

**PETROGLYPHS OF CALIFORNIA  
AND ADJOINING STATES**

BY  
**JULIAN H. STEWARD**

**UNIVERSITY OF CALIFORNIA PUBLICATIONS IN AMERICAN ARCHAEOLOGY  
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PICTOGRAPH IN PAINTED CAVE, SANTA BARBARA, SITE 83

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## INTRODUCTION

The original plan of this paper was to present a large amount of unpublished material on petroglyphs and pictographs in California. The material however has appreciably expanded, and it has become evident that since there are certain types of petroglyphs which are not limited to California it is preferable to extend the survey to neighboring states rather than to delimit the area artificially by the political boundaries of the state and thus do violence to the study. Therefore Nevada, Utah, Arizona, and Lower California have been included in this survey, although the data are less full for these states.

The nucleus of our material is the accumulation of many years at the Department of Anthropology of the University of California and is largely the contributions of private individuals. This has been increased several-fold during the past two years by further private contributions and by extended correspondence.

We are especially indebted to the following for their kind cooperation: Mr. Edward E. Clarke, editor of the San Francisco Sunday Examiner, who has given us the benefit of a large amount of petrographic<sup>1</sup> material accumulated by him, as well as material secured on

<sup>1</sup> Petrography is here used as a comprehensive term to include both pictographs and petroglyphs. Pictographs are painted symbols; petroglyphs are carved.

the "Examiner Expedition" to Nevada; Professor Eliot Blackwelder, of Stanford University, who has permitted us to use his unpublished report on Grapevine canyon, Nevada; Mr. Guy Earl, Regent of the University of California, and Mr. William Lyle Skinner, of Lone Pine, California, who have furnished a large number of excellent photographs of petroglyphs in Inyo county; Professor Andrew Kerr, of the Department of Archaeology of the University of Utah, who has given us a large number of photographs of petroglyphs in Utah; Colonel George Stewart, of Sacramento, who has supplied a large number of excellent drawings together with valuable information concerning pictographs in Tulare county, California; Mr. A. P. Miller, of Needles, California, who has furnished a large number of excellent photographs of the petroglyphs at Grapevine canyon and Hiko springs, Nevada; and Mr. Phil T. Hanna, of Touring Topics, Automobile Club of Southern California, Los Angeles, who kindly furnished excellent photographs of the petroglyphs at "Lost City," Nevada.

We have incorporated herein also a small amount of material from publications which are very inaccessible. For comparative purposes several well-known archaeological and ethnological publications have been quoted at length when describing sites in California and at less length when describing sites in Nevada, Utah, and Arizona.

Much of the material is unfortunately inadequate and many sites are known to us only through brief references to them without further information being available.

The author has been able to make personal visits to only a few sites. These include several in southern California and in Inyo county, California. The procedure followed in field work has been (1) to ascertain the relation of the sites to scenes of other types of aboriginal activity, (2) to ascertain when possible the kind of rock, its exposure to weathering, and other factors which might influence the making and preservation of inscriptions, (3) to ascertain what evidence there is of relative antiquity of the various characters making up the inscriptions, either by relative weathering, difference in type of design, or superimposition, (4) to reproduce the characters as accurately as possible by sketches as well as by photographs. It has been found feasible in taking photographs to chalk the vast majority of petroglyphs. This seldom seriously alters the quality of the petroglyphs and has the great advantage of bringing out the designs which are usually difficult and frequently impossible to reproduce in any other way. Where

several designs occur together, unless one or two can be clearly singled out as independent of the others, it has been the practice to chalk all lines. This eliminates almost inevitable subjective selection and furnishes full data which may later be weighed and refined through a comparison with petroglyphs from other sites.

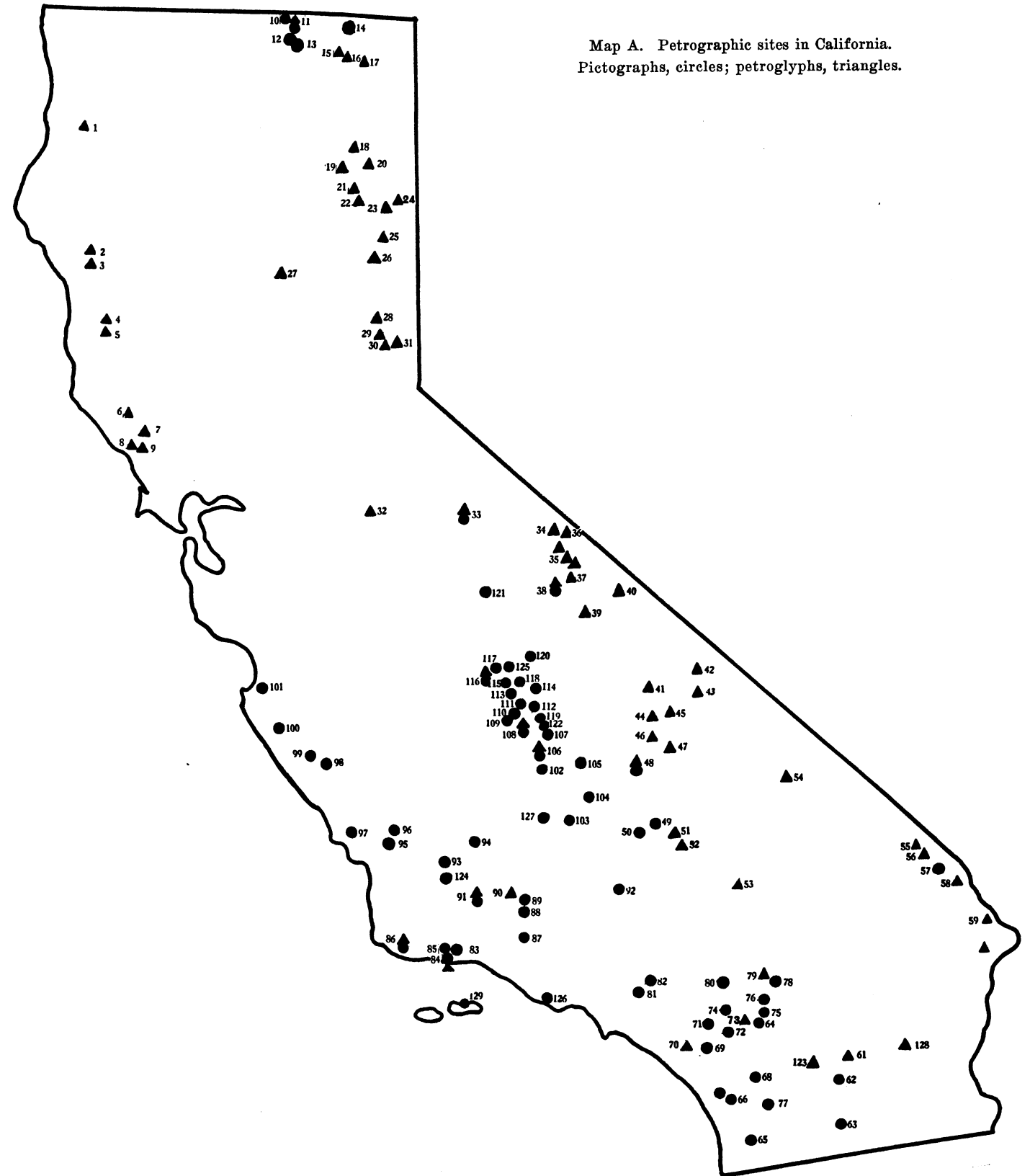
The illustrations are taken mainly from the unpublished material at the Department of Anthropology, University of California. Several have been copied from inaccessible journals. Only in rare instances have sketches been taken from anthropological publications and then only for comparative purposes.

In several respects the illustrations do not give true pictures of the original rock inscriptions. The photographs are generally accurate as to form except where foreshortening has occurred. Pictographs however seldom make good photographs. They are usually too dim to be photographed and when they will reproduce, red always appears as dark gray or black, while yellow is seldom distinguishable from white. The text figures are taken from original rock inscriptions, and from photographs and sketches submitted by private individuals. In general these are undoubtedly fairly accurate. In many cases however it is clear that they are greatly idealized. This shortcoming is probably not frequently serious, for rock is seldom a favorable medium for accurate and neat work and reproductions which are slightly better than the originals are probably nearer to the form which was in the mind of the primitive artist than his own crude product executed on a rough and irregular rock surface. This however must be taken with caution and applies mainly to realistic figures and others where we can be reasonably certain of what was intended.

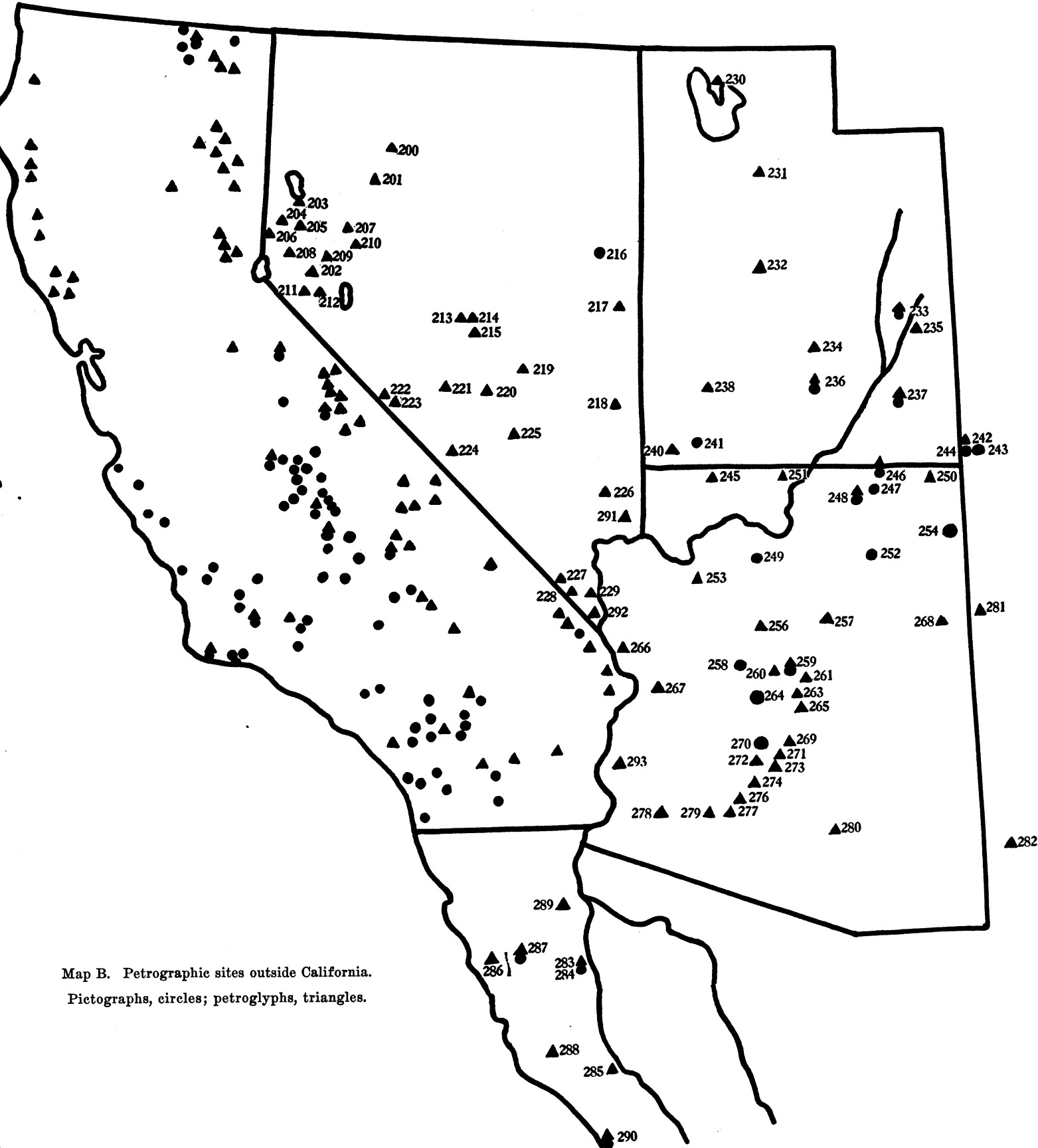
We must also make allowance when possible for the inaccuracies inevitably committed by untrained observers. In complexed and confused designs it is seldom easy for even the special student to decide what does and what does not belong to or form part of any given character, and it is very difficult often to make sketches which will give a true idea of the designs present and their relation to one another.

When parallel hatching has been used in the illustrations red is indicated. Short dashes indicate white. In many figures solid black has been used where the detail is so great that it was impracticable to draw an outline filled in by hatching or dashes.

Map A. Petrographic sites in California.  
Pictographs, circles; petroglyphs, triangles.



Map B. Petrographic sites outside California.  
Pictographs, circles; petroglyphs, triangles.



Exact measurements are rarely given. The justification for this is that size is usually independent of style, design, or locality. Where size has seemed significant the available measurements are given.

Any attempt to draw inferences as to meaning, age, and relationship of the petrographic inscriptions is fraught with methodological difficulties. Stratification which is so useful in archaeological comparisons is lacking here. The nearest approach to it is superimposition of designs, but this has generally yielded negative results.

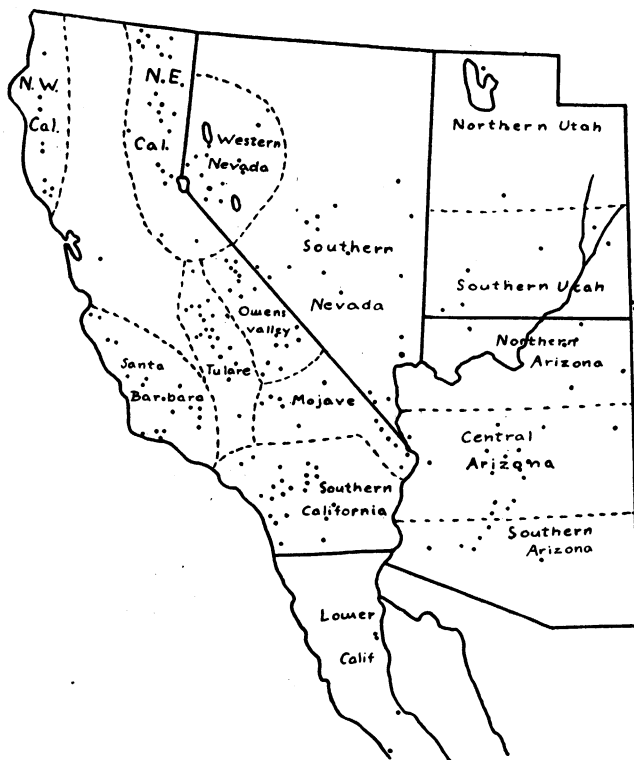
The method has been to analyze groups of pictographs and petroglyphs into component elements of design. Here the subjective element is unusually great, for, except for realistic figures, we cannot be certain of the identity of similar designs at different sites. Moreover, many designs which are roughly similar in general appearance seldom agree in detail. Explanations of the designs, which would greatly aid us in this analysis, are with few exceptions entirely lacking, nor can we be certain that identical designs always carry the same implication.

The analysis has however yielded certain broad results. A series of distribution maps of elements of designs, which were chosen a priori as being more or less definite and hence probably the same wherever found, show that these elements have fairly well defined areal extent and a high degree of association. Moreover, they tend to group themselves according to general stylistic characteristics.

The analysis is by no means exhaustive. The extent of the material is such as to permit the ascertainment of only broad relationships. A more intensive study of the petrography of restricted areas is necessary to establish more detailed relationships. This perhaps can be built up on our general conclusions and may alter our results concerning many points. We leave the interpretation of pictographs and petroglyphs to these more detailed studies, and give the meaning and purpose of designs only in a few instances where there is no doubt. More detailed studies in this area and studies in adjoining areas are highly desirable.

## PART I. DATA, CLASSIFIED BY SITES

In the following list of sites the numbers refer to the sites plotted on Maps A and B. *Pt.* after the site number indicates petroglyphs; *Pc.* indicates pictographs. Where both petroglyphs and pictographs are present *PtPc.* is used. Following this is the name of the site. The name does not always indicate the exact spot where the petroglyphs and pictographs occur but is in some cases the nearest well-known place and in such cases is used merely for convenience.



Map C. Geographical regions.

This list of sites roughly follows stylistic areas. Sites 1-9 are on the northwest coast of California; 10-60 are in California east of the Sierra Nevada mountains; 61-82 are in southern California, mostly in the western part; 83-101 are in the Santa Barbara region (see map C); 102-122 are in the Tulare region; 200 is in Nevada and the



numbers increase to southern Nevada; 230 is in northern Utah and the numbers increase to southern Arizona; 283-290 are in Lower California. After 122 and 290 are several sites which do not follow the above order. The information concerning them came in after the greater part of the manuscript had been prepared.

## CALIFORNIA

### *Northwestern California—Sites 1-9*

1 PT. KLAMATH RIVER, HUMBOLDT COUNTY.—These petroglyphs occur on the northeastern bank of the Klamath river, two miles below the mouth of the Trinity river. The figures are pecked and unpainted. In general they are of the geometric style of the decorative art of the modern Yurok Indians. This group is shown on plate 22*b*. The "rake" design occurs several times associated with wavy lines. Two "star-points" occur, made up of four crossed lines.

2 PT. SW CORNER OF TRINITY COUNTY.—This group is located in T 5, R 6 E, Sec. 22. The predominant design of these petroglyphs is the zigzag, several horizontal bands of which appear in different parts of the group. Circles and curves, variously arranged, also appear. In the upper part of the group is an irregular series of dots (pl. 22*a*; P. E. Goddard, letter of November 8, 1913).

3 PT. BELL SPRINGS, MENDOCINO COUNTY.—In this locality there is a large rock covered with carved figures (J. H. Groves, Cloverdale, California, letter of January 3, 1927).

4 PT. NORTH OF WILLITS, MENDOCINO COUNTY.—This group of petroglyphs is near Laughlin station, north of Willits. "The rock is on the ridge, southeast of Nigger Hole. The rocks are of talc and have 'horse tracks' and Indian signs" (Francis C. Thompson). Plate 22*c* shows several of these "tracks" on the surface of an outcrop of bedrock.

5 PT. NORTH OF WILLITS, MENDOCINO COUNTY.—This group may be the same as the last. It is described as seven miles north of Willits, about one mile or so east of the Northwestern Pacific railroad. The rock however is hard sandstone, the vertical face of which is carved with geometric figures. Associated with this are several bedrock mortars. The rock was first seen by William Snell in 1868. About 200 yards from the rock there is evidence of an Indian camp (Mr. Snell, Oakland, California).

6 PT. ROCHE LA MOTTE, SONOMA COUNTY.—This group is ten miles north of Skaggs.

7 PT. HEALDSBURG, SONOMA COUNTY.—In the vicinity of Healdsburg are several occurrences of petroglyphs. One is at Duke Blair's ranch; another is at Cole's pass.

8 PT. CAZADERO, SONOMA COUNTY.—These petroglyphs are located near Cazadero, Sonoma county (A. J. Graff and Ben Lee, photographers, Cazadero, California). They may have originated as bedrock mortars, some being elaborated by circular grooves around the holes (pl. 22*d*). In general however the figures are much like those of Willits (pl. 22*b*).

9 PT. PORTER CREEK, SONOMA COUNTY.—"On Porter creek, 9 miles southwest of Healdsburg, on a large boulder of hornblende syenite, petroglyphs similar to those found in Arizona and Nevada are to be seen. They are generally oblong circles or ovals, some of which contain crosses" (Mallery, 69).

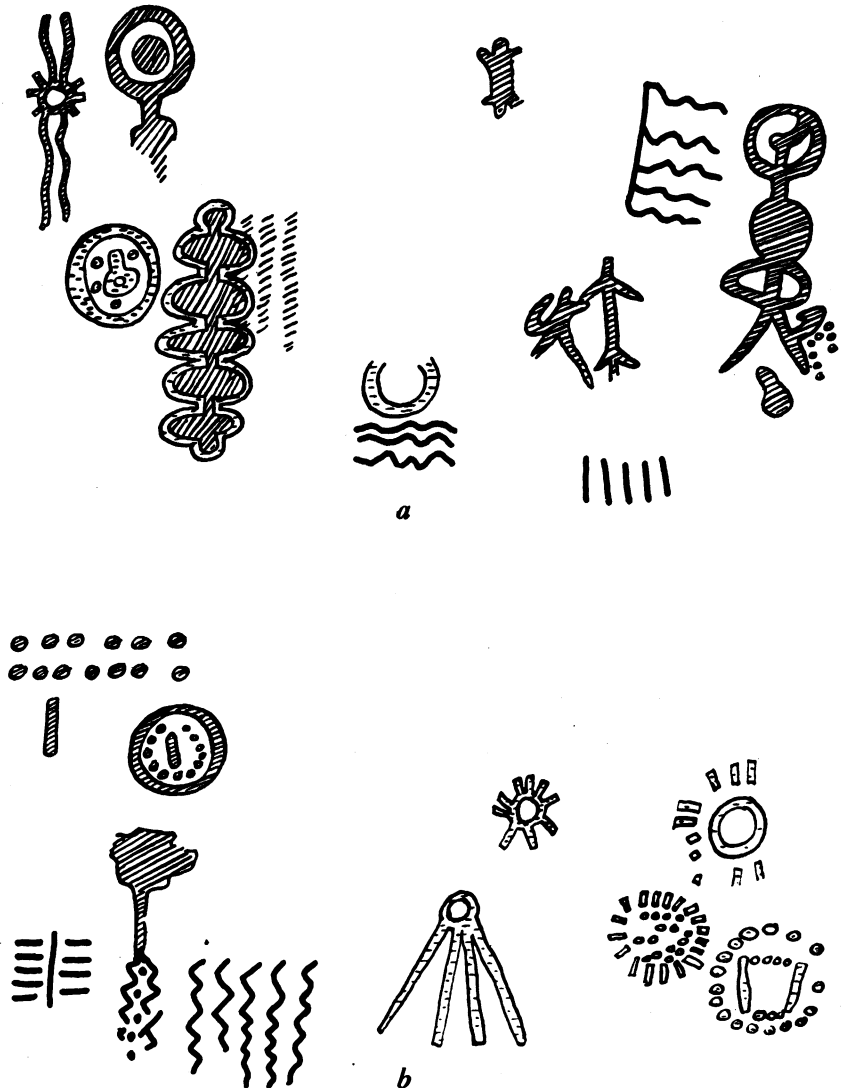


Fig. 1. Pictographs at Modoc lava beds, site 10, northeastern California.  
(Copied from photographs)

*Northeastern California—Sites 10-33*

10 PC. MODOC LAVA BED, MODOC COUNTY.—These pictographs are “on the wall of a cave in the Modoc lava beds, near the ice cave.” They are located near the junction of the boundaries of Siskiyou and Modoc counties with the Oregon boundary (John Fryer, Berkeley, California, letter of November 8, 1911). Several pictographs from this site are shown in figure 1. The colors are red and white. The zigzag lines, dots, circles, and sun disks are in general like the petroglyphs of the Great Basin. The use of white to outline red however

resembles the Santa Barbara-Tulare region. The two large designs and the small central one in the upper part of figure 1a, moreover, are very similar to designs from this region.

11 Pt Pc. TULE LAKE, MODOC COUNTY.—This site is on the shores of Tule lake. There are both paintings and carvings. The former are in red and black. "These represent facings of about five to eight by three or four feet on the natural rock walls" (from C. A. Higgins, Alturas—of the United States Forest Service—through Ernest Weyand). "From the peninsula, Wrett lake (Tule lake), Modoc county, about forty-five miles southeast of Klamath Falls, and fifteen miles from Malin, Oregon. Near Cornell ranch (old Harden place). Painted near the point of the peninsula. Painting said to have been done by a white. There are others there. Others at Horse or Mushroom mountain, about three miles easterly, cave on side" (Mrs. W. S. Foster, Los Gatos schools, July 22, 1925).

Several pictographs from this site are shown in figure 2. Most of them are done in red, although a few are in black, blue, or yellow. Most of the designs are of the basin style (curvilinear). Several suggest the Santa Barbara paintings, as for example, the series of triangles in figure 1c which are done in one color and outlined in another, and the several figures in *c* and *d* which seem to possess several pairs of legs or arms.

Figure 3 gives three groups of petroglyphs from this site. These are of the basin style but those in *a* are rather more angular than the typical basin petroglyphs.

The following description of petroglyph and pictograph sites in this region, as written by Mr. Paul J. Fair, was kindly furnished us by Mr. Edward E. Clarke:

"A cliff near the extremity of the peninsula running out into Tule lake is composed of a pumice formation, rather soft, and wave action is apparent along the base.

"Cut into the stone on the base of the above cliff, to a depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch, is picture writing. This writing extends along the cliff for a distance of probably 600 or 700 yards. Where there are projecting shoulders and rough spots gaps occur in their continuity, but eliminating these gaps there are approximately 200 yards. The writing is for the most part within a range of three to eight feet from the cliff base, but in places it extends up as high as 20 feet. The higher writing was not as distinct, apparently from weathering.

"Painted picture writing occurred all over the flat surfaces of a butte of hard lava rock near the base of the peninsula running out into Tule lake. The colors were deep red, black and an orange vermilion. The writing on the east side was the most distinct, the weather having almost effaced many of the others.

"Painted picture writing occurred on Symbol bridge in the lava beds near Merrill's resort at Bearfoot cave, a few miles south of Tule lake.

"Painted picture writing was found on the rim rock of Snake island, on the south shore of Tule lake. Burial places were located in crevices under and between large fragments of rock which had split off and fallen from the rim of the island. In all instances the opening of the crevice was closed by piling in rocks. The latter were weathered and lichen-covered on the external faces and gave every evidence of a very long period having elapsed since their placement.

"In one grave which had been opened a small fragment of basket was found. In another—that of a child, the skull of which is in the possession of the Museum of Anthropology—some fragments of a twisted cord or small rope, evidently made of tules was found, together with a mass of fragments of what I think were woven tule mats. Probably the body was wrapped in these and tied with the cord."

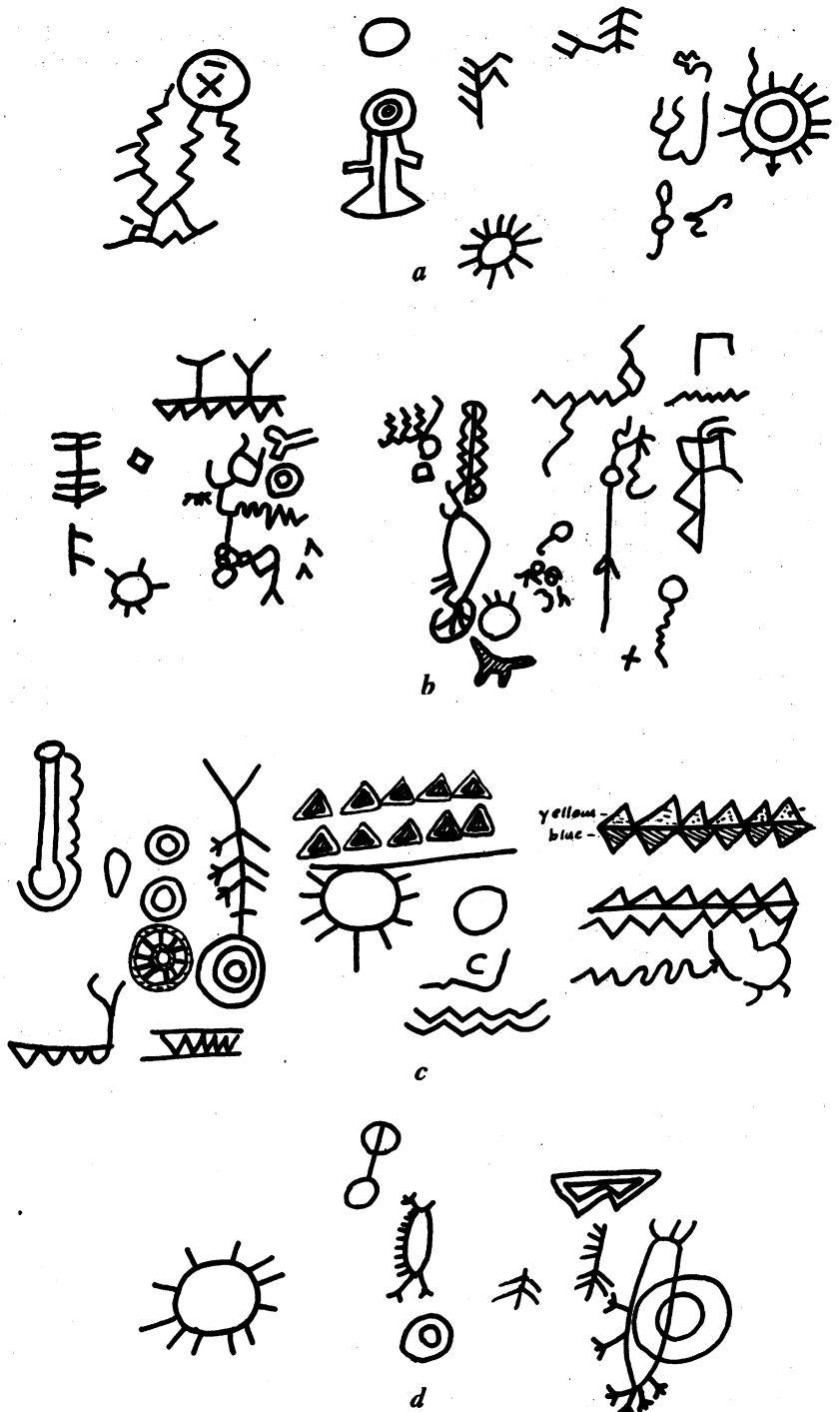


Fig. 2. Pictographs from Tule lake, site 11, northeastern California. (Copied from photographs)

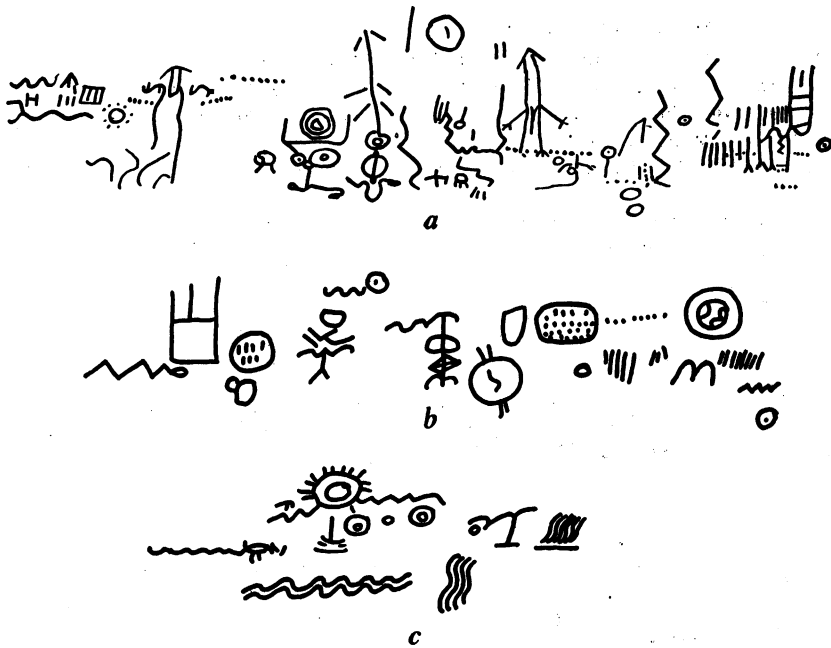


Fig. 3. Petroglyphs from Tule lake, site 11, northeastern California. (Copied from photographs)

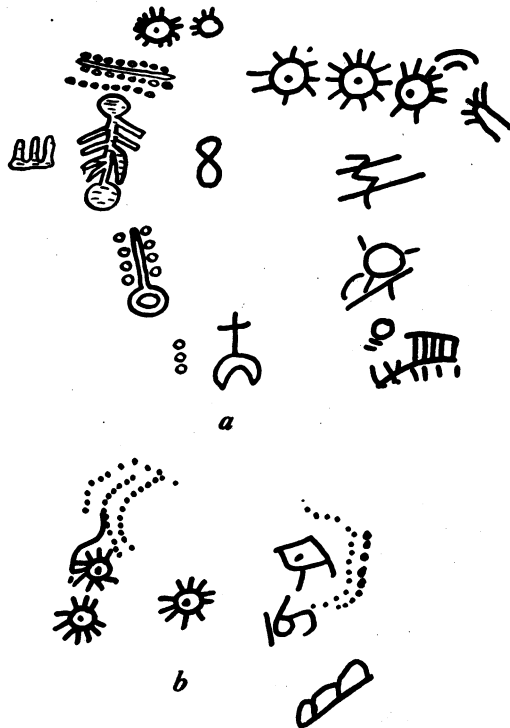


Fig. 4. Pictographs from Modoc lava beds, site 12, northeastern California.

