearly 2,000,000 acres of desert and mountain country, is the sixth largest area administered by the National Park Service. The monument is situated in eastern California and southwestern Nevada. Death Valley proper, running in a northwesterly direction, is about 140 miles long but only 4 to 16 miles wide. Nearly 550 square miles of its floor lie below sea level, reaching an extreme near Badwater of over -280 feet. Mountains, 4,000 to 11,000 feet in height, rise sharply on either side; the Panamint Range on the west and the Amargosa Range, divided into the Grapevine, Black and Funeral mountains, on the east.

With such elevation extremes the Monument naturally has a wide variety of climate. The valley is famous for its heat, low rainfall (ca. 2 inches), and low humidity. Excessive temperatures are known only during the summer, however, with the winter months generally mild. Rainfall increases and heat lessens in the surrounding mountains which can be classified as semi-arid.

Over most of the low country, including the valley floor, alluvial fans, and lower mountain slopes, there is a scattered growth of drought resisting shrubs interspersed with herbaceous perennials. Mesquites are the only significant trees growing on the valley floor, most of these occurring in thickets on sand dunes. In higher elevations, generally above 6,000 feet, are thin pinyon forests.

Wildlife is varied though, excepting lizards, not particularly abundant. Of the mammals, most are small species such as mice, rats, and rabbits. Several carnivores, including kit-foxes and coyotes, are present. In the high country are small herds of bighorn; a few deer live in the eastern mountains. Lizards, of a dozen or more species, are seen everywhere; snakes are fewer in variety and number. Although a great many bird species have been observed in the country, the majority are winter residents or migrants. Insects abound during certain months.

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Historically the region was inhabited by small bands of Shoshonean-speaking Indians (Steward, 1938, 1941; Driver, 1937). These people obtained their living from natural products of the desert and mountains. Their lives were regulated by an almost constant search for food, following ripening vegetation over much the same seasonal route year after year. Mesquite beans, pinyon nuts, and various small seeds were their staples but many other plant and animal foods were eaten. While on the valley floor during the winter, spring, and early summer they camped in the shelter of the mesquite dunes. In the late summer and fall, when they moved into the high country to harvest pinyon nuts, they either lived in the open or in rock shelters. It is exceedingly doubtful that the country supported more than 100 persons; there may have been fewer.

Archaeological Research

Archaeological remains are diverse and plentiful in Death Valley National Monument and have been observed from one end of the valley to the other as well as at many places in the bordering mountains. There are open campsites, rockshelters, quarries and workshops. Petroglyphs are widely distributed; pictographs have been noted at a few places. There are various rock constructions such as circles, mounds and alignments. The latter, locally referred to as "Indian maps" are made up of small cobblestones arranged in patterns. Trails, actual furrows worn into the ground through long continued human foot travel, cut across gravel surfaces in many places.

Despite the wealth of prehistoric remains, the area has been largely neglected and little systematic archaeological work has been done. Considerable relic-hunting has gone on, however, and this continues. There was sporadic collecting and excavating by National Park Service and Civilian Conservation Corps personnel in the 1930s and 1940s. During 1946-7 the Park Naturalist surveyed and recorded better-known petroglyph and pictograph localities. From 1950-2, Lydia and Thomas Clements, Department of Geology, University of Southern California, collected materials at several localities (Clements, 1951, 1953, 1954; Clements and Clements, 1953). In February, 1951 the University of California Archaeological Survey made a brief reconnaissance along the western slopes of the Panamints in the vicinity of the Racetrack (Lathrap and Meighan, 1951). A few months later a Survey field party excavated the Coville rockshelter discovered during the earlier investigation (Meighan, 1953).

In 1952 a contract for an archaeological survey of Death Valley National Monument was negotiated by the National Park Service with the Department of Anthropology, University of Southern California. The purpose of this reconnaissance is to determine the number, extent and scientific importance of prehistoric and historic remains within the Monument. Fieldwork began in December, 1952 and has continued ever since through additional contracts and supplements. Alice Hunt joined the survey as a collaborator in 1955. She has worked for two winters in the

central section of the valley in conjunction with Charles B. Hunt of the U. S. Geological Survey.

As Death Valley National Monument includes thousands of square miles of broken country it was obvious that the entire Monument could not be investigated intensively. Therefore limited districts were selected for examination. The localities were chosen partly to give spaced areal coverage but primarily because they represented contrasting environmental or topographical conditions. It was assumed that such differences would be reflected in human settlement patterns and in artifact assemblages. A complete coverage was made of each selected region, the effort being to record every site and thus to obtain a total picture of past Indian occupation. The survey has been essentially a surface exploration, with occasional digging of test pits at key sites. Surface collections have been made of all whole and broken artifacts at each site.

