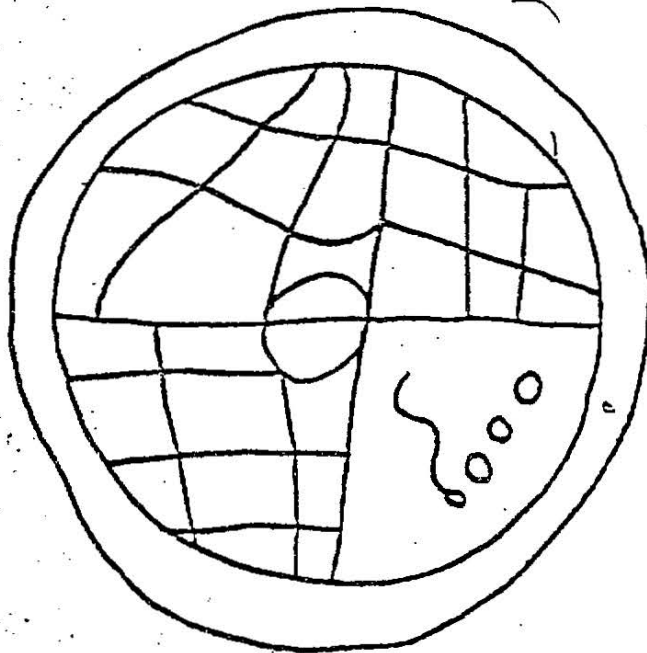


ARCHAEOLOGICAL EXPLORATIONS
in the southern section of
ANZA-BORREGO
Desert State Park

by

William J. Wallace



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ARCHAEOLOGICAL EXPLORATIONS
IN THE
SOUTHERN SECTION OF ANZA-BORREGO
DESERT STATE PARK, CALIFORNIA

William J. Wallace

ARCHEOLOGICAL REPORT

No. 5

State of California
Department of Parks and Recreation
Division of Beaches and Parks
Interpretive Services Section

January, 1962

Sacramento, California

Preface

Anza-Borrego Desert State Park, stretching from San Diego County's central mountains eastward into the Imperial County lowlands, is the largest area administered by California's State Park System. Its nearly half million acres comprise almost 75 percent of all State-owned recreational lands. Highway 78, running through the park, roughly separates Borrego Desert on the north from Anza Desert in the south.

Although an enormous amount of archaeological collecting has been carried on in Anza-Borrego, most of it by relic-hunters, almost none of the recovered material has been studied and described in print. Consequently, archaeologists know comparatively little about the region's prehistoric past. In order to remedy this situation, the California State Division of Beaches and Parks, in 1957, detailed the University of Southern California and the University of California (Los Angeles campus) to learn more about the archaeology. The immediate purpose of the research was to determine the number, extent and importance of prehistoric remains within the park boundaries. Another aim was to provide accurate information for park personnel and visitors. U.C.L.A. was assigned the northern (Borrego) section, and U. S. C. the southern (Anza) section.

Field parties from U.C.L.A. made a wide sampling of the Borrego district during which survey was concentrated in flat valleys and along lines of principal drainage. Six main districts -- the full length of San Felipe Creek lying within park boundaries, Culp Valley, (northern) Collins Valley and Indian Canyon, Coyote Creek, Clark (Dry) Lake, and Rockhouse Canyon -- were examined.¹ All of the 173 sites discovered seemed to belong to the last aboriginal period, dated since about 1000 A. D. The general absence of more

ancient remains was attributed to their having been removed or obscured by the extensive erosion which has occurred in this country. Subsequently, excavations were conducted at two rock-shelters in Culp Valley and at a village site in Grapevine Canyon.² The three sites produced evidence of occupation by a late, pottery-using population.

Archaeological investigations carried on by U.S.C. during the same period consisted of intensive reconnaissances of the entire Bow Willow Canyon³ and the Indian Hill district.⁴ Forty-eight sites were recorded in the two areas. Again, all appeared to belong to the last prehistoric phase though a few traces of an earlier occupation were detected. In addition, preliminary digging was done at a large rockshelter at Indian Hill.⁵ This excavation produced clear-cut evidence of cultural stratigraphy with the lowest level of the archaeological deposit containing a preceramic assemblage characterized by heavy projectile points.

Under a second contract, U.S.C. conducted additional researches in the southern section of the park. The results of these investigations are presented here in four separate reports. Each is a self-contained unit and is, more or less, in the original form as submitted to the California State Division of Beaches and Parks in fulfillment of contractual obligations. The first three were written by William J. Wallace, the fourth was prepared in collaboration with E. S. Taylor and George Kritzman.

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I

Archaeological Sites
in the
Mountain Palms Springs Area
Anza-Borrego Desert State Park

by

William J. Wallace

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Archaeological Sites
in the
Mountain Palms Springs Area
Anza-Borrego Desert State Park

Introduction

A growing fund of knowledge regarding the prehistoric past of Anza-Borrego Desert State Park in San Diego County has been accumulating as the result of a program of archaeological research instituted in 1957 by the California Division of Beaches and Parks. Investigations have been conducted in a number of localities in both the northern (Meighan 1959) and southern (Wallace and Taylor 1958, 1960a, 1960b) sections of the park. These explorations have revealed the existence of numerous archaeological remains and have demonstrated that the region has a long and interesting history of human occupation.

In order to gather further information on Anza-Borrego's past and to explore a comparatively unknown area archaeologically, a site survey was made of the Mountain Palms Springs district. The selection of this rather than another locality was motivated by three factors. First, it contains a dependable water supply -- always an attraction for desert Indians. Secondly, it adjoins an area of similar environment previously investigated (Bow Willow Canyon) and thus provided an opportunity to check inferences concerning aboriginal settlement pattern and ecology arrived at during the earlier survey. And finally, the salvage factor was considered. As Mountain Palms Springs is readily accessible by ordinary car over a well-graded road, it has been invaded constantly by relic-hunters. It was hoped that some valuable archaeological information could be rescued before additional vandalism occurred.

Geographical Setting

Mountain Palms Springs, (Plate Ia) 800 - 900 feet above sea level, is situated in the hilly, desert country lying between the Tierra Blanca and In Ko Pah mountains. Entrance to it is through a bowl-shaped area of relatively even surface which has been converted into a parking lot. Branching off from here are two main washes, each about a mile long, containing springs and groves of native palms (Plate Ib). The two watercourses are separated from one another by a high ridge of jumbled masses of granite boulders. Along their margins are low, often ill-defined or interrupted sandy benches. In their upper reaches, the two washes widen out into broad basins. At many points narrow branch canyons, carrying flood waters only briefly during the infrequent periods of heavy rainfall, enter the two main drainage channels.

Weathering of the exposed boulders has produced a fine gravel or granitic sand which mantles the surface. This is only loosely compacted and is being continuously swept away by rainwash. Serious erosional damage, aggravated in recent years by cattle grazing, is evident everywhere.

This section of Anza-Borrego is extremely arid and a safe estimate of the average annual precipitation is five inches, perhaps less. Winter storms provide most of the scanty rainfall, although summer thunderstorms occur. Summer temperatures are very high, often exceeding 100° F., but winter days are normally cool and pleasant.

Mountain Palms Springs has the typical dry and barren aspect of southern California desert localities. Vegetation, made up largely of desert shrubs and cacti, is sparse. Aside from a scattering of elephant trees on the boulder-strewn hillside, tree-growth is limited to the washes. Here are found small clusters of mesquite and desert willow as well as five widely separated palm groves and a few smaller stands of palms.

Though desolate and unfriendly in appearance, the Mountain Palms Springs region offered certain attractions to desert Indians. In contrast to much of the surrounding country, it has a relatively bountiful and never-failing supply of water. There are at least six springs or seeps as well as damp spots in the washes where water is available by digging to a shallow depth. In addition, the flora--mescal, fruit-bearing cacti, palms and mesquite, among others--furnished a variety of native plant foods. Small game, mainly rabbits and rodents, occurred in abundance. However, because of the broken nature of the terrain, suitable camping spots were limited.