12 PC. MODOC LAVA BEDS, MODOC COUNTY.—(Mr. F. M. Russell, Department of Political Science, University of California, August 1925). Several pictographs from this site are shown in figure 4. In general they resemble the pictographs from site 10. Sun disks are common and dots are abundantly used.

13 PC. MODOC LAVA BEDS, MODOC COUNTY.—These figures "are painted on rocks with both red and yellow, and are in very fine shape. Practically all the writing in the lava beds, and there is an immense amount, is in those colors" (Will W. Ahl, Alturas, California, letter of April 6, 1923). This group is about fifty miles from Alturas. The designs from this site are shown in figure 5a.

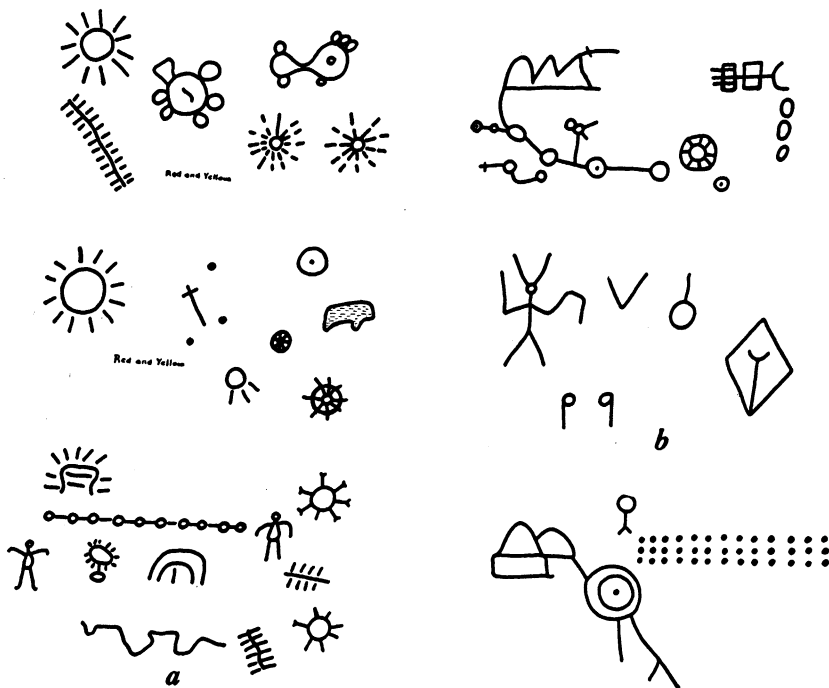


Fig. 5. *a*, pictographs from Modoc lava beds, site 13; *b*, pictographs from Willow Creek valley, site 14; *c*, petroglyphs from Fairchild swamp, site 15; all in northeastern California.

(Not natural groupings)

The most common element of design is the sun disk. The circle motif is also frequently used, both as a single circle and in conjunction with other circles. One group of circles connected by straight lines appears. Two spoked wheels occur. The only realistic pictures are two human figures.

14 PC. WILLOW CREEK VALLEY, MODOC COUNTY.—This site is located in T 11, R 46 (Will W. Ahl, letter of April 6, 1923). A group of designs from Willow Creek valley is shown in figure 5*b*. The circle element is predominant and occurs singly, in series connected by straight lines, and as a spoked wheel. One human figure occurs at the bottom of the group.

15 PT. FAIRCHILD SWAMP, MODOC COUNTY.—This site is twenty-five miles northwest of Alturas (Will W. Ahl, Alturas, letter of April 6, 1923). Figure 5*c* shows a group of designs from Fairchild swamp. The style is curvilinear. A group of dots also appears.

16 PT. PORCUPINE VALLEY, MODOC COUNTY.—“On the side of a large rock that is located at a place known as Porcupine, Modoc county. . . . All the figures center at one spot which is a deep hole drilled into the rock” (L. G. Renshaw, Alturas, California. Also, Will H. Ahl, letter of April 6, 1923). This site is twenty miles northwest of Alturas. Sketches of the pictures from this site are

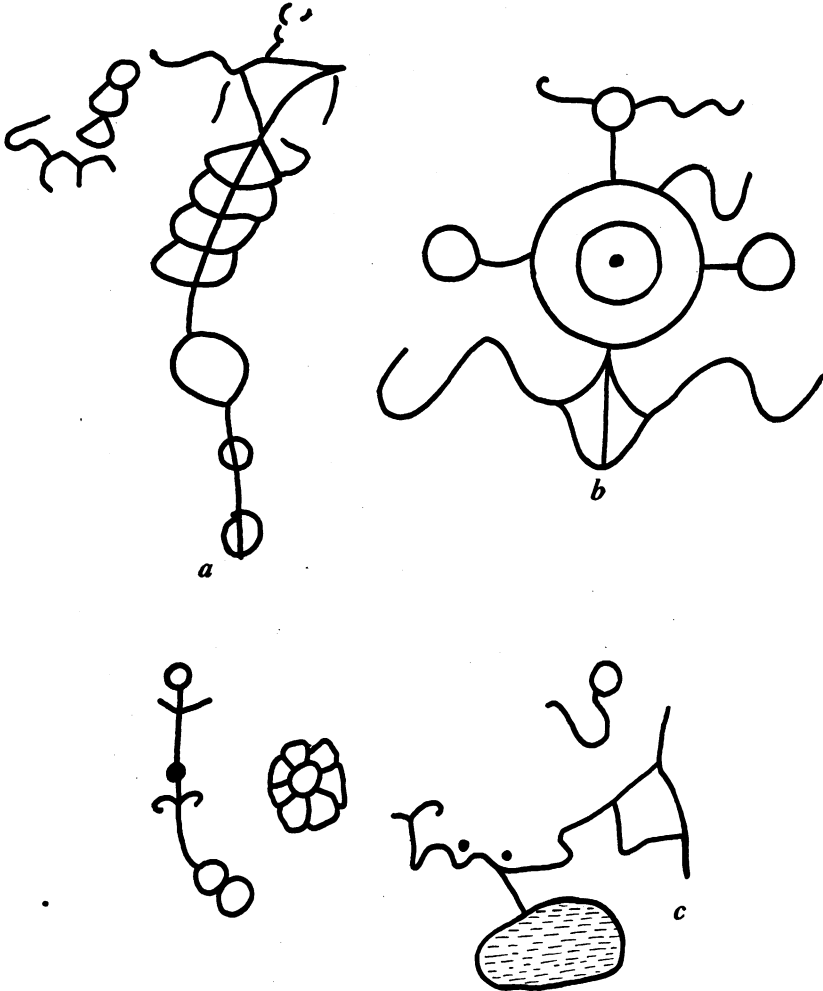


Fig. 6. Petroglyphs from Porcupine valley, site 16, northeastern California.  
(Not natural grouping)

shown in figure 6. The circle element is the most common design and occurs in various combinations. In *c* a “rosette” appears. The elaborate design in *b* shows an unusual amount of symmetry.

17 PT. RATTLESNAKE CANYON, MODOC COUNTY.—This site is fourteen miles north of Alturas. “I cannot say that the different groups of characters are complete, for instead of being painted on the rocks they are etched, probably with some stone instrument. The lichen has grown over a great portion of it”

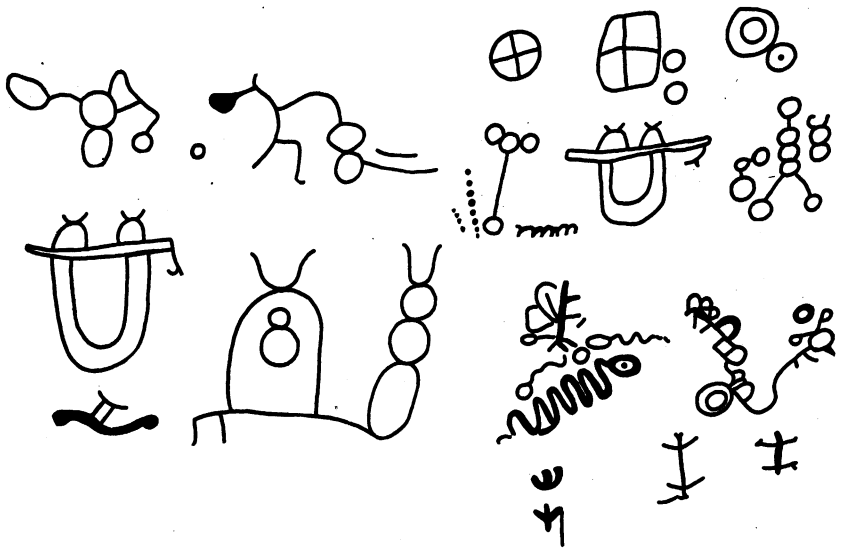


Fig. 7. Petroglyphs from Dry valley, site 18, northeastern California.

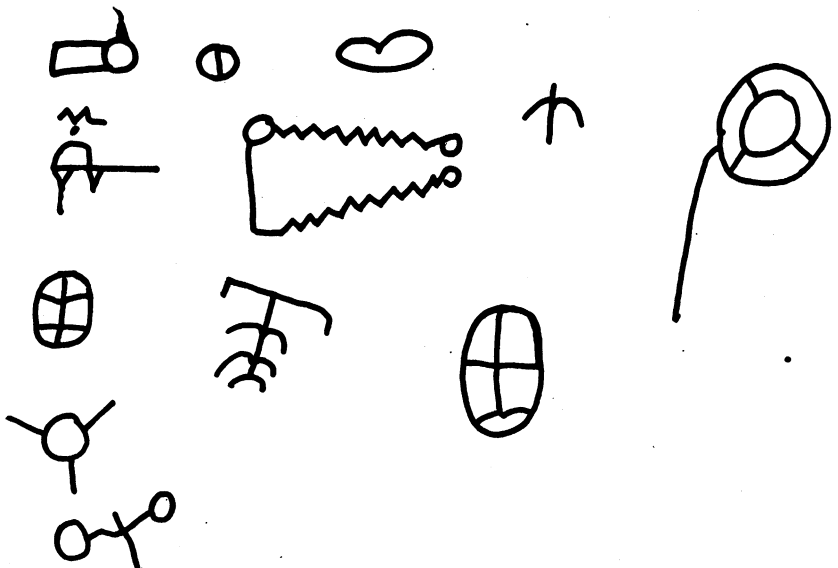


Fig. 8. Petroglyphs from near Susanville, site 22, northeastern California.



(Will W. Ahl, Alturas, letter of April 6, 1923). Nine photographs of petroglyphs from this site are shown on plate 23. Concentric circles and circles with dots in their centers are the most common design elements. These appear in *a*, *c*, *d*, *h*, *i*, where they are variously grouped and connected by straight or curved lines. *a* and *h* show several groups of dots; *i* is a spiral with radiating lines suggesting a sun disk. The only distinctly realistic figure is that shown as *g*, which may be either a lizard or a human representation.

18 PT. DRY VALLEY, LASSEN COUNTY.—These petroglyphs are in Dry valley which is sixty-five miles south of Alturas (Will W. Ahl, letter of April 6, 1923). Plate 24 shows pictures from this site. The style is curvilinear, circles variously grouped being the most common design. Plate 24*a* shows several in conjunction with zigzags. Commonly the circles are joined by straight or curved lines (fig. 7). Plate 24*b* shows a series of dots in the form of notches on the rock edge. Notched rock edges are also found in the Columbia River valley.

19 PT. SECRET VALLEY, LASSEN COUNTY.—“Township 33-10, Secret valley section” (Russell Brownell, letter of December 24, 1913).

20 PT. GRASSHOPPER VALLEY AND MADELINE VALLEY, LASSEN COUNTY.—Located in T 34 N, R 13 E, Sec. 8, between Grasshopper valley and Madeline valley (Russell Brownell, letter of December 24, 1913).

21 PT. HONEY LAKE, LASSEN COUNTY.—“There is one such large rock about twenty-five miles northwest of Honey lake in Lassen county, California. An old Paiute (so-called) told me that his grandfather took him to this rock and said that the writing (?) was the story (legend) of the Great Flood when the waters rose to cover all the mountains and all the people of the earth were drowned except their race who hewed a boat out of a great tree, which boat, as the waters went down, settled upon the summit of Diamond mountain” (H. G. Clinton, of Mammoth Mining Company, Manhattan, Nevada, letter of February 24, 1920).

22 PT. SUSANVILLE, LASSEN COUNTY.—(Information and sketches from Elmer C. Gerking, Susanville, California, to San Francisco Examiner.) These figures comprise circles, ovals with crosses, and zigzags (fig. 8).

23 PT. WILLOW CREEK, LASSEN COUNTY.—“In T 30 N, R 14 E, Sec. 7, on the east cliff overlooking Willow creek. It can also be found further up the same stream in Pete’s valley” (Russell Brownell, letter of December 24, 1913).

24 PT. EAGLE LAKE, LASSEN COUNTY.—Township 31-15 (Russell Brownell, letter of December 24, 1913).

25 PT. WILLOW CREEK, LASSEN COUNTY.—“Mr. L. L. Frost, of Susanville, reports the occurrence of pictographs (undoubtedly petroglyphs) fifteen miles south of that town on Willow creek, and at Milford, in the lower end of the valley. No details were furnished as to their general type and condition” (Mallery, 69).

26 PT. BLAIRSDEN, PLUMAS COUNTY.—A carved rock within ten miles of this town (letter and sketches, fig. 9, from Fenton J. Zehner, Blairsden, to San Francisco Examiner, August 22, 1924). These carvings comprise feather elements, zigzags, bird and animal(?) tracks, and various arrangements of circles, chiefly in series. A sun disk and spiral are also present. Figure 9 does not give the natural grouping of these inscriptions.

27 PT(?). NORTH FORK OF FEATHER RIVER, BUTTE COUNTY.—(Label with specimen 26508, in Golden Gate Park Museum, tells of this rock inscription.)

28 PT. HAWLEY LAKE, SIERRA COUNTY.—One-fourth mile SE of lake (J. W. Henderson, San Francisco, California, letter of July 14, 1913). "Upper end of Gold valley near Hawley lake, about fourteen miles easterly from Downieville, . . . hieroglyphs cut deeply in a deposit of iron ore" (H. S. Tibbey, Downieville, California, letter of November 6, 1926).



Fig. 9. Petroglyphs from Blairsden, site 26, northeastern California.  
(Not natural grouping)

29 PT. MEADOW LAKE, NEVADA COUNTY.—Petroglyphs are "found on the granite rocks at Meadow lake, near the summit of the Sierra Nevada, 7400 feet above the level of the sea." There are "similar marks on the rocks near Four Hills, Sierra county, at the same altitude." These petroglyphs are curvilinear in style showing several circles, concentric, crossed, and variously connected with curved lines; wavy lines also occur (fig. 10).

30 PT. DONNER PASS, NEVADA COUNTY.—“They occur in the glaciated rock basin of Donner pass right below tunnel no. 8 on the Southern Pacific railroad, covering approximately one-fourth acre of the basin floor. Some of the characters were very indistinct and some few lines uncertain, but on the whole you can rely on these copies as fairly accurate. No attempt has been made here to maintain the proper relations or even position, simply to reproduce each separate character in its proper shape and size” (fig. 11; J. C. Hawver, Auburn, California, letter of March 20, 1909). The hieroglyphics are located on an inclined flow of granite which stretches down from tunnel no. 7 to the Donner road on the Central Pacific railroad. The summit station tunnel is known as no. 6 and precedes no. 7 by about 100 yards. The old Donner stage road crosses the

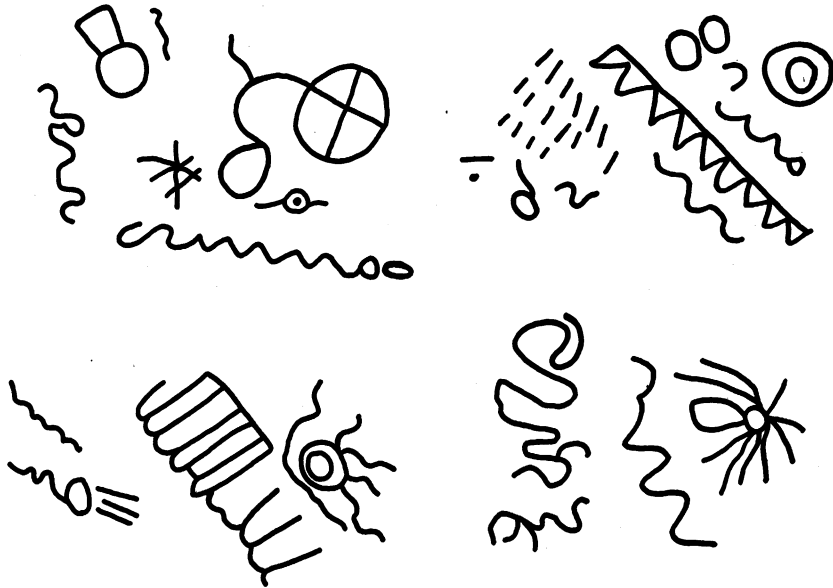


Fig. 10. Petroglyphs from Meadow lake, site 29, northeastern California.  
(Not natural grouping)

railroad at the eastern mouth of tunnel no. 6 and then winds down toward Donner lake, which is three miles distant. It has been customary for persons walking from Truckee to the summit to cut across the large bends of the road to save time. The hieroglyphics are on the granite flow which made the second bend in the road necessary, counting down from the railroad crossing. It is possible that it may be the third instead of the second. . . .

“A great granite table located at the Summit Soda springs had some of the best specimens of Indian writing that I have seen, but unfortunately the surface of the granite has been scaling off quite rapidly during the past few years, and now the best work has perished, leaving similar hieroglyphics to those referred to above” (Philip R. Thayer, San Francisco, California, letter of November 2, 1903).

A number of designs taken from this group of petroglyphs are shown in figure 11. These designs are again curvilinear. The wavy line occurs in *i*, *j*, *n*, *t*, and *u*; *b* shows a series of five circles or loops. Concentric circles occur in *c*, *g*, and *h*. The elaborate design in *m* almost resembles a piece of netting; *o* is

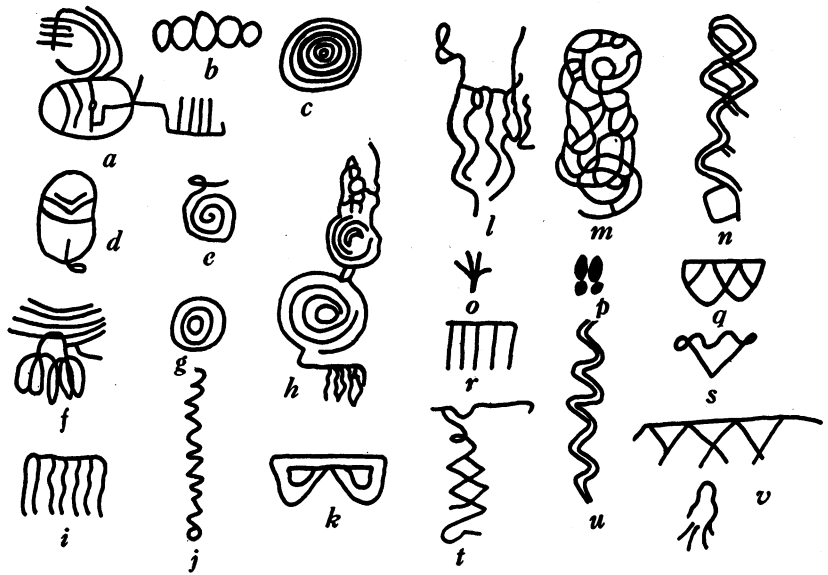


Fig. 11. Petroglyphs from Donner pass, site 30, northeastern California.  
(Not natural grouping)

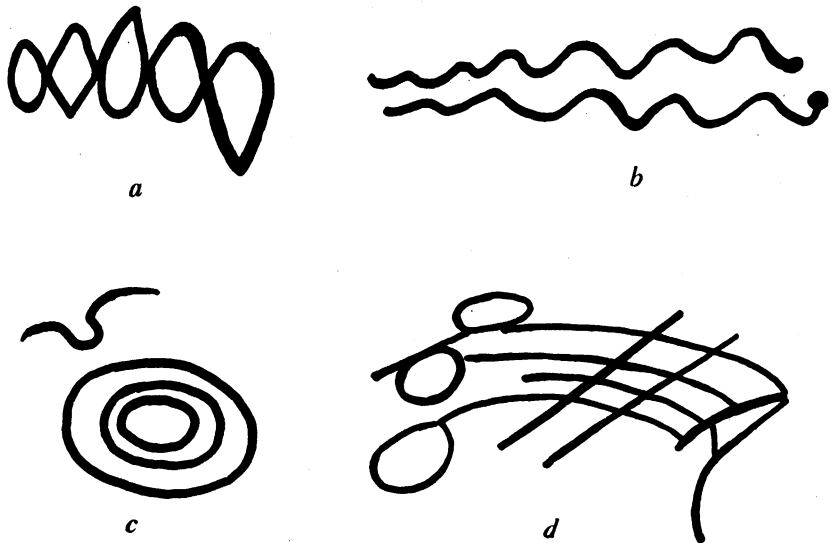


Fig. 12. Petroglyphs from near Donner pass, site 31, northeastern California.  
(Copied from photographs with slight foreshortening; not natural grouping)

apparently intended as a bird track, while *p* appears to be human footprints. More or less rectilinear figures begin to appear in this group; *r* is suggestive of the "gridiron" type commonly found farther south, while *v* is suggestive of diagonal cross-work.

31 PT. NEAR DONNER LAKE, NEVADA COUNTY.—Two miles up the Victory highway toward the summit of the Sierra Nevada. Figure 12 shows tracings from four photographs from this site. *a*, shows a series of loops; *b*, two wavy lines, apparently snakes, judging by the enlarged heads; *c*, concentric circles; *d*, circles and crossed lines.

32 PT. STANISLAUS RIVER, CALAVERAS COUNTY.—These petroglyphs are "found near the Horse Shoe Bend Gold Mining Company, on the bank of the Stanislaus river. The large stone . . . shows signs of weathering, and already in some places fully an inch of the rock has peeled" (Edward Spencer, letter of November 25, 1905). Figure 13 shows several of these designs. They include three parallel wavy lines, a circle enclosing a double cross, and a number of loops and wavy lines variously arranged.



Fig. 13. Petroglyphs from Stanislaus river, site 32, northeastern California.

33 PT PC. TUOLUMNE CANYON, TUOLUMNE COUNTY.—We are indebted to Mr. E. W. Harnden, of the Sierra Club, for the photographs in plate 25 and for the following information: "The pictographs that Mr. McKibben and I found were in Pate valley, a northern side valley midway in the Tuolumne canyon. [Plate 25a] is taken from a point about ten minutes in from the Tuolumne river, following the tributary creek by the timber and boulders and reaching the edge of the inner meadow, looking north. The inscriptions were found on the face of the cliff rising from the meadow . . . west of some large oaks, the cliff fronting east of southeast. The markings were incised, probably with obsidian, fragments of which were lying about, and were colored with red ochre or pigment. While the designs seemed to stand out boldly in but a few places, examination showed that they had probably been worked into the cliff for one hundred feet or more, from the ground to a height of ten or twelve feet, but had been in many places almost or entirely obliterated by weathering or scaling of the granite face. They appeared to be quite old. At about the middle of the inscribed face was a shallow, somewhat irregular chamber in the rock, seeming to follow lines of cleavage with side recesses where one could retire or conceal himself from view—perhaps a partly natural cave, added to and amplified by man. In a horizontal rock in front of the cave was sunken a mortar hole

fifteen inches long, which seemed slightly stained on the end—either from weathering or because it was used in grinding color. The measurements and points of the compass are surmises, as we had no time for verification, but I think they are approximately correct.

“The markings [in plate 25*b*] are to the right of the cave, the upper ones seeming to represent a rough map of Pate valley, the parallel zigzags at the left indicating the Tuolumne river, and the upper of the two dotted trail lines the trail to the ford at which we ourselves crossed to the south side. A faint line of dots at the right also suggests a trail into the valley from the north, coming over and through the hills at the back, shown in [pl. 25*a*], and I believe such an ingress is known. (The “map” idea simply suggested itself to us, and is to be taken for what it is worth; but the points of compass of the valley, river, and hills accord with the layout on the cliff.) This briefly summarizes a very rapid and cursory survey that we made just before breaking camp, and of course does not do the scantiest justice to a place worthy of careful study.”

These pictographs are entirely rectilinear in style. The designs comprise a number of “rakes,” several series of parallel, short, straight lines, two zigzags (pl. 25*b*), and several “stars” (pl. 25*a*).

#### *Owens Valley Region—Sites 34–48*

34 Pt. NORTHERN OWENS VALLEY, INYO COUNTY.—“One of the most important series of groups is that in the northern portion of Owens valley, between the White mountains on the east and the Benton range on the west. On the western slope of the latter, at Watterson’s ranch, is a detached low butte or mesa, upon the blackened basaltic boulders and cliffs of which are numerous deeply cut characters.” The series of footprints “appear to have been pecked and finally worked down to a uniform and smooth surface by rubbing, as if with a piece of stone or with wood and sand. In almost all, if not all, instances throughout the entire series the sculptured surfaces have assumed the same shining blackened luster as the original and undisturbed surface of the boulder, caused by gradual oxidation of the iron present. This would seem to indicate considerable antiquity for the petroglyphs.

“On the northeast angle of the mesa referred to were found the remains of an old camp, over which were scattered large quantities of arrowheads, knives and flakes of obsidian. . . . Many of the specimens of this material have been lying exposed to the elements until the upper surface has undergone a change in color, so as to become bleached and friable, in some instances to a depth of from one-tenth to one-fourth of an inch. This warrants the inference that the relics may have been made by the same people who made the petroglyphs, as the worked relics generally differ from those of the present Indians by being larger and less elaborately finished” (Mallery, 57, 58, pls. I, II).