To date six localities have been explored, two on the valley floor and four in the high country (map 1). A brief description of each is given below:

1. Northern Death Valley (Mesquite Flat). The northern arm of Death Valley, measuring roughly 8 miles in an east-west direction and 12 miles north to south. Elevation 40 feet above sea level to 40 below. A region of large sand dunes and bare, often salt-encrusted, clay surfaces. It has a scattered shrub vegetation with groves of mesquite on many dunes. Surveyed periodically from December, 1952, until March, 1957. The reconnaissance covered the entire valley floor but only the fringes of encircling gravel benches and fans. A total of 424 sites recorded. This was the most productive area. (Wallace and Taylor, 1955a.)

2. Central Death Valley. This stretch of country, not definitely bounded, falls mostly within the Furnace Creek and Bennetts Well and southern half of Chloride Cliff Quadrangles. Elevation is well below sea level. Includes bare salt-pan and mesquite dunes, which are fewer and smaller than at Mesquite Flat. Vegetation scanty. Several good springs. Survey during winter and spring of 1956 and 1957, covered gravel benches as well as valley floor. Less productive of artifacts than northern section but outstanding for numerous stone circles and mounds. Number of sites recored - 374. Work to be continued by Alice Hunt.

3. Wildrose Canyon. Located on the western side of the Panamints. A large canyon, 13 miles long and 1/4 to 1 1/2 miles wide. Elevation 4000 - 8000 feet. Vegetation of shrubs in the lower valley and pinyons in the upper area. Surveyed in August, 1953. 45 sites recorded. (Wallace and Taylor, 1955b.)

4. Butte Valley. A broad valley, 3 miles wide and 6 1/2 miles long, on the eastern side of the southern Panamints. Elevation 3600 - 4200 feet. Trees are absent and vegetation is made up of widely-spaced shrubs. Surveyed in August, 1954. 26 sites recorded. (Wallace and Taylor, 1956.)

5. Grapevine Mountains. Three canyons on the eastern (Nevada) side of the mountains investigated in August, 1955. Elevation 6000 - 8000 feet. Well wooded with pinyons; good water supply. 53 sites recorded.

6. Old Crump Flat. This is an arbitrary name applied to a tract north of Butte Valley including Old Crump Flat, Arrastre Spring, a section of Warm Springs and intervening canyons. Elevation 4200 - 5600 feet. No trees, only shrubs. Surveyed in June, 1956. 51 sites recorded.

Cultural Complexes

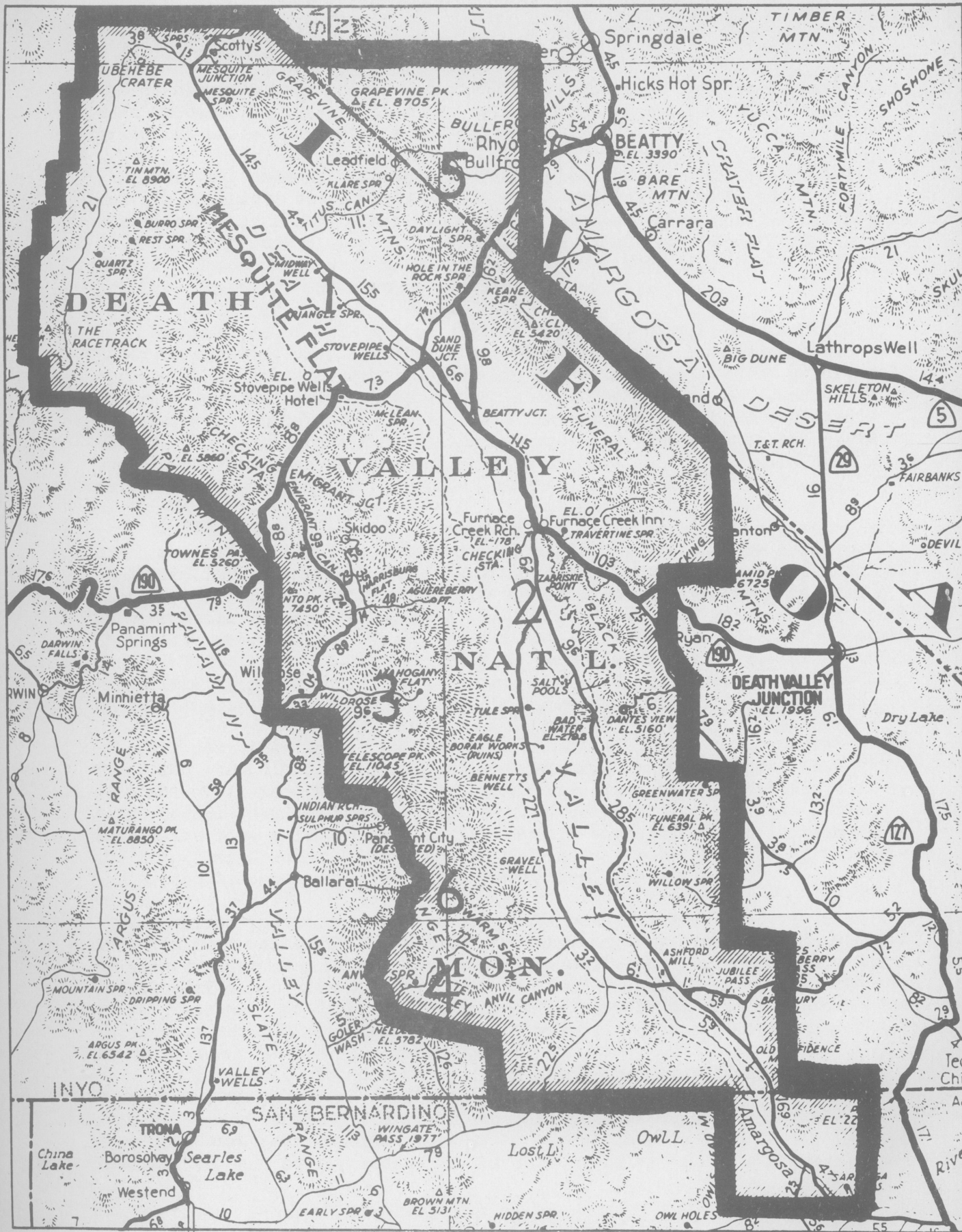
Although the University of Southern California survey has covered only a small portion of Death Valley National Monument, it is felt that a reasonably clear outline of the prehistory has been obtained. An analysis of materials from the six regions indicates the presence of four complexes which differ in content, time, and in type of locality selected for settlement. These can be grouped into four broad time periods. The valley floor has been used as the base point for the sequence because of the greater amount of data.

