THE STONE ART OF THE SAN DIEGUITO PLATEAU

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THE region considered in this paper lies in western San Diego county, California, contiguous to the lower drainage of the San Dieguito river, and embraces an area of about one hundred square miles.[1] Flowing in a southwesterly direction the San Dieguito river breaks through the low Coast Range about six miles from the Pacific, and continues in this general direction in a deep, broad valley across a greatly dissected plateau to the ocean. This coastal plateau averages six miles in width, stands from three hundred to five hundred feet above sea level, and is composed of uplifted Tertiary marine beds, and some Pleistocene. These formations are but slightly indurated, especially the upper strata, and are greatly eroded. They consist of intercalated sandstone, shale, sandy marl, and gravel. In general the gravel caps the entire region, or has capped it previous to the recent period. Although this coastal region is criss-crossed with myriad canyons and some broad valleys, it presents the general appearance of a plateau, when viewed from a distance. Most of western San Diego county, bordering on the Pacific, is of a similar topography.

With one exception (locus IV, fig. 1) it is only in the above-described region that the writer has been able to locate a certain chipped stone industry, thoroughly distinctive from other local industries. It will be pertinent first to consider certain factors relative to the latter to bring out the salient points of the former, for they are quite different.

When the Spanish arrived in California they found San Diego county occupied by two different linguistic groups, one speaking a Shoshonean language and the other a Yuman. Neither had a tribal entity, and there was some dialectic variation within each of these groups. A line drawn approximately east and west

[1] This paper has been prepared from data gained through field work, begun in 1920 in western San Diego county, and carried on intermittently down to the present time.

through the middle of San Diego county would define the linguistic boundary between the two stocks. Those clans in the south half of the county, viz., the Yuman, came under the influence of the San Diego mission and became known as the Diegueño, and likewise those in the northern half, the Shoshonean

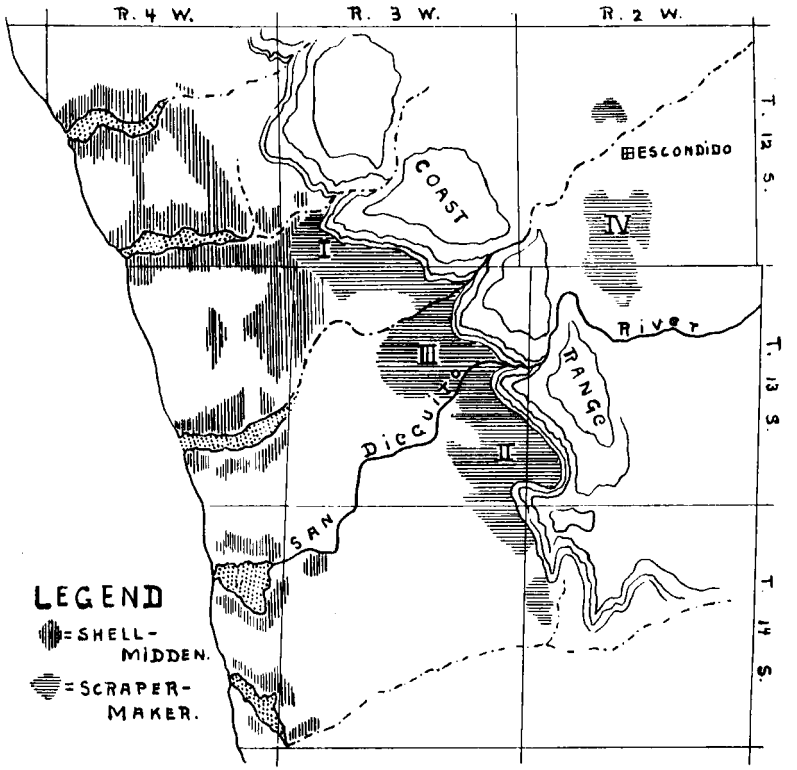

Fig. 1. The San Dieguito plateau.

people, were named Luiseño from their association with the San Luis Rey mission. The cultural similarity of these two groups is such as to permit their being considered together, and henceforth in this paper I shall refer to them collectively as Mission Indians. A complete résumé of their material culture is outside the province of this report, and it has been adequately presented elsewhere.[2]

[2] A. L. Kroeber, Handbook of the Indians of California. Bur. Amer. Ethnol., Bull. 78 (Washington, 1925).