Site Survey

A three-man field party from the University of Southern California, consisting of J. Peter Redwine, Edith Taylor Wallace and William J. Wallace, spent six days from March 23rd to 28th, 1959, exploring the Mountain Palms Springs district on foot. The two main washes and three large tributary canyons were examined. A level area lying between the county road and the parking lot and extending from Egg Mountain on the south to a point .5 of a mile north of the Mountain Palms Springs turn-off was also inspected.

Vestiges of former Indian settlement were found in all of the regions investigated. Fourteen aboriginal habitation sites were discovered and recorded. Though occurring in a variety of locations, there was a preference for camping along washes: ten of the fourteen sites were found along the arroyo banks or on the sandy benches at their edges; two were situated among boulder clusters; one site lay in open country away from drainage channels; and a rock-shelter was located high up on the canyon wall.

Of the fourteen camping places, only one (MPS 4) appeared to have been the site of a major settlement and lived upon regularly (Plate Ic). Covering

an area of roughly 300 by 700 feet, it has a one to two foot deposit of darkened soil. Unfortunately MPS 4 has suffered tremendous damage, having been dug into time and time again by relic-hunters searching for arrowpoints, pots, or other choice items. Five other encampments (MPS 2, 3, 5, 8 and 11), all partially pillaged, were fair-sized and had some accumulation of refuse. Of these, two (MPS 2 and 5) once may have been quite extensive but they have been considerably altered by the destructive forces of erosion. The impression is that all five sites were repeatedly camped upon for short periods of time.

The remaining eight sites were inconspicuous, marked only by a thin scattering of potsherds and broken rock. They undoubtedly represent temporary camps of short duration, inhabited briefly during a season of gathering or occupied for a few days by a party passing through the country. The rock-shelter (MPS 9) was small and shallow and afforded only slight protection from the elements. It contained scant evidences of aboriginal use.

Cultural remains, not directly associated with any habitation site, included three mescal roasting pits, three isolated bedrock mortars, about a dozen pottery fragments and a stone artifact or two.

Description of Artifacts

A painstaking search was made at each site to obtain as complete a sample of artifacts as possible. Potsherds were the most abundant items gathered from the surface, comprising slightly over 66 percent of the total collection. Aside from pottery, the artifact inventory is limited to stone work. No objects fashioned from bone, shell, wood or other substances were recovered. The occurrence by site of both the ceramic and stone materials is given in Table 1.

All sites, except the rock-shelter, produced potsherds with a total of 437 obtained. The ceramic material, all of paddle-anvil construction with a sand-tempering, falls into three groups. Most common are fragments of Tizon Brown Ware (Euler and Dobyns 1958, Ware 15) of the Palomar type (Meighan 1959, pp. 36-38). When definable, the vessel form is a short-necked, round-bottomed, globular cooking jar with straight or slightly flaring rim. A second pottery ware, represented by 108 sherds, is Topoc Buff, a type of Colorado Buff Ware (Schroeder 1958, Ware 16, Type 18). The predominant shape of this pottery appears to be a taller, globular-bodied water or food container with a short neck and straight or recurved rim. The third category, Topoc Stucco, also placed with the Lower Colorado Buff, is exemplified by two rough-surfaced sherds (Schroeder 1958, Ware 16, Type 21). These are similar to Topoc Buff but have an applique of stucco. No decoration was discernible on any of the pottery fragments.

Three potsherds have been modified. Two Tizon Brown rim pieces have been drilled, probably in an attempt to repair a damaged vessel by binding the cracked sections together with cordage laced through the perforations. Another brown sherd with two rounded and worn edges may be a pottery-making tool, employed in smoothing vessel walls.

The ceramic materials possess no distinctive features and the sherds are identical to those recovered in other parts of Anza-Borrego. Pottery fragments were, however, less abundant at Mountain Palms Springs than elsewhere and they form a smaller percentage of the total artifact inventory. In nearby Bow Willow Canyon, 1013 sherds, constituting 87 percent of all artifacts, were obtained from eighteen sites. At Indian Hill, farther south, twenty-eight encampments produced 3299 pieces of pottery, making up 94 percent of the surface collection. The lesser frequency of ceramic materials

in Mountain Palms Springs is difficult to account for as it cannot be attributed to the efforts of relic-hunters as they rarely gather broken bits of pottery.

Grinding implements suitable for processing vegetal foods were the most common stone artifacts encountered on Mountain Palms Springs camping places. Included in the collection are 33 milling stones--heavy, natural slabs of rock showing evidences of utilization; 32 have been used on one side and only one mill has two worn surfaces. The amount of use on 17 examples has been sufficient to have worn a shallow (4 - 8 mm. deep) oval concavity into the rock; on the remaining 16, the grinding area is smoothed but not basined. None of the slabs exhibits any attempt at shaping other than functional roughening of the grinding area by pecking. Several kinds of stone -- granite (26), sandstone conglomerate (4), sandstone (2) and schist (1) -- were selected for these mealing slabs. The largest specimen measures 46 by 30 cm., and is 12 cm. thick; the smallest mill is 27 cm. long, 25 cm. wide, and 8 cm. thick. Average dimensions are: length 39.3 cm.; width 28.2 cm.; thickness 9.7 cm.

In addition to portable milling stones, seventeen bedrock examples were noted. These occurred on flat or slightly slanting boulders. Most frequent (12 examples) was a large smoothed, often highly polished grinding area, without any depression. Five bedrock mealing areas had oval concavities ranging from an almost imperceptible depth to about 9 mm. One of the latter was unusual in having a shallow mortar hole worn into the center of mealing basin. The bedrock mills occurred singly and in groups of two to nine (Plate Id).

Handstones, used with the milling stones, vary from natural rocks, angular or oval in form, to well-shaped implements (Plate II a-c). All are

Artifact Class	Site No.														ISO	Totals	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
Pottery																	
Palomar Brown		23	15	85	42	45	27	20		9	29	4	7	10	11	327	
Topoc Buff	13	7	4	7	9	11	24	5		1	23			3	1	108	
Topoc Stucco											2					2	
Milling stones																	
Portable, basined		3	1	2	3	1	4	2		1						17	
" , non- "				9	2	1	2	1			1					16	
Bedrock			1	9				3		1			2	1		17	
Handstones																	
Uniface	1	3	1	3	3			2		3	1		1			18	
Biface				9	2	2		1								14	
Mortars																	
Portable				1												1	
Bedrock			1					3				1	1	3		9	
Cobble Pestles				4				1				1	1	1		8	
Polishing Stones							2			1						3	
Hammerstones																	
Cobble		2	1	9	4	3	2	5		2		1			2	31	
Flaked core											1					1	
Choppers				6	1	1	2			2	2				1	15	
Scraper Planes							1			1						2	
Projectile Points																	
Large, corner-notch				1												1	
" , unclass.	1				1											2	
Small, concave base							1									1	
" , unclass.	1															1	
Blades																	
Leaf-shaped, rd. base											1					1	
Unclassifiable	1			2	1											4	
Flake Scrapers	1			1	1		2		1		2					8	
Totals	18	38	24	148	69	64	67	43	1	21	62	5	10	17	20	607	
Features:																	
Stone circles			?												4		
Pit Ovens		2		3	3	1									3	12	

Table 1: Artifact Inventory by Site
in Mountain Palms Springs.

of the single-hand variety and regularly show a pronounced flatness of the grinding surface. Eighteen of the 32 specimens found are worn on one side with a natural convex upper surface; the other fourteen have been used on both sides. A few of the latter have been "sharpened" by pecking. Sandstone (13) and granite (12) were preferred materials although sandstone conglomerate (5) and quartzite (2) were also utilized. In size, the handstones range from a specimen measuring 14 by 11.1 cm., and 6.1 in thickness, to one that is 9.1 by 8.5 cm. and 5.7 cm. thick. Average dimensions are: length 11.5 cm.; width 7.8 cm.; thickness 5.7 cm.