As the cultural sequence is based upon surface collections there is no stratification whereby it can be checked. This is not a great handicap, however, as the overwhelming majority of sites contain implements typical of one cultural phase and little or nothing from others. There are some mixed sites where more than one complex is represented but cases of this sort are surprisingly few.

Period I

The reconnaissance has not produced any Paleo-Indian remains dating back into Pleistocene times. An early occupation, at least 20,000 years old, has been claimed for Death Valley (Clements and Clements, 1953) but the evidence is unconvincing. From a gravel bench, a remnant of a beach terrace of Pleistocene Lake Manly, has come a collection of over 500 chipped stones. These are designated as products of human manufacture and classified as crude scrapers, knives, choppers, drills, and microliths. It is highly improbable that they are man-made tools. On the terrace, actually a part of the highly-varnished, tightly-packed desert pavement which forms its surface, are hundreds of stones showing various stages of flaking. The majority exhibit one or more chipped margins; some assume artificial form even to the extent of now and then having a bulb of percussion. A selection of stones has produced the series of "artifacts." The obviously varying stages of flaking and the lack of a defined form leave little doubt that the specimens are products of natural forces. The materials from other allegedly ancient sites fall into the same category (Clements, 1954).

The failure of field parties to find early man sites does not, of course, rule out Death Valley as an area for such discoveries. Certainly



Map 1

it was a suitable and perhaps even an ideal location for human settlement when fresh water lakes filled the valley during the late Pleistocene. Evidences of Ice Age occupation may yet be found.

The most ancient authentic archaeological remains discovered are heavily patinated stone tools collected at several sites in the central section of the valley. These consist of large and heavy projectile points, knives, scrapers and choppers. The typical points have long tapering stems with a rounded base, weak shoulders and short blades (fig. 1a-e). The artifact inventory includes no grinding implements.

Known sites of this period suggest seasonal, though recurrent, occupancy by a roving people. They are on low gravel benches adjacent to springs which are extinct or which, if they still supply fresh water, had at one time presumably a much greater flow. The localities contain no bone refuse or other camp debris. All that remain are stone tools and flakes. The implements and stone chips are interspersed with the gravel and are difficult to detect because they are stained to the same deep brown color as the surrounding gravel.

As the assemblage includes no grinding tools or other objects suitable for processing wild plant foods, it can be assumed that these early people subsisted largely, if not wholly, by hunting. The large projectile points, knives, scrapers and other tools are primarily adapted for killing and butchering large game animals. It is, of course, by no means certain that the tools necessarily or fully reflect the entire yearly round of economic tasks. It is possible, though there is no evidence for this, that plant foods were gathered and eaten in season and small game was consumed when large mammals, for one reason or another, were not readily available.