It is necessary, however, to mention some of the principal features in order to bring out the dissimilarities between their culture and the one to be described.

In the choice of camp and village sites the Mission Indian showed a marked preference for the east sides and tops of rocky hills, overlooking a creek or waterhole. His shelter was built either under, or in the lee of a large boulder, when one was available. Camp sites on open ground are so rare as to be negligible.

These people practised cremation, made pottery, and used the bedrock mortar and metate in preference to the portable forms, although the latter were used. Their chief article of diet was acorn flour, and the geographical distribution of the live oaks, to a certain degree, determined the location of their settlements. These trees occur but sparingly throughout the local coastal belt.

The Diegueño and Luiseño used the bow and arrow, and sometimes tipped their arrows with stone points. While these points are by no means common, a few are to be found on any site. They were but indifferent workers in stone and their scrapers are little more than percussive flakes with some secondary chipping on the edges, or none at all. It is probable that they used the teshoa-flake[3] occasionally, for this occurs sporadically throughout southern California, but nowhere to my knowledge as a type-scraper except on a narrow strip of the Upper and Lower Californian coast.

The above briefly described culture is the only recognized culture in San Diego county. This situation is undoubtedly due to unfamiliarity with the field and not to lack of evidence to the contrary. The writer recognizes two distinct and older cultures throughout the coastal belt. The first and probably the older is chiefly characterized by numerous shell middens. These middens are to be found not only on the coast, but as far as four miles inland. In elevation they range from tidewater to two hundred and fifty feet above sea level, the inland ones being usually located

[3] Shoshone term for a shoulder-flake (plano-convex type) struck from the long axis of a water-washed cobble. This form was first described by Dr. Joseph Leidy of the Hayden Geological Survey (Sixth Ann. Rept. U. S. Surv. of the Territories, Washington, 1872).

at the greater height. They are invariably located on mesa rims adjacent to sanded-in sloughs, which indent the local coast and extend inland often for several miles. Judging from the contents of the middens, these sloughs formerly supported an abundant molluscan fauna. Whether the unusual location of the higher middens is indicative of a subsequent crustal uplift or not, is not debatable with our present incomplete geological knowledge; but it seems impossible to account for them otherwise.

The surface finds from these middens include metates, manos, hammerstones, teshoa-flakes, and a great amount of split stone, but no chipped stone artifacts which may be recognized as finished implements, unless it be the teshoa-flakes. Potsherds are entirely absent, but occur sparingly in the vicinity. Many of the middens produce nothing that would associate them with man, except the split stones.

Although a thorough discussion of this culture would be relevant to the main thesis of this paper, lack of knowledge forbids it. Extensive excavations with special regard to stratigraphy must be made before these middens can be viewed from any but a speculative angle. The writer has examined many of these middens superficially, however, and collected sufficient surface material to warrant comparisons if not conclusions with regard to the material about to be described.

We now come to the consideration of a certain chipped stone industry, which conforms in its occurrence to a well-defined zone on the San Dieguito plateau. This cultural area may be divided into four loci upon the basis of intensive occupation with each locus having at least one site of sufficient size to be dignified with the name of village, the remaining local area being scattered over with small camp sites. It will be seen from the accompanying map (fig. 1), that this zone parallels the shell midden area on the east, and in some places merges with it; also that in only one locus is it found back of the Coast Range, viz., in the Escondido region.