A portion of a well-shaped granite mortar was found. From a rounded rim its wall curves outward indicating a globular form. The bowl-shaped concavity is about 9.5 cm. deep and shows signs of considerable use. The piece appears to have been broken off from near the bottom so that the original mortar was not particularly large, perhaps having a diameter of 14 cm. and an estimated height of 14 to 15 cm. Wall thickness, which increases from the rim toward the base, varies from 3.5 to 5 cm. This is the first portable mortar reported for Anza-Borrego.

Nine bedrock mortar holes were observed. Four of these cup-shaped depressions were quite shallow, 9 mm. to 1.1 cm.; the others were deeper, ranging from 5 to 22 cm. Their diameters varied from 14 to 20 cm. Mortar holes occurred either singly or in groups of two or three together. Usually they were to be found on the same boulders as bedrock mills (Plate Id).

The eight pestles recovered closely resemble one another. All consist of heavy, natural wedge-shaped cobbles, with their narrower end showing wear from pounding and grinding. Six of them are granite, the other two are quartzite. The largest pestle is 32.3 cm. long, 24.0 cm. wide and 6.2 cm.

thick; the smallest one measures 18.1 by 13.2 cm. and is 10.1 cm. thick. Their averages are: length 24.4 cm.; width 15.9 cm.; thickness 7.7 cm.

Three thin oval pebbles appear to have been used as polishing stones. Two are of hard sandstone and the other is a fine-grained porphyry pebble. One of the former exhibits two well-polished surfaces; the other two have only a single smoothed side. The pebbles probably were employed in finishing the surface of unfired pottery vessels. The two sandstone specimens have almost identical dimensions, 5.7 by 4.5 cm. The porphyry pebble is smaller-- 2.8 cm. long and 1.7 cm. wide.

Cobble hammerstones were relatively numerous. The 31 examples recovered are all naturally shaped oval or angular stones which show scars from battering on one or more edges (Plate II d and f). The material most favored for these tools was quartzite (22), but other tough stones--hard sandstone (6) and porphyry (3)--were also chosen. Two oval hammers, one of quartzite and the other of sandstone, appear to have seen service earlier as handstones as each has one flat, worn side (Plate II e). The hammers are all of a size that can be conveniently grasped in one hand and average 8.9 cm. in length, 7.3 cm. in width and 4.4 cm. in thickness.

The Mountain Palms Springs sites also yielded a fair number of crude, percussion-flaked porphyry tools. Most numerous are choppers, 15 of which were found. All were made by removing large flakes along one border of a cobble to produce a sharp, though irregular, edge (Plate II, h, i). They were used without much additional modification, though on several a few additional chips were struck off from the upper side of the stone, presumably to facilitate grasping. Excessively battered edges on five choppers indicate that they were used secondarily for pounding. Size varies considerably, with the largest specimen measuring 14.5 by 9.8 cm. and the smallest 7.9 by 6.6 cm.

Average dimensions are: length 11.2 cm.; width 8.8 cm.; and thickness 4.4 cm. A single flaked cobble hammer was recovered (Plate IIg). In manufacturing this tool, flakes were removed from part of the stone to produce a rough, faceted surface. The hammer is quite small, measuring 5.6 by 5.4 cm. and 3.3 cm. thick. The remainder of the rough stone tools consist of two broken scraper planes. Their characteristic features are: a flat base (the cleavage surface of the cobble); a high, partially-worked upper side; and a flaked edge along the base.

Smaller chipped stonework was extremely scarce. This paucity can be attributed, in part, to the activities of relic-hunters. However, this is not the complete explanation. Apparently, the prehistoric inhabitants of Mountain Palms Springs expended little effort on the manufacture of such articles because only small quantities of chipping waste were present at their camps. White quartz was the most popular stone utilized in fabricating these chipped articles and flakes of this material far outnumbered all others. This is a rather inferior rock, coarse-grained with a relatively poor fracture, and objects made from it have a crude appearance (Plate IIj-q). Next in order of abundance were porphyry chips but the majority of these are either waste flakes discarded during the fashioning of heavier tools, or they represent spalls accidentally broken off of such articles while they were being used. The other lithic materials--chalcedony, chert, and obsidian--were very sparsely represented. Local stream-bed gravels served as the source for all of the stone, except obsidian. The latter was imported, presumably from Obsidian Butte on the shore of the Salton Sea.

The dearth of projectile points is noteworthy. Only five broken points were obtained, two of which are sufficiently complete to categorize. The first is a "large" quartz point (Plate IIj) presumably hafted on a dart.

It has broad, U-shaped corner notches and a thinned, slightly concave base. The specimen has a projected length of 3.2 cm., a width of 3.2 cm., and is 9 mm. thick. The other classifiable example is an asymmetrical obsidian arrowpoint with a deeply notched base, (Figure 1).

Its dimensions are: length (projected) 1.7 cm.;

width 1.1 cm.; thickness 3 mm. The three other



Figure 1.

fragmentary examples, all of white quartz, consist of the central section (Plate IIk) and tip (Plate IIe) of "large" points, as well as the tip of an arrowhead (Plate IIm).

Five pieces of bifacially-chipped blades, undoubtedly knives, were collected. Only one retains enough of its original form to be classified (Plate IIn). It is the narrow, rounded base of a large, leaf-shaped blade, measuring 3.7 cm. wide and 1.5 cm. thick. A central section of a second fair-sized quartz blade (Plate IIo) is 1.4 cm. across and 1.3 cm. thick. The other three specimens are edge pieces: one is from a quartz blade (Plate IIp), the second is from a well-made obsidian specimen and the third is of porphyry.

The eight scrapers obtained are irregular stone flakes, unifacially retouched along one edge. Materials used in their manufacture are chert (3), porphyry (3), quartz (1) (Plate IIq), and obsidian (1). The tools range in size from a heavy porphyry scraper that is 7.2 cm. long, 4.2 cm. wide and 2.1 cm. thick to a tiny obsidian specimen measuring 2.0 by 1.7 cm. and 4 mm. in thickness. Scrapers average 4.2 cm. in length, 3.2 cm. in width, and 1.1 cm. in thickness.

Features

Ten stone circles, averaging about four feet in diameter, were observed at one site (MPS 3, see Plate Id, top of ridge). Each consisted of 15 to 20

large boulders arranged around a central cleared area. The circles appear to be of very recent origin, perhaps constructed by a troop of Boy Scouts or other camping party. Quite possibly aboriginal structures at the site were subsequently "repaired" or rearranged, as boulder-ringed clearings of this type have been noted elsewhere in Anza-Borrego (Parker 1957, p. 48; Meighan 1959, p. 30). Four ill-defined rock circles, each roughly four feet in diameter, were discovered on a gravel bench south of Egg Mountain, just beyond the limits of the area surveyed.

Pit ovens, presumably used for roasting mesquite stalks, were present at four Mountain Palms Springs camping places. There were also a few isolated examples. Their occurrence was as follows:

<u>Site</u>	<u>Number of Pit Ovens</u>
MPS 2	2
MPS 4	3
MPS 5	3
MPS 6	1
Isolated	<u>3</u>
Total	12

The ovens were rectangular to oval in shape and generally about half filled with fire-fractured rocks and varying amounts of charcoal and ash. The walls of all the pits examined showed evidence of having been subjected to extreme heat and the earth in and around them was heavily fire-stained. Outlined with 15 to 45 boulders, they ranged in length (interior) from five to seven feet, in width from three to four feet, and were one to two feet deep. Relic-hunters, attracted by the discolored soil, have dug into all of the ovens.

Subsistence Remains

The only food refuse found at any of the encampments were scraps of burned mammal bone and these were far from numerous. None of the fifteen fragments recovered is identifiable as to species.