The campsites appear to have been inhabited during early Recent times (ca. 7000 - 6000 B.C.). Fairly moist conditions must have prevailed with rainfall sufficient to give the region a more luxuriant vegetation than is found today. Game animals were presumably quite numerous. This period was followed by a long-term, gradual rise in temperature and increase in aridity (Long Drought). The hunters very likely moved on to a more hospitable land as their supply of game diminished.

No traces of these early hunters have been noted at Mesquite Flat in northern Death Valley. Most of this country may have been still covered by the remnants of a late Pleistocene lake while they lived in the valley. Evidence of their presence may later be found on the as yet unexplored gravel benches. No campsites or tools attributable to them have been discovered in the four highland regions surveyed.

The artifacts resemble those found along the beach lines of extinct Lake Mohave in San Bernardino County (Campbell and others, 1937) with nearly the complete range of Lake Mohave artifacts duplicated. Analogous artifacts have been reported from around Owens Lake in Inyo County (Antevs, 1952, p. 28) and small numbers or solitary examples of the characteristic

projectile points have been found in San Bernardino Valley (Smith, 1942; 1950, p. 8). The Lake Mohave complex has been equated with the San Dieguito-Playa assemblage of the Mohave desert with its main locus in north-central San Bernardino county (Rogers, 1939, pp. 27-44). There have been conflicting and changing opinions regarding the age of Lake Mohave finds. They are now placed in the wet phase that accompanied the last deglaciation, and probably from its closing phase about 9000 years ago (Antevs, 1952, p. 28).

Period II

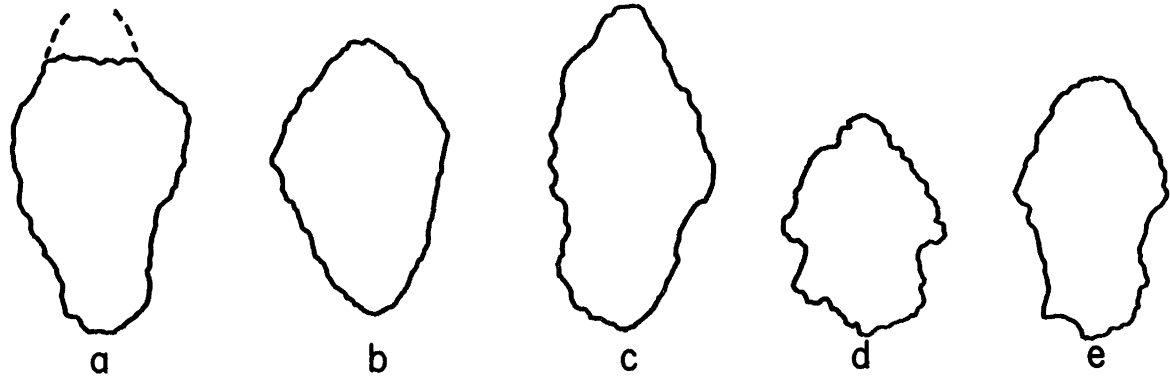
Following this early complex but separated from it by a long time gap is an assemblage best known from 5 large sites in Mesquite Flat. They are on bare, eroded clay surfaces, away from sand dunes that sheltered the more recent Indians. The sites, paralleling a dry water course, are extensive, often comprising several acres, and appear to have been favorite camping places, reoccupied time after time by the same people. Only one appears to have been lived on by a later group.

A wide range of whole and broken stone tools are strewn over the sites. Many large flakes and cores, representing workshop debris, indicate that considerable stone-flaking took place. The stone materials occasionally exhibit a desert polish but are not patinated. Consistently lacking are house remains; hearths, scraps of bone from food animals, and pottery. The materials rest directly on the clay. Test-pitting failed to reveal any depth.