To the people who produced this industry I have given the provisional name of Scraper-Makers, after the most numerous and distinctive of their stone implements. Their camp and village

sites are found only on mesas and ridges whose tops are covered with at least a moderate depth of soil. These locations are at variance with the rocky sites of the Mission Indian, and are often at considerable distance from any modern water supply.

The usual occupational stratum of dark soil, which is to be found on sites where men have long dwelt, is entirely lacking on these sites. It is the writer's opinion that this stratum was once present, but that the sites are of sufficient age to have lost it through erosion. The stone implements of these people, due to their bulk, have settled in place, while the lighter constituents of the occupational stratum have been carried off. All the stone material of this industry occurs upon the surface, or but slightly below. None of the sites has produced an arrowhead or a potsherd, although pottery sites are in close proximity. On sites exhibiting the greatest degradation with recession of the mesa edge, the artifacts, chips and rejects are scattered throughout the talus. No excavations have been made on these sites as it has been deemed useless. If these people interred their dead the burials would have suffered destruction, unless placed at an unusual depth. As yet the mortuary customs are problematical.[4]

The chipped stone implements of the Scraper-Makers may be grouped under three generic types: (1) scrapers, (2) knives, and (3) ceremonial stones[5]; and they are numerically common in the order named. The first-named type of artifact so far outnumbers the other two types that it often constitutes the sole evidence of a Scraper-Maker site. Although the scrapers are all

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[4] In May, 1926, the writer witnessed the uncovering of two skeletons beneath a shell midden at La Jolla, California. In all, nine skeletons were torn from this site through the activities of a steam shovel. There were no mortuary offerings of any kind with these burials. There have been many such interments uncovered accidentally, due to road grading and various land improvements throughout the coast region of southern California, and although they were not uncovered by trained observers, they must be reckoned with. I know of none which have yielded Caucasian material, but do know that Mission Indian interments (a post-Spanish practice) invariably do. Unsatisfactory as it is, the available mortuary data on this region would seem to indicate that interment preceded the practice of cremation.

[5] This type of artifact is so named by the writer to facilitate discussion, rather than to imply knowledge as to its usage.

Scraper-planes from the San Dieguito plateau. Natural length of *a* is 125 mm.

of the plano-convex type, they may be differentiated into two classes upon the basis of both form and fabrication.

The type-scraper of the industry, which is found in the greatest numbers, is conical in shape and acutely convex (plate 29). It was fashioned either from a teshoa-flake, or from a nucleus possessing at least one even plane. From this platform flakes were struck off about the perimeter until a disk shape was obtained. If a satisfactory edge had been secured, retouching was dispensed with. The finest secondary work is confined to the medium-sized and small scrapers, also to scrapers made from specific materials, the discussion of which will follow.

The technique of the larger scrapers is less finished and refinement is confined to the edges. Little attempt seems to have been made to remove the irregularities of the backs. Many individuals are devoid of secondary chipping except on short marginal sections, and are so crude of technique that one might doubt that they are purposeful artifacts; especially when viewing a detached member of the group (pl. 29*a*). Many would pronounce them flake cores, but the secondary working of the edges precludes such an assumption. Furthermore even those scrapers that lack retouched edges often show a battered edge, where the worker made repeated attempts to bevel a refractory margin, i.e., a section with a plunging grain. And again, the flakes obtained from such nuclei would not be of sufficient size to fashion anything from except small arrowheads—implements which this industry has failed to produce.

This scraper, or more properly scraper-plane, resembles to a marked degree the Palaeolithic planing tools of the Aurignacian industry, and was possibly used for the same purpose, i.e., for dressing hides. This comparison has been made because of the interesting coincidence of two widely separated peoples possessing in common a rare type of artifact.

There are, however, some distinctive differences in the respective groups. The San Dieguito planes have not the long, fine, parallel retouches of those of the Aurignacian. This is undoubtedly due to the poor flaking qualities of the stone employed, as the respective techniques seem to have been identical. A few of the

local planes are elongated and keeled like the European, but the predominant type is conical. They are more abruptly beveled and much larger than the grattoir Tarte of the Aurignacian.