Summary and Conclusions

Reconstruction of the prehistoric past of the Mountain Palms Springs district is made difficult by the meagerness and incompleteness of the archaeological record. Part of this stems from the fact that the region was formerly inhabited by aboriginal peoples with a simple level of culture and who had but few material possessions. The small store of tools, implements, weapons, and other objects they left behind at their abandoned campsites have been further reduced in number by the forces of nature and by avid relic-hunters. The little that remains today allows for only a few general inferences regarding the manner of living of the area's former inhabitants and the course of local cultural development.

The surviving artifacts indicate the food supply of the prehistoric Mountain Palms Springs peoples was closely linked to the native flora because, aside from pottery, the most numerous objects found were implements for converting plant foods into flour or some other edible form. Presumably, each year a small band or two migrated into the district during the ripening season of various wild crops and moved along following their harvesting. Apparently they did some hunting to augment or to give variety to their vegetable diet, but, judging from the near absence of mammal bone, combined with a scarcity of projectile points and tools suitable for butchering game animals, this was a minor activity.

As in all other sections of Anza-Borrego Desert State Park which have been investigated, the finds can be attributed almost exclusively to the last phase of aboriginal occupation--postdating 1000 A.D. The pottery and other cultural items are very similar to those occurring at late campsites elsewhere in the Park. It is safe to assume they were made and used by the recent Yuman-speaking Diegueño Indians as Mountain Palms Springs lies within their territory.

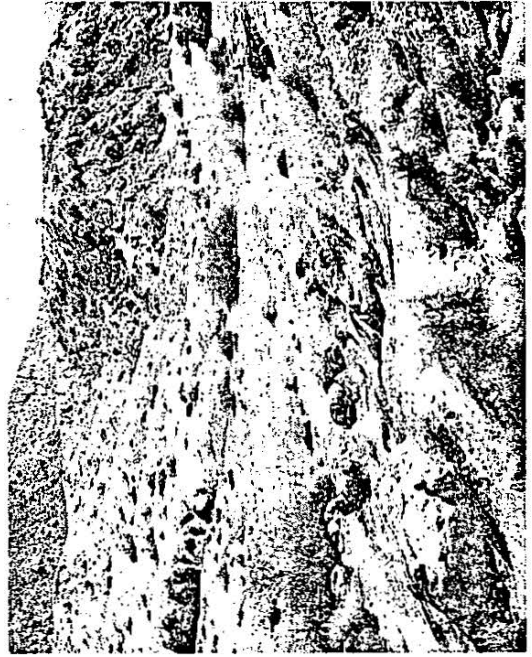
Only three articles recovered during the survey are suggestive of a previous occupation. They comprise the large, corner-notched point from MPS 4 and what appear to be pieces of two other specimens of similar size and weight found at MPS 1 and MPS 5. These projectile points, quite different from the small, light missile tips which recent Indians hafted to their arrows, hint at the presence of an earlier, dart-using people. As these three sites also produced late cultural materials the sorting out of other artifacts which might belong to the older phase is not possible. Actually, knowledge of pre-Yuman habitation is almost entirely wanting (Wallace and Taylor 1960b, p:9; Meighan 1959, p. 40). This scarcity of more ancient cultural remains is duplicated in other parts of Anza-Borrego. Either there was a limited and localized occupation by a sparse population in earlier times, or erosion has eradicated these older remains, if they ever existed.

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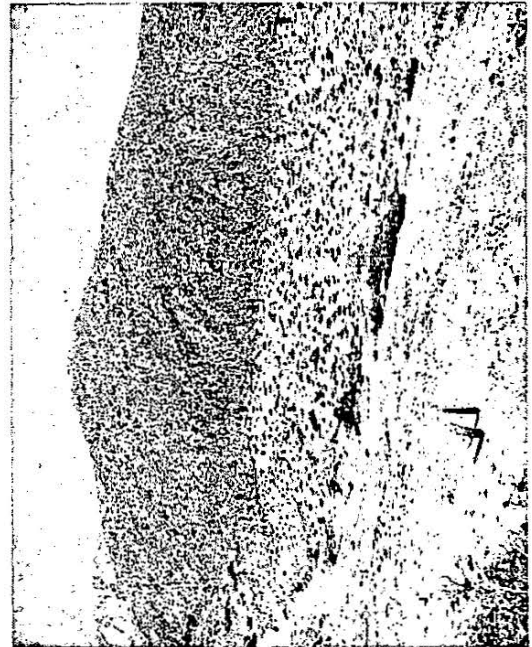
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d



a



c

Plate 1

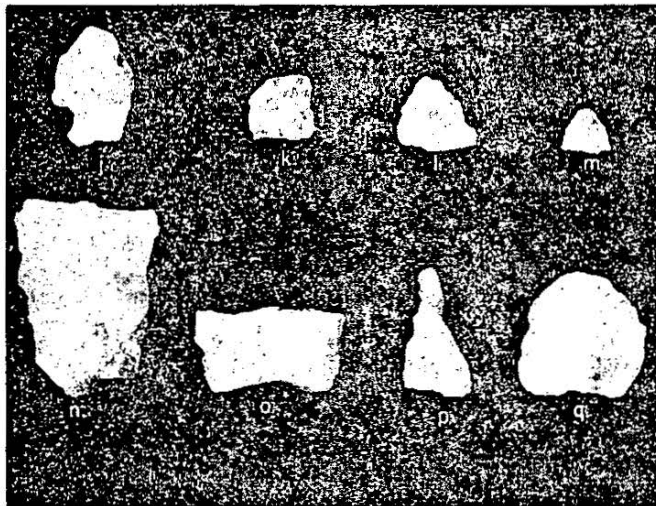
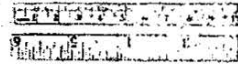
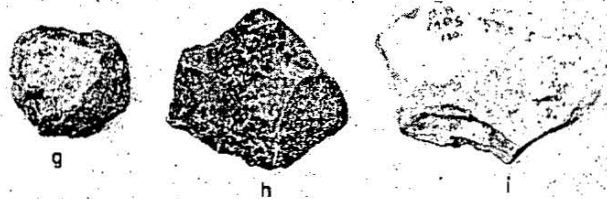
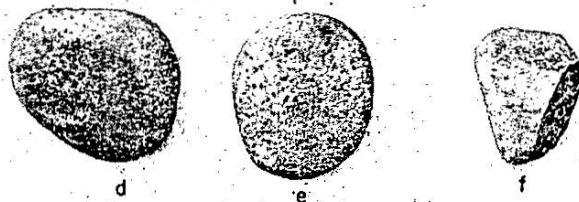
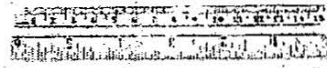
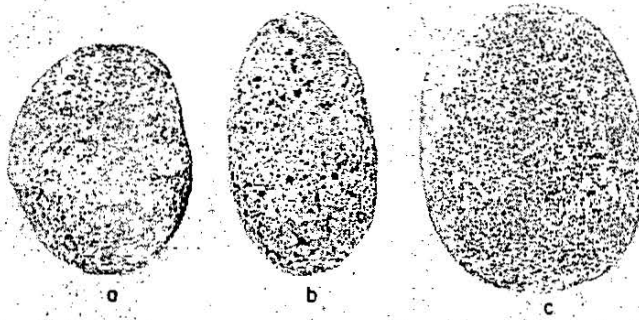


Plate 2

II

Prehistoric Settlements
in the
Indian Gorge--Indian Valley District
of
Anza-Borrego Desert State Park

by

William J. Wallace

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Prehistoric Settlements in the Indian Gorge--Indian Valley District of Anza-Borrego Desert State Park

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Introduction

While the essential purpose of an archaeological survey is to determine the number, nature, and distribution of prehistoric and historic sites within a particular region, another objective is regularly involved. From surface finds and other data secured, the field-worker seeks to determine the manner of living of an area's former inhabitants, and at least in a preliminary way, to reconstruct the sequence of past events. Since all interpretations and generalizations must be drawn from existing material remains, this latter aim is difficult to achieve in a locality where depredations by relic-hunters have been extreme.