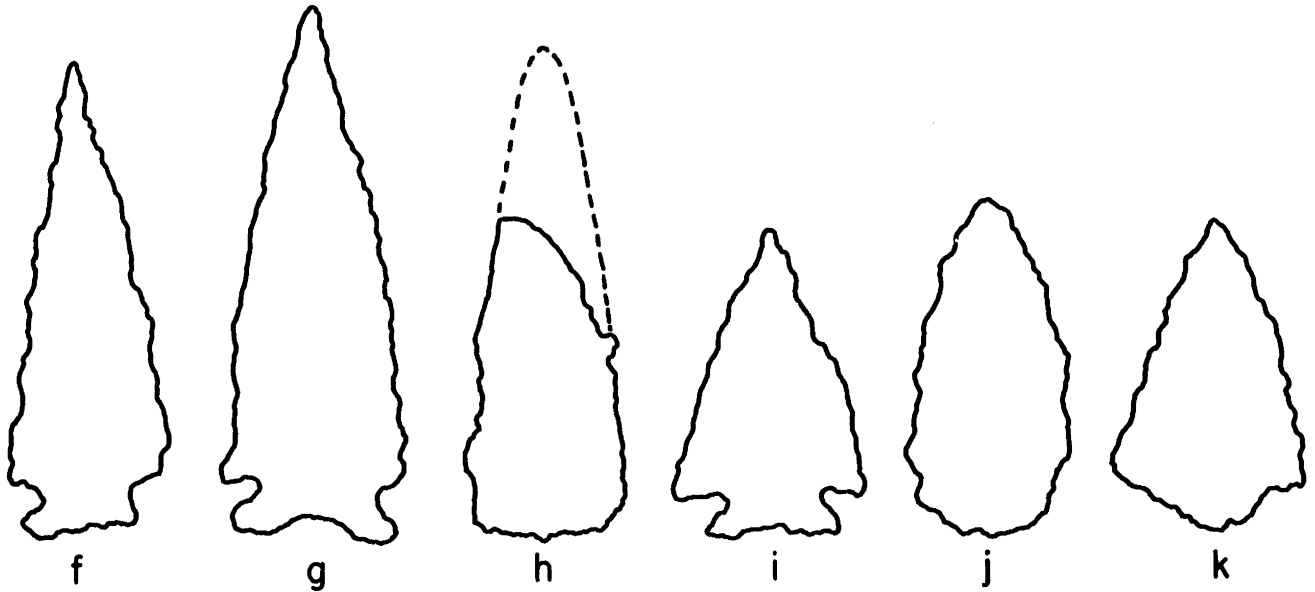
Projectile points are plentiful and frequently of excellent workmanship. They are made from a wide range of local materials--chert, jasper, chalcedony, rarely from imported obsidian. There are several varieties present; the typical form has both side and basal notching, giving a characteristic "footed" or "eared" appearance. (fig. 1f-k). Other points are either corner-notched with straight or convex base, or leaf-shaped. Their size and weight suggest that they were more suitable for darts than for arrows and that the projectile weapon was the dart-thrower rather than the bow.

Accompanying the points are several forms of large blades and expanding base drills. Hammers, choppers and scraper-planes fashioned from quartzite pebbles are numerous. Flake scrapers are rare, however, though some of the large flakes could have been so used. Mortars and pestles of coarse, volcanic stone are the characteristic grinding implements though not particularly abundant. Milling stones and handstones do not appear to have been used.

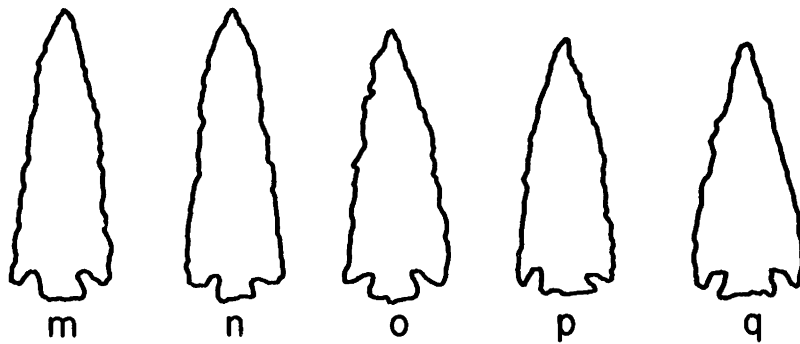
That hunting was primary in the economy of these people is attested by the high proportion of projectile points, knives and other stone tools seemingly adapted to slaughtering and preparing large game. Mortars and pestles demonstrate some use of wild plant foods. There presumably was a wider exploitation of natural food resources than earlier. The size of settlement implies a fairly heavy, semi-sedentary population.



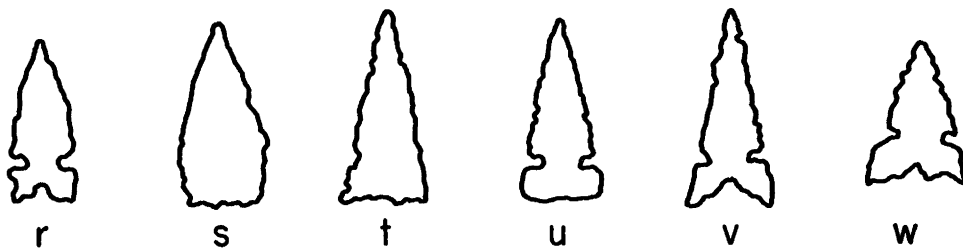
PERIOD I



PERIOD II



PERIOD III



PERIOD IV

Figure 1

Like recent Indians the prehistoric people on occasion went into the mountains, presumably to hunt. Three campsites in Butte Valley produced typical projectile points and blades as did two open sites in the Grapevines. At Old Crump Flat signs of their presence were found at two open sites and in a rockshelter. Scanty traces of these early people were also noted in Wildrose Canyon. Only a few scattered examples of their points have thus far been found in the central Valley.