The minimum and maximum breadths exhibited by the local planes are one and one-half inches, and five and three-quarters inches. The largest specimen that this industry has produced has a weight of three pounds. The average plane will measure about two and one-half inches across the base. This average is derived from material representing the entire region. When separate averages are taken from each of the four loci shown on the accompanying map (fig. 1), different results are obtained. In loci III and IV, where the finest chipping technique is found, planes fall slightly below the general breadth average. In locus II the largest scraper-planes are found and the breadth average rises to three inches. Here, too, the workmanship is the crudest. Locus I has produced the smallest planes of all and but few in number. This area runs more to side-scrapers than to scraper-planes. This condition of variability in size and technique extends to other chipped implements of the industry. Considering such variability within a region of so small an area, we must conclude that we are confronted with transitional stages rather than with synchronous, stylistic divergency.

The second and numerically minor type of scraper is the side-scraper, also of the plano-convex type, but of low convexity and indefinite outline (pl. 30). The more carefully worked ones are roughly oval. They are fashioned from percussive flakes, have conchoidal bases with torsional edges, and are not suitable for planing. In this group, as in the first group, chipping is confined to the convex face and sometimes to one margin.

With this culture certain aberrant forms such as the borer and the end-scraper do occur, but so seldom that they must be attributed to the originality of individuals.

The material utilized for chipping by the Scraper-Makers is of two different sources, but both are in the immediate region. The most readily usable material was the extensive stratum of ancient river gravel that caps the greater part of the coastal plateau. This gravel possesses a varied lithology but in the main

Side-scrapers from the San Dieguito plateau. Natural length of *c* is 88 mm.

is composed of fine-grained, igneous rocks, among which the porphyries predominate. These porphyries are short-grained and not amenable to long flaking. As they also lack the conchoidal fracture, it is practically impossible to employ a pressure-flaking technique.

The second source was in the eruptive rocks of the Coast Range. Where the San Dieguito river cuts through this range several large bodies of latite and felsite are exposed, and it was from such material that the finest chipped work was fashioned. These rocks are fine-grained and uniform in texture, have a conchoidal fracture, and flake well. They alter more rapidly than the porphyries, and it is unfortunate that more is not known about their rate of decomposition, as the dating of the Scraper-Maker culture depends upon such knowledge.

Without exception, all implements composed of these eruptives exhibit patination in varying degree; the degree of patination seeming to identify itself with certain phases of the material. I believe further study will prove that this condition is the major factor in such variation, and that this variability is not entirely due to relative age differences. The latite artifacts carry the heaviest patina of all. In color this patina exhibits either a putty grey, a greenish grey, or a reddish buff. These shades are peculiar to material from specific sites. There is considerable soil variation throughout the region and it has had a marked effect on the patina color. The reddish loams of locus IV are highly ferruginous and have stained implements from this district a reddish brown. Implements from the other three loci vary but little in color, being most often some shade of grey, and are less easy to classify on a color basis with regard to their source. As the fresh groundmass of these eruptives is a bright greenish grey, the dull patinized surface offers a strong contrast. On scraper *c* (pl. 30), where a recent chip has been broken off from the left margin, the color contrast is well exemplified.[6]