These petroglyphs are in general similar to others found in the region of Owens valley and Nevada. The circle element appears frequently both singly as concentric circles and associated with various arrangements of straight and curved lines (Mallery, pl. I, figs. *a*, *b*, *d*, *e*, *i*, *j*; pl. II, figs. *e*, *g*, *h*, *i*). Rectilinear figures also occur which are very similar to the gridiron designs of Bishop and other localities to the south (Mallery, pl. I, figs. *f*, *h*, *m*; pl. II, figs. *e*, *h*, *k*). Plate II shows two sun disks. Human figures are crudely depicted in plate II, figures *a*, *b*, *d*, and possibly *f*. The rectilinear figure in plate II*e* suggests the elaborate rectilinear figures of Grapevine canyon and southeast Nevada and the adjoining region in California.

35 Pt. BENTON, INYO COUNTY.—“Southeastward of this locality there is a low divide leading across the Benton range into the broad, arid, sloping sand desert of Owens valley proper, but it is not until a point twelve miles south of Benton is reached, along the line of the old stage road, that petroglyphs of any consequence are met with. From this point southward, for a distance of six miles, large exposures and boulders of basalt are scattered, upon which are great numbers of petroglyphs, pecked into the rock to depths of from half an inch to one and one-half inches, and representing circles, footprints, human forms, etc.” (Mallery, 58, pls. III to VII).

The circle element is again characteristic of this group. It is however typically filled in with straight lines which may be variously arranged from a simple cross to elaborate lattice work. Wavy lines are also common, sometimes occurring in groups. Several concentric circles occur which may be connected with one another by straight lines. The rectilinear gridiron type is replaced by cross-hatched circles, but several “rake” designs occur. Groups of dots occur in the form of several human representations and crude deer and mountain sheep.

“For the space of four miles southward there are a few scattered petroglyphs . . . and the greatest number of characters are not found until the southernmost extremity of the entire series is reached. These are over the surface of immense boulders lying on the east side of the road where it passes through a little valley known locally as the Chalk grade, probably on account of the whitened appearance of the sand and of some of the embankments” (Mallery, 58, 59, pls. VIII, IX).

“The country over which these records are scattered is arid beyond description and destitute of vegetation. Watterson’s ranch group is more favorably located, there being an abundance of springs and a stream running northward toward Black lake” (Mallery, 59).

These petroglyphs are similar to those in the last group, the circle element being most abundant and filled in with various arrangements of straight lines. Connected concentric circles appear, a rake design and a few dots. There are no human figures although Mallery’s plate VIII*d* seems to show a hand and arm. There are two deer (?). The cross within a circle, formed by pecking away the surface around the cross, is unique (Mallery, pl. IX*a*).

“Upon following the most convenient course across the Benton range to reach Owens valley proper, drawings are also found, though in limited numbers, and seem to partake of the character of indicators as to course of travel. By this trail the northernmost of the several groups of drawings above-mentioned is the nearest and most easily reached.

“The pictures upon the boulders at Watterson’s are somewhat different from those found elsewhere. The number of specific designs is limited, many of them being reproduced from two to six or seven times, thus seeming to partake of the character of personal names” (Mallery, 60).

Other petroglyphs from Owens valley shown by Mallery, plates X and XI, have the gridiron and circular gridiron as the most common element of design. There are also circles and concentric circles, some of them being connected by straight lines. Several groups of dots appear. Several circles contain animals of an indeterminate species. One of these may be a lizard (Mallery, pl. XI*d*).

36 Pt. NORTHERN OWENS VALLEY, INYO COUNTY.—“A collection of petroglyphs was recently examined by me. It is scattered over a considerable extent of rhyolite, about twenty-eight miles north of this town (Bishop). The markings are similar to those on photos sent to you some time since but are much more extensive. To my untrained observation it seems that they cast doubt on

such markings, in this region, being of great antiquity. A few are dim and cut but little below the rock surface; others are fully a quarter of an inch deep. There is no material difference in coloration between the bottoms of the cuttings and the bottom of a freshly made fracture. The rock is soft and of many shades. An interesting fact in this connection is that bits of slate found in Indian burial places opened in taking out sand near Bishop, show some of the same characters as found on the rocks. The figures include a few which appear to have significance—a deer, a pine tree, a many-legged bug, a rude cross, a circle crossed by intersecting lines, a series of small round figures connected by lines (pools of water and streams?), a sinuous snake-like figure. Most however are very crude geometric figures, showing no orderly arrangement or skill in making.

“From the finding of such markings beside human bones in good preservation I would infer that the people making them were here not many generations ago, and possibly were earlier Paiutes themselves, though present members of the tribe disavow all knowledge” (A. Earl Patterson, Bishop, California).

37 PT. BISHOP, INYO COUNTY.—“Cut in an old lava flow near Bishop, Owens valley, California” (A. Earl Patterson, Bishop, California). The predominant style in this group of petroglyphs is rectilinear, or what might be called “gridirons.” There are many crude rectangles crossed by straight or wavy lines, sometimes both. There are several circles filled in by similar parallel straight or wavy lines, and some circles enclosing two crossed lines. Other figures include spirals, rows of dots, bear tracks, and irregular curved lines many of which are drawn close together and frequently the figures superimposed making their identification impossible (pl. 28b).

This site apparently marks a point of contact between the curvilinear style from the north and the rectilinear style which centers at Grapevine canyon in the south. Judging from the photograph, the rectilinear gridirons near the top of the boulder are the most recent. Associated with them and below are circular gridirons and below these and apparently still older are spirals, circles, and other elements characteristic of the Great Basin curvilinear style.

38 PT. BISHOP, INYO COUNTY.—About twelve miles due west of Bishop. “Painted hieroglyphics” (letter of Douglas Robinson, Covelo, California, to San Francisco Examiner, August 19, 1924). No other information.

About six miles to the north of Bishop, Owens valley, a long, flat plateau, shown on the United States Geological Survey topographic quadrangle for Bishop as “volcanic tableland,” ends abruptly on the south at Owens river. There is a slight ridge along the southern rim of this table-land through which a pass leads to an old rock quarry. On both sides of this pass are a large number of petroglyphs. These were examined by the author, with the assistance of Mr. William Sanford, of Bishop, California. On the northern side of the ridge are circles of rocks, which are dwelling remains, associated with abundant potsherds, bedrock mortars, and many worked obsidian fragments. Petroglyphs are found associated with this habitation site and occur also on the northern slope of the ridge. There is every suggestion that the petroglyphs were made by these pottery-making people who lived at this place.

The petroglyphs are incised chiefly on the tops and sides of boulders and the greatest number of them occur within the pass. The rock is a soft, brownish volcanic material which is easily pecked. Many of the petroglyphs are one-fourth to three-eighths of an inch deep, and most of them are quite distinct. The rock when freshly incised shows a much lighter brown than a normally weathered surface. In most of the petroglyphs, however, the interior of the incision is nearly as weathered as the unpecked rock surfaces and in



some the weathering is complete. It would be hazardous to deduce comparative ages of the various figures from their state of weathering, for this apparently depends in large measure upon exposure and perhaps upon variations in the rock itself. Moreover it is impossible to correlate styles or specific designs with age, for similar figures occur among petroglyphs which appear very old as well as in groups of apparent recency. Superimposition of figures offers no assistance.

A particularly notable feature was the presence of slight traces of red paint within the cuts of several of the figures. The petroglyph shown in plate 27*f* had a considerable amount of red pigment, especially on the outside lines. This was especially surprising for the lines in this figure have weathered as greatly as the uncut surface of the boulder. Elsewhere there were faint dashes of red which were not placed upon petroglyphs. There is nothing, however, to indicate whether these pictographic elements were contemporaneous with the petroglyphs. North of the ridge a faint red rake design occurs in a small, shallow cave formed by an overhanging rock.

A number of the better preserved petroglyphs from this site are shown in plates 26 and 27. The geometric style is curvilinear but not altogether typical of the Great Basin style for these groups are given rather to well defined, single figures than to disorderly composites of curves, circles, wavy lines, etc., which is so characteristic of the region to the north and east. The "circular gridirons," however are similar to those shown by Mallery from sites just to the north of this site (see above). Several of these appear in plate 27*a, b, d*. A very characteristic element of Owens valley is a series of circles, usually three, placed in a vertical row and cut through by a straight line, plate 26*e, f, h* (compare below, Fish springs, site 39). The square gridiron, plate 27*f*, recalls the rectilinear style found to the south and east. Other geometric elements include the spoked wheel, plate 27*c*, concentric circles, plate 26*d*, the sun disk, wavy line, and rake design, plate 26*g*, and the herringbone, plate 26*h*. Realistic figures comprise chiefly mountain sheep which are in no way different from those found throughout our area (pl. 26*e, f*). The two symmetrical designs in plate 26*a, b*, may be conventionalized zoomorphic figures.

Another group of petroglyphs is cut into a granite boulder about halfway between Bishop and Round valley. The group presents a unified aspect by being enclosed in a roughly oval outline. The outline is bordered in part by cilia-like radiating lines. Within this outline are two groups of concentric circles, one of which is partly bordered by short radiating lines, the other is crossed by two straight lines. Scattered about are other small figures which resemble bird tracks (pl. 28*a*).

39 Pt. FISH SPRINGS, INYO COUNTY.—At the Fish Springs store, a road turns off the main highway through Owens valley and leads toward the Red Mountain fruit ranch. About a quarter of a mile from the main highway, just before this road crosses Red Mountain creek, there is a low lava hill between fifty and a hundred feet high to the west of and adjoining the road. Large and small boulders on the western and southern sides of this hill are covered with petroglyphs. Along the crest of this hill are numerous circles of stone, belonging to ancient house sites, and abundant fragments of obsidian, many of which are worked. No potsherds could be found.

The petroglyphs have the appearance of great antiquity, for in nearly every group the lines have weathered so as to approach the dull black color of the untouched rock surfaces. As the depth of the lines is usually very slight, one-sixteenth to one-eighth of an inch, and as the rock surfaces are generally very rough, this weathering has rendered most of the figures very indistinct.

Continuing on the Red Mountain fruit ranch road, one crosses the creek and then turns toward the west. Within another quarter of a mile the road passes below a low lava cliff on its south. Along this cliff which faces toward the north are several groups of petroglyphs. Some of these figures appear very old, as the basalt within the cuts has oxidized to the color of the old rock surface and many have newer and more distinct figures pecked over them. Still others appear completely fresh as though done within the past year. This rock, however, is probably very slow to weather. At neither of these sites was there any trace of paint.

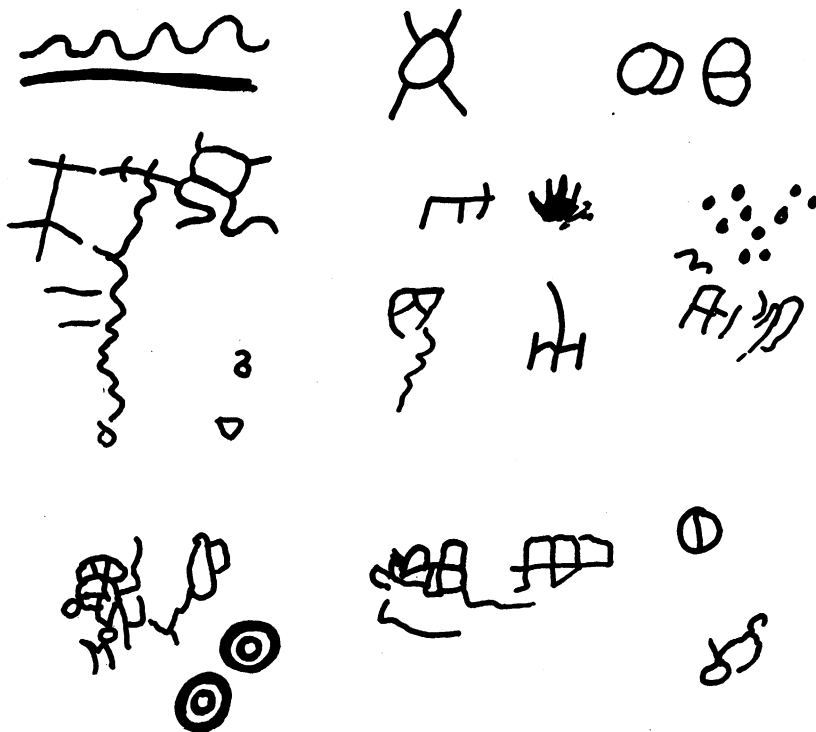


Fig. 14. Petroglyphs from Fish Springs, site 39, Owens Valley region.  
(Not natural grouping)

It is a striking fact that in Owens Valley most of the petroglyphs are executed on lava, preferably black lava. By far the most common rock in the valley is granite and there are thousands of granite rock faces which one would imagine to be ideal for these inscriptions yet none bore any traces of petroglyphy. In the vicinity of Red Mountain Creek there is evidence of an extensive camp site, the favored spot probably having been at Red Mountain fruit ranch. The presence of native obsidian in these lava hills may have some connection with the presence of petroglyphs at such places. The contrast for inscriptions furnished by the black lava can hardly account for this choice, for while a deeply cut petroglyph stands out very clearly, many if not most of the figures had scarcely penetrated the outer layer of black oxides and hence could hardly have been more distinct when made than at present. (Examined by the author.)

A number of petroglyphs from Fish springs are shown in plates 29-31 and in figure 14. These figures are almost entirely geometric. Complex curvilinear designs characteristic of the Great Basin are present (pls. 29*a-e*; 30*b, e, f*; and 31*g*). The circles bisected by straight lines in plate 30*a* and the large dots connected by straight lines in plate 29*d* are similar to designs found on the volcanic table-land north of Bishop. The circular gridiron, plate 31*e*, is also similar to designs at that site. Spoked wheels, concentric circles, wavy and zigzag lines also occur. The rectilinear figures in plates 29*d*, 30*d*, and 31*a, b*, suggest the rectilinear style which is more common to the south. At Little lake, site 48, there is a figure almost identical with that in plate 30*d* (pl. 36*c*).

Realistic figures are almost totally lacking. In plate 30*f* there are what appear to be several highly conventionalized or crude human representations at the upper right-hand corner of the photograph.

40 PT. DEEP SPRINGS VALLEY, INYO COUNTY.—There are several boulders with petroglyphs in the mouth of Wyman canyon at the northern end of Deep Springs valley. This site shows evidence of having been a camp site. The

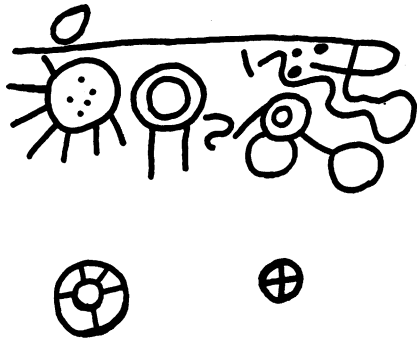


Fig. 15. Petroglyphs from Deep Springs valley, site 40, Owens valley region.

petroglyphs are fairly clear and do not appear to be very old. Several are shown in plate 28*c-f*. One of the boulders has several human figures and a symbol which resembles the Greek  $\alpha$ , plate 28*e*. On another boulder, *d*, there are several circles, two of which contain another inner circle, connected by straight lines. Below these is a more or less unified but elaborate design made up of zigzags and circles in a vertical row, cut through by a straight line, like those at Fish springs, site 39, and Bishop, site 38; *f* shows circles, curves, "spoked wheels," designs resembling spider webs, and two naturalistic figures, one of which vaguely resembles a jack rabbit in front view and the other the profile of a bird. See also figure 15. (Site examined by the author.)

41 PT. KEELER, INYO COUNTY.—These petroglyphs are on the east of Owens lake, on a point of hills that juts out into the valley approximately one-half mile south of the end of the old aerial tram from Saline valley. This site was the ancient shore line of Owens lake and many smooth, even water-worn, rock faces are excellent mediums for petroglyphs. The rock is of dolomite and apparently weathers very slowly, for initials cut into the rock in 1907 have none of the granular deposit of calcium which covers the uncut surfaces, and other initials cut in 1868 show no appreciable weathering. Many of the petroglyphs however are entirely covered with this granular deposit, while others appear quite recent. There is no superimposition of symbols. (Site examined by the author.)

One-quarter of a mile to the south is a small camp site with abundant potsherds. An old spring at this place has recently dried up.

For the photographs shown in plates 32 and 33 we are indebted to the kindness of Mr. Guy Earl, Regent of the University of California, and Mr.

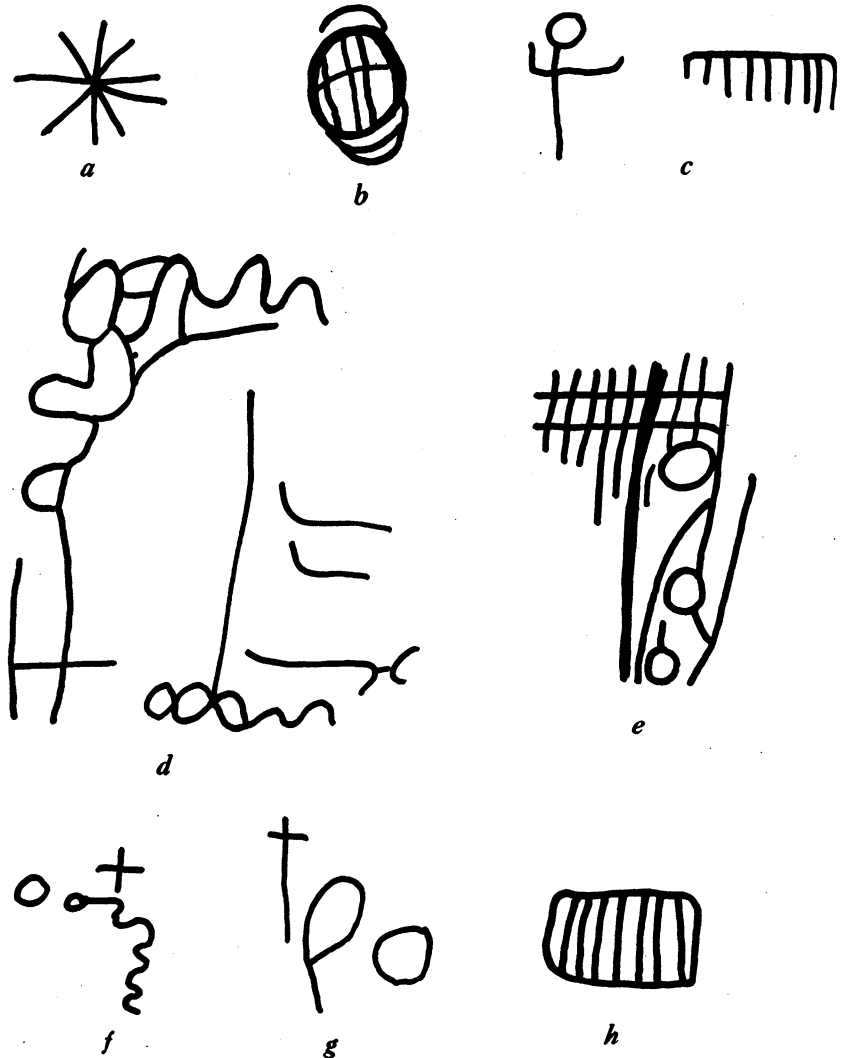


Fig. 16. Petroglyphs from Keeler, site 41, Owens valley region.  
(Not natural groupings)

William Lyle Skinner, of Lone Pine, California. The petroglyphs in figures 16 and 17 do not represent natural groupings. These are taken from sketches by the author.

The typical curvilinear style of assembled wavy lines, circles connected by straight or wavy lines, and other curvilinear elements combined together is shown in plate 32b. It also appears in several petroglyphs shown in figures

16 and 17. A sun disk is shown in plate 32a; and a symbol resembling the circular gridiron, in figure 16b. Circles bisected by straight lines occur several times (figs. 17e, h, i; pls. 32a and 33d). The geometric elements include symbols characteristic of the Great Basin with a few which are especially characteristic

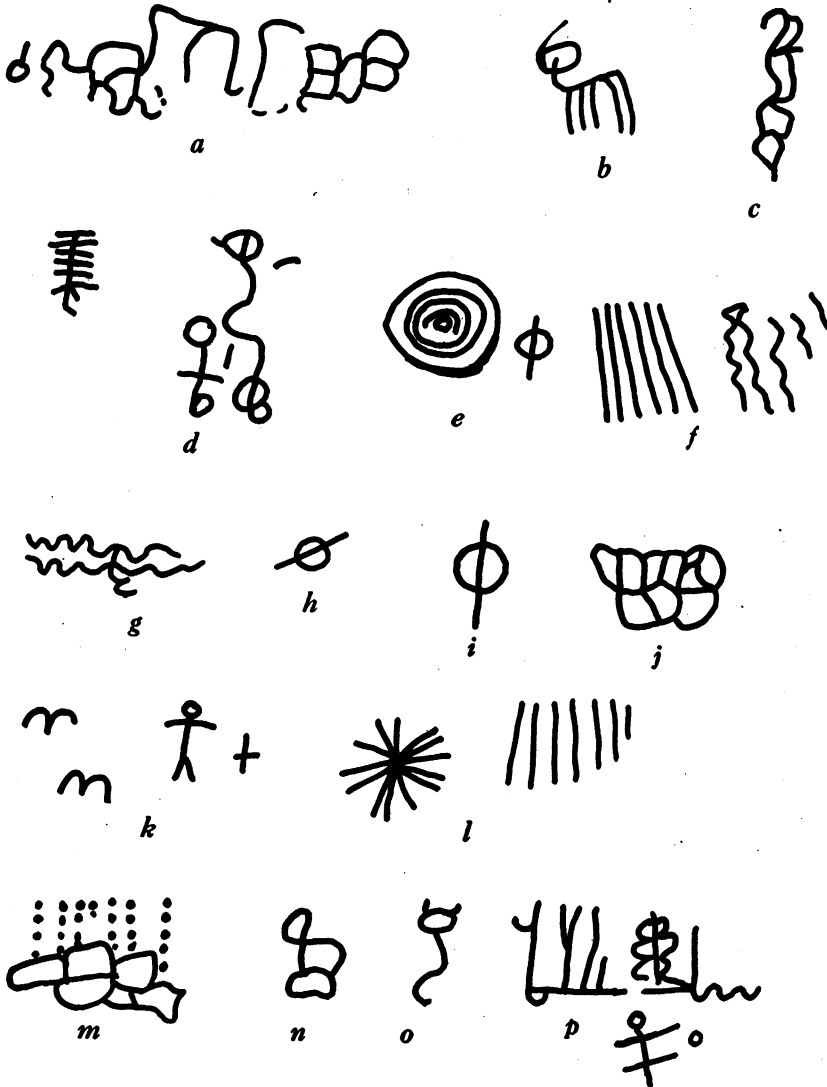


Fig. 17. Petroglyphs from Keeler, site 41, Owens valley region. (Not natural groupings)

of northern Owens valley and a few of the rectilinear ones which are more common farther south. Realistic figures are limited to several mountain sheep with large, sweeping horns, plate 32d, and several human figures, plate 32d and figure 17k. Compare the circular head of the figure in 17k with similar ones from Coso springs, site 46 (pls. 33b and 34e).

The two star designs, figures 17*l* and 16*a*, appear very old. All of the other petroglyphs in figure 16 were well covered with the granular deposit and seemed comparatively very old. Of the petroglyphs in figure 17, *a*, *d*, *f*, *h*, *i*, and *l* were old. The others were moderately old while *g* and *k* were comparatively free of this deposit. In general the distinctly curvilinear figures are newer in appearance while the rectilinear and the circles bisected by straight lines seem older. This may not indicate relative antiquity, however, for there may have been differential weathering. In fact in figure 17*e* the right-hand design was well weathered above while its lower part seemed very new.

43 PT. SARATOGA SPRINGS, DEATH VALLEY, INYO COUNTY.—“In a communication dated Saratoga springs, at the lower part of Death valley, California, on February 5, 1891, Mr. E. W. Nelson says that about 200 yards from the springs, and on the side of a hill, he found several petroglyphs. Mr. Nelson says: ‘The spring here is in a basin some 60 to 80 acres in extent in which are ponds and tule marsh. Close by is an extensive ancient Indian camping ground, over which are scattered very many ‘chips’ made from manufacturing arrow points from quartz crystal, chert, chalcedony, flint, and other similar material’” (Mallery, 60, 61).

The petroglyphs from this site as shown in figure 18, page 60 (Mallery) comprise a large number of circle elements enclosing various combinations of straight lines similar to those found in Owens valley. Several wavy lines also occur. Two human figures are shown which have the male genitalia unmistakably represented.

44 PT. DARWIN, INYO COUNTY.—“A great many petroglyphs occur in the lava beds around Darwin” (Lloyd Summers, Postmaster, Mammoth, California).

45 PT. SALINE VALLEY, INYO COUNTY.—“In the desert between Sand springs in the northern part of Death valley and Saline valley are many hieroglyphics” (letter of Douglas Robinson, Covelo, California, to San Francisco Examiner).

46 PT. COSO SPRINGS, INYO COUNTY.—“The petroglyphs there are all cut in basalt. There are several miles of them in a canyon about three miles from the springs” (William Lyle Skinner, Lone Pine, California).

Several designs among these petroglyphs resemble the gridiron type which is so abundant at Bishop, Inyo county (fig. 18, top; pl. 34). Realistic figures comprise chiefly mountain sheep, many of which present the unusual feature of having the head turned so as to show a full view of the head and horns, a few lizards, and several human representations (fig. 18; pls. 33*b*, 34*a*, *b*, *d*, *e*, *f*, 35*b*).

47 PT. MILLSPAUGH, INYO COUNTY.—Approximately five miles northwest of Millspaugh; southeast of Owens lake, Inyo county (H. C. Floyd, of Independence, Inyo county).

48 PT. LITTLE LAKE, INYO COUNTY.—This site is about fifty miles south of Keeler and is just below Owens valley. There is a small lake here, along the eastern shore of which runs a lava cliff approximately one hundred feet in height. Its western and southern faces are carved with petroglyphs from ground level to over forty feet high in all accessible places. In addition to the petroglyphs there are several faint traces of pictographs. The ground in the vicinity is littered with obsidian fragments, indicating an extensive camp site, and potsherds are reported to have been found there. (Site examined by the author.)

The petroglyphs at this site appear moderately recent and some extremely modern. The brownish patina which covers the cliffs has been pecked through in most cases and has seldom re-formed over the designs. A few, however, have been rendered indistinct through slight weathering.

The photographs shown in plates 36 to 39 were furnished us through the kindness of Mr. Guy Earl, Regent of the University of California, and Mr. William L. Skinner, of Lone Pine, California. These petroglyphs include a number of gridirons and other distinctly rectilinear figures (pls. 36*b, d*, 37*a-d*, 38*a-c, e*, and 39*b, d*). The circular gridiron in plate 37*c* is similar to the type

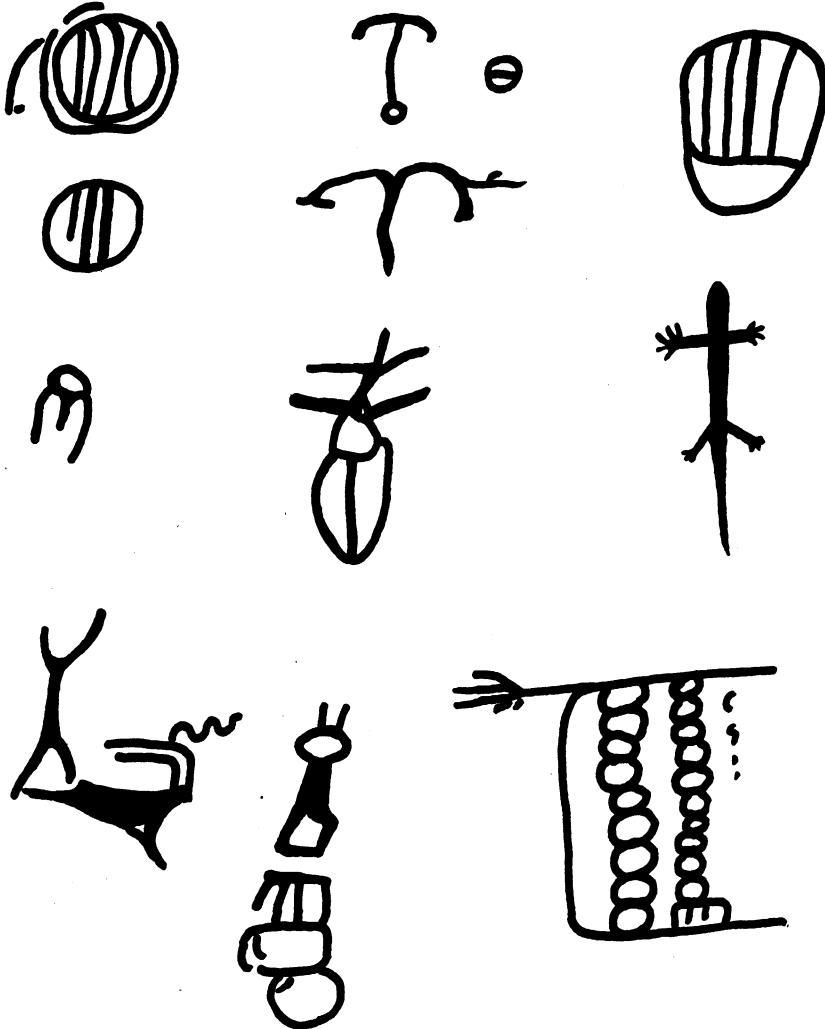


Fig. 18. Petroglyphs from Coso springs, site 46, Owens valley region.  
(Drawn from photographs; not natural groupings)

found farther north. On the other hand the complex figure in plate 37*e*, while combining some circular and rectilinear gridiron elements, appears in the ensemble much like the complex curvilinear Great Basin figures. However, compare with plate 91, Fort Bayard, New Mexico, site 282. This figure is about six feet high. Other geometric figures found at this site include the widespread sun disks, concentric diamonds (fig. 20*g*), and a row of concentric diamonds

through which passes a straight line (fig. 19c). There are also various combinations of dots (pls. 37b, 38a, and 39a). The combinations of dots connected by straight lines in figure 19b suggests figures at Bishop, site 38, and Fish springs, site 39. Spoked wheels, zigzags, and wavy lines also occur. A spiral is shown in figure 19c.