This fact was clearly demonstrated during a reconnaissance of the Mountain Palms Springs district of Anza-Borrego Desert State Park. Over the years, vandals have ruthlessly destroyed large sections of many aboriginal encampments and have left no important site untouched. The archaeological record, impoverished to begin with, was, as a consequence, so meager and incomplete that few precise statements could be made regarding Mountain Palms Springs' past.

Following this rather unfruitful survey, a search was made for a nearby locality in which the prehistoric remains had not been so badly molested. This was found at Indian Gorge-Indian Valley, just north of Mountain Palms Springs. Not as easily reached by car, it is less frequently visited by collectors so that the Indian campsites, though not entirely untouched, have been far less despoiled. Surface finds were more numerous in quantity and, to a lesser degree, in type as well. Because the record was more complete it was possible to obtain a fuller picture of aboriginal occupation.

Natural Landscape

The Indian Gorge-Indian Valley district, entered through a mile-long, boulder-strewn passage (Indian Gorge), gives an impression at first sight of being a broad, level valley enclosed by rocky hills. Upon closer inspection, it proves to be quite broken country, dissected by a network of dry watercourses, large and small. At a point .8 of a mile above the gorge, two main washes branch -- North and South Indian Valleys -- and each runs about three miles to terminate in narrow, rock-choked canyons.

Most of the region lies at elevations of 1300 to 2000 feet above sea level. Clusters of large granite boulders dot the surface and the soil is a coarse, unconsolidated granitic sand or gravel. As the loose ground covering is easily gullied and washed away, the effects of floodwaters have been severe.

Extreme dryness characterizes the area. Coupled with a dearth of precipitation, are long and intensely hot summers. Winter and spring days are mostly mild, often ideal. Standing water is lacking though there is a temporary abundance following heavy rainstorms when natural depressions in the normally dry streambeds fill and hold moisture for days or even weeks. A never-failing water supply is available at Mountain Palms Springs across a rocky ridge, less than a mile away.

An unusual variety of hardy desert shrubs and cacti make up most of the vegetation. Prominent are stands of tall ocotillo and thick clumps of mesquite. Tree growth is limited to mesquites and desert willows fringing the washes, and scattered torotes (elephant trees) on the rocky hillsides in a side canyon, as well as a grove of native palms at the head of South Indian Valley. Reptiles, small rodents, and rabbits far outnumber all other

forms of animal life and are the only creatures regularly seen. Seasonally the district supports a fairly numerous and diversified bird population.

For aboriginal peoples, the chief attraction must have been the food resources provided by the varied native flora. An additional feature was the availability of good camping places which, in the narrower canyons of adjoining Mountain Palms Springs, were extremely few. The people who roved this section of Anza-Borrego at the time of exploration and subsequent White settlement were Diegueño Indians, speaking a language belonging to the Yuman linguistic group.

Archaeological Site Survey

A survey was made from the mouth of Indian Gorge to the heads of both North and South Indian Valleys. Also reconnoitered was a large, unnamed canyon entering on the north side, between the Gorge and the fork of the valleys. The work was accomplished on foot by a three-man field party made up of Richard Brooks, Edith Taylor and William Wallace between April 11th and 18th, 1960. A purely surface inspection was made and no excavating was undertaken except for clearing out three roasting pits.

Twenty-eight abandoned encampments were discovered. These ranged from campsites marked by a sprinkling of artifacts and broken rock on the surface to three sites (IG 2, 8, 9) of considerable size and having fairly deep deposits of darkened soil. Evidently the latter were favorite living places, returned to repeatedly. These larger and more productive sites were concentrated in the area adjoining the upper end of the Gorge.

Twenty-six were open-air habitation sites, situated either close to the edges of washes or on ridges of higher ground between them. Six camps adjoined boulder formations which afforded protection from the frequent high,

often dust-bearing winds. One location, marked by an abundance of hammer-stones, waste flakes, and cores of porphyry, appears to have been primarily a workshop where rough service tools were made though it also contained a few seed-grinding implements. The remaining site (IG 2) was a good-sized rock shelter (See Plate III) with a heavily smoke-blackened ceiling and dark midden to testify to its long usage. Intermittent signs of the former presence of Indians were also observed in the open areas, away from dwelling places.

Artifacts

A careful search of the surface at each of the twenty-eight sites netted 2245 artifacts. For the most part, the objects collected consist of potsherds and heavy stone tools. Smaller stonework is sparsely represented. Aside from two scraps of marine shell, there are no objects made of organic substances. Table 1 shows the incidence of artifacts, bedrock mills and mortars, by campsites.

Pottery fragments were the principal cultural materials and only one site (IG 16) was devoid of them. Among the 2086 sherds are examples of the two related wares characteristic of this section of the southern California desert. Tizon Brown (Euler and Dobyms 1958, Ware 15) of the Palomar type (Meighan 1959, pp. 36-8) is dominant with 1762 specimens. Less numerous are pieces of Lower Colorado River Buff Ware of the Topoc type (Schroeder 1958, Ware 16, type 18) with 321 sherds. Three rough-surfaced pieces represent another variety of Lower Colorado River Buff Ware, Topoc Stucco (Schroeder 1958, Ware 16, type 2).

While the vast majority of the sherds are plain, there are five which are decorated. Three Tizon Brown rims are notched, with parallel lines

pressed into the wet clay of the vessel lip with a stick. A body sherd of the same ware has been scratched, after firing, with five thin, converging lines. The inner surface of a Topoc Buff piece is marked with a coiled basketry impression.

Additional potsherds have been modified. Three Tizon Brown pieces, all apparently from the same pot, have been deeply grooved. Thirteen other fragments have holes such as are drilled for crack-mending. The edges of one of the latter are worn, probably from use as a scraper. A single Topoc Buff fragment is also perforated. A novel feature noted on four sherds (3 brown, 1 buff) is a highly polished surface.

Stonework accompanying the pottery is made up mainly of seed-grinding implements and rough service tools. Twenty-eight naturally flat slabs of granite, the most readily available rock, show usage as milling stones. Twelve have depressions, typically oval and covering most of the slab, worn into them; the remaining sixteen have smoothed areas but no perceptible concavity. All of the specimens, except one, have been used on one side only. Pittings, made with hammerstones, indicate that the surfaces of many have been "sharpened" to maintain or to improve their grinding quality. The mills are not particularly bulky, differing in size from a slab measuring 29 x 46 cm., 19 cm. thick, to one 16 x 26 cm. and only 5 cm. thick.

Milling areas on bedrock boulders were far more frequent with 101 examples encountered. In form they varied from mere polished patches on flat-surfaced granite boulders to elliptical depressions 3 cm. or more deep. The largest mill covered an area of 36 x 36 cm., the smallest was about half this size, 15 x 19 cm. One grinding area departed from the usual in having a mortar worn into its center. The mills occurred singly as well as in groups, with fourteen as the largest cluster on a single boulder. Fifty-nine

milling areas were at or in the immediate vicinity of campsites, while forty-two were found isolated.

Handstones employed with the mills range from natural pieces of stone with one flat surface suitable for grinding (Plate IIIa-c) to neat, rectangular specimens shaped by pecking and grinding (Plate III d-f.) The largest number (21) have been used on one surface; fifteen, including all of the more symmetrical specimens, have been utilized on both sides. Granite was the material most commonly selected (21), though specimens of sandstone (5), quartzite (4) and a volcanic rock (1) also occur. The implements are all of a size to fit the hand, the largest measuring 9.2 x 13.2 cm., and the smallest having dimensions of 8.6 x 9.4 cm. Averages for the whole handstones are: length 11.4 cm.; width 8.5 cm.; thickness 5.2 cm.