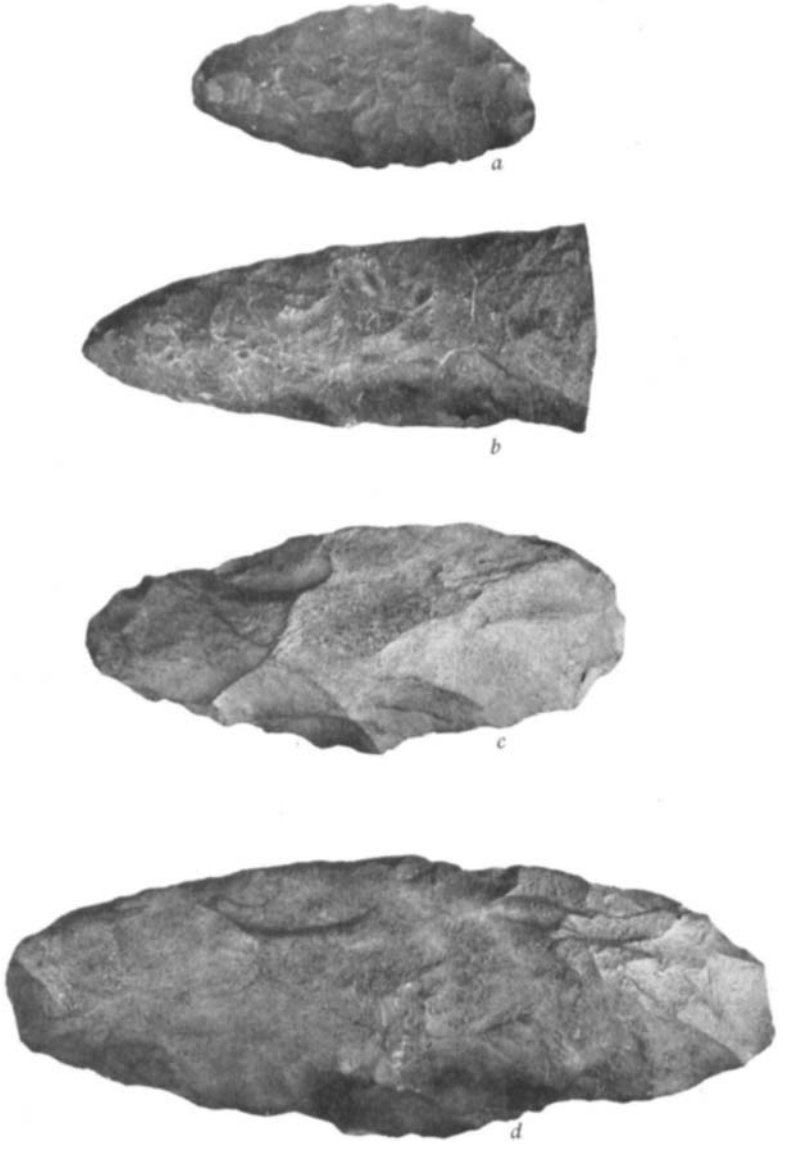
[6] Directly concerned with the subject of chemical alteration upon the surface of Scraper-Maker artifacts is the fact that the same stone material was used by the Mission Indians for arrowheads and scrapers, yet I have never seen the least trace of patina on any of their implements.

The second type of chipped stone work associated with this culture is shown on plate 31. These knives are far from common, the whole region having produced but six complete, and about twenty-five broken ones. It would seem that the incomplete ones were either broken in the making or but a short time after, for the patination is of the same depth on the fractures as on the worked faces. The same material was employed in the making of knives and of scrapers. Knives of latite and felsite predominate, whereas porphyry ones are rare. They range from two to five inches in length, the average being about three and one-half inches. In outline they seldom depart from the elliptical, although a few lanceolate and willow-leaf forms are present, the latter forms being particularly strong in locus IV. In the elliptical type both end curvatures are often identical, and, in such cases, it is impossible to specify which are the points and which the butts, if such distinction ever was intended.

It is probable that two different techniques were employed in fashioning these knives, viz., (1) reduction from an inchoate mass, and (2) reduction from a percussive flake (on some knives near the butt a percussion bulb is still evident). Reduction was accomplished and completed most often wholly by percussion, flakes being struck from both faces of the nucleus. On the finer specimens this process was supplemented by pressure flaking. Although a few knives display such secondary work (pl. 31*a*, *b*), the majority are devoid of retouching. One can not regard the latter as rejects, for the entire industry has produced so few knives evincing secondary chipping.