It is not definitely known when these people lived in Death Valley. The location of their settlements in places today inhospitable for human occupancy and away from present water sources suggest that they were present in a period of moister climate. This may well have been during the Little Pluvial or Little Ice Age (3000 B.C. - 0 A.D.) when a fluctuation of climate produced a cycle of heavy rainfall. An approach to modern arid conditions and the drying up of the stream along which they lived may have forced a gradual withdrawal.

The Death Valley materials are comparable to those recovered at Pinto Basin in Riverside county (Campbell and Campbell, 1935). The typical Mesquite Flat point is like the Pinto form though differing in details. Leaf-shaped points are also shared. Both complexes also include similar blades and rough core tools. There are divergences also: Pinto Basin sites contain milling stones and handstones, Death Valley sites only mortars and pestles. Flake Scrapers, rare in Death Valley, are common in Pinto sites. The Pinto complex is generally assigned to the Little Pluvial.

An analogous artifact assemblage has been unearthed at the extensive and rich Stahl site near Little Lake in Inyo county (Harrington, 1948a, 1948b, 1949). This material has not yet been fully described in print. Other localities in the southern California deserts have also produced like artifacts (Rogers, 1939, pp. 47-60).

Period III

A better definition of this stage is needed as all data come from two stone mounds in the central section of Death Valley (Wallace, Hunt and Redwine, n.d.). On gravel benches in this region are many stone mounds and circles. The former are heaps of boulders, oval to round in outline, 6 - 18 feet in diameter and 1 - 3 feet high; the latter are circular clearings of varying diameters ringed with stones. After surface stones were removed from two mounds, circular, boulder-filled grave pits were discovered beneath them. The first grave contained a flexed adult skeleton and scattered bones of a child. An interesting array of artifacts not duplicated at other Death Valley sites accompanied the burials. Included are delicately chipped, thin, long-bladed, corner-notched points (fig. lm-q), a bone sickle, a nondescript bone tube, several bone spatulae, and an Olivella shell bead with both ends removed. The second cairn also covered two burials--an adult in a flexed position and disarranged bones of an infant. Associated artifacts were crude oval Olivella beads and limpet ring beads.

Very little is known about the stone-mound builders as none of their campsites have been found. Duplicate projectile points have been picked up here and there, occasionally on late sites, but nowhere in numbers. Oval Olivella beads are frequently found on younger sites but this bead form is known to have been used over a long time span in California and the Southwest.

Stone mounds have been observed at several localities in the Panamints but in none of the sections intensively surveyed. A salvage excavation of a cairn in Wingate Wash, disturbed by a relic-hunter, exposed a badly deteriorated adult skeleton and a few amorphous stone artifacts. That not all stone mounds contain burials was demonstrated by the investigation of an isolated example on the gravel fan along the west side of Mesquite Flat and of a large one in the central section. These proved to be mere piles of rocks without burial pits below them. Stone circles are regularly found adjacent to mounds but whether they were constructed by the same people is uncertain.

The only clues to the age and cultural position of the cairns come from areas outside of Death Valley. The long-bladed, corner-notched points are identical to those found in Pueblid sites of southern Nevada (Schellbach, 1930, fig. 7). Other less specific traits are also shared, such as flexed burial, bone spatulae and Olivella beads with both ends removed (Hayden, 1930). It can be assumed that some relationship exists between the two regions and that the stone mound materials are roughly contemporaneous to the Pueblid occupation of southern Nevada (800 - 1200 or 1300 A.D.). The cairn points also resemble late Amargosa specimens from deserts to the south (Rogers, 1939, pl. 18). The dating of this complex has been confused by recent revision, but presumably falls in the same general time period (Hauray, 1950, fig. 116).

Period IV

For late prehistoric and early historic times, there is ample evidence of occupation in northern and central Death Valley. There are many small and a few rather large settlements assignable to the latest Indian people. Their living sites are amongst the mesquite-covered dunes, usually some distance from springs or other water sources. Although these were seasonal camps, many appear to have been inhabited recurrently.

The "mesquite camps" are marked by accumulations of debris, consisting of pebbles cracked and discolored by fire, charcoal, and stone flakes, complete and broken stone tools and potsherds. Food grinding equipment, in the form of milling stones and handstones, is abundant. Long cylindrical stone pestles and mortars fashioned from sections of mesquite logs are also present.

There are many small and finely chipped arrowpoints of chert, jasper, and chalcedony, more rarely of obsidian or other materials. Characteristic specimens have either straight or concave bases and are side-notched.