Mortars and pestles, used to pulverize wild plant foods, were far less abundant. Unusual are two massive granite boulder mortars. The first, broken, is a naturally globular rock, 45 to 47 cm. across and 37 cm. high. Though free-standing and movable, it is hardly portable as it weighs about a hundred pounds (see Plate III; mortar is by the figure, left of the shelter). Its hollowed-out cavity is 20 cm. deep and 30 to 35 cm. in diameter at the top. Of lesser size, though by no means small, is a second mortar, also fashioned from a rounded boulder. It measures 32 cm. across and 26 cm. high; the depression is 13 cm. deep and 20 - 21 cm. in diameter. These are the first of their kind to be recorded for Anza-Borrego. A much smaller section of a shaped mortar, secured earlier at Mountain Palms Springs, is the only other mortar thus far reported for this area.

At two encampments and associated with milling areas on the flat topped boulders were bedrock mortars--four at one locality and two at the second. They had the typical cup-like form with rounded bottoms. Only one was large

and deep, having a diameter of 23 cm. and a depth of 17 cm. The other mortar holes ranged in diameter from 13 to 21 cm. and in depth from 4 to 8.5 cm.

Both shaped and unshaped pestles occurred. Six of the nine recovered are of the cobble variety -- heavy pieces of granite much wider at one end than at the other. On all six, the smaller end shows abrasion and wear. The biggest cobble is 20.4 cm. long, 10.3 cm. wide, and 6 cm. thick; a short bulky specimen measures 8 x 10 cm. and is 7 cm. thick. Partially worked is an oval cobble of hard-textured granite. Two of its edges have been pecked and ground so that they are nicely rounded (Plate IIIg). Both of the pestle's naturally flat surfaces are slightly worn as if from use as a handstone. This is a good-sized specimen: 28.2 cm. long, 11.5 cm. wide and 5.1 cm. thick. Completely shaped are the two remaining pestles, one almost whole and the other a fragment. The former (Plate IIIh) tapers toward the grasping end and is carefully polished. It has a length of 24.7 cm. and a maximum diameter of 7.7 cm.

An appreciable portion of the stonework consists of rough service tools. Most prominent are cobble hammers. There is no standardized pattern for these tools as both angular and rounded stones were selected and almost any lithic material was utilized if it was tough and resistant. Among the thirty-nine hammers are twenty-six of porphyry, eight of quartzite, three of hard granite and one of felsite. All are of a size which could easily be held in one hand and vary in size from an unusually large specimen 9 x 13.1 cm. and 7 cm. thick to one only 6 x 6.3 cm. x 4 cm. thick. Group averages for hammers are: length 8.4 cm.; width 6.5 cm., thickness 4.4 cm. As a result of constant service, one end of each cobble has become much scarred.

Quite limited in number are prepared hammers. On the three examples found, flakes have been struck off, more or less at random, from waterworn

porphyry cobbles to produce angular projections. All have been so much used that the projections have been dulled or battered flat. The two complete specimens have dimensions as follows: 7.9 x 9.3 cm., 6.8 cm. thick; and 6.6 x 8 cm., 6 cm. thick.

Nine crude stone choppers were obtained. Fashioned from porphyry cobbles, each has a scalloped chopping-edge produced by rough percussion flaking. The remainder of the stone is either unworked or only slightly modified through the removal of a few large chips. Dimensions in centimeters of the three intact choppers are: 9.2 x 10.4 x 5.6; 6.4 x 8.5 x 4.0; 3.7 x 5.2 x 2.5.

As has been noted for other sections of Anza-Borrego, the Indian Gorge-Indian Valley district was noticeably poor in smaller chipped stone artifacts. Not only were specimens of this kind few in number but those found exhibit neither elaborate form nor a high standard of workmanship. In all, the smaller stonework comprised only twenty-nine specimens: 9 projectile points, 1 broken blade, 2 drills, and 17 flake scrapers.

The six classifiable projectile points (4 quartz, 1 obsidian and 1 chert) are all triangular in form with straight sides but they differ in other details. One specimen has a straight base, three have concave bases, and two, in addition to basal concavities, have side notches. The missile points are uniformly small and light, indicating that the bow and arrow was in general use. Dimensions of the three more complete examples are: 1.6 x 2.1 cm., 5 mm. thick; 1.3 x 2 cm., 4 mm. thick; and 1.3 x 1.9 cm., 4 mm. thick. Three unclassifiable fragments (2 of quartz and 1 of obsidian), include two tips and one central section.

The lone blade fragment is the rounded base of a two-edged, presumably leaf-shaped, knife. It is made of quartz and the remaining piece measures 2.8 cm. across and 9 mm. thick.

A roughly-fashioned chipped object most likely saw service as a drill -- though it could have been employed as a graver. Made from an irregular quartz flake, it has a short, somewhat blunted point. Only the tip has been worked, the rest of the stone flake is unaltered. The artifact is 2.4 cm. long, 2.2 cm. wide, and 6 mm. thick. Almost certainly used for boring holes, is a second specimen. It is the parallel-sided shaft section of a well-fashioned obsidian drill, and measures 7 mm. across, 4 mm. in thickness. Both tools are probably "finger drills," held between the thumb and index finger while in use rather than mounted on the end of a stick. The drill is a relatively rare form of artifact in Anza-Borrego.

Haphazard flakes, by-products in the manufacture of other stone tools, were used as scrapers. Each of the seventeen examples secured is retouched along one border to give a sharp edge. Aside from such edge modification, no other attempt was made to alter the flake. Porphyry was preferred (9 specimens), but other materials were also used -- obsidian (3), quartz (2), felsite (2) and chalcedony (1). Flakes of varying size and thickness were utilized, the largest specimen measuring 3.7 x 6.7 cm., 1.7 cm. thick; the smallest 1.4 x 2 cm. and 4 mm. thick. Averages for scrapers are: length 3.9 cm.; width 2.9 cm.; thickness 1 cm.

Two other items complete the inventory of stone tools. The first is a circular quartzite pebble, quite small (3.3 x 2.1 cm.). As one surface shows perceptible wear, it can be assumed that the pebble served for smoothing the walls of earthenware vessels or the surfaces of other objects. Noteworthy for its symmetry and neat workmanship is the second specimen; a steatite arrowshaft straightener. This artifact (See Plate III) has a flat base and a convex upper surface with an evenly rounded groove (1.7 cm. wide, 9 mm. deep) across its top, placed at right angles to the long axis of the stone.

Two incised, parallel lines decorate one half of the upper side. Designed primarily to straighten cane arrowshafts, it probably was employed also in smoothing them. Its fire-blackened coloring shows that the tool had been heated before using. The arrowshaft straightener measures 9.5 cm. long, 6.1 wide and 3.6 cm. thick.

Although no artifacts of shell were recovered, there are two scraps of marine shell in the collection. Both are from the hinge of a Forty-ribbed Cockle, a large Pacific Coast species. The pieces, apparently wastage, show marks of cutting or grooving.

Mescal Pits and Trails

Quite numerous were boulder-outlined pit ovens, presumably once used for baking mescal stalks. Seven were associated with dwelling areas; four at one camp and one each at three other sites. An additional thirty-three ovens were located, but none in the immediate vicinity of any encampments. Despite some diversity in form, the stones of the pit ovens were usually arranged in oblong fashion. All contained charcoal, ash, blackened earth and fire-fractured rocks. Dimensions varied from a pit measuring 240 x 260 cm., to one only about half that size, 108 x 133 cm.

To determine more fully their shape and content, three ovens were excavated. They proved to be quite shallow, 8 to 25 cm. deep. Just beneath ground level in each was considerable charcoal; underlying this was a layer of rocks. One pit contained a mass of carbonized fiber, evidently the remains of mescal stalks.