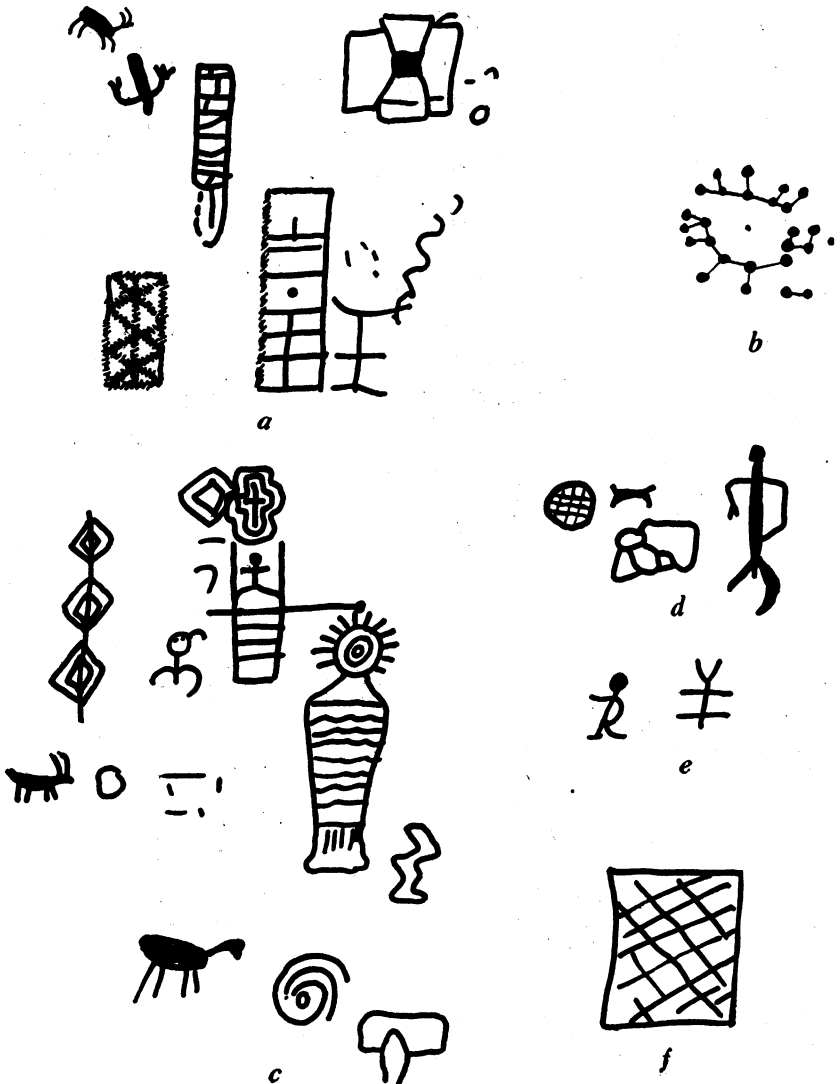


Fig. 19. Petroglyphs from Little lake, site 48, Owens valley region; two in *a* are painted.

Realistic figures are more abundant than in Owens valley. The mountain sheep is the most common animal and is readily identified by its long recurring horns. The native artist, however, always made the naïve mistake of representing it with a tail. Three excellent representations may be seen in plate 38c,



which is evidently intended to portray the male, with long curving horns, the female with short, upright horns, and the young. Plate 39c shows another with its head turned to full view. This aspect suggests that such symbols as appear in figure 20k and which are found at other sites may be a conventionalization of the mountain sheep. The sheep in figure 20b is interesting in that



Fig. 20. Petroglyphs from Little lake, site 48, Owens valley region.

it is executed with more or less rectilinear style (compare with Grapevine canyon, Nevada, site 227, pl. 74a; also Coso springs, site 46, fig. 18). The sheep in figure 20c is unique in possessing two pairs of horns. The only other identifiable animal form is some kind of lizard. Examples of these may be seen in plates 36c and 38d. The ciliated creature in plate 38e, however, may be intended as a centipede.

There are several human representations (pl. 39*a*; figs. 19*d*, *e*, 20*b*, *e*, *h*, and 21).

The pictographs were too dim to gain any adequate idea of their form. They appear however to form designs made up of combinations of dashes. The color is red except one figure which is black. In no case is a pictograph superimposed upon a petroglyph although several petroglyphs were painted red (fig. 19*a*). The parallel hatching represents coloring. Although several petroglyphs have been cut through pictographs, there is no reason to believe that there is any great difference in their ages.

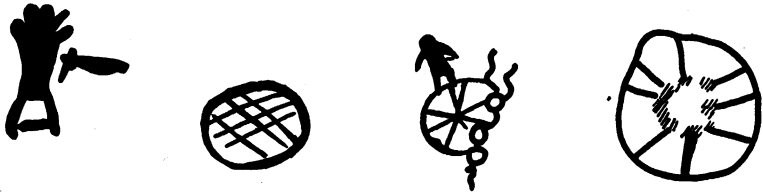


Fig. 21. Petroglyphs from Little lake, site 48, Owens valley region.  
(Not natural grouping)

#### *Mohave Desert—Sites 49–60*

49 PC. RANDBURG, KERN COUNTY.—This site is located about ten miles north of Randsburg “in the vicinity of an old well” (Herbert S. Taylor, Randsburg Miner Publishing Company, letter of June 4, 1914).

50 PT(?) KAWAI, KERN COUNTY.

51 PT. RANDBURG, KERN COUNTY.—This site is located near and to the east of Johannesburg, California (Dr. L. Rosenstein, formerly Department of Chemistry, University of California).

52 PT. INDIAN WELLS, SAN BERNARDINO COUNTY.—Near Cuddleback Dry lake in Mohave desert, east of Randsburg (H. S. Taylor, letters of June 4 and June 27, 1914).

53 PT. DAGGETT, SAN BERNARDINO COUNTY.—“In the Mohave desert, about two miles north of Daggett station, according to the Mining and Scientific Press, is a small porphyritic butte known as ‘Rattlesnake rock,’ ‘so named by reason of the immense number of these reptiles that find shelter in this mass of rock.’ The author states that ‘the implement used in making these characters was evidently a dull-pointed stone, as the lines are not sharp, and the sides of the indentation show marks of striation’ ” (Mallery, 61, fig. 19).

These petroglyphs comprise a large number of circles, variously arranged, often in series or connected by lines. Several wavy lines occur. There is one feather design. Two of the circles contain simple crosses. There are several more or less rectilinear figures approaching the “gridiron.”

54 PT. PANAMINT MOUNTAINS, EMIGRANT CANYON, DEATH VALLEY, SAN BERNARDINO COUNTY.—“Dr. C. Hart Merriam, of the Department of Agriculture, on his return from the exploration of Death valley kindly furnished a photograph of a ledge in Emigrant canyon, Panamint mountains. A large number of petroglyphs are represented in groups. The characters are of the Shoshonean type. Among them are ‘Moki goats,’ tridents, the Greek  $\phi$ , many crosses and other characters . . . found in the same general region” (Mallery, 61).

55 Pt. LANFAIR, SAN BERNARDINO COUNTY.—Sixteen miles below Barnwell, near Paiute gap (Miss Maye Tennent, Lanfair. Kindness of Professor Jepson, University of California).

56 Pt. PIUTE SPRINGS, SAN BERNARDINO COUNTY.—This group is about thirty-six miles north of Needles, California (Mr. Eugene Golomshtok, letter of February 24, 1927). These petroglyphs comprise largely rectilinear figures, resembling the extensive rectilinear group at Grapevine canyon, Nevada. They are not so definitely rectilinear, however, and many curves and wavy lines are woven into the designs. Plate 40*g* shows a sun disk. A sort of "netting" is shown in *a*. The only realistic figures are two mountain goats(?) in *c*. Compare the symmetrical zigzag in plate 40*f* with that at Coso springs, site 46, plate 33*b*.

57 Pt. PAIUTE GAP, SAN BERNARDINO COUNTY. (Mr. A. P. Miller, Needles, California.)

58 Pt. EAGLE PASS, SAN BERNARDINO COUNTY.—"At Eagle pass the carvings are on the rocks scattered along a very faint trail. There must be twenty or more than I have found. They are on small rocks while at the other places

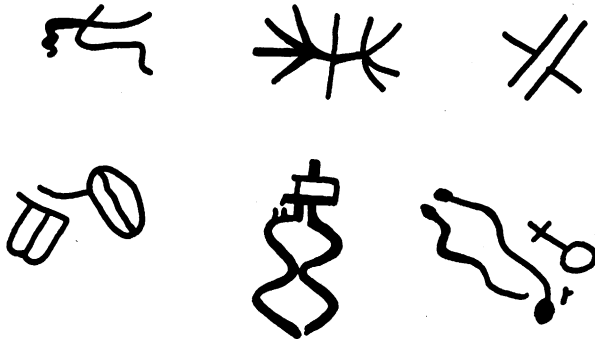


Fig. 22. Petroglyphs from Eagle pass, site 58, Mohave region.  
(Not natural grouping; drawn from photographs)

(Grapevine, etc.), they are on the canyon walls. This trail seems to run south through Eagle pass to Chemehuevi valley and north to Granite springs, Hiko springs, and Grapevine canyon" (Mr. A. P. Miller, Needles, California, letter of July 12, 1926).

A group of photographs furnished by Mr. Miller are shown on plate 41 and in figure 22. In general the designs are more or less curvilinear, although the rake design occurs (pl. 41*d*). A sun disk is shown in plate 41*b*. In plate 41*d* are circles connected by straight lines. Plate 41*a* shows a spiral which may be a snake running off into an animal body. Plate 41*c* shows a band of diamonds between two straight lines. The lower right-hand design in figure 22 appears to be two snakes.

59 Pt. WEST WELLS, SAN BERNARDINO COUNTY.—This site is about forty miles south of Needles and about ten miles from the Colorado river (Eugene Golomshtok, letter of February 24, 1927). Photographs from this site furnished by Mr. Golomshtok are shown in plate 42. Plate 42*a, b, d, e* are definitely rectilinear and are closely similar to those found at Grapevine canyon. A few curvilinear designs suggestive of those farther to the north in the Great Basin also occur (pl. 42*c, f*). Two animal figures are shown in the upper right-hand corner of *f* and *b*.

60 Pt. CHEMEHUEVI VALLEY, SAN BERNARDINO COUNTY.—This site is forty miles south of Needles (Mr. A. P. Miller, Needles, California, letter of July 12, 1926).

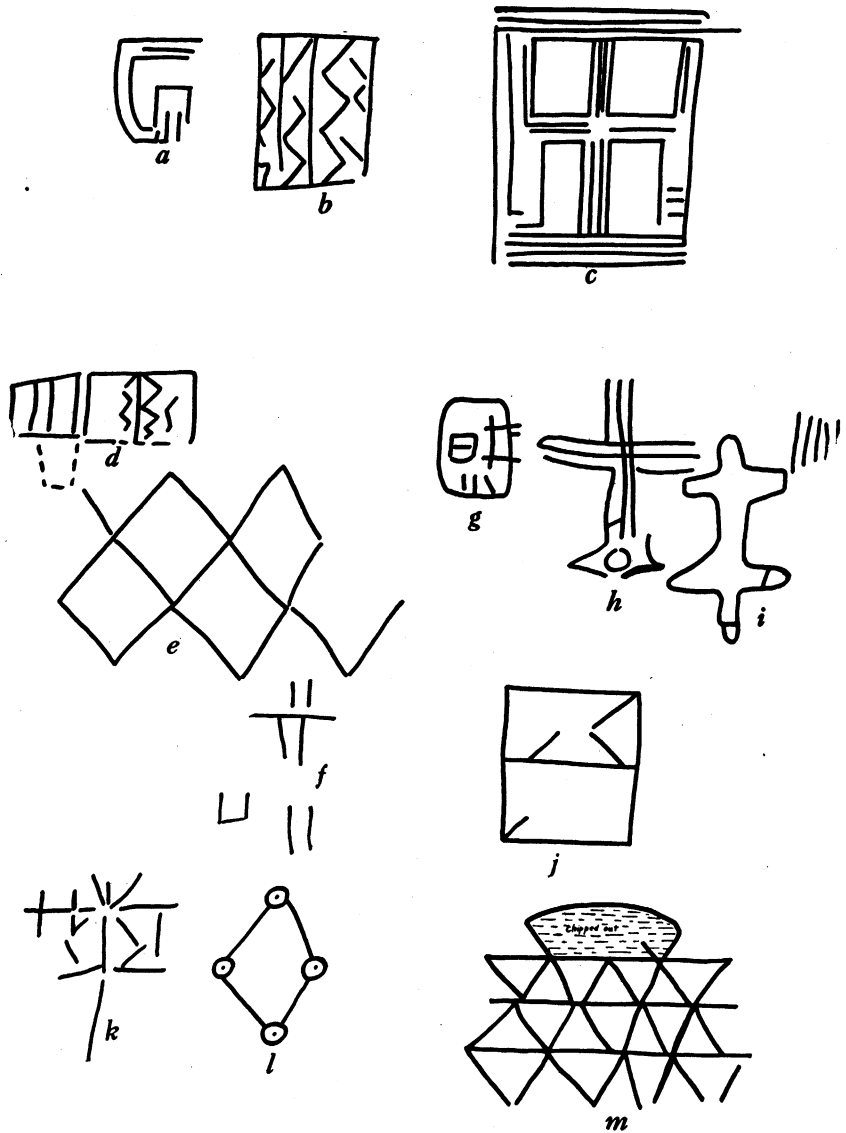


Fig. 23. Petroglyphs from Fig Tree John, site 61, southern California.  
(Not natural grouping)

*Southern California—Sites 61–82, 123, 128*

61 PT. FIG TREE JOHN, IMPERIAL-RIVERSIDE COUNTIES.—The figures are carved in travertine on the shore of the ancient sea above the present Salton sea. They are on the boundary line of Riverside and Imperial counties. This site was examined by Dr. W. D. Strong. The most exposed and lowest carvings are the most indistinct (fig. 23; pl. 46a-c).

Figure 23a is thirty feet above the road and one hundred yards west of it. It is carved one-half inch deep into barnacles. *b* is on the other side of the same rock, and is carved one-quarter inch deep. *c* is one hundred yards from and twenty feet above the road, and is carved on the northeast face of a large boulder covered with barnacles. It is low on the boulder and the deposit is at least one foot thick. *d* and *e* are about fifty feet to the north on the same level, and are carved on the long face of a boulder topped by another boulder of equal size, and all together the figures cover the entire surface, about sixteen or eighteen feet long by eight feet high. The upper boulder is larger and more rounded on top. There is a thin scum of coral one-quarter inch deep over all the design, which in places is one-half to three-quarters of an inch deep. You can chip through this covering with a pocket-knife, one-eighth inch (?), and uncover the original design. There is no chance that the drawings were made before the formation of rocks, yet certain of the obscure petroglyphs give indication of having been obliterated either by new travertine or by erosion. Figure 23d is one-half inch deep in the original travertine with one-quarter of an inch of new travertine deposited over it. Figure 23g is twenty feet to the north on the same level, facing to the east. The figures are painted red so that the deposit resembles red coral. Many other eastern faces of boulders near here have faint linear drawings of the same type, but too faded for delineation. The carving was quite evidently done while the mollusks were still soft, for the original rock does not seem to have been reached, and the faded drawings show more erosion of the barnacle-like crustaceans. All are line drawings. The obscure drawings look as though the surface had been covered with water after the originals were made and had partly filled in with other barnacles. Figure 23j is fifty feet to the north and at approximately the same level. It faces to the north. The design is faint and obscure. Figures 23k, *t*, *l* are on a large, smooth-faced boulder about fourteen by twelve feet. The figure on the left is obscure and unretouched. The right-hand figure has been retouched with red. Figure 23m is thirty feet to the north of the last of the southern face of a rock. This figure has been retouched with red paint, and the top part evidently chipped out (see also pl. 46a).

The carvings are made on the travertine (not on the original rocks). They were put on just before the last inundation and then covered again for a period, allowing the formation of about one-quarter of an inch of mollusks. The faintness of the designs is due to this and to erosion of wind and blown sand. The varying clearness of the pictures seems to be due in the main to original differences in depth of carving and to varying exposures to prevailing winds.

The designs are in general rectilinear. The rectangle in *b* includes several bands of zigzags. *c* is closely similar to the maze design and may be a form of it (pl. 46b). *e* and *m* show diagonal lattice work of a crude sort. The circles connected by lines to form a diamond in *l* remind one of the circles connected by straight lines occurring to the north in the Great Basin area (pl. 46c). An animal-like figure (fig. 23i) however seems to be rather of the Santa Barbara and southern Sierra Nevada type.

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The following observations on petroglyphs in the vicinity of the Salton sea have been furnished by Mr. W. Egbert Schenck, Honorary Associate Curator of the Museum of Anthropology, University of California, as of March 10 and 19, 1928:

“*The Coral Reef.*”—About 6–8 miles south and 4 miles west of Coachella near the Rau Ranch. A well-known landmark. Consists of an isolated ridge a few hundred feet long with the northeastern end exhibiting in striking form the old beach line of Lake Cahuilla.

At this place the beach line is perhaps 75 feet above the valley floor with the western side of the Reef above the old water line. The “line” is the point where the granite has ceased to be encrusted by the travertine deposits from the lake. Above the line the granite is clean; below the travertine varies from a trace to several inches in thickness, giving the rock somewhat the appearance of a coral formation.

*Petroglyphs.*—On the faces of the rock below the water line are a number of petroglyphs. One lot consisted of simple linear human figures and two other lots, of rectangular designs. The four sets here seem undoubtedly aboriginal. However the situation is confused since hundreds of people have placed their names and initials on the surfaces. They have also made imitation Indian designs, and there are Japanese characters. A swastika is more questionable.

Apparently the most important thing about these petroglyphs is the fact that they are below the water line and are all cut in the travertine. In other words, they have certainly been done since the recession of the waters of Lake Cahuilla. All the aboriginal petroglyphs seen at this point are near the present valley floor and one of the largest designs perhaps extends somewhat below the present surface where shells, etc., indicate that there has been little change since the recession of the lake waters.

In other words, the time of deposition of the travertine would seem to have little bearing on the age of the petroglyphs since they could have been carved any time after such deposition. A carving dated 1900 was noted and its weathering compared with the aboriginal designs without very satisfactory results since other dated designs were observed to have weathered irregularly, some of the later ones appearing older than those of older dates. There is a possibility that the large design low on the cliff had travertine deposited in its lines after they were cut, although the effect might also have been produced by wind action.

I think Strong spoke of the travertine deposits as being *over* the designs. This was certainly not true of the designs inspected by us here. The original irregularities of the surfaces of the granite on which the travertine was deposited had been obliterated by the travertine and it seems most probable that a design cut in the rock would simply be concealed by the travertine. The petroglyphs were not tampered with, judging by experimentation with near-by modern cuttings. They can all be removed by simply scaling the travertine coating off the granite.

Brown (Water Supply Paper 497, p. 59) quotes MacDougal to the effect that the travertine was deposited in successive layers and that “Indian carvings on these coatings of travertine are found buried at varying depths.” If this means that a definite layer of travertine could be scaled off leaving a carving on the layer below it would be most interesting. But the “varying depths” would indicate little since great variation of thickness can be found within an area a very few feet square.

"*Engraved Rocks.*"—About 2-3 miles south of the Reef (8 miles from Coachella on highway and 2½ miles west at Bendels Service Station) are similar examples of petrography. These are on boulders about a third of the way between the valley floor and the beach line. The above remarks apply to these also.

Travertine rocks are farther south on the highway near the Riverside-San Diego county line. Beach line very plain. Petrography reported in this vicinity, but we were unable to get sufficiently definite reports to find it.

"*Travertine Rocks.*"—This site is the prominent group of rocks just west of the state highway about 2-3 miles south of Oasis. The water line of Lake Cahuilla is very prominent. On the lower travertine covered boulders are a number of geometric petroglyphs in general similar to those on Coral Reef and near the Fish-traps. They are perhaps less disfigured by modern additions. One modern name is dated 1898 and certainly does not appear to be as much weathered as the more definitely aboriginal designs. However there are two crosses near the best of these aboriginal designs and said crosses appear quite old.

The appearance of petroglyphs on these exposures at Travertine Rocks, Engraved Rocks, and Coral Reef make it seem very probable that all prominent exposures of the old water line would show petroglyphs and that the practice of making them was extensive.

None of the petroglyphs were on the granite; nor were any seen where a layer of travertine had been superimposed on the carving. It is judged that all were made on the last formed travertine surface.

It is interesting to note that all the petroglyphs were comparatively near the present valley floor. None were high up on the rocks near or above the water line. This might be taken to indicate that the petroglyphs were made with some definite purpose. Otherwise it seems expectable to find some of them on the higher points.

Quite a few plain pottery sherds may be found along the western foot of the Travertine Rocks.

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62 PC. SALTON SEA, IMPERIAL COUNTY.—"On the west side of the Salton sea, a few feet under and near the ancient beach line and probably three hundred feet above the present water level. The so-called sun on the picture was, when first discovered by the old timers, said to be covered with a deposit of travertine. Possibility of this exists from the fact that this portion of the pictographs is bright while much of the remainder is badly faded. These paintings are red.

"About two hundred feet from this group are a number of markings in white. These are indistinct and run down below the surface of the present soil. Travertine deposits still cling to the rock in places, but it is easily broken loose. I was unable to find any travertine overlapping any of the pictographs but it is possible that below the ground level this may happen. I had no tools with which to work and did not care to disturb the place.

"South of the Palo Verde valley, along the Colorado, I am told, is a cave where elaborate drawings are found" (M. D. Witter, Brawley News, Brawley, California, letter of January 31, 1927).

Plate 43a shows a spiral with radiating lines, from this site.

63 PC. IMPERIAL COUNTY.—A shallow cave at the southern edge of a rock hill, the hill about one-half mile long. One of a group of foothills where the mountains meet the desert. T 15, R 9 ½, San Bernardino base line. The main figure here is a human representation (pl. 43c and the sketch in fig. 24). Plate 43b may be intended as a man on horseback.

64 PC. IDYLLWILD, RIVERSIDE COUNTY.—On Perris ranch, north of Hemet (Mary E. Botherell). These figures are painted on granite? boulders and are rectilinear in style, comprising mainly zigzags, chains of diamonds, and triangles. Bedrock mortars are associated with them (pls. 44 and 45*b, c, d*).

65 PC. NORTHEAST OF SAN DIEGO, SAN DIEGO COUNTY.—Located twenty-five miles northeast of San Diego. "Many of them, found upon the faces of large rocks, are almost obliterated, though sufficient remains to permit tracing. The only color used appears to be red ochre. Many of the characters closely resemble those in New Mexico at Ojo de Benado, south of Zuñi, and in the canyon leading from the canyon at Stewart's ranch to the Kanab Creek canyon, Utah" (Mallery, 681, 682).

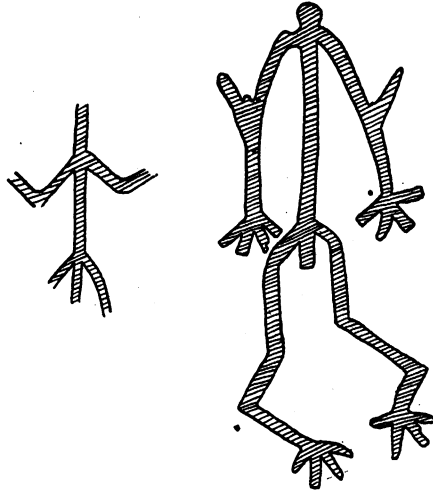


Fig. 24. Pictographs from near the Salton sea, site 63, southern California.  
(Not natural grouping)

66 PC. ESCONDIDO, SAN DIEGO COUNTY.—This pictograph is located somewhere in the region of Escondido. Apparently the color is white. The design is the maze or labyrinth. "There are four painted boulders each with the pictographs on the northeastern face. Apparently this has helped to preserve these figures from weathering under the prevailing southwesterly storms. On the top of the hill where these boulders occur, there are piled rocks, supposedly breastworks, and arrowpoints may be found upon the ground. Another stone is incised with some design." Potsherds are reported from this locality (Mr. Silas W. Bernard, Escondido, California, letter of March 19, 1899—now in Field Museum).

Mallery also mentions a petroglyph from this locality which may be the same as above, for the style of design is that usually found in carving and not in paintings. "Mr. Willard J. Whifney, of Elmhurst, Lackawanna county, Pennsylvania, gives information regarding nearly obliterated boulders on the summit of a mountain four miles directly west of Escondido, San Diego county, California. The designs are not colored, and are not more than one-eighth or one-fourth of an inch in depth. There is a good lookout from the eminence, but there are no indications of either trails or burials in the vicinity" (Mallery, 62, 63).



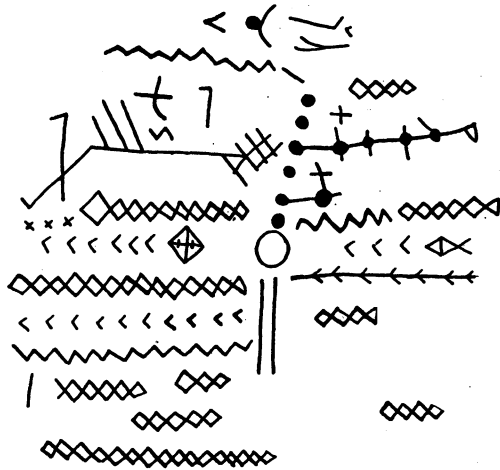


Fig. 25. Pictographs from near Vista, site 67, southern California.

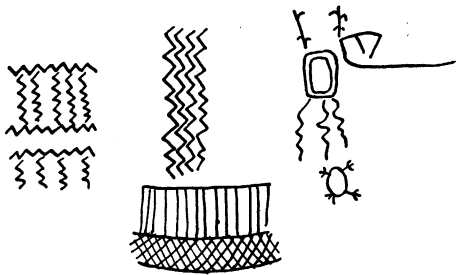


Fig. 26. Pictographs from near Perris, site 71, southern California.

67 PC. VISTA, SAN DIEGO COUNTY.—Pictographs one-half mile from Vista (C. E. Kelsey, San Diego, California). These pictographs comprise almost entirely series of diamonds or crosses, running parallel to one another in straight lines. Some dots appear, however, connected in series by straight lines (fig. 25).

68 PC. PALOMAR MOUNTAIN, SAN DIEGO COUNTY.—Painted rocks on Palomar mountain, sixty-eight miles northeast of San Diego. Inscribed on granite(?) boulder. Design consists of three vertical bands filled in with crosses (pl. 48e).

69 PC. LAKE ELSINOR, RIVERSIDE COUNTY.—On eastern shore.

70 PT. TRABUCO, ORANGE COUNTY.—A carved maze or "labyrinth" design on a boulder on the top of a small foothill ridge between Trabuco and Bell canyon, Orange county (pl. 46e; Santa Ana Register, October 17, 1921).

71 PC. ANDERSON STATION, RIVERSIDE COUNTY.—Near Perris. (Through courtesy of H. J. Spinden.) These pictures comprise essentially groups of zigzags and cross-hatching to form diamonds. There are also bear tracks, handprints, and a turtle or horned toad (fig. 26).

72 PC. WINCHESTER, RIVERSIDE COUNTY.—This figure is a square filled in with horizontal and vertical cross-lines on the side of a large boulder (pl. 48a).

73 PT. RHEINHART CANYON, RIVERSIDE COUNTY.—Near Hemet, California. "Maze" or "labyrinth" carved into granite boulder (pl. 46d; Miss Adelaide Wilson).

74 PC. LAKEVIEW HILLS, RIVERSIDE COUNTY.—Large square pictographs on solid granite boulder on spur jutting out on north side of Lakeview hills, nine miles west from San Jacinto, one-eighth mile south of junction of Lakeview road and Moreno boulevard. Faces north, done in clear faded red (either iron oxide or something similar). It is two feet above the ground level at present, is four feet high, and three and one-half feet wide. It resembles the carving in Rheinhart canyon, but lacks the center square and four uncut corners. It is too faint for clear comprehension.

Apparently there is an outer border of four lines. Counting lines from left to right there are 16 to center, and 16 from center to right-hand edge gives 32 lines. Each line is about one-half inch wide. Across the top of the design is a broad red band, faded considerably, and like the others blending with the natural red (iron oxide) coloring on the rock. This band is about three inches wide. To the right of the main design are other faint lines too indistinct for interpretation. As usual, the pictograph appears on an outcrop of hard, durable granite, unique among the many scaling granite rocks and smaller boulders in the vicinity. It faces north, on a conspicuous exposure, just across the old lake bed from the opening (northwest) of the San Timoteo(?) pass and directly on the best natural route from the Coyote pass and Rheinhart canyon. (Examined by Dr. W. D. Strong.)