In classifying this type of artifact as a knife, the writer has followed the conventional classification of implements of this shape, but not with complete conviction. It would seem that such a decision is hazardous on several grounds. From the standpoint of comfort it would be impractical to use such a blade without a handle. Perhaps the surmounting of this difficulty is explained by similar artifacts mounted in balls of asphaltum, shaped to fit the palm of the hand, which have been found in California.[7] Most

[7] Lieut Geo. M. Wheeler, U. S. Geographical Surveys West of the 100th Meridian, 7: 69, fig. 17, 1879.



Knives from the San Dieguito plateau. Natural length of *d* (in San Diego Museum) is 98 mm.

of the local blades are thick in cross-section, even toward the ends; and to haft them in wood securely enough to withstand the leverage of actual use would present great difficulty. An apparently similar blade hafted in wood and bound with pitch and cord is featured, however, by Kroeber, as a Yurok salmon-knife.[8] Due to the wrapping, it is impossible to say whether the butt of this knife is shaped like those under discussion. If the local blades were used for cutting, this must have been confined to soft materials, for none show dulled edges.

In reviewing the ethnological data on Pacific Coast Indians, we find a widespread ceremonial use of chipped stone blades in dances, shamanistic ritual, etc.[9] Although this cultus as employed by different tribes has ritualistic variations, it leaves little doubt as to the basic similarity and probable common origin of such ceremonies in California. As extreme examples of chipped stone exhibition we have the huge obsidian blades carried in the hand during certain dances of the Karok, and the small stone points which are hafted into the dance-sticks of the Luiseño and Diegueño.[10]

The Channel islands have produced more hafted stone blades than any other Californian region. These are invariably secured in cleft sticks with asphaltum, and are usually classed as knives. In the archaeological report of the Wheeler Survey,[11] it is said that one of these sticks from San Nicolas island had a blade cemented on both its ends. It would be difficult to imagine anything but a ceremonial usage for such an implement. It is not impossible, however, that we are here confronted with a secondary use of an artifact primarily made for a knife.

The third class of chipped stone artifacts from this industry is shown *in toto* on plate 32. Repeated and persistent searching of the region for several years has produced only five of these artifacts, of which only two are intact. Chipped stones of this genre

[8] Op. cit., pl. 16.

[9] Ibid., 26, 56, 192, 198, 262, 418, 638, 665.

[10] T. T. Waterman, The Religious Practices of the Diegueño Indians. Univ. Calif. Publ. Am. Arch. Ethn., 8: 300, 301, 1910.

[11] Op. cit., 60.

have been discussed by H. Newell Wardle in a previous issue of this publication[12]; their source is San Miguel island. She reports having seen stones of a similar nature in the American Museum of Natural History, which were from the Channel islands and Santa Barbara county. One other artifact of this nature is featured by Heye in reviewing San Miguel island artifacts.[13]

The very paucity of these stones would seem to preclude a utilitarian purpose for them, and all speculation to such an end. No ethnological information in regard to the use of such stones has been found in California, and if they are of a ceremonial nature, they represent a cultus long extinct. Wardle believes them to be scarifiers, and there is some record of scarifying having been practised by shamans and individuals of various Pacific Coast tribes,[14] but no evidence of so elaborate an implement having been used.

Three of the stones (pl. 32*a*, *c*, *e*) described in this paper are from a large village site in locus III, and two (pl. 32*b*, *d*) are from the largest site in locus IV. As one may only theorize with regard to them, I offer the suggestion that they were the property of the local shamans, because of their rarity together with the fact that they are only found at sites large enough to have supported a shaman. Whether they were employed for scarifying or merely exhibited during ceremonies, I should guess that they were hafted at the centers into cleft sticks at right angles to the sticks with the notched margins upward, as shown in figure 2.