Two Indian trails were noted. The first, originally an aboriginal foot-path, has been deepened and widened in recent times by the hoofs of cattle seeking water. It wound through a low gap in the ridge separating South

ARTIFACT CLASS

ARTIFACT CLASS	Site No.																												Totals	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		Isa
Pottery																														
Palomar Brown	240	61	5	126	57	28	34	205	305	73	41	13	129	65	47		19	28	28	34	33	35	22	12	46	21	32	23	1762	
Topoc Buff	13	24		6	4	10	4	28	73	9	7		27	9	59					12	9	15	6	1	3	1	1	321		
Topoc Stucco					1				1					1															3	
Milling stones																														
Portable	1	8	1	1	1				4					2	2	1	2					2					1	2	28	
Bedrock		5	2				2	4	4	2							11	14	8			4				2	1	42	101	
Handstones																														
Uniface		4	1	1	1				1	1	1	1	1	1	1												1	6	21	
Biface	1	3	1						2					1		3			1	2		1							15	
Mortars																														
Portable		1								1																			2	
Bedrock		4					2																						6	
Pestles																														
Cobble		1		1	1						1		1						2										6	
Shaped									1																		2		3	
Arrow. Straight	1																												1	
Polishing Pebble									1																				1	
Hammerstones																														
Cobble		4	1	1	2	1	5	7		2	3	1	1	10			1												39	
Flaked core								1	1														1						3	
Choppers		1		1				2	2					1		1											1		9	
Projectile Points																														
Base-straight															1														1	
-concave		1						1	1																				3	
-concave & side-notch.					1					1																			2	
Unclassifiable									1	1													1						3	
Drills														1			1												2	
Blade																												1	1	
Flake Scraper		4		2		1		5				1	2	1											1				17	
Shell		1																								1			2	
TOTALS	256	122	11	138	64	42	45	246	406	89	48	19	161	83	113	16	33	29	45	56	42	57	30	13	51	22	38	24	53	2352
Features:																														
Pit ovens									4							1											1	1	33	40

Table 1: Artifact Inventory by Site
Indian Gorge Survey

Indian Valley from Mountain Palms Springs. The path was clearly visible on the rocky surface and scattered along it were potsherds. Presumably, it represents the main route of travel between the two districts. Less obvious was a narrow trail skirting the north side of South Indian Valley. It was traced at intervals for a mile or so and seemed to lead toward the upper end of Bow Willow Canyon. Several small trailside camps were located along it.

Food Remains

Very little food refuse was present at the camping places. Seventeen pieces of mammal bone were collected but these provide little insight into which animals were eaten as they are unidentifiable scraps. Eleven charred fragments are from the bones of large mammals; the other six (four of which are calcined) are portions of rabbit-sized creatures. The only recognizable mammalian remains are three bits of horn from mountain sheep. Aside from carbonized fibers noted in one of the mescal pits, no vegetable substances were found.

Conclusions

Taken all together, the archaeological information secured during the surface survey of Indian Gorge-Indian Valley is sufficient to allow for the piecing together of a fairly clear picture of the mode of life of the district's former inhabitants. In aboriginal times the area was inhabited seasonally by small groups engaged in gathering wild plant products. Their residence at any one time was not sustained for very long. It can be deduced that the population fluctuated considerably from year to year. When the yield of wild crops was bountiful, several bands may have been encamped simultaneously; in lean years perhaps none. Reliance upon the native flora

is clearly reflected in the many stone implements designed for seed grinding which these people left behind. A scarcity of mammal bones and of hunting accoutrements suggests that they did not depend much on game, at least not during the harvesting season. Their livelihood was gained with the aid of simple equipment. Many of their stone tools were used for a short time and abandoned when they moved from one temporary camp to the next.

While allowing for a partial reconstruction of the manner of living of the Indians, the archaeological data tell nothing of cultural change or succession. The artifacts reveal a remarkable uniformity from site to site, demonstrating that they belong to a single occupational phase. Regularly recurring together were pottery, milling stones, handstones and cobble hammers. Other items usually present were flake scrapers, choppers and pestles. Even the more rare articles such as projectile points disclosed a consistency in form and relative frequency. There is good reason to believe that the way of life illustrated by this cultural assemblage began around 1000 A.D. and lasted into the historic period.

Nothing was learned regarding the remainder of prehistoric times for no signs of the presence of a previous population with a culture differing from that of the pottery-making people were detected. The one non-ceramic encampment yielded no artifacts which could not be duplicated at the others. Although recorded as being primarily a workshop, conceivably it could represent an earlier habitational site though no diagnostic tools were found to prove this.

Generally, the results of the Indian Gorge-Indian Valley reconnaissance match those obtained from surface surveys conducted elsewhere in Anza-Borrego Desert State Park. In all sections of the Park systematically explored, evidences of a late prehistoric habitation have been plentiful (Meighan 1959;

Wallace and Taylor 1958; 1960a; Wallace 1960) showing that the interval from the tenth century to modern times must have been one of fairly intensive aboriginal settlement. A curious feature of the archaeological research has been the difficulty in locating remains of greater age. It hardly seems plausible that the total scope of man's activity is encompassed in the period since 1000 A.D., yet conclusive evidence of his earlier presence is nearly absent. Two explanations have been advanced to account for this situation. Either ancient sites have been obliterated by torrents resulting from cloud-bursts, or, are exceedingly few in number. The only clear-cut indication of a pre-late horizon has come from the bottommost layer in a large rock shelter at Indian Hill. Here in earlier times dwelt a dart-using group who made no pottery (Wallace and Taylor 1960b).

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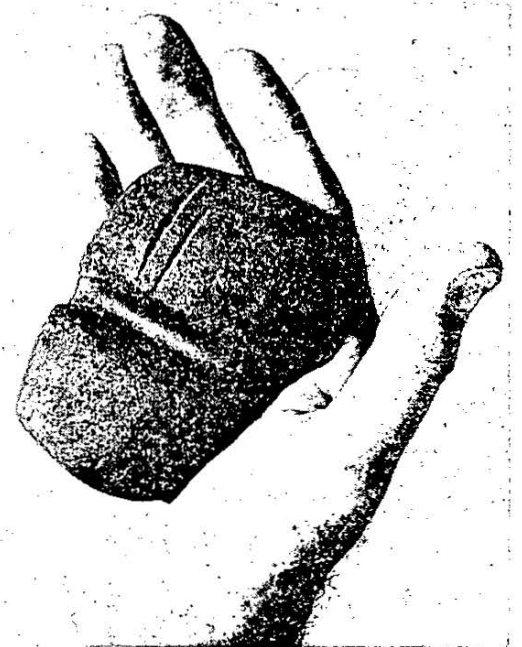
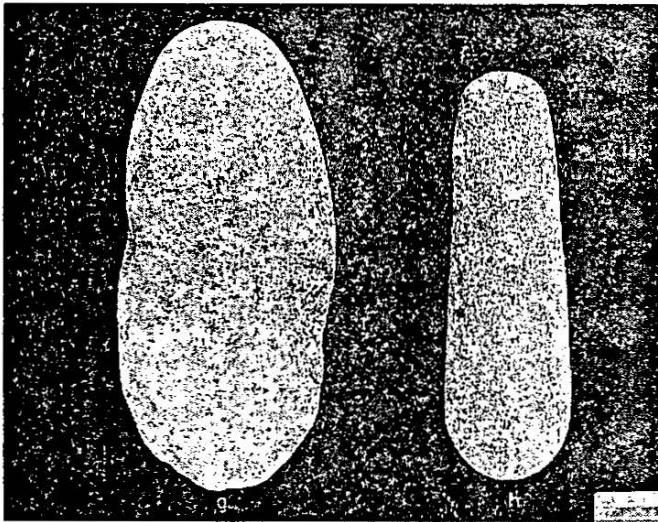
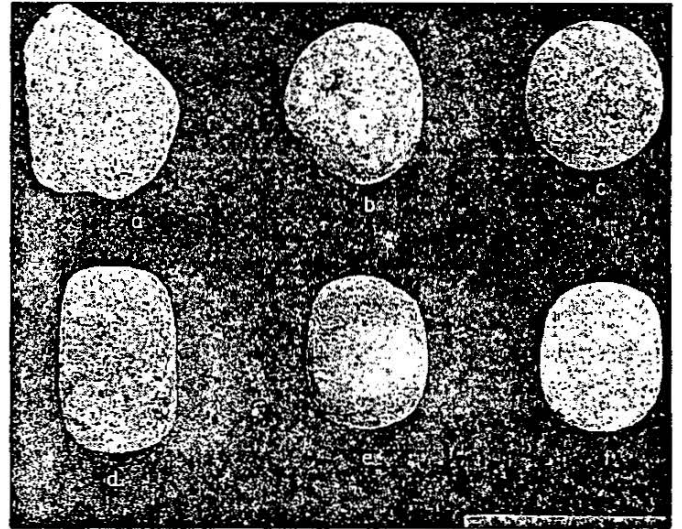


Plate 3

III

Test Excavations at BW 9

a Late Prehistoric Site

in

Anza-Borrego Desert State Park

by

William J. Wallace

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Test Excavations at BW 9
a Late Prehistoric Site
in
Anza-Borrego Desert State Park

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- Plate IV a - Tizon Brown sherd, drilled;
b - Lower Colorado Buff sherd, drilled, possibly for use
as a pendant
c & d - Basketry-impressed Tizon Brown ware sherds.
e-g - BW 9 hammerstones (g-is a flaked core hammer)
h - BW 9 chopper
i-j - BW 9 scraper planes
k-n - BW 9 shell pendants and bead.