75 PC. SAN JACINTO MOUNTAINS, RIVERSIDE COUNTY.—Sketches of painted rocks in the San Jacinto mountains by N. H. Chattenden. Also sketches by H. S. Reed, who writes: "Some days ago I was with a party in one of the valleys on San Jacinto mountain which found a set of supposedly Indian pictographs on the side of a rock. These symbols were made with some sort of red pigment and were in a position where they were well protected from weathering. I enclose a rough pencil sketch made on the spot with the thought that you might possibly be interested in it, assuming that the things are genuine" (letter of June 2, 1920).

These pictographs are also rectilinear in style and closely resemble those at Idyllwild (site 64) in comprising chiefly zigzags, chains of diamonds, arranged in rectilinear designs. In addition, there is a large use of dots (fig. 27).

76 PC. WILLOW HOLES, RIVERSIDE COUNTY.—This site is in the Coachella valley, Riverside county, near Willow Holes (George A. Bailiff, Los Angeles, letter of March 8, 1927).

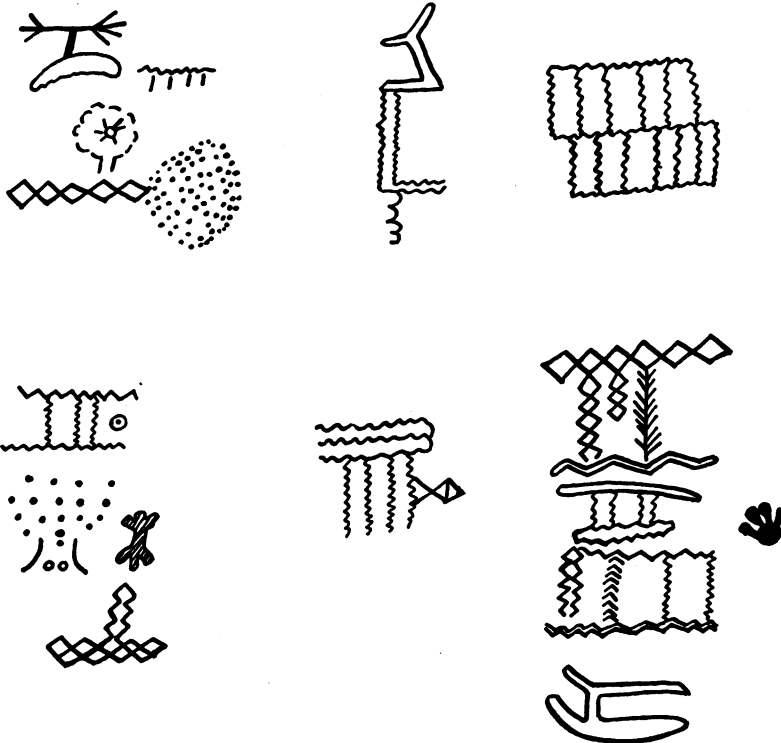
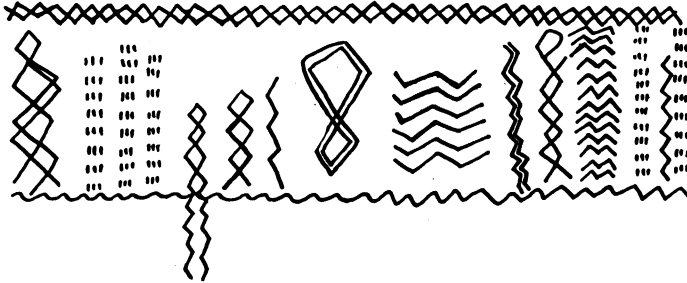


Fig. 27. Petroglyphs from San Jacinto mountains, site 75, southern California.

A photograph from this site is shown in plate 49*i*. The figures apparently done in red or black include a rake element, above which is a crossed circle.

77 PC. BLAIR VALLEY, SAN DIEGO COUNTY.—We are indebted to Mr. E. Ray, of Warner hot springs, for the photographs shown on plate 47 and for the follow-

ing information concerning this site. These pictographs "are located about thirty miles southeast of Warner hot springs, about forty-two miles to the east of the road called Butterfield Stage route, at a point called Blair valley between San Felipe and Vallecitos."

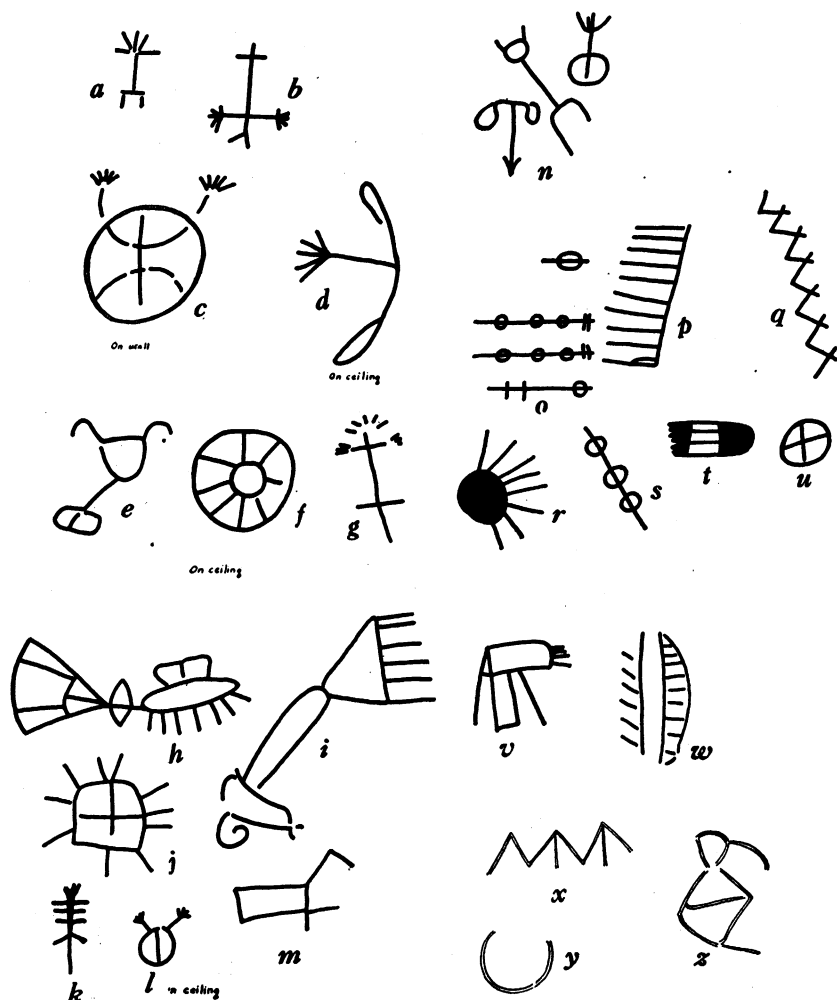


Fig. 28. Pictographs from Desert Queen well, site 78, southern California.  
(Not natural grouping)

Plate 47a shows a general view of the large granite boulder on which these pictographs are inscribed. *b* shows a close-up of the group. The main elements of design are zigzags, diamonds, chains, and cross-hatching. This is essentially similar to the general southern California style. A sun disk also occurs. The many-legged creature in the center of *b* suggests some of the Santa Barbara figures.

78 Pc Pt. DESERT QUEEN WELL, RIVERSIDE COUNTY.—These pictographs, examined by W. D. Strong, appear about two miles northeast of Bill Keyes' ranch, at the old mill near Desert Queen Well, almost on the line between

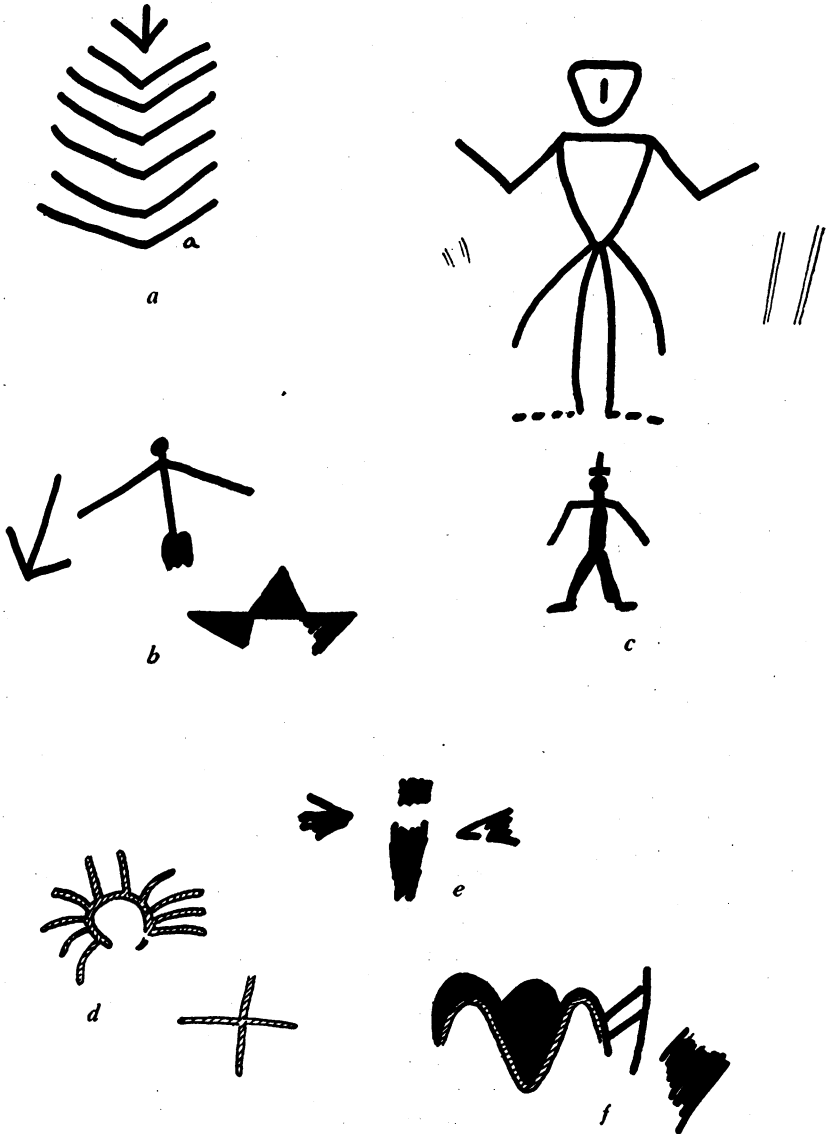


Fig. 29. Pictographs from Desert Queen well, site 78, southern California.  
(Not natural grouping)

Riverside and San Bernardino counties, about fifteen miles southwest of Twenty Nine Palms in the Morongo mountains. The figures are on the walls and ceiling of a cave and outside the cave on overhanging rocks, and are in

black, white, and red (fig. 28a-n). About one and a half miles southwest of this site figures in black appear on the east face of large boulders (fig. 29c-f). The figures at the cave comprise what may be highly conventionalized human figures, some more or less rectilinear figures, and several circle or "wheel" designs. Carved on a boulder are curvilinear figures (circles) with arrows pointing down the canyon toward the south (exactly to the water hole about two hundred yards away; fig. 28n).

The cave, on the western face of a narrow canyon, is in granite with sand on the floor (fig. 29a). Colors are black, white, and red. The floor is painted but worn off; grinding places appear on the floor. On a boulder one and one-half miles to the southwest is an arrow, a human figure(?), and three triangles, all in black (fig. 29b).

Another cave occurs about two hundred yards south of the last, about 10 by 8 by 4 feet. Figures on the roof of this cave include circles along straight lines in red, series of crosses, a sun disk and "wheel" in red, and several rectilinear figures in black (fig. 28o-w).

To the northeast of this is another cave twenty feet away, entered through a narrow passage. The pictographs are on the back walls of a small side chamber and are done in white (fig. 28x-z). They are crudely curvilinear but incomplete.

These caves show no signs of habitation, although sherds or points (?) were found. Mr. Keyes found a cache of unworked flints in one of the caves.

At the northwest face of the canyon is a camp ground, where many potsherds, mortars, and rock cisterns were found; also paintings on a huge boulder, 14 by 10 feet, with a large hole in the center bored by a water-carried boulder, were observed. One figure is a sun symbol done in red; another figure in black resembles the full face of a ram. Other indistinct smudges of black appear (fig. 29d-f).

Around the bluff, northeast about fifty yards, four feet from the ground is a human figure done in black, figure 29c. (Campfire remains and potsherds occur on the ground around the cave.)

Plate 45 shows several photos from this site. The series of diamonds and  $\phi$  signs are the most common figures.

79 Pt. COYOTE WELLS, SAN BERNARDINO COUNTY.—This is reached by taking the road from Warren's well to Twenty Nine Palms, go one-fourth mile past road to Desert Queen Mine which turns off to right. Turn to the right up a sandy wash for one-half mile where there are "sand cisterns" made by the Indians. Here on the faces of large boulders are petroglyphs carved in the rocks to a depth of about one-eighth of an inch (fig. 30). They appear to vary in age, and some are on fallen slabs. The figures are cut in a vertical wall—"rattlesnakes, water signs, etc." (Information from Mr. W. L. Percy and Mr. A. J. Burdick, Beaumont, California.) Figure 30 shows several circles, one filled with dots, another a "spoked wheel," a third three vertical straight lines. The other design vaguely resembles an arm.

We are in receipt of a group of photographs of the petroglyphs at "Coyote Holes" from Mr. George A. Bailiff, Los Angeles, California (letter of March 8, 1927). These pictures are shown in plate 49a-h. In general the style is rectilinear and resembles that found in southeastern California and southwestern Nevada. Plate 49e, however, shows connected circles and wavy lines of the style most common in the northern basin area.

80 PC. SAN BERNARDINO, SAN BERNARDINO COUNTY.—“From information received from Mr. Alphonse Pinart, pictographic records exist in the hills east of San Bernardino, somewhat resembling those at Tule river in the southern spurs of the Sierra Nevada, Kern county” (Mallery, 62).

81 PC. AZUSA CANYON, LOS ANGELES COUNTY.—“Painted rocks also occur in the Azusa canyon about thirty miles northeast of Los Angeles” (Mallery, 69, fig. 31).

The main design at this site is seven vertical series of groups of short, straight lines, three vertical lines in each group. This is bounded on the top by similar lines running horizontally. Animal and insect figures are also shown.

82 PC. MOUNT SAN JACINTO, LOS ANGELES COUNTY.—A group of pictographs on the north fork of the San Gabrielíña river on side of Mount San Antonio, Los Angeles county (Lionel Deane, 1886).

123 PT. ROCK HOUSE CANYON, RIVERSIDE COUNTY.—This is located in T 8 S, R 6 E, Sec. 35. Figure 68 is taken from sketches by Mr. E. N. Wear, who writes: “The drawings do not show all of the cuttings or incised work as it is

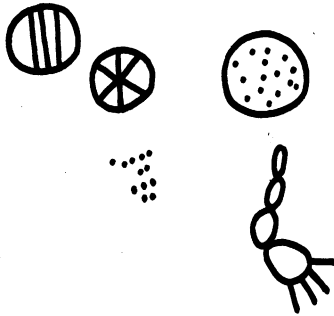


Fig. 30. Petroglyphs from Coyote wells, site 79, southern California.

quite impossible to follow it out in all the detail. This is on a very smooth surface that stands perpendicular and faces the north. The deeper work remains fairly fresh, but the other is being covered with a black tarnish that makes it hard to follow.

“There is every evidence that the Indians have spent considerable time in this vicinity at certain periods, which is indicated by tepee sites, caves, monuments, etc.

“There is also some pictographic work in Old Nikolias canyon.”

These figures are both carved and painted (Mr. E. N. Wear, Brawley, California, letter of July 29). See figure 68, p. 136.

These petroglyphs are of the Great Basin style of curvilinear designs, circles being variously combined and connected by straight and curved lines. The human figure at the bottom of figure 68 suggests those encountered at Koso Springs, site 46 Pt, plate 34f, and elsewhere.

128 PT. CORN SPRINGS, RIVERSIDE COUNTY.—Mr. Randall Henderson of the Calexico Chronicle writes: “These petroglyphs are at Corn springs, Riverside county, about ten miles south of the Blythe-Mecca highway and are among the best petroglyphs I have ever seen” (letter of May 27, 1927).

*Santa Barbara—Monterey—Sites 83-91, 93-101, 124, 126, 129*

83 PC. PAINTED CAVE, SANTA BARBARA COUNTY.—The Painted cave is well known as a place of tourist interest, as it contains one of the most elaborate groups of pictographs in the southwest. Mr. G. Gordon Hawes of Santa Barbara, California, describes it as follows:

“In September last [1906] I visited the so-called ‘Painted Cave’ near Santa Barbara, California. This cave is located near the San Marcos pass over the Santa Ynez mountains, some fourteen miles west of Santa Barbara. The only practical way of reaching it from this town is by taking the Goleta road running out in a westerly direction and turning from that into the San Marcos Pass road. Go up this and take the first road leading off to the left after you strike the grade proper. This last road cuts across the face of the mountains and takes you direct to the cave. The San Marcos pass is a very old one and was known and used by the Indians before the whites settled in this part of the country.” (This is located on the United States Geological Survey topographical sheet “Goleta Special.”)

“The age of the paintings in it is not exactly known. The mission fathers say they were there when the mission was built. This would make them 125 years at least. How much they antedate this cannot be determined.

“The cave is located in a small ledge of sandstone on the sloping side of a small stream about a hundred feet up from the stream. In appearance it is simply an irregular opening some eight or nine feet high and perhaps ten feet wide in the widest part. The cavity runs in about fifteen feet only, the floor sloping upward sharply and the roof being hollowed out. The paintings—there are two, both being somewhat mutilated by vandals—occur on the walls. The larger painting is on the right-hand wall as you enter, and runs a short distance onto the roof. A rough estimate would make it six feet long and five feet wide. The smaller painting is well in, practically at the back of the cave. It covers a space about three or four feet long and two or three feet wide. The colors used in both paintings are the usual brickish red found in so much Indian work, white, and a blue so dark that it appears black. As may be seen from the photographs, the symbols depicted in the smaller painting are nearly all repetitions of some of those found in the larger one.”

The most typical and highly elaborated occurrence of this type is at this site. The entire group of paintings found here is shown in the frontispiece and plates 50 and 51. The figures are all painted and three colors are employed, brownish-red, black, and white.

The style is decidedly conventionalized. None of the figures can be definitely affirmed to be realistic and it is doubtful if any are even intended as human figures which occur so commonly elsewhere.

Most striking are the highly complex wheels or circles surrounded by zigzag lines somewhat like teeth in a cogwheel and crossed inside with a varying number of lines. These “wheels” are for the most part in red, occasionally white lines alternate with the red, as is clear in the plate, and in one or two instances the interstices between the crossed lines are filled with black. Some of the white lines are not continuous but are made up of a series of dots.



Another typical element of design is the maltese cross. One of these appears at the top of the group. It is unfortunately scrawled over with initials.

A third element is the series of alternating black and white bands, one group of which appears in the left of the plate divided into two parts. The upper of the two parts is bisected by a vertical red line, running from the white patch above through the bands and bifurcating below into two eye-like symbols made up of black and white bands. Next to this are two groups of zigzag lines, enclosed by alternating bands of red, white, and black. The figure in the center which resembles a monstrous centipede is made up of cross-lines of alternating red, black, and white with a circumference and "legs" of red. A simpler type of zigzag appears just below this and to the left like a series of crosses.

Just below the center appears a ghost-like figure in red outlined in white, with arms and legs sprawling. There are several other figures in the group, some partly painted over by other elements, which are apparently parts of similar figures.

Scattered among the other figures are found a number of finely drawn lines of white resembling herringbones. Faintly showing and partly obscured by the main designs are several more simple ones which are older and of the style of the Tulare county pictographs. (See below.)

84 PC. "LA PIEDRA PINTADA," SANTA BARBARA COUNTY.—This rock is "on the northern slope of the foothills of the Santa Ynez mountains, a little east of north from the city of Santa Barbara, four miles distance therefrom, between the head of the Montecito valley and La Cañada de las Alisos, or Sycamore canyon. There is a large, isolated boulder of ovoid shape, thirteen feet high, with flat top. On the northwest side is a cavity,  $6\frac{1}{2}$  by  $8\frac{1}{2}$  by 6 feet deep, containing painted figures. It is called Bad Indian's Cave, by Indians" (Yates, 660, 661).

85 PC. WEST OF SANTA BARBARA, SANTA BARBARA COUNTY.—"Dr. Hoffman reports the following additional localities in Santa Barbara . . . county. Fifteen miles west of Santa Barbara, on the northern summit of the Santa Ynez range, and near the San Marcos pass, is a group of paintings in red and black" (Mallery, 64).

One of these figures is in the form of a checkerboard made up of red and black squares (Mallery, 62, fig. 20). Other designs are shown (Mallery, 62, 63, figs. 21 and 22). The zigzag element is common, as well as series of triangles resting on straight lines. Other designs comprise a sun disk, groups of three and four parallel straight lines, a feather element (possibly a centipede?), several "stars," a series of triangles in the form of a chain (see Carriso Rock), several rake designs with three or four teeth, and several simple crosses made up of two straight lines. The enlargement at the end of several of the zigzags suggests representations of snakes.

"These paintings are in a cavity near the base of an immense boulder over 20 feet in height. A short distance from this is a flat granitic boulder, containing twenty-one mortar holes, which had evidently been used by visiting Indians during the acorn season. Oaks are very abundant, and their fruit formed one of the sources of subsistence.

"Three miles northwest of this locality, in the valley near the base of the mountain, are indistinct figures in faded red, painted upon a large rock. The characters appear similar, in general, to those above mentioned" (Mallery, 65).

A group of sketches from San Marcos pass furnished us through the kindness of Mr. John V. Frederick, of Los Angeles, California, are reproduced in figures 69 and 70. He writes that "these paintings are in San Marcos pass which is the lowest part of the mountains and the most natural place for a trail across the mountains and are also by the side of a burying ground" (letter of May 21, 1927).

These figures show the typical many-legged creatures, hand or footprints in red, a series of short dashes. The style of execution, as well as many of the elements of design, is entirely of the Santa Barbara-Tulare type.

An extract from the field notes of P. M. Jones on Painted Rock no. 2, Santa Barbara, is here given: "On December 16th I examined and tried to photograph some Indian pictographs (see photographs herewith, numbers 175 and 196), mentioned by Garrick Mallery in his article on Pictographs of the North American Indians, in the Fourth Annual Report of the Bureau of Ethnology. These are located on the old Stevens place and owing to the very

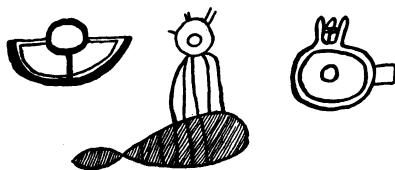


Fig. 31. Pictographs from Najowe valley, site 86, Santa Barbara region.

small cave in which they are situated it was found impossible to make satisfactory photographs of them. They strongly resemble certain pictographs to be seen on the walls of a cave near the San Marcos pass, on what is known as the 'Painted Cave Ranch.' These are pictured in the article by Mallery, already mentioned, opposite pages 34 and 35 of that work.

"I intended to return to this place provided with the proper sketching materials and make, carefully, sketches in color, at some later time; many of the pictographs hereabouts have been destroyed, but such as remain are undoubtedly safe from mutilation or alteration for some little time to come. They are in the small cave-like erosions in a large mass of sandstone which outcrops on what was a part of the old Stevens place; a water reservoir has recently been constructed against one side of this mass of rock."

Pulpit Rock, Santa Barbara county. An isolated sandstone boulder measuring twenty feet high and thirty feet in diameter upon the western side of which is a slight cavity bearing designs, which correspond in general form to others in Santa Barbara county. The gesture for negation appears in the attitude of the human figures. "Half a mile farther east on Dr. Coe's farm is another smaller boulder, in a cavity in which various engravings appear (Mallery, 68). Mallery gives a sketch of some of the figures from this group, figure 30, page 68. The zigzag element is common and occurs in one instance in the form of a series of diamonds enclosed by a rectangle. A large number of dots also appear.

86 PC. NAJOWE VALLEY, SANTA BARBARA COUNTY.—"Forty-three miles west of Santa Barbara, in the Najowe valley, is a promontory, at the base of which is a large shallow cavern, the opening being smaller than the interior, upon the roof and back of which are many designs, some of which are . . . of forms

similar to those observed at San Marcos pass. Several characters appear to have been drawn at a later date than others, such as horned cattle, etc. The black used was a manganese compound while the red pigments consist of ferruginous clays, abundant at numerous localities in the mountain canyons. Some of the human figures are drawn with the hands and arms in the attitude of making the gestures for surprise or astonishment, and negation'' (Mallery, 65-67).

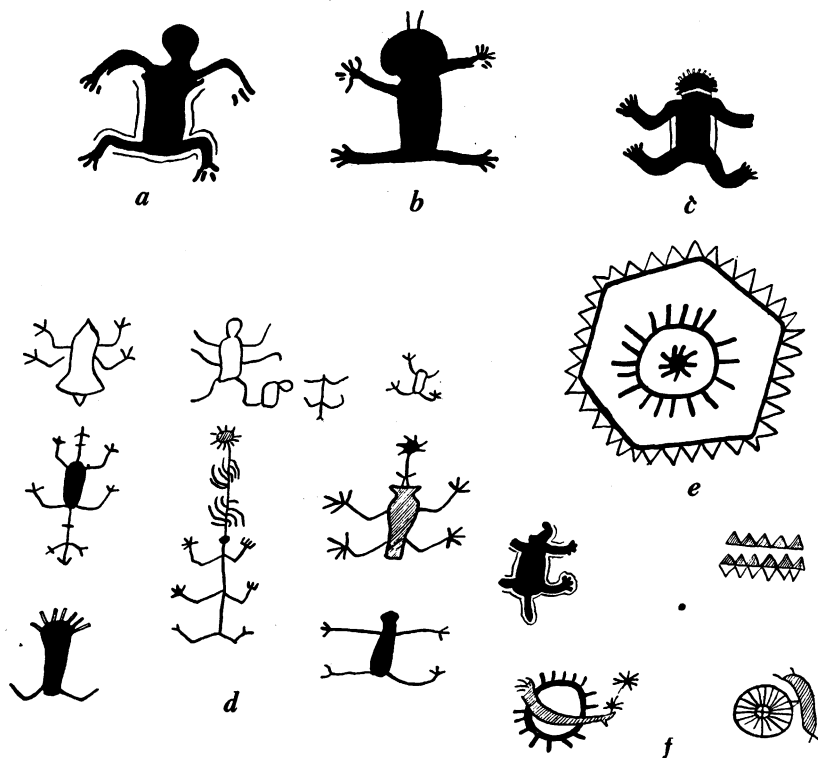


Fig. 32. Pictographs from Mutau flat, site 87, Santa Barbara region.

Several groups from Najowe valley are shown by Mallery in figures 23-28, pages 63-67. The human figures have more or less rectangular, elongated bodies, with the arms and legs (when represented) stretched out to the side. One cross is shown, of two lines, each of which is made up of alternating sections of red(?) and white. Three pictographs from this site are shown in figure 31.

87 PC. MUTAU FLAT, SANTA BARBARA COUNTY.—Located in caves in rocks in center of Mutau flat, fifteen miles northeast of Nordhoff, on Pine creek, south of Stauffer postoffice, Lockerwood valley, Santa Barbara county. The style is essentially of the Santa Barbara type. The colors are predominantly red, black, and white. Several of these pictographs are shown in figure 32. They are not in their natural arrangement (S. D. Thacher).

Certain of the elements of design are essentially the same as those at the Painted cave and the Carriso rocks. We find here wheels and circles with



aged rims (fig. 32*e, f*) and series of triangles or zigzags. The human figures, done in solid black and outlined with white (fig. 32*a-e*) strongly recall similar figures encountered at the Painted cave (see frontispiece) and at the Carriso rocks (fig. 34).

Another group of figures, shown in figure 32*d*, are rather difficult to define but may be designated bugs, insects, or lizards for the sake of convenience.

88 PC. PLEITO CREEK, VENTURA COUNTY.—On Pleito creek, in the San Emigdio mountains. The pictures are in a sandstone cave, at an elevation of about 4000 feet. They are on the ceiling of the largest cave, about 3½ feet high.

The colors employed in this group are red, black, green, dirty orange, and white. The photograph shown in plate 52*a* shows this group to be clearly of the Santa Barbara type or style. The zigzags, feather elements, and the custom of outlining figures of solid color by another color is typical of the region. The cactus-like figures are very similar to some which occur at Carriso rocks. Dotted white lines are used.

89 PC. WOODY, KERN COUNTY.

90. PC. PLEITO CANYON, KERN COUNTY.—In a cave, 7 to 8 feet deep, 2 to 3 feet high, facing east. "Leave highway at Rose station highway camp, turn in at gate 3000 yards south of camp on salt works canyon road. Sun designs, circles with star points, no human figures or animals; red, black, white, and green; partly weathered away" (J. W. Stockton, Bakersfield, California). Also he reports that on "Blue mountain, between White River postoffice and Woody are pictographs in black on a rock; animal figures, apparently antelope."

91 PC PT. CUYAMA VALLEY, SANTA BARBARA COUNTY.—This site is in the mountains some ten miles east of the Cuyama valley. There is a rockshelter camp site at Pine Corral of very friable sandstone with about six pictographs and one set of linear petroglyphs. The former cannot be very old as the rock is scaling off rapidly. There is a cave about 8 by 8 by 4 feet high on the western face of the sandstone bluff at Salisbury Potrero. There are many pictographs here and in the rockshelter below. This low shelter at one time was completely covered with elaborate paintings of the Santa Barbara cave (also Carriso) type, but they have scaled off in all but one place and traces of others. The cave has many pictographs and is entered by a small (3 feet high) hole; it can also be reached over lip of cave, due perhaps to recent scaling away of the surface. (Site examined by W. D. Strong.)