(fig. 1r-w). Points lacking side-notching also occur. Other chipped stone objects include knife blades and small expanded base drills. Battered quartzite pebbles used as hammers are found everywhere.

Fragments of pottery are present at most sites. The sherds vary in texture, hardness and coloration but represent a single ware of the type classified as Owens Valley Brown Ware (Riddell, 1951, pp. 20-23). Decoration, when present, consists of simple incised designs. Pueblo sherds, painted and corrugated, have been recovered at several camps in association with the brown ware. Unbaked clay pieces, usually female figurines, have also been found.

Olivella shell beads, most frequently oval or circular, but sometimes whole shells with spires removed, and glass beads are occasionally recovered. Perforated stone pendants are other ornaments. Twined and coiled baskets have been found (Wallace, 1954). Mesquite log frameworks of houses originally thatched with arrowweed, are still standing at several places; some semi-circular windcreens have also survived the desert winds. The dead were regularly cremated.

A seasonal variant of this culture has been observed in four mountain areas, in rock-shelters and in open sites. The artifact inventory is shorter as brief occupation does not leave a complete range of cultural materials. There is a scarcity of sherds, handstones, and a virtual absence of side-notched points and luxury items. A few new features--storage pits, charcoal-filled roasting pits, bedrock milling places and gathering crooks--all connected with pinyon harvesting, are encountered.

There is little doubt that the "mesquite camps" and their highland counterparts are settlements of Death Valley Shoshone and their immediate ancestors. Exactly when Shoshoneans entered Death Valley is uncertain but it may have been as early as 1000 A.D. Presumably they came in from somewhere in the arid Great Basin to the east with a way of life well adapted for desert-living. Whether they found a people already present is not known. The archaeological data seem to indicate that they did not.

The Desert Shoshonean complex, including such typical elements as a brown ceramic ware, side-notched points, milling- and handstones, is well represented elsewhere in southern and eastern California. It has been reported for Owens Valley (Riddell, 1951; Riddell and Riddell, 1956) and Mono county (Meighan, 1955) to the north of Death Valley. It is also known in the south (Rogers, 1939, pl. 21) and it prevailed in much the same form over the entire Great Basin in the late period (Jennings and Norbeck, 1955).

Manifestations of an Unknown Age

There are some archaeological remains which cannot be tied to any of the complexes or assigned to a definite time period. The various stone monuments, circles, non-burial mounds, and alignments lack associated arti-

facts whereby they might be dated. Trails present a similar difficulty, though it is known that some continued to be used until modern times. Petroglyphs, occurring on cliff faces and boulders in many side canyons as well as on the borders of the valley proper, are difficult to date. Time differences are signified by style variations and in degree of weathering. A thick-lined, basically geometric style, now and then with desert varnish covering the designs, is earlier than a thin-lined, less weathered style depicting mainly humans and animals. A detailed distributional study is needed, however, before a definite sequence can be worked out. Pictographs, found mostly in rockshelters, appear to be late, perhaps all painted by Shoshoneans.

Summary and Conclusions

Archaeological studies in the Death Valley region have demonstrated a long human occupancy lasting over many centuries. People began living in the area at least as long ago as early Recent times (7000-6000 B.C.) and continued to do so with occasional interruptions from that time forward. The cultural history as now known is summarized in Table 1. The sequence as outlined may be faulty and premature as evidence is not very conclusive in some instances. Certainly it will need to be checked and perhaps revised. For the present the periods can only be approximately dated. Time indicators for the two earliest are geological and typological; for the last two they are typological. Assigning of absolute dates to the beginning and end of each is thus pretty much guesswork.

The listing of traits which characterize each complex brings out a significant point, namely the lack of carry-overs from one to the next. There are items used during more than one period but they are of a rather general nature. It is therefore difficult to see a cultural continuum. Most of the important traits, if not entire complexes, appear not to have arisen either through local development or invention, but rather to have been introduced from an outside source by migration into the region of a new population. This suggests that occupation did not continue unbroken and that each complex is separated by a hiatus in time. Climatic fluctuations, alternating cycles of dryness and wetness, may account for these breaks. An unusually arid period may have led a population to shift to a new locality or to continue to live in the area by adjusting to a different altitude zone. More than once, groups appear to have moved out of the region to be replaced after a lapse of time by new people as the climate became more favorable.

An alternative suggestion to time gaps is that there are intermediate assemblages which have not been discovered. If there are no interludes of non-occupancy, the apparent absence of such complexes may be accounted for by their presence in altitudinal zones or localities not yet explored. It is, of course, possible that materials from intervening times are still unrecognized in the surface collections.