Hypothetical Hafting of Ceremonial Stones in Cleft Sticks

The skill necessitated in the manufacture of these implements is of no small degree, and it is superior to all other Scraper-Maker chipping. The material employed in their making is the same as that used in other work and shows great diversity, each artifact

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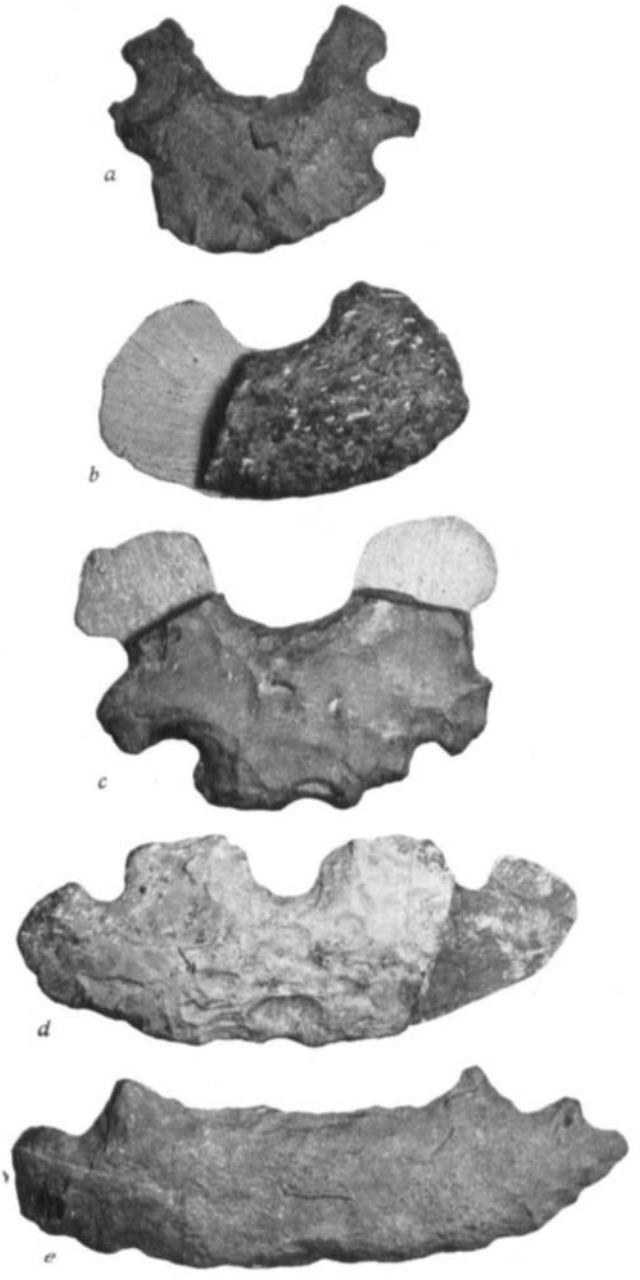
[12] H. Newell Wardle, Stone Implements of Surgery (?) from San Miguel Island. Amer. Anthr., n.s., 15: 656–660, 1913.

[13] George G. Heye, Certain Artifacts from San Miguel Island. Ind. Notes and Mono., 7: 72, *fig. 3*, 1921.

[14] S. Powers, Tribes of California. Contrib. to N. Am. Ethn., 3: 152, 181, 239, 354 (Washington, 1877).



Ceremonial (?) stones from the San Dieguito plateau. *a*, *c*, *e* are in the San Diego Museum. *b*, *c*, *d* are restored. Natural length of *e* is 73 mm.

being made of a different stone. Wardle reports some of the San Miguel scarifiers as being made of flint, but this material is not represented in any of the San Dieguito artifacts, nor have I ever n a flint implement from southern California.