Unfortunately we have but one good photograph of the pictures from this site—plate 52*b*. Drawings of other figures are shown in figure 33. *a-g* are in red. *a* is undoubtedly a human figure from which the head has weathered. *b* resembles the sun disks design. *c* may be a many-legged animal. All of the designs shown in this figure appear to be incomplete. *h* and *q* show examples of the wheel element. *o* appears to be intended as a human figure. In figures *j* and *k* we find small animal figures, possibly beaver. These are done in red, *j* being filled in with solid color. A red "rake" appears in *l* and *h*. The designs in *m* and *n* are done in both red and black. These designs appear to be incomplete, although we see the spoked wheel again in *n*. Incomplete linear figures appear in *b, e, i, and p*.

92 PC. [Data for this site entered under Tulare.]

93 PC. CARRISO ROCK, SAN LUIS OBISPO COUNTY.—This site has one of the best known pictographic groups in southern California. The paintings occur on

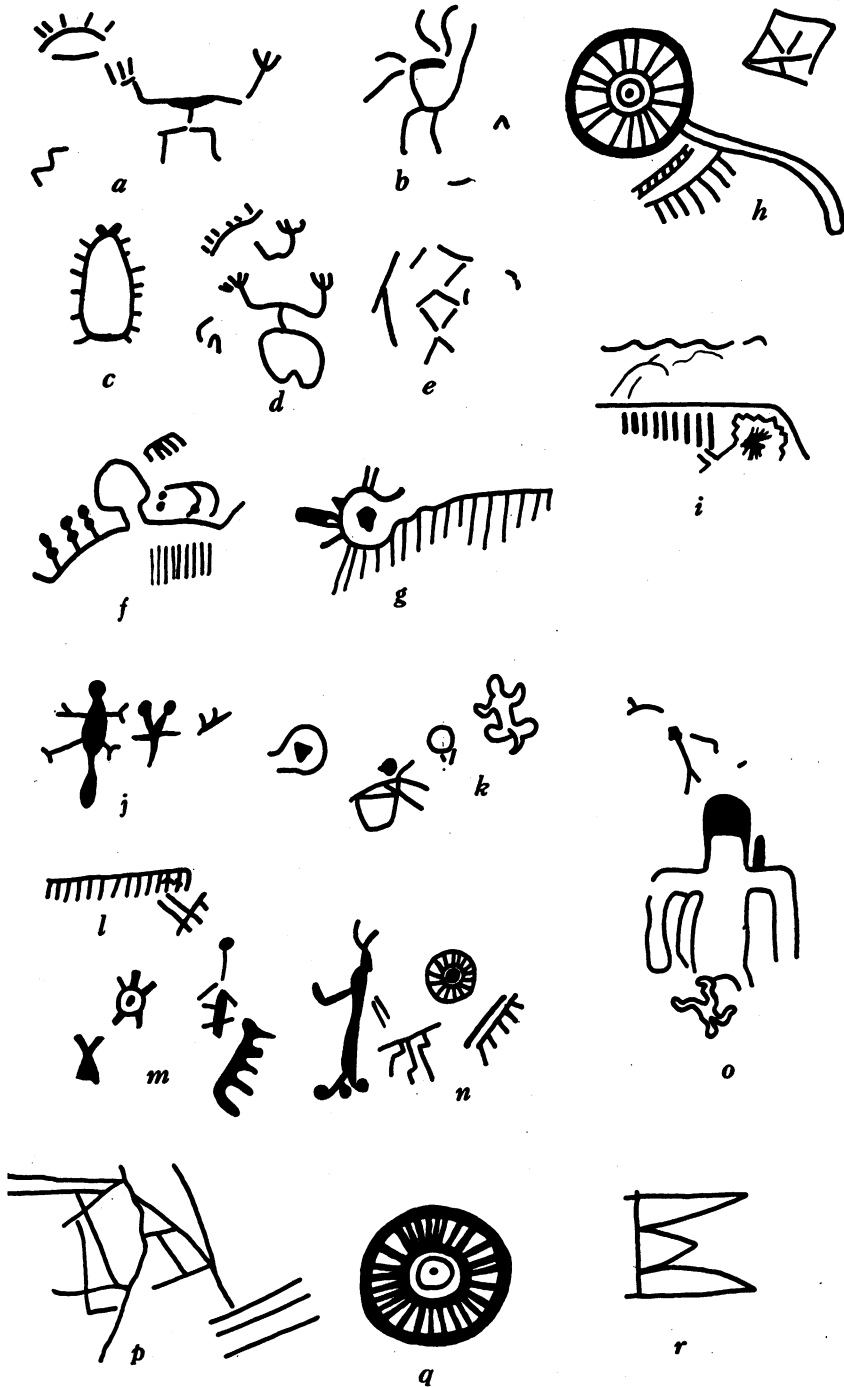


Fig. 33. Pictographs from Cuyama valley, site 91, Santa Barbara region.

a large granite dome rising from the Carriso plains. This is located on the United States Geological Survey topographical map, McKittrick quadrangle. The main group is on the walls of a cul-de-sac or amphitheater eroded in the side of the dome (figs. 34, 35; pls. 53, 54).

Apparently this group has undergone great deterioration in recent years although many of the figures are still in excellent shape. Mr. Arthur F. L. Bell writes: "I had visited this rock about thirteen years ago and remember at that time there were a great many more surfaces covered than I found on my last visit. . . . The question came up as to whether the paintings on the rock were done recently by the Indians or whether they had been painted on the rock for a long time. It would appear from the obliteration that has taken place during the past few years, that these hieroglyphics could not have been on the rock for a great period" (letter of May 16, 1916; Mr. Arthur F. L. Bell, Associated Oil Company, San Francisco, California).

Other pictographs occur in scattered places in this vicinity (see below, 124 Pc).

The site of these paintings is shown in plate 53a. The largest group occurs on the left wall of the cul-de-sac and is located in the recess under the overhanging wall.

Petroglyphs do not occur here and the paintings are in three colors as at the "Painted cave," red, black, and white (the red appears as gray in the plates). Plates 53 and 54 show some of the main groups. On the whole the designs are geometric although several human figures are considerably more realistic than at the Painted cave. While by no means all of the various component elements are to be found at the Painted cave the general style is much the same, especially as contrasted with pictographs occurring elsewhere. A close examination of plate 53b shows that many of the white lines are, as at Painted cave, not continuous but are made up of a series of small dots. This characteristic also occurs in Tulare county.

One of the foremost points of resemblance to the Painted cave is in the common use of elaborated circles or wheels. One of these appears toward the left of plate 54b with the zigzag around the edge drawn out so as to make the figure a ten-pointed star. Other circles and concentric circles appear in plates 53b and 54a, and in figure 34. Some have rays or spokes within the rim. One also appears with the human figure in figure 34f.

Again, there is a common use of zigzags (pls. 53b and 54a) and successions of triangles, some of which appear in plate 54b. In the lower left-hand corner of plate 54b is a considerable group of double zigzags or series of crosses. Toward the left in the same picture appear several "feather" elements in white. All of these elements occur at the "Painted cave" and some are precisely the same. At the right is a series of parallel white lines which may have some relation to the alternating black and white lines at the Painted cave (frontispiece).

Of greatest interest, however, are the life-like drawings which are undoubtedly intended as humans or at least to have human form. The most striking of these appears in the center of the group in plate 54a. The body is squarish, filled in with white, and outlined in red or black. The grotesque face is also white with the features painted in either red or black. The arms appear raised on either side of the head and the legs are spraddled. It would appear as though an object was held in either hand. The whole is framed in a very asymmetrical figure which, judging by the digits at the ends of the extensions

from the corners, is apparently meant to be some kind of animal. Near this are several peculiar chains of crude triangles, some of which have been painted over by it.

Another human (?) figure appears in plate 54b with the arms similarly raised but the legs crossed as though in a squatting posture. The various scrolls around the body may or may not be part of this figure. Those just below the

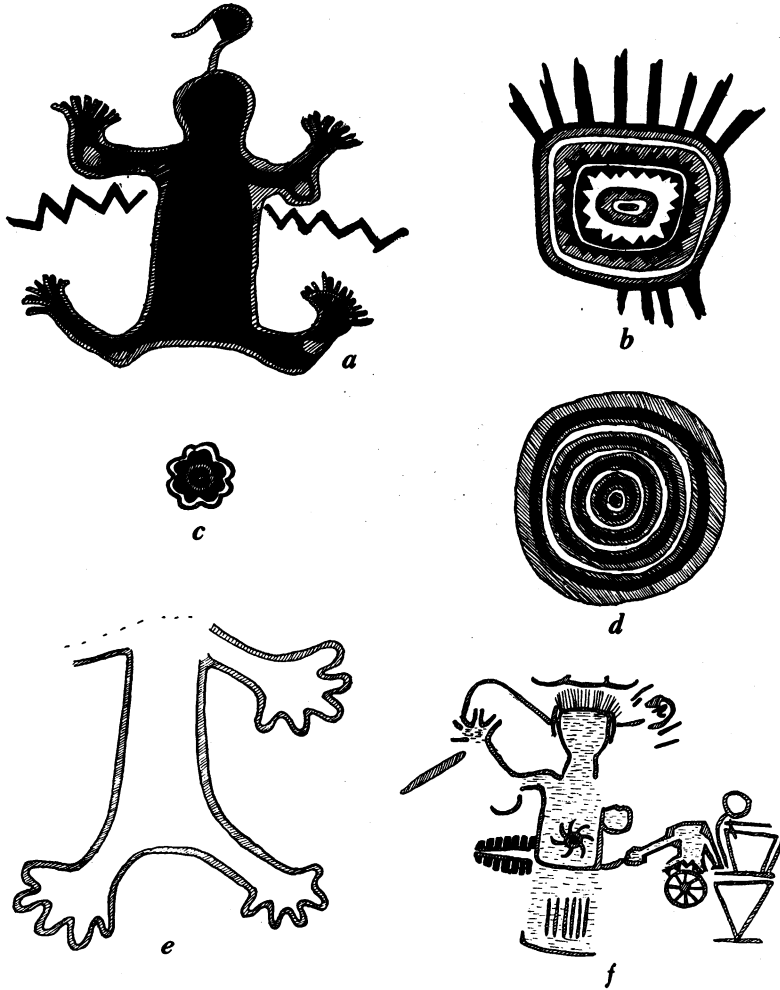


Fig. 34. Pictographs from Carriso rock, site 93, Santa Barbara region.

elbows, however, appear to be continuous with the sides of the body. Others of the lines may be parts of the figure to the right which appears to be some sort of monstrous insect. Other examples of the human figure appear in figure 34. *a* is much like those just mentioned while *e* is apparently the same but in less detail. These last two are of particular interest because of the occurrence of similar figures in regions remote from this center of the Santa Barbara type.

Human figures again appear in figure 35. Those shown in *a* and *b* are of a distinctly different type from the above and in style are very suggestive of the Pueblo area dancing figures. Figure *e* is apparently of the same style, the body being solid and outlined with white, but is more highly conventionalized. This figure is in three colors, red, black, and white.

One other design which should be mentioned is that appearing in plate 54*b* to the right of the human figure. The general appearance of this suggests an insect, possibly a grasshopper or dragon fly, with the head and proboscis to the left, the wings folded above the body, and the tongue curled below.

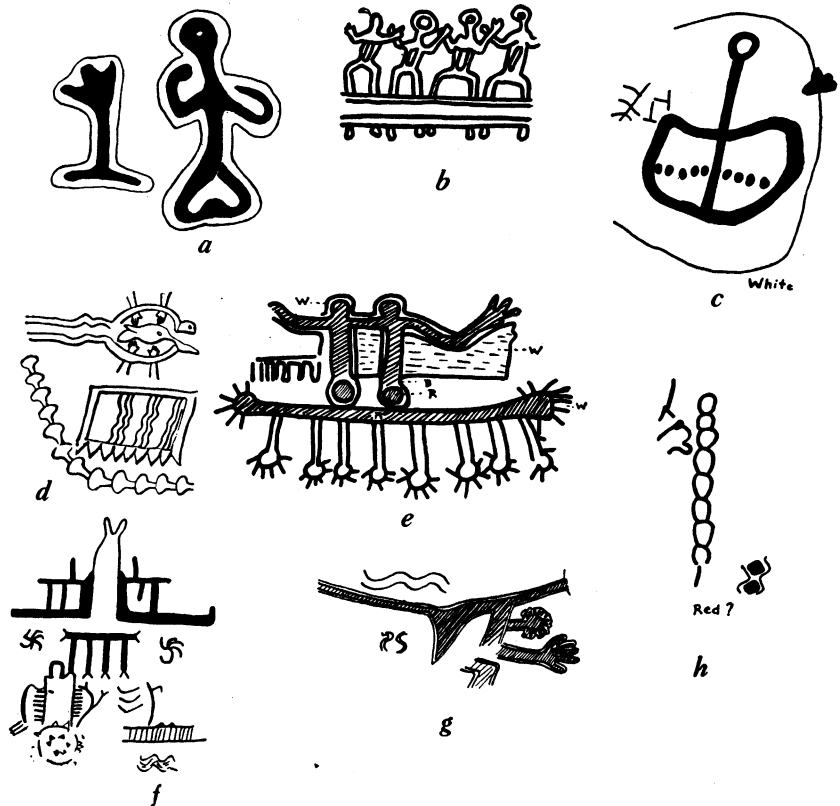


Fig. 35. Pictographs from Carriso rock, site 93, Santa Barbara region.

Lorenzo G. Yates<sup>2</sup> has analyzed the colors at this site as follows: "dull red from red ocher; yellow from ocherous clay; white from some earthy substance; and black made by mixing powdered charcoal with clay or by using some compound of manganese."

Dimly appearing beneath the newer and more elaborate figures are several older ones which are very similar to those in Tulare county; for example, two human figures (pl. 53*b*) and several others.

<sup>2</sup> Pp. 657 ff., 659.



94 PC. MCKITTRICK, KERN COUNTY.—“There are rock paintings near Carneris springs, beyond the Templor ranch near McKittrick oil fields” (Mary B. Williams, Sebastopol, California, letter of April 4, 1927). •

95 PC. CRESTON, SAN LUIS OBISPO COUNTY.—These pictographs are on a hill opposite the Huer-Huero school house, about six miles southeast of Creston. The pictures are mainly in red and yellow. In the vicinity are many bedrock mortar holes (Mr. Cliff).

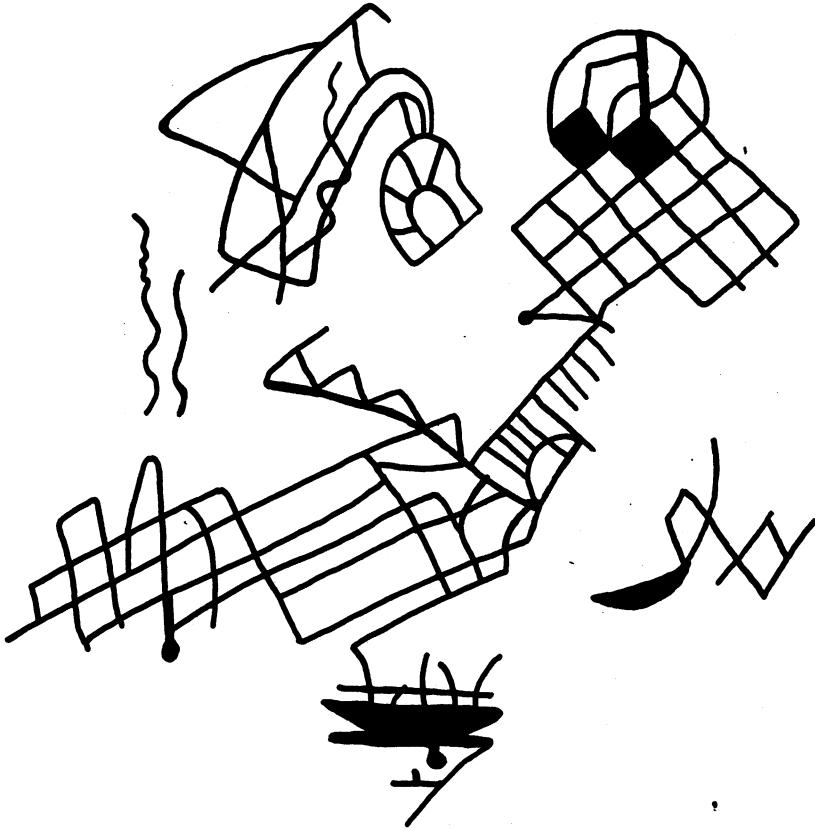


Fig. 36. Pictograph from Fisher's peak, site 97, Santa Barbara region.

96 PC. VACQUERO WATER, SAN LUIS OBISPO COUNTY.—There is a high bluff containing petroglyphs (probably pictographs) at Vacquero Water, about six miles east of Creston and twenty miles from Paso Robles. This bluff is one hundred feet high and is composed of a chalk formation. The carvings are about fifteen feet above the talus at the bottom of the bluff (Mr. Cliff).

97 PC. FISHER'S PEAK, SAN LUIS OBISPO COUNTY.—Sixteen feet from the ground; thirty-two inches wide, fifty-eight inches high (F. T. Green, San Francisco, California). These pictures are shown in figure 36. The lattice design is predominant.

98 PC. JOLON, MONTEREY COUNTY.—“About three or four miles south-south-east of my camp in a direct line, but some twelve miles by road, on the San Miguelito ranch, is a painted rock, . . . the markings on this mass of rock are all in black, no colors having been used in the pictographs which still remain visible.

“The rock, a coarse sandstone, apparently miocene, outcrops through the floor of the valley at a number of places within a distance of five miles, but only on the one mass pictured in the accompanying photographs was there any sign of aboriginal activity. At this place the strata of sandstone rise at an angle with the horizontal of some 60°, and the mass is eroded into arches and cave-like openings. The longitudinal axis is east, 20° south, and the mass somewhat overhangs the northern base. All these markings show rapid destruction by weathering, and I was told that thirty years ago there were numerous pictographs here that have now entirely disappeared. If this be true it would certainly contraindicate any great age, and from the traces of former markings which still faintly remain, I have no doubt of the truth of the statement.

“One of the figures is undoubtedly intended to indicate an acorn [fig. 37]. Another composed of an upright with four transverse lines, may have been a crude sketch of the mast and cross arms of a ship [fig. 37]. At the extreme left, and scarcely perceptible in the photograph for the reason that it has almost weathered away, is a horizontal line some twenty inches in length with short vertical lines dropping from it, from one to two inches apart and about three inches long; these have been twenty or thirty in number, I should judge, but only six or eight remain. This may have been some sort of tally. It is quite probable that this place was used as an acorn gathering camp, for in the valley are many fine large oak trees that furnish the best acorns in the vicinity. On the floor of one of the arches or ‘caves,’ are three well worn mortar holes and the side of the mass of rock which is overhung by the top is extensively blackened by fire smoke. I excavated in every likely place in the immediate neighborhood but could find nothing and no sign of any burial place or hut circles” (extract from field notes of P. M. Jones).

Figure 37 shows a human figure in white, below which are two horizontal series of short, vertical lines in red. There is a sort of cross-work of white lines to the right of the human figure. In the upper left-hand corner is a sun disk (?) in white.

99 PC. SAN ANTONIO RIVER, MONTEREY COUNTY.—“In the Salinan area but one collection of pictographs is known, a cave known as ‘la cueva pintada’ near the top of the hills forming the eastern wall of the valley of the San Antonio river and about five miles above San Antonio mission [fig. 38]. The cave is large and easily entered and affords a perfect shelter from storms. The greatest height is about ten feet, width thirty, and depth fifteen to twenty feet. The rock appears to be a sandstone; the floor is free from dirt and shows a polish as if by much use. The roof is much blackened by smoke, said to be the result of the use of the cave by sheep herders, and most of the pictographs are partly or entirely obliterated by the soot. Yet some of the pictures are evidently painted over the soot, showing the use of the cave in aboriginal times. They are said to have been much clearer when first observed, some having still the appearance of very recent production, while others seem to be of considerable age.

“The walls of the cave are well covered with paintings in different colors and designs. A yellowish-white material like a clay, and a black, probably of charcoal or soot, are evident. Some of the pictographs are entirely filled in with color, while others are made of lines and dots, resembling the Shoshonean pecked petroglyphs of the plateau area, the resemblance in some cases extend-

ing also to the design and figure. A characteristic feature is the utilization of natural features in the rock, such as depressions, as parts of the painting. Thus a round or oval cavity is in several cases encircled by a painted line and used as a head, arms and body being added. This fact may be advanced as evidence that the drawings are the result of impulse and imagination, and had no other *raison d'être*. They may have been made as a pastime by Indians taking shelter in the cave, but the fact that other caves show evidences of occupation, such as mortar holes in the bedrock, but do not contain pictographs, while this 'cueva pintada' shows no evidences of permanent occupation, and

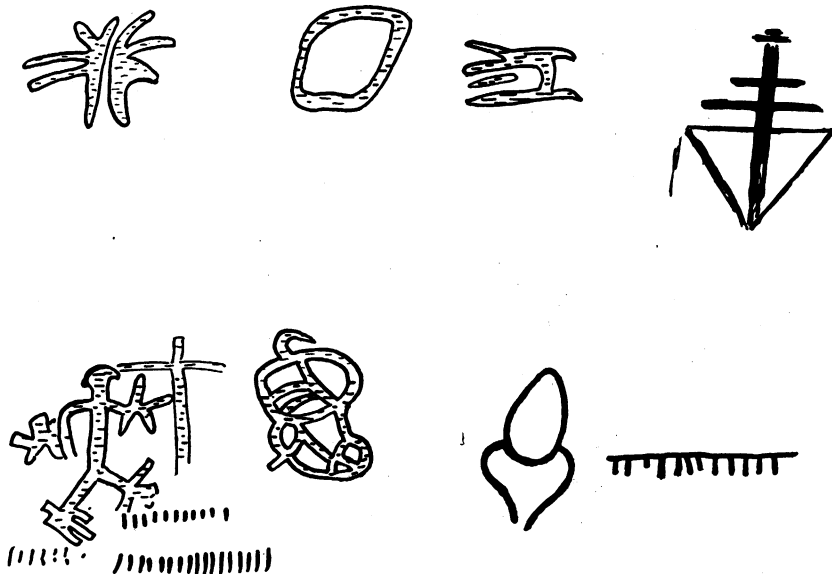


Fig. 37. Pictograph from Jolon, site 98, Santa Barbara region.

(Not natural grouping)

the additional facts of the great paucity of pictographs in the country together with their abundance in a few isolated places, point to a ceremonial explanation. Ceremonial paintings are made by boys and girls at the puberty ceremonies among the natives of the southern missions, and as some puberty rites are known to have been held by the Salinans, the probable explanation for the pictographs in the region south of Monterey is that they were made in some esoteric ceremony, probably that of puberty. No explanation for them is offered by the living Indians.

"The figures themselves are in many cases truly pictographic, the human figure, turtle, and sun being among those recognized while others are unidentifiable, and some must be either devoid of meaning or else ideographic. Some of the paintings somewhat resemble specimens of Shoshonean work, but the figures most common among the latter, deer, antelope, and other animals, and hunting scenes, are conspicuous by their absence in this Salinan group. . . ."

100 PC. TASSAJARA, MONTEREY COUNTY.—These pictographs are on the walls of a cave on Church creek, near Tassajara. This is in the southeast quarter of Sec. 13, T 19 S, R 3 E, on the Jamesburg quadrangle, United States Geological

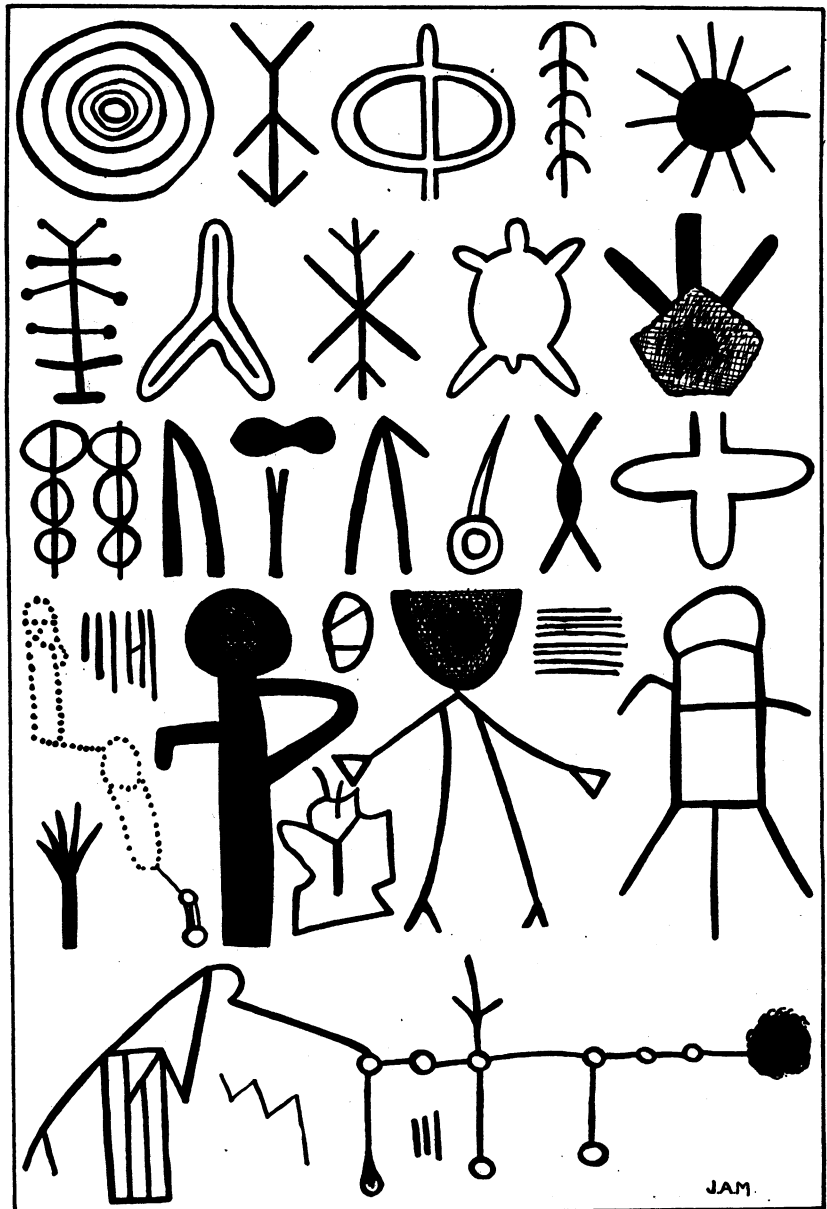


Fig. 38. Pictographs from San Antonio river, site 99, Santa Barbara region.  
(Reproduced from Mason, 1912, pl. 37)

Survey topographical map. The pictures are on the property of Mr. William Lambert of Jamesburg, Monterey county. Two miles from the cave, toward Pine valley, there is said to be a painting of a red swastika, ten or fifteen feet from the ground on overhanging rocks (Miss Alice L. Griffin, Kenwood, Sonoma county, California).

The pictographs from the cave at Tassajara are shown in plate 56*b*. The designs are made up of vertical white dashes placed on the wall in groups which resemble human hands.

101 PC. MONTEREY, MONTEREY COUNTY.—“There is a large cave not far from the hot springs of the Tularcitos hills of the Carmelo range, east of Monterey, which has many figures on the rock, by the Indians, painted in red; most probably of vermilion from the present New Almaden locality on the headwaters of the San Juan or Estrella creek which comes into the Salinas river at San Miguel mission, at about fifty miles southeast by south from the mission and a short distance from the Sulphur spring. On the east part of the plain on the Carriso ranch (the country here is a large basin or mountain plain between the coast mountains and the mountains bounding the Tulare lakes), there are some large perpendicular rocks of soft sandstone, which one of my friends informs me are covered with Indian figures in red paint. . . .” (Taylor, 58).

124 PC. CARRISO PLAINS, SAN LUIS OBISPO COUNTY.—Mr. B. F. Stilwell of Santa Maria, California, writes: “About ten miles south of the well known painted rocks in the Carriso [plains] in San Luis Obispo county is another one smaller in size and in the number of paintings, but quite well preserved in spite of the fact that it is somewhat exposed to the weather. Being located in an isolated section of the mountains few know of it, as it can only be reached by horseback or by walking a few miles.

“The pictures or drawings show a dog or coyote head, a bat, a centipede and a series of circles, one around the other, in I think red, black, and white, the whole looking more like a target than anything else. It is about fifteen inches in diameter. The animals, if I remember correctly, are painted in black.

“There are also two or three painted caves in the Sisquoc River country” (letter of May 15, 1927).

126 PC. CORNELL, LOS ANGELES COUNTY.—Mr. K. W. Thompson, of Hollywood, California, writes: “We own a ranch which has over fifty of these paintings which are well preserved, due to the fact that few people knew of them and until this last Fall was practically inaccessible to automobiles. The property is located near Cornell postoffice, about forty miles west of Los Angeles in Sec. 12, T 1 S, R. 19 W, S. B. M.” (letter of May 16, 1927).