Figure 1: BW 9 Projectile points and blade fragment.

Test Excavations at BW 9
a Late Prehistoric Site
in
Anza-Borrego Desert State Park

Introduction

While conducting an archaeological survey, the problem always arises as to whether the surface collection of artifacts recovered at a particular habitation site accurately mirrors its contents and allows for its precise placement in time. Often exploratory digging has to be undertaken to provide a check on conclusions derived from surface finds alone. This procedure was followed during an archaeological investigation of Bow Willow Canyon in Anza-Borrego Desert State Park, San Diego county. First the entire canyon was systematically inspected on foot for evidences of former Indian occupation (Wallace and Taylor 1958). Next, test-digging was carried on at the largest and least disturbed of eighteen campsites discovered during the eight-day survey.

The site selected for excavation had been designated as BW (for Bow Willow) 9, since it was the ninth abandoned Indian encampment encountered in the canyon. BW 9 occupies a level bench, 15 to 20 feet above the sandy bottom of Bow Willow wash, paralleling the arroyo bank for a distance of 315 feet and extending back 240 feet to a cluster of enormous granite boulders. The locality has the appearance of a meadow with a dry vegetation made up of a thin covering of grass, a few clumps of low-growing desert shrubs, and scattered clusters of cacti (See Plate IV).

Lying well above the level of flash flooding and situated so as to receive a cooling afternoon breeze on hot days, BW 9 must have been an excellent camping spot for an aboriginal hunting-gathering peoples. The surrounding region is well supplied with wild plant foods and small game.

There is not, today, a dependable water supply in the immediate vicinity, although low spots in the washes retain water for days, or even weeks following a heavy rain. Perhaps in former times a spring existed nearby though there is nothing to indicate such a possibility now.

When first viewed, the surface of EW 9 was littered with broken rock, potsherds, and stone artifacts. A collection consisting of the following objects was made:

Potsherds	195
Handstones	9
Milling stones	5
Cobble pestles	5
Polishing stones	2
Projectile points	6
Blades	3
Flake scrapers	4
Cobble hammers	4
Pecking stones	3
Flaked core hammer	1
Chopper	1
Scraper Plane	1
Total	239

Worn into flat-topped boulders at the northwestern section of the site are 29 seed grinding areas and eight mortar holes. Four roasting pits, marked by rings of rocks and fire-stained stones, are still visible on its surface although all have been badly disturbed by relic hunters.

The general appearance of EW 9, with its loose and darkened soil, suggested that it had been occupied during the last aboriginal period. Surface materials gathered from it pointed to the same conclusion as they duplicated those recovered from late campsites in the northern and southern portions of Anza-Borrego Desert State Park (Meighan 1959; Townsend 1960; Wallace and Taylor 1958, 1960a, 1960b). Although not yet precisely dated, this closing phase of native occupation is assigned to a time-span extending from around 1000 A. D. to modern times.

Excavation Methods

Before digging began a permanent datum (an iron pipe) was established at the highest point in the camping area. From this spot, the site was surveyed with a transit and a contour map with one-foot intervals was drawn. A grid system with North-South and East-West base lines was established so that each excavation unit could be accurately located on the map.

A series of five-by-five-foot test pits, arbitrarily placed where it was hoped they would divulge maximum information, were dug. Four units were excavated between March 20 and 22, 1959 by a field party composed of Peter Redwine, Edith Taylor and William Wallace. Testing was continued on April 15 and 16 of the following year by Richard Brooks, Edith Taylor and William Wallace. Two five-by-five squares were dug at this time. On both occasions the midden was removed in six-inch levels. After being loosened with trowels and examined, the soil was sifted through a 1/4-inch mesh screen.

Overlain with a thin (one inch) layer of coarse, granitic sand, the accumulation of refuse reached an average depth of 24 inches. Uniform in composition, it consisted of loose and dusty, dark-gray sand mixed with broken rock, potsherds and other artifacts. Beneath the midden lay a light-colored, coarser-grained sand which contained pebbles and cobbles. Rodent activity was noticeable and extended well into the subsoil in some places.

Description of Artifacts

From the test pits came 559 artifacts, 92.8 percent of which consisted of potsherds. The non-ceramic objects were predominantly of stone with bone tools absent and only a few shell articles recovered. The classes of artifacts, their numbers and depth distribution are recorded in Table 1. Surface

CLASS OF ARTIFACT	Surf.	0-6"	6-12	12-18	18-24	TOTALS
Tizon Brown ware	24	273	94	45	6	442
Lower Colorado Buff ware	6	49	10	1	1	67
Sherd scrapers	1	1				2
Sherd disc			1			1
Handstones			3	1		4
Milling stone			1			1
Polishing stones			2	2		4
Projectile Points						
		1	1			2
				1		1
	2					2
	1		1			2
				1		1
Unclassified	1	2	1		1	5
Blades	1		2	1		4
Scrapers		2		2	1	5
Cobble Hammers		1	1	1		3
Pecking stone		1				1
Flaked Hammer			1		1	2
Choppers	1	1				2
Scraper Planes			1	1		2
Curio			1			1
Shell Pendants		1		1		2
Shell Bead			1			1
Shell Scraps				2		2
	<u>37</u>	<u>332</u>	<u>121</u>	<u>59</u>	<u>10</u>	<u>559</u>

Table 1: Depth Distribution of EW 9 Artifacts

materials included in the tabulation are those recovered in and adjacent to areas cleared for excavation; the finds made previously and listed earlier are omitted.

The digging produced 509 fragments of pottery but no whole vessels or even good-sized pieces. Sherds were concentrated in the upper six inches of the midden with a marked decrease in their frequency as the base of the deposit was neared. The ceramic materials can be separated into two wares, both of paddle-anvil construction and sand-tempered.

Tizon Brown sherds (Euler and Dobyns 1958, Ware 15), numbering 442, make up roughly 87 percent of the total pottery fragments. On this ware, surface color is quite variable but is usually dark brown. All pieces large enough to provide clues as to vessel form appear to be from globular cooking jars with short necks and wide mouths. Rims, round or flat-edged, are regularly straight but a few flare out slightly. Two rim sherds have short, oblique lines cut or pressed into their edges and two body pieces have coiled basketry impressions on the interior surfaces (Plate IVc,d); but otherwise the pottery is plain. This type of Tizon Brown Ware has recently been named Palomar Brown (Meighan 1959, p. 36-38).

Lower Colorado Buff Ware (Schroeder 1958, Ware 16) is represented by 67 sherds, comprising about 13 percent of the ceramic materials. Surface color on these fragments ranges from buff through tan with a few examples exhibiting a pinkish or reddish hue. It is believed that the greater portion of them belonged to large, globular jars with narrow mouths, similar to those used by recent Indians for food preservation and for the handling and storing of water. Rims, again, are mostly straight with round or flat edges; a few are recurved. Decoration is absent. The BW 9 buff sherds appear to be of the Topoc Buff type.