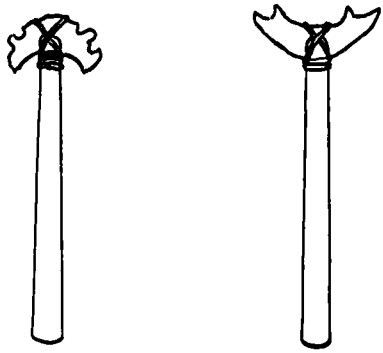


Fig. 2. Hafted stone blades secured in cleft sticks with asphaltum.

In flaking, chips were removed from both faces by the pressure method after the form had been roughed out by percussion. The stones are elliptical in cross-section, but not thickly so. Although the group shows considerable form variation, and exact duplication does not exist, there are several technical factors which are constant, viz., all of them are crescentic in shape; each individual has duplicate ends with regard to the number of cusps, notches, and arrangement, insofar as the maker was able to control the chipping. On all of those featured by Wardle the notching is confined to the inner periphery, and only three of the local stones depart from this arrangement, plate 32*a*, *c*, which are notched on the outer periphery, and plate 32*b*, which has no notches. One of the scarifiers from San Miguel island possesses a median notch, as does plate 32*d* from the San Dieguito group. Possibly these median notches were to facilitate hafting. Most of the cusps on the local implements show definite wear.

The only other artifacts found with this culture are the metate and mano. Only a few of the former have been found, and these were broken. They are of the usual Pacific Coast type with an oval basin, but not so large. There is nothing distinctive about the manos either.

Conclusion

It will be seen, by comparing the material culture of the Mission Indians with that of the Scraper-Makers, that the two do not resemble each other except in the joint possession of the metate, also that the dissimilar topographic placing of the respective village sites emphasizes this cultural divergence.[15] At present there is no stronger evidence for the assumption that the Scraper-Maker culture preceded that of the Mission Indians, than that offered by the patinized implements of the former.

On the other hand a comparative study of the notched, crescentic stones from this region and the Channel islands indicates cultural affiliation between the two. Whether this apparent connection resulted from cultural diffusion or direct migration, the direction of the movement can only be determined by further field work on both the coast and the islands. The knife, too, seems to be common to the two regions; and although the scraper-plane has not been reported from the Channel islands, it might easily have been overlooked during the looting for the more spectacular artifacts connected with this culture.

Returning to cultural comparisons within the immediate region, we see that the Scraper-Maker culture can be connected, through its chipped stone industry, with still another culture, viz., that of the Shell-Midden people; in fact, there is some evidence that the former is an outgrowth of the latter. The numerous flake cores of the middens might easily be prototypes to the scraper-planes; at least, they are an essential stage in the construction of the latter. Felsite and latite flakes are rare on midden

[15] While considerable study has been expended on contrasting the house-types of different peoples, next to nothing has been done toward gaining an understanding of the significance of the topographic placing of houses within a specific terrain. The choice of a house, camp, or village site was hardly a haphazard affair even with the most primitive people, but must have been made in conformity with some economic, social, or climatic condition, or all three. A complete or even partial understanding of this subject would give to the investigator yet another diagnostic medium with which he might not only differentiate primitive cultures, but date them with regard to priority. I believe that the solution of the chronological order of the local cultures could not only be helped by such a study, but that they are to a degree the reflection of the aforementioned conditions.

sites, but do occur and are found to carry equal if not greater surface alteration than that found on Scraper-Maker material.

On the west side of locus 1 two Scraper-Maker sites blend into shell middens without a break. Furthermore, in the talus below one of these middens, I found scraper-planes identical in technique and degree of patination with those here described. I should consider this site and its environs to be a transitional region, and to be extremely valuable for stratigraphical work.

If, on the exhaustion of sea food on the adjacent coast and in the contiguous lagoons, the Shell-Midden people were compelled to move inland in search of food, it seems likely that in their economic readjustment they would become a hunting group, specialize the teshoa-flake into a more perfect fleshing-tool such as the scraper-plane, and later develop the knife. If this hypothesis be correct, this territory offers an invaluable field for studying the effect of changing economic conditions upon the material culture of a people.

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