129 PC. SANTA CRUZ ISLAND, SANTA BARBARA COUNTY.—Mr. Ronald Olson, University of California, has kindly furnished us the following information concerning the pictographs on this island: “No petroglyphs were observed on the island. Pictographs were noted at only one place. In a cave on the north shore were perhaps fifty such, painted in red ochre on the walls and roof. None of these were elaborate. Common forms are stripes arranged in groups of two to ten, and irregular smears of red on smooth portions of the rock. A few simple crosses and rake figures also occur. An ash deposit of two to six feet in depth forms the floor of the cave, showing a considerable period of occupation. In this deposit were found mortars, pestles, asphalted pebbles, and asphalt blocks all resembling comparable objects in normal Chumash shell heaps. Many of the pictographs have been partially obscured by blackening from fires built beneath.”

*Tulare Region—Sites 92, 102–122, 125, 127*

92 PC. MOJAVE, KERN COUNTY.—Thirty miles west of Mojave, in a canyon—two painted rocks (S. Mills Vincent, Tehachapi, California, letter to San Francisco Examiner).

102 PC. VISALIA, TULARE COUNTY.—Colonel George W. Stewart has kindly furnished us the excellent sketches in figure 64 with the following description:

“This pictograph occupied a space about six feet square on a vertical surface facing the west unprotected from the elements and was quite distinct. This is located about ten miles east of Visalia. Copied by G. W. Stewart in 1905.”

Figure 64 shows several curious human figures, the uppermost bearing greatly exaggerated toes and fingers, a common trait in the Tulare county pictographs. This figure may be a horned toad or turtle like the one below it. The spread-eagle figure on the right has greatly exaggerated feet and a long, sinuous arm.

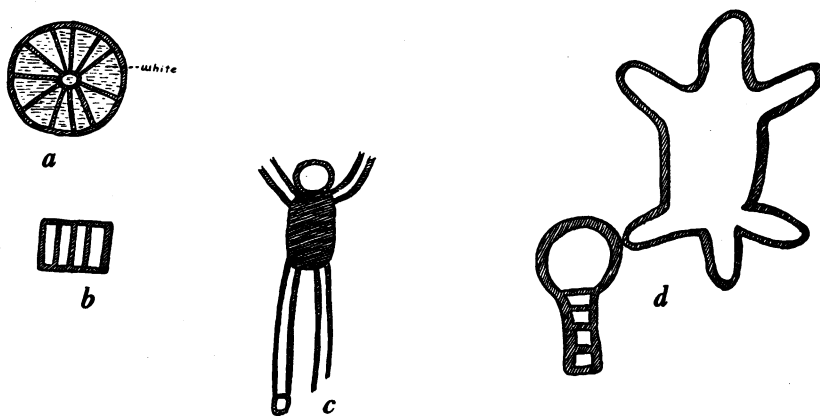


Fig. 39. Pictographs from Kern river, site 103, Tulare region.

There are a number of zoomorphic figures in profile. Those on the right are rather smudgy quadrupeds. Those on the left bear three ears and bifurcated tails. The presence of only two legs may be due to the profile view. There is a centipede to the right of the sinuous line. The main geometric elements are a sun disk containing an inner circle and a chain of circles.

103 PC. KERN RIVER, KERN COUNTY.—At the mouth of Erskine creek (J. Dron, Berkeley). Four figures from this locality, reproduced from photographs, are shown in figure 39. In figure *a* is a wheel in red, with the interstices between the wheels filled in with white. *b* shows a gridiron in red. *c* is a human figure with very long legs. *d* has an animal form resembling a bear pelt which is common in the region of the southern Sierra Nevada. Plate 52*c*, *d* also shows two photographs from this site. The horseshoe-shaped design in figure *c* and the complex of designs in *d* are often the same general style as the Santa Barbara pictures.

104 PC. TUBATULABAL TERRITORY, KERN COUNTY.—On the south fork of the Kern river. There is a large boulder on the north side of the canyon. This is on the property of C. B. Barbeau, west of Weldon. The main design is a

circle in red, having a diameter of  $2\frac{1}{2}$  feet, with short, red radii which do not quite join in the center. On the south side of the road opposite the boulder there is a bedrock mortar, about fifty feet away (T. T. Waterman and E. W. Gifford). This design is shown in figure 40.

105 PC. NORTH FORK OF KERN RIVER, KERN COUNTY.—Packsaddle creek, a painted cave fifteen miles above Kernville (E. W. Gifford).

106 PC. TULE INDIAN RESERVATION, TULARE COUNTY.—Above Porterville. Three photographs from this site are shown (pl. 55*d-f*). These pictures occur in a cave. *e* shows a human figure with arms outstretched wearing a high peaked "hat." To the right of this figure is the centipede(?) shown in *f*. *d* shows two animals, one of which is clearly the beaver and the other possibly a bear.

Pictures from the Tule Indian agency are also given by Mallery. He quotes Dr. Hoffman as follows: "All appearances with respect to the weathering and disintegration of the rock upon which the record is engraved, the appearance

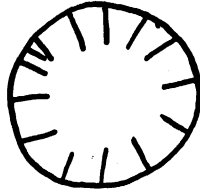


Fig. 40. Pictograph from Tubatulabal area, site 104, Tulare region.

of the coloring matter subsequently applied, and the condition of the small depressions made at the time for mixing the pigments with a viscous substance, indicate that the work was performed about a century ago.

"The Indians now at Tule river have occupied that part of the state for at least one hundred years, and the oldest now living state that the records were found by their ancestors, though whether more than two generations ago could not be ascertained.

"The drawings were outlined by pecking with a piece of quartz or other siliceous rock, the depth varying from a mere visible depression to a third of an inch. Having thus satisfactorily depicted the several ideas, colors were applied which appear to have penetrated the slight interstices between the crystalline particles of the rock, which had been bruised and slightly fractured by hammering with a piece of stone. It appears probable, too, that to insure better results the hammering was repeated after application of the colors.

"Upon a small boulder under the natural archway formed by the breaking of the large rock, small depressions were found which had been used as mortars for grinding and mixing the colors. These depressions average 2 inches in diameter and about 1 inch in depth. Traces of color still remain, mixed with a thin layer of a shining substance resembling a coating of varnish and of flinty hardness. This coating is so thin that it can not be removed with a steel instrument, and appears to have become part of the rock itself.

"From the animals depicted upon the ceiling it seems that both beaver and deer were found in the country, and as the beaver tail and the hoofs of the deer and antelope are boiled to procure glue, it is probable that the tribe which made these pictographs was as far advanced in respect to the making of glue and preparing of paints as most other tribes throughout the United States.

"Examination shows that the dull red color is red ocher, found in various places in the valley, while the yellow was ochereous clay, also found there. The white color was probably obtainable there, and is evidently earthy, though of what nature can only be surmised, not sufficient being obtainable from the rock picture to make satisfactory analysis with the blow-pipe. The composition of the black is not known, unless it was made by mixing clay and powdered charcoal. . . .

"An immense granite boulder, about 20 feet in thickness and 30 in length is so broken that a lower quarter is removed, leaving a large square passageway through its entire diameter almost northwest and southeast. Upon the western wall of this passageway is a collection of colored sketches [Mallery, fig. 983]. The entire face of the rock upon which the pictograph occurs measures about 12 or 15 feet in height, from the end of the toes to the top of the head, the others being in proportion as represented.

"Upon the ceiling are a number of well executed drawings of the beaver, bear, centipede [Mallery, fig. 12], and bald eagle [Mallery, fig. 13]. Many of the other forms indicated appear to represent some variety of insects, several of which are drawn with exaggerated antennae [Mallery, fig. 14]. It is curious to note the gradual blending of forms, as for instance, that of the bear with those resembling the human figure, often found among the Shoshonean types in Arizona and New Mexico.

"Fig. 15 embraces a number of characters on the ceiling. The left hand upper figure is in black with a narrow line of red surrounding it. The drawing is executed neatly and measures about 18 inches in length. The remaining characters are in dull red, probably ocher, though the two on the left hand, beneath the one just mentioned, are more yellowish.

"The first three forms in Fig. 16 are copies of human-like figures painted on the ceiling. They are each about 12 inches in length. The other form in Fig. 16 is white and is on the southern vertical wall of the passageway facing the north. It resembles some of the human forms occurring elsewhere in the same series of petroglyphs" (Mallery, 52-56, figs. 12-16, 983).

The figures in these groups from the Tule reservation are in style much like those occurring elsewhere in the southern Sierra Nevada, and have many resemblances to the Santa Barbara pictographs. The animal figures, frequently outlined with white, are almost identical with animal figures from Nordhoff and similarly the insect figures are of the same type as at this site. The zigzag and feather elements occur here as well as groups of short, straight lines in parallel series. Nor are the human figures unlike others of the Santa Barbara type, although they are somewhat more "ghost-like."

107 PC. TULE RIVER, NEAR SUMMER HOME, BEAR GULCH, TULARE COUNTY.— "There are quite a number of markings all of which are black. Up to a few years ago there were quite a number of human skulls and skeletons lying exposed at this place" (Walter Fry, United States Sequoia National Park, letter of January 20, 1927).

108 PC. LINDSAY, TULARE COUNTY.—Colonel George W. Stewart has kindly procured for us the sketches shown in figures 41-43 and the following information: "These pictographs are located on a rough rocky hill on Lewis creek, Tulare county, California, about 2½ miles from Lindsay. Figure 41a in red, 12 inches long and 5 inches wide; b, in black, white and red (size not noted); c, in red, 8 inches long and 7½ inches wide; d and e, in red, the latter 4½ feet across and very indistinct; f, in red, 14 inches long; g, mainly in black with small part



of upper portion red, 15 inches top to bottom, 14 inches across. Figure 42 is in white, black and red, with portions a very light red or pink; occupied a space on the underside of an overhanging rock 6 feet long by 4½ feet wide. Figure 43a is in red, white, and black, occupying a space 6 feet × 3½ feet; b and c, in red (size not given).”

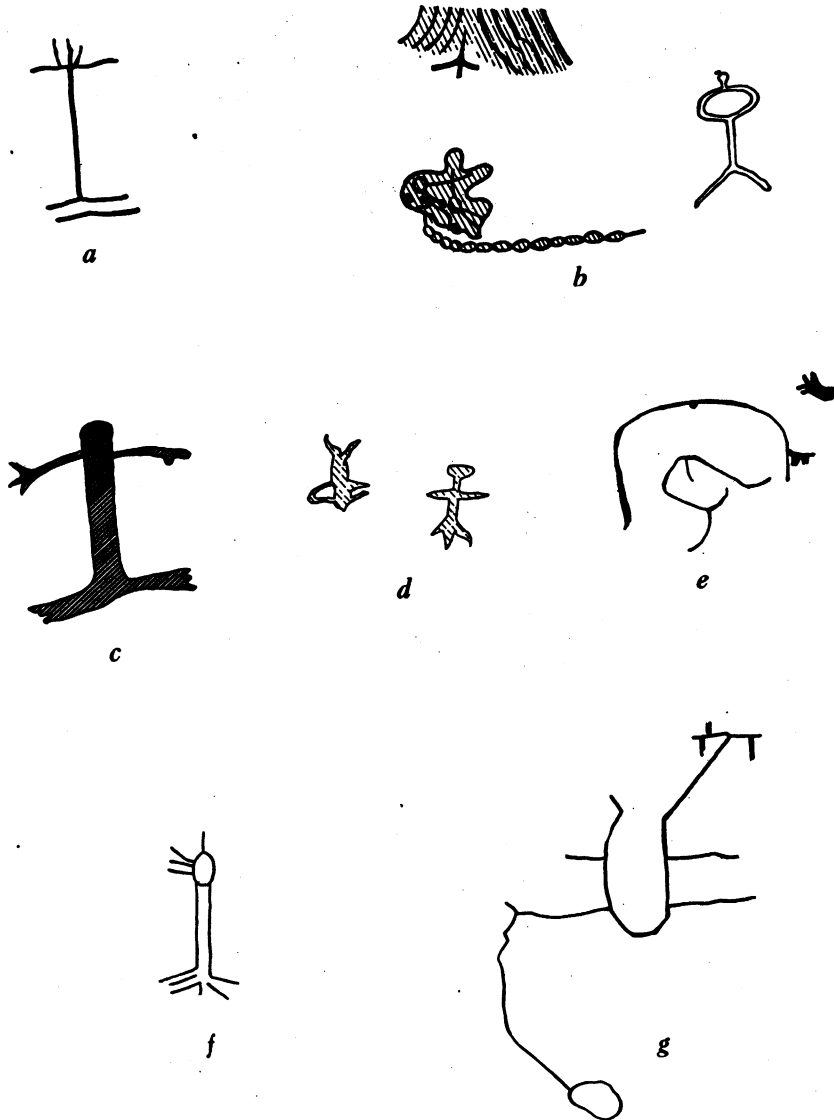


Fig. 41. Pictographs from near Lindsay, site 108, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

These pictographs are typical of the pictographic art of the western foothills of the southern Sierra Nevada. Most of the designs appear to be zoomorphic but very sketchily drawn with a resulting loss of detailed form. The concentric ovals, figure 42, are suggestive of the Santa Barbara art.

109 PC. ECHO COVE, TULARE COUNTY.—These pictographs are in a cave in Echo cove, which is on the Kaweah river above Exeter (Associated Fruit Grower, August 1921). The site is on the Captain R. Thew ranch. Figure 44 shows a number of the pictographs from this group. The human or animal figures shown in *a*, *b*, and *c* are closely similar to those at the Tule reservation at Lindsay and at Nordhoff. Concentric circles, resembling a target appear above *b*. *d* is a figure more or less in the nature of two rake designs surrounded by a white band, while *e* shows a group of white dots arranged in rows.

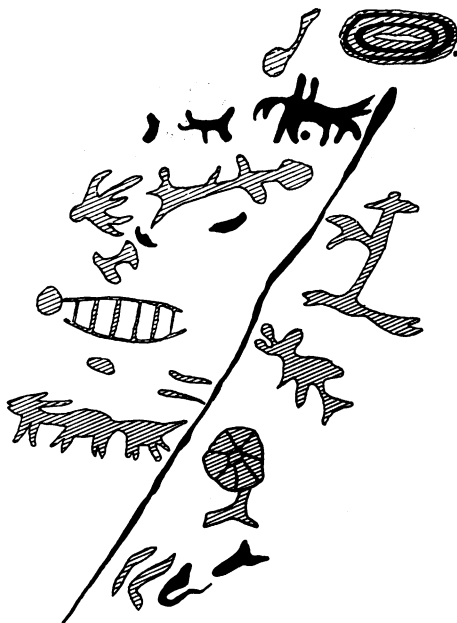


Fig. 42. Pictographs from near Lindsay, site 108, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

110 PC. WHITE RIVER, TULARE COUNTY.—For the excellent and accurate copies of pictographs illustrated in figures 45 and 46 we are indebted to the kindness of Colonel George W. Stewart, Sacramento, California, who also furnished the following information concerning them: Figure 45*a*, *b* are “pictographs in red, yellow, black and white, from underside of projecting cave-like rock, near White river, Tulare county, California. Copied by C. P. Wilcomb. The size of the rock and the space occupied by the pictures are not given. The sketches in figure 46 are copies of pictographs made by C. P. Wilcomb about 1890, six miles southeast of White river, Tulare county, and probably in Kern county. Figure 46*a* is taken from the west wall in a cave-like space in a mass of granite. The upper and two lower figures were in yellow and the others in red. *e* was evidently from another part of the same wall; the large figure on the right was black with a red border and space about the eyes in red; the other characters were in red paint. *c*, *d*, these figures in red paint were taken from a large boulder at the head of a valley on the Woody ranch in the locality above mentioned. *b*, is a single red painting on one wall of the cave first mentioned.”

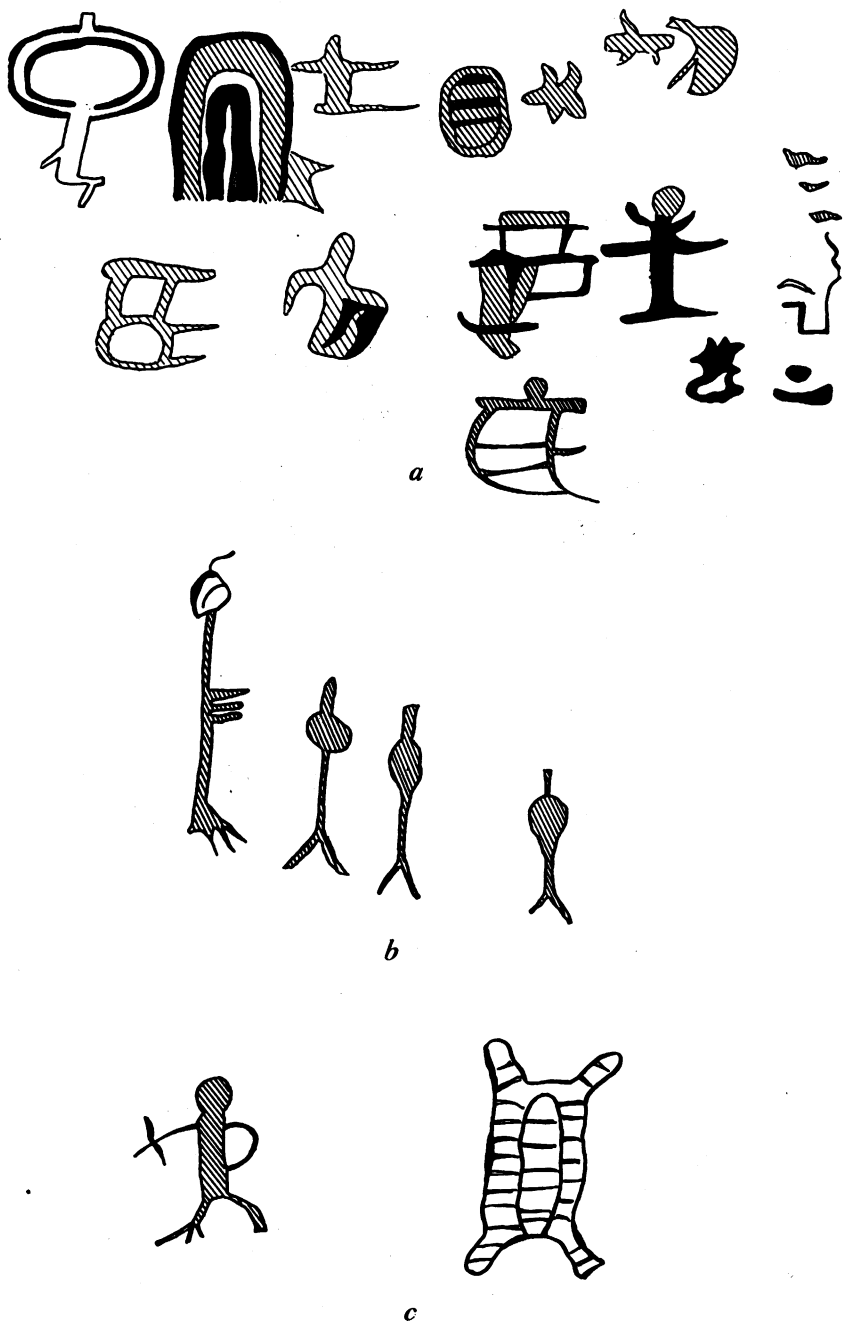


Fig. 43. Pictographs from near Lindsay, site 108, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

These pictographs are mainly human and zoomorphic. Several strange human representations are shown in figure 46e, a. In figure 45 are several animals, probably the beaver, bear (a), lizard (a and b), and three human figures in b. A centipede is clearly portrayed in a. The curious eight-legged creatures in figure 46a are similar to ones found to the south—Mutau flat, Santa Barbara county (site 87, fig. 32)—and at Carriso rock (site 93, pl. 53b). A sun disk and concentric circles also occur (fig. 46).

111 PC. WOODLAKE, TULARE COUNTY.—At cement bridge where the Woodlake-Lenore highway crosses the Kaweah river. The rock is practically blasted away. All but the main designs are badly obliterated, several being mere

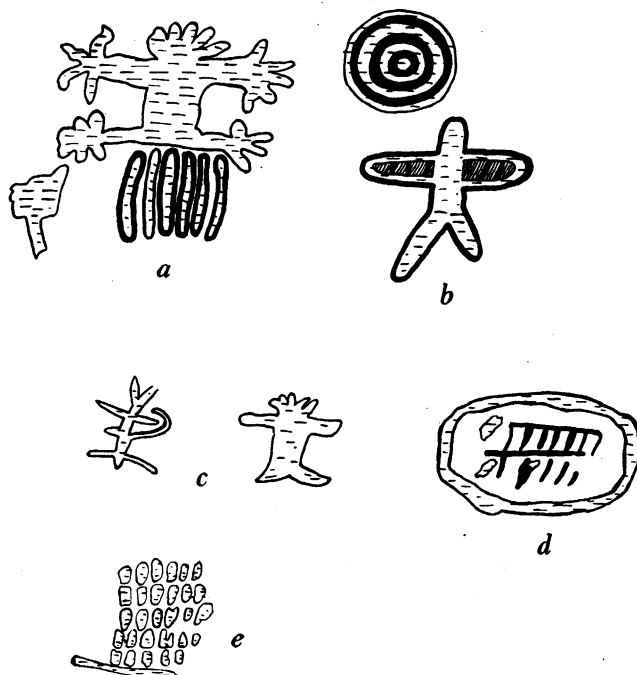


Fig. 44. Pictographs from Echo cove, site 109, Tulare region.

smudges. The pictographs are in red. The paint is on the top of a kind of black incrustation. The rock is some sort of creamy substance (probably talc?) and not the ubiquitous granite.

112 PC. "HOSPITAL ROCK," TULARE COUNTY.—"On the south side of the rock there is a smooth perpendicular surface, 20 feet by 30 feet, where the boulder split in twain. . . . This expanse of smooth rock is covered by hieroglyphics and picture paintings, dark red in color. . . . Latter day Indians claim that they were made before their time and that they cannot interpret them; nor do they even know the ingredients and material used for painting" (Walter Fry. From Hospital Rock in the Sequoia National Park, Sequoia Guide Service, Historical Series).

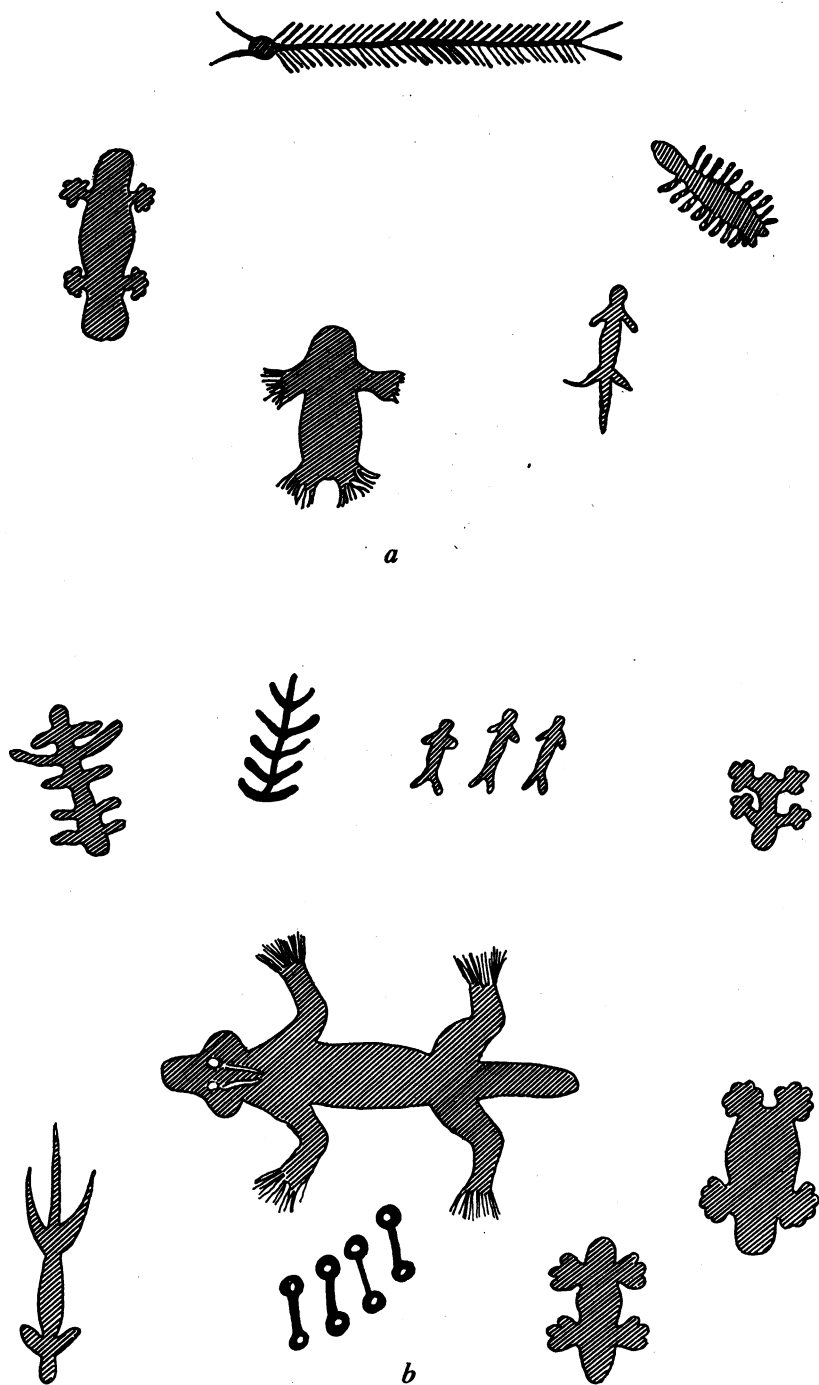


Fig. 45. Petroglyphs from White river, site 110, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

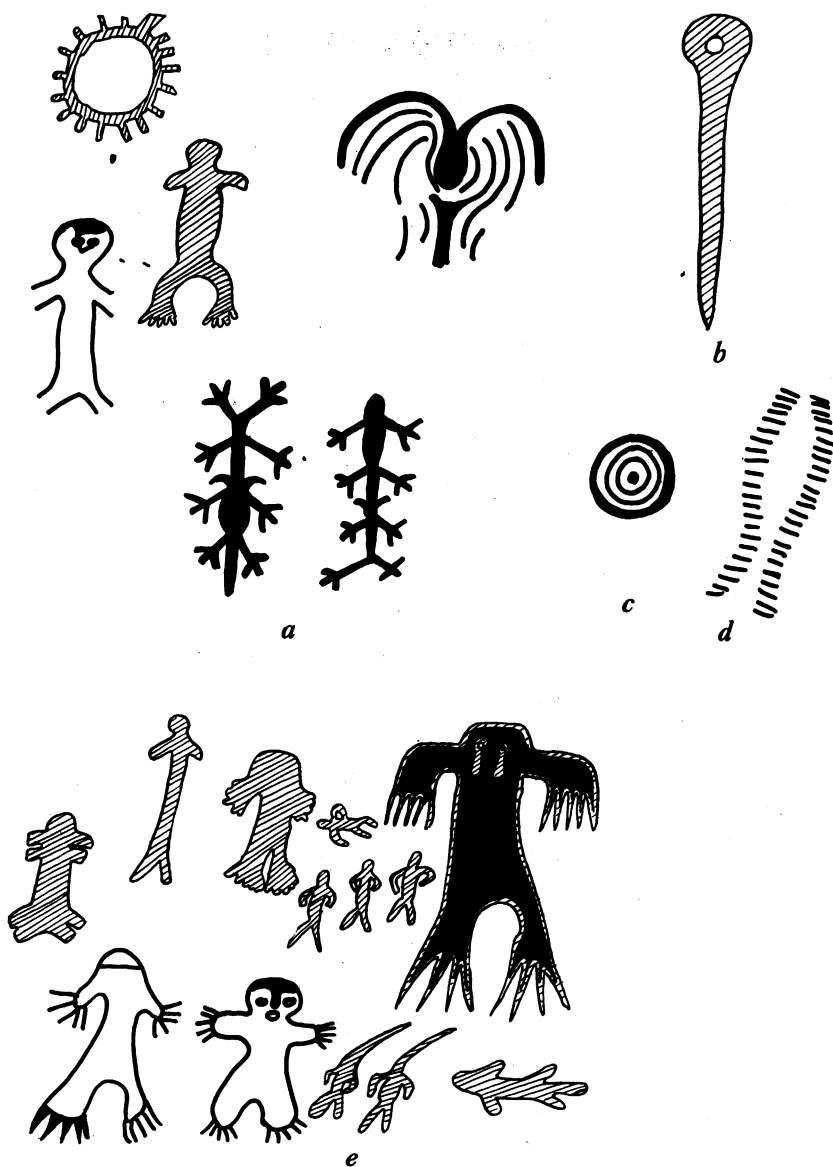


Fig. 46. Pictographs from White river, site 110, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

An excellent photograph of this group supplied by Mr. Eddy, of Giant Forest, shows herringbones, stars, sun disks, wavy lines, and crude human figures (pl. 56a). These paintings are in a dark red.

Other pictographs are stated by Mr. Fry to occur along the bluff of the Kaweah river about one mile north of Lemon cove. These are done in black (Walter S. Fry, United States Sequoia National Park, letter of January 20, 1927).

113 PC. ROCKY HILL, TULARE COUNTY.—For the sketches of pictographs from this site and for the following information we are indebted to Colonel George W. Stewart of Sacramento: "Figure 47 is a pictograph on a large granite surface, facing west, exposed to the elements, and when copied about 25 years ago was quite distinct. It is situated on Rocky hill, a short distance east of Exeter, Tulare county. Copied by G. W. Stewart."