Table 1

CULTURAL COMPLEX	DATE	ENVIRONMENT	ECONOMY	DIAGNOSTIC TRAITS	DISPOSAL OF DEAD
IV Desert Shoshone	1000 A.D.- Present	Mesquite dunes	Collecting, some hunting	Pottery Projectile points: small concave based side notched Milling stones and Handstones	Cremation
III Stone Mound	0 A.D. - 1000 A.D.	Gravel benches	?	Projectile points: slender, corner-notched Oval Olivella shellbeads Stone cairn over burial (?) Stone circles	Flexed burial
II Mesquite Flat	Little Pleistocene 3000 B.C.- 0 A.D.	Clay surfaces adjacent to extinct water courses	Hunting, some collect- ing	Large projectile points: corner-notched side-notched leaf-shaped, etc. Stone mortars and Pestles Crude quartzite tools abundant No pottery	?
I Lake Mohave	Early Recent 6000 B.C.- ?	Adjacent to springs	Hunting, no evi- dence of collecting	Lake Mohave-type points Scrapers numerous Deep patination of stone objects	?

A comparison of Death Valley complexes with those found elsewhere in the southern California deserts indicates a broadly similar cultural history for the entire region. There are differences in details, but like configurations of traits occur in essentially the same time relationship nearly everywhere. As in Death Valley, the most ancient remains consist of a simple lithic assemblage (Lake Mohave, San Dieguito-Playa), presumably representing tools left by hunting people of early recent or terminal Pleistocene times. There follows an interval for which evidences of human presence are lacking. Severe desiccation (Long Drought) following the disappearance of the Pleistocene lakes may have made the region uninhabitable for a time. With the return to moist and cool climatic conditions during the first two or three millenia B.C. (Little Pluvial), people again lived in the region. A more elaborate series of stone tools (Pinto, Pinto-Gypsum), reflecting an economy no longer purely hunting but combining hunting and collecting, though seemingly emphasizing the former, is found. Archaeological remains assignable to the intervening time between the Little Pluvial occupation and that of the ancestors of the recent Indians consist of a complex characterized by large corner-notched dart points (which later give way to corner-notched arrowpoints) and an absence of locally made pottery (Amar-gosa, Basketmaker). Intrusive Anasazi ware is found at some later sites of this period. A last desert complex (Shoshonean, Yuman) including small projectile points, indigenous pottery, and showing great dependence on the gathering of wild plant foods is well documented.

Cultural affiliations with sections of the Great Basin beyond the borders of California are evident. Archaeological finds in contiguous areas are still too spotty to be built into a systematic sequence, hence broader areal comparisons and correlations will not be undertaken. It is of interest, however, to examine the hypothesis of a basic "Desert Culture" in light of the Death Valley sequence. The Desert culture, assumed to have been established at the end of the Pleistocene and to have continued until historic times, includes a number of variants which share a core of general traits (Jennings and Norbeck, 1955). Fundamental is a subsistence pattern based upon intensive exploitation of food resources offered by the environment without overwhelming reliance upon any single item. Seed-grinding and plant-preparing implements, handstones and milling stones, are an important component. The two earliest Death Valley complexes can be fitted into this framework only with great difficulty, if at all. In the first known cultural level there are no data to indicate that the people were anything but hunters. If they gathered and consumed plant foods in any quantity, no physical evidence for this remains. The succeeding complex also appears to have had a strong hunting base though mortars and pestles, not milling stones and handstones, testify to the use of some plant foods. These two complexes, unless they be classified as "local environmental specializations," and it is not clear what was special in the local conditions, do not conform to the Desert cultural pattern. They were not, so far as is known, "enclaves of lacustrine specialization," more or less sedentary communities relying upon the richer resources of the lakes and their shores, as none of the sites are directly on the old beaches. Too little is known about the Death Valley stone mound complex to determine whether it conforms to the basic Desert culture or not. The closing Shoshonean occupation does.

A desert way of life thus does not appear to have become established in Death Valley until the beginning of the Christian era and perhaps not until a thousand years later. Therefore the concept of an ancient and persisting stratum is of doubtful validity here, and of no value in reconstructing the past history of this and contiguous areas. The different temporal manifestations contrast strongly with one another and to lump them together under a single heading is to ascribe a uniformity of development which did not exist and to obscure rather than clarify past events. A different frame of reference in terms of more specific cross-culturally recurrent artifact types would, it seems, be more helpful in working out a sound regional history.

Although the basic features are known, knowledge of Death Valley's prehistoric past is far from complete, being deficient in some important details. It can be safely estimated that many hundreds of archaeological sites remain to be discovered. A series of excavations is needed to determine whether conclusions that have been developed through conducting surveys and studying surface collections are sound. Rockshelters in the bordering mountains hold promise of well preserved materials in stratigraphy, and a number of these should be carefully investigated.

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