This group, in either black or red, is entirely naturalistic. Toward the left is evidently a man with a flaring headdress (compare with site 109, fig. 44) on horseback. The next figure to the right is not unlike the steatophygous bushman paintings in South Africa. Other human figures toward the right tend to become more or less conventionalized. The animal on the extreme left is unidentifiable. In the middle is one in outline, suggesting a kangaroo, while the five round-bellied animals below it are probably horned toads.

114 PC. KAWEAH CANYON, TULARE COUNTY.—These pictures are on the roof of a cave in the Kaweah River canyon (Associated Fruit Grower, August 1921). Sketches from a photograph are shown in figure 48. This group includes a large



Fig. 47. Pictographs from Rocky hill, site 113, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

number of animal-like figures closely similar to those at Echo cove, site 109 Pc, Tule Indian reservation, site 106 Pc, and at Mutau flat, site 87 Pc. In the upper right-hand corner of the photograph appear a number of incomplete concentric rings. At the left is a long white line, running vertically, crossed by short horizontal lines. At the bottom of the group are several more or less rectilinear figures and several human representations.

For the sketches reproduced in figures 49 and 50 we are indebted to the kindness of Colonel George W. Stewart, Sacramento, who has also furnished the following information concerning them: Figure 49 shows "pictographs from underside of sloping rock, Potwisha, on the middle fork of the Kaweah river, Tulare county, California. A part of the underslope had scaled off to a depth of about three inches leaving below a portion, culminating at a point, which was occupied by the top of the painting. Parts of the figures were slightly incised and rubbed smooth before painting. The colors were red, white, black, and yellow and the figures appeared to have been made at different times. One large figure near the bottom was painted over others. The paintings were copied by George W. Stewart, Miss Gretchen Flower, and Miss Eleanor Butterfield. The main part of the pictograph occupied a surface of 8 feet 8 inches from the top to the bottom, 4 feet 7 inches across with a section below to the right, 4 feet 2 inches from top to bottom, 16 inches across. Figure 50 shows

pictographs in solid red, a number of which were indistinct, on north side of Kaweah river, Tulare county, California. The pictograph occupied a space  $4\frac{1}{2}$  feet by 3 feet. Copied by Miss Flower. Near Lemon cove.''

Figure 49 is a curious group which scarcely admits of description. The style, however, is definitely that found elsewhere in Tulare county, and the many-legged creatures have their parallels elsewhere. An exceptional figure, however, is what appears to be a flower with several pairs of long oblanceolate leaves on the stalk below in the middle right of figure 49. A quadruped, perhaps a dog, is in figure 50.

Rock paintings are also present on the Kaweah river, near power house 5 of the Mount Whitney Power Company, 200 yards from the junction of the Marble and Middle forks of the Kaweah river (S. C. Bequette).

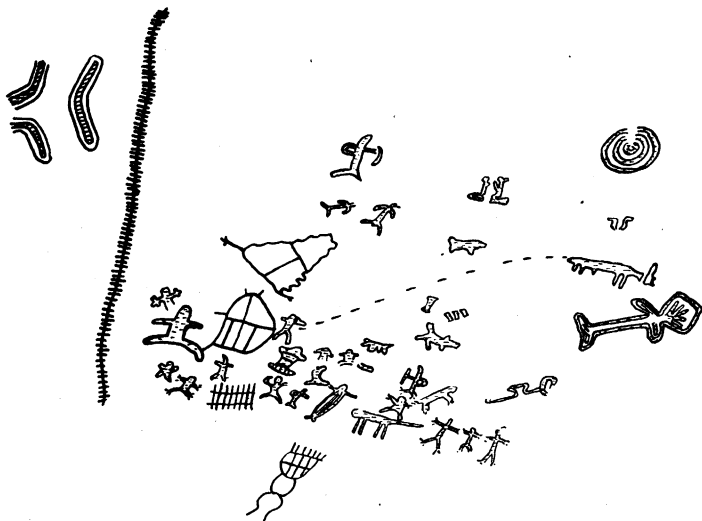


Fig. 48. Pictographs from Kaweah canyon, site 114, Tulare region.  
(Drawing from photograph)

115 PC. DRUM VALLEY, TULARE COUNTY.—Pictographs on boulders of rock pile. Drawings ten to fifteen feet above the ground but easily accessible, and prominently placed (Anna H. Gayton, University of California, field notes).

The pictographs from Drum valley, executed for the most part in red, appear in figures 51 and 52. Figure 51a is apparently a much weathered human figure. The design in figures 51b, c and 52 appear to be highly conventionalized arms and legs worked in with even more highly conventionalized bodies. If these figures are developed from a basically Santa Barbara type, they have drifted rather far in design and style. The design in figure d however is very similar to many of the "chains" found in the center of development of the Santa Barbara type.

116 PC PT. ORANGE COVE, FRESNO COUNTY.—"Pictographs may be found near springs or water courses, all along the western foothills of the Sierra Nevadas, and extending up to an elevation of 5000 feet. . . . The rocks on which they are found are mostly hornblende granite of varying texture and composition, on which has depended much of the decomposition and destruction of the pictures." The pictures shown in figure 53 are from near Orange cove, near





Fig. 49. Pictographs from the Kaweah river, site 114, Tulare region.

(Drawings by courtesy of Mr. George Stewart)

Reedley, Fresno county. Those in figure 53*d, e* "have been carved into the rock and then painted," while *a-c* have been simply painted. "There were more of those carved figures on this rock but most have been overgrown with moss and lichens." "This is the only place where I found incised characters. But other places have been reported to me" (E. D. Fitzsimmons, Reedley, California, letter of March 10, 1924).

The human-like figure in figure 53*a* is striking in the possession of three pairs of arms and in the fingers projecting from the knee. Other human figures appear in *b* and *c*, all in red and highly suggestive of the small human figures

found at Carriso rock and frequently in the southwest. The oblong figure in *a* is outlined with white. The geometrical designs in *b* and *c* are of especial interest in that while they are painted in red, the use of circles and straight lines is stylistically more like the Great Basin petroglyphs than the Santa Barbara pictographs. Petroglyphs however do occur at this site, which is one of the few in this region where petroglyphs may be found, as shown in figure 43. The series of circles on a straight line, however, occurs also in southern California.

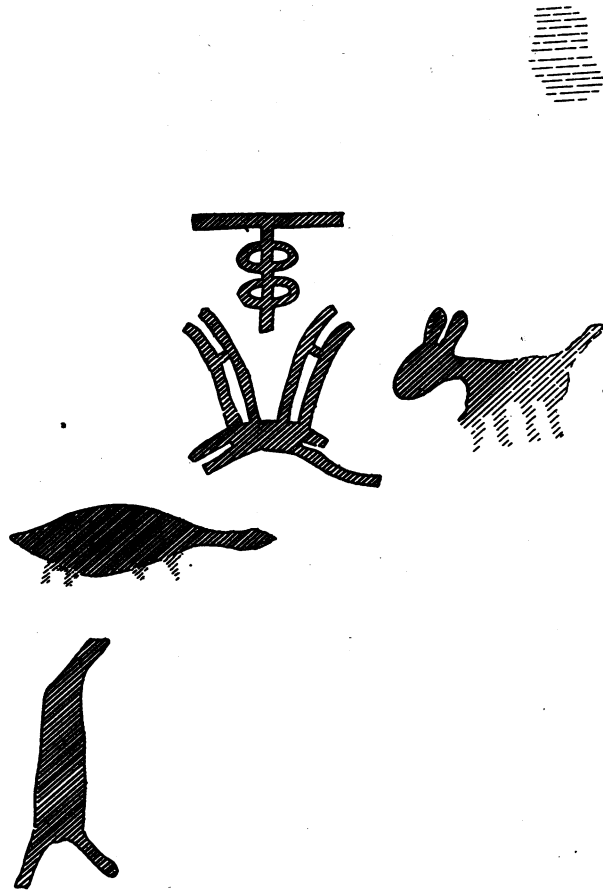


Fig. 50. Pictographs from the Kaweah river, site 114, Tulare region.

(Drawings by courtesy of Mr. George Stewart)

The designs in figure 53*d* and *e* are distinctly curvilinear. The circle is commonly used, and the arrangement of circles on branching lines is similar to those figures which have been painted without carving. A crossed circle also occurs as well as groups of short, parallel lines.

Another group of pictographs from the vicinity of Orange Cove is shown in figures 54 and 55. This group, examined by the author, is located about three miles from the town of Orange Cove and is where the paved highway passes through the "Gap." Approximately three hundred yards south of the

residence of Mr. C. Way a dirt road branches eastward from the highway and crosses the railroad track to run along the base of a low range of hills. About two hundred yards from the railroad where the dirt road meets the hills is a large granite outcrop on the northern face of which are carved the spoked wheel and circle shown in figure 55*a*. These are in dull red, and have badly weathered. Bedrock mortars associated with the pictographs indicate a former camp site. Jimsonweed is abundant in the locality.

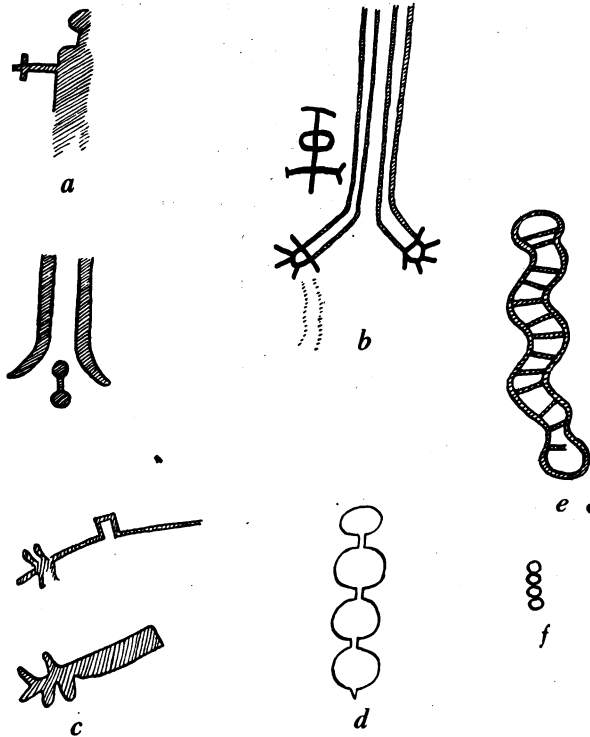


Fig. 51. Pictographs from Drum valley, site 115, Tulare region.  
(Drawings by Dr. A. H. Gayton, University of California)

A quarter of a mile from the railroad on the same road is another large granite boulder which is immediately to the north of the road. On the northern face of this is painted in red the monster shown in figure 55*b*. This creature is about three feet in height. Below it is a level pavement of granite with nine large and deep mortar holes. Several of these show unmistakable traces of red paint. Just below figure *b* on the boulder, figure *d* in faded red appeared. This is clearly a human being. *e* was on the same level with *b*, about fifteen feet from the ground and difficult of access. It is approximately three and a half feet in height. The older figures are in black and seem to represent several lizards, a round-bellied lizard or horned toad (compare with site 113, fig. 47) and a double "fence." The formless daubs of red were superimposed upon the black.

Figure 54*a* shows a "fence" design in red, painted over a daub of black. Figure 54*b* is on a third boulder, some fifty yards below the last. It is in dull

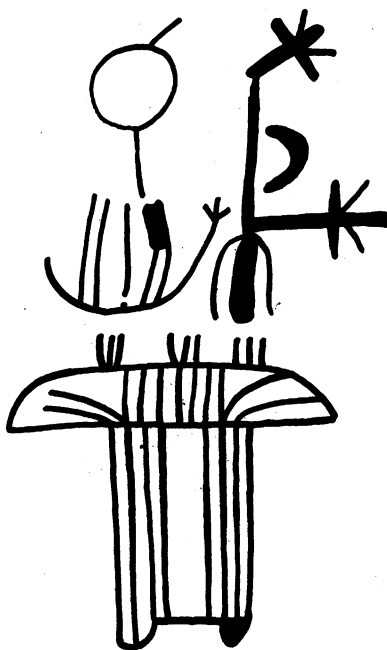


Fig. 52. Pictographs from Drum valley, site 115, Tulare region.  
(Drawings by Dr. A. H. Gayton, University of California)

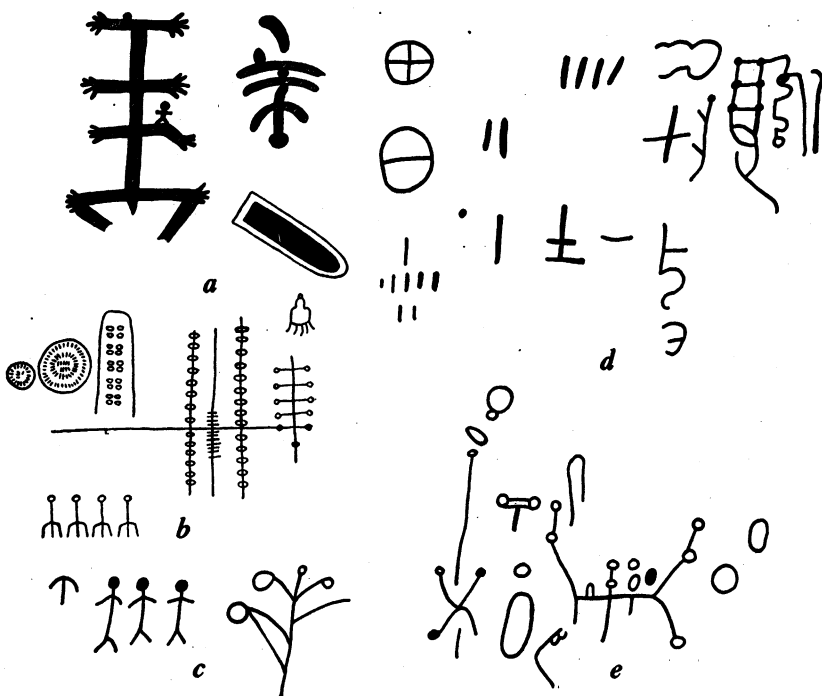


Fig. 53. a, b, c, pictographs from Orange cove, site 116, Tulare region;  
d, e, painted petroglyphs from the same.

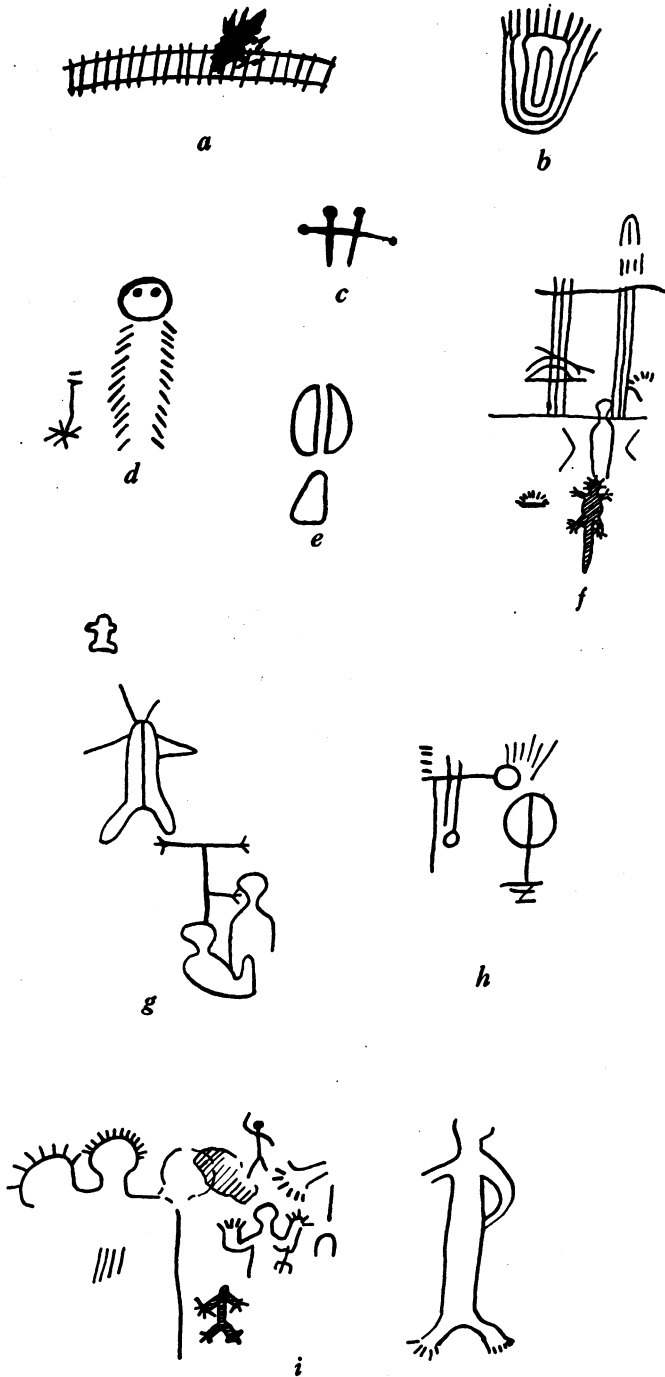


Fig. 54. Pictographs from near Orange cove, site 116, Tulare region.  
(Several natural groups)

red and is about one and a half feet in height. The remaining designs in figure 54 are on a boulder adjoining the road on the south and about fifty yards west of the last. *d* and *e* are in dim red and about two feet in height. Those in *f* are also in red, and the group as a whole is about seven feet in height. Most of the coloring is dim except for the half sun disk and the lizard with lines radiating from its head which stood out in comparatively bright color. The middle figure in *g*, which resembles the "bear pelts" observed elsewhere in Tulare county, was in clear red while the others in *g* and *h* were in dim red. Those

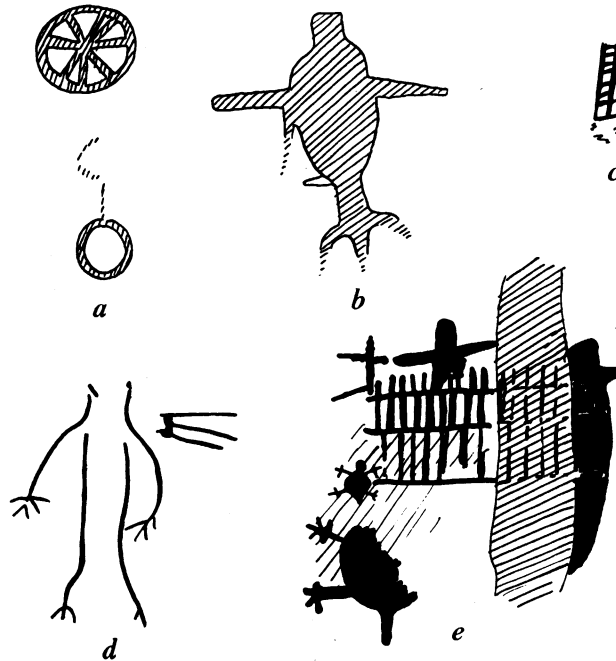


Fig. 55. Pictographs from near Orange Cove, site 116, Tulare region.  
(Several natural groups)

human representations in *i* were also in dull red, parts of the pictures having been obliterated by weathering. The large figure on the right was four feet in height.

The granite on which most of these designs are executed is covered with a thin patina of some mineral deposit which has leached out from the rock. It is probable that the obscuring of many of the pictographs is due rather to their being covered with this patina than to weathering. In some cases the paint appears more clear when the patina is scraped off and the brightest pictographs are found where the patina is lacking.

117 PC. SQUAW VALLEY, FRESNO COUNTY.—“Paintings are not uncommon up and down the whole range of granite hills fringing the Sierras. . . .” Also, “some paintings on huge boulders on the Grant’s Park highway at the entrance of Squaw valley, about 25 miles east of Fresno. People at Dunlap, an Indian settlement, told me that paintings were to be found there and that the oldest Indians did not know their history or meaning” (Roy E. Miller, Associated Grower, Fresno, California, letter of August 24, 1921).

118 Pc. OROSI, TULARE COUNTY.—There are several pictograph sites in the vicinity of Orosi. Colonel George W. Stewart has kindly furnished us with the excellent sketches reproduced in figures 56 to 63, and has supplied the following descriptions: Figure 56 is a "pictograph in red paint, parts indistinct, copied from a vertical rock near Mud Springs gap, about 8 miles northeast of Orosi, Tulare county, California. The principal figures occupied 3 feet from top to bottom, 1½ feet in width, with indistinct figures about 4 feet to the right. Copied by George W. Stewart." These sketchy beings are undoubtedly human and are of one of the several styles employed in Tulare county to represent the human.

Figures 57-59 "were copied from pictographs on a lone butte about six miles east of Orosi, Tulare county." Figure 57a is "from the east wall of a cave-like structure about 20 feet long. Pictographs in red, copied by Miss

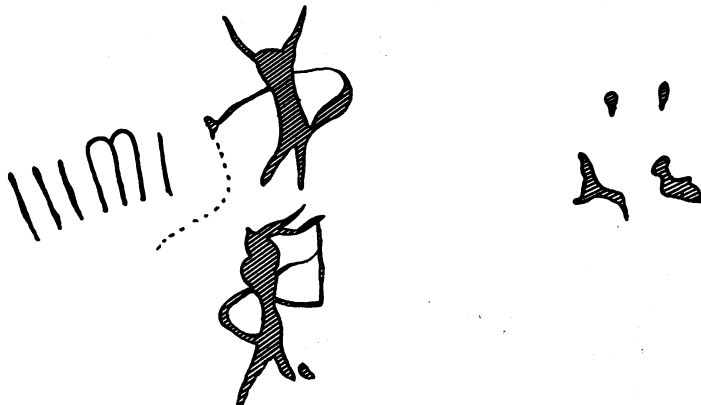


Fig. 56. Pictographs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

Eleanor Butterfield, with three incised figures above to the right, copied by George W. Stewart." Figure 57b is "pictographs in red on a perpendicular flat surface, copied by George W. Stewart. The figure to the left was 3 feet in length, the straight line at the bottom 4½ feet long, and the sphere at the lower right-hand corner 6 inches in diameter."

Figure 58a is "pictographs mainly in red, with small part in black, on flat vertical surface, 12 feet from top to bottom and 16 feet wide. Copied by George W. Stewart." Figure 58b is "a long pictograph in yellow, and red, and others in red on a vertical flat surface. Copied by Miss Eleanor Butterfield." Figure 58c is a "pictograph in red paint on flat vertical surface (copied by Miss Eleanor Butterfield). The horizontal marks on the two inner rows were 32 in number and on the outer row 34, with those at the left somewhat indistinct." In figure 58d "the upper pictograph is in black and white, others indistinct in red. Copied by George W. Stewart."

Figure 59a is "pictographs in red, the one to the right 3 feet long, the panther or California lion to the left 2 feet long. Copied by George W. Stewart." Figure 59b is "copied from the flat, vertical surface on a rock 20 feet high and 18 feet wide. The pictographs in black and red, on portion of the surface 10 feet in height and 9 feet in width. Copied by Miss Gretchen Flower and George W. Stewart."

All of these copies of pictographs were reproduced in black by Miss Ruby Serrano from the original copies in colors."

The geometric figures, as at Orange cove, are mainly "fences" or series of parallel bars arranged vertically along one or more parallel straight lines (fig. 58a, c). Several spirals occur (fig. 57a b), in all of which the outer ends turn off abruptly at right angles to the spiral. The animal representations

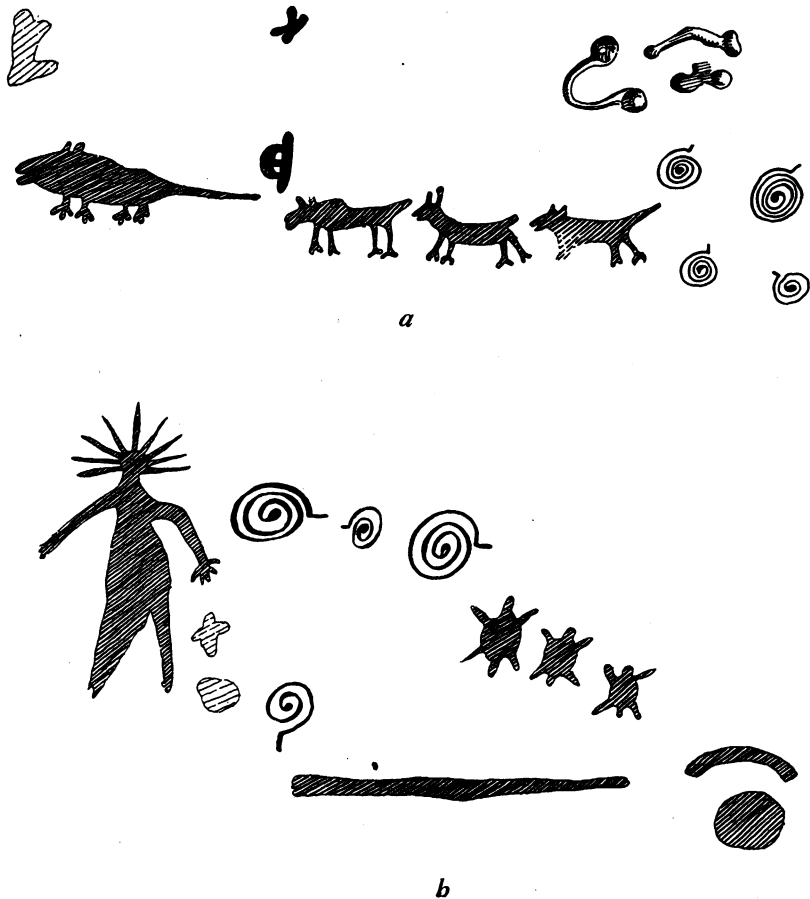


Fig. 57. Pictographs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

comprise a number of quadrupeds, probably either dogs or coyotes (figs. 57a, 59a). The round-bellied horned toad occurs in figure 57b and figure 59b. A small lizard-like animal is shown in figure 58a and figure 59b. A many-toed "bear track" is present in figure 58b. Human figures are varied. In figure 57b is one with a flamboyant nine-pointed headdress. Figure 58 has another with apparently a feathered headdress which runs down the back like a Plains Indian war-bonnet. Below this is what appears to be a human body with excessively thin arms and legs supporting a long swan-like neck and head. Again, in figure 59b are two different human beings, one with legs and arms stretched so as to form a cross and the other spread-eagle.



Figure 60 gives further sketches from the same locality as the preceding. Figure 60a is of "pictographs which occupy a space 6 feet high and 8 feet across. Some of the pictures were very distinct and others at the extreme right and extreme left quite faint. Drawn by George W. Stewart." Figure 60b "was merely a straight line about 5 feet from the ground, about 1 inch wide in red, painted along two faces of a large granite rock, 27 feet long from left to the extreme right where it turned downward about 2 feet to a large crack

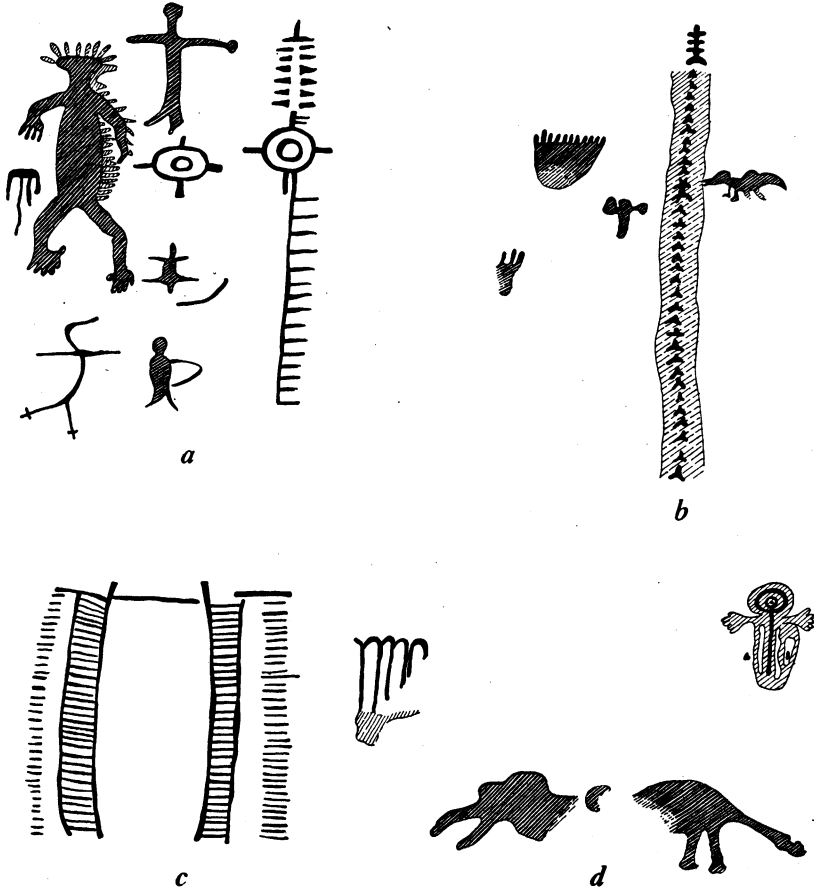


Fig. 58. Pictographs from near Orosi, site 118, Tulare region.

(Drawings by courtesy of Mr. George Stewart)

in the rock where there was an indistinguishable figure in red paint. There were two figures above the line, the largest about  $1\frac{1}{2}$  feet in length. Drawn by George W. Stewart." Figure 60c is of "two figures which occupied a space near the top of a flat surface of a large granite rock, the largest figure about 18 inches in length. Drawn by George W. Stewart." Figure 60d is of "three figures 5 to 7 inches in length, . . . on the surface of a large granite rock. Drawn by George W. Stewart." Figure 60e is of "three figures which appear to be incomplete or were indistinct. The one on the extreme right is 7 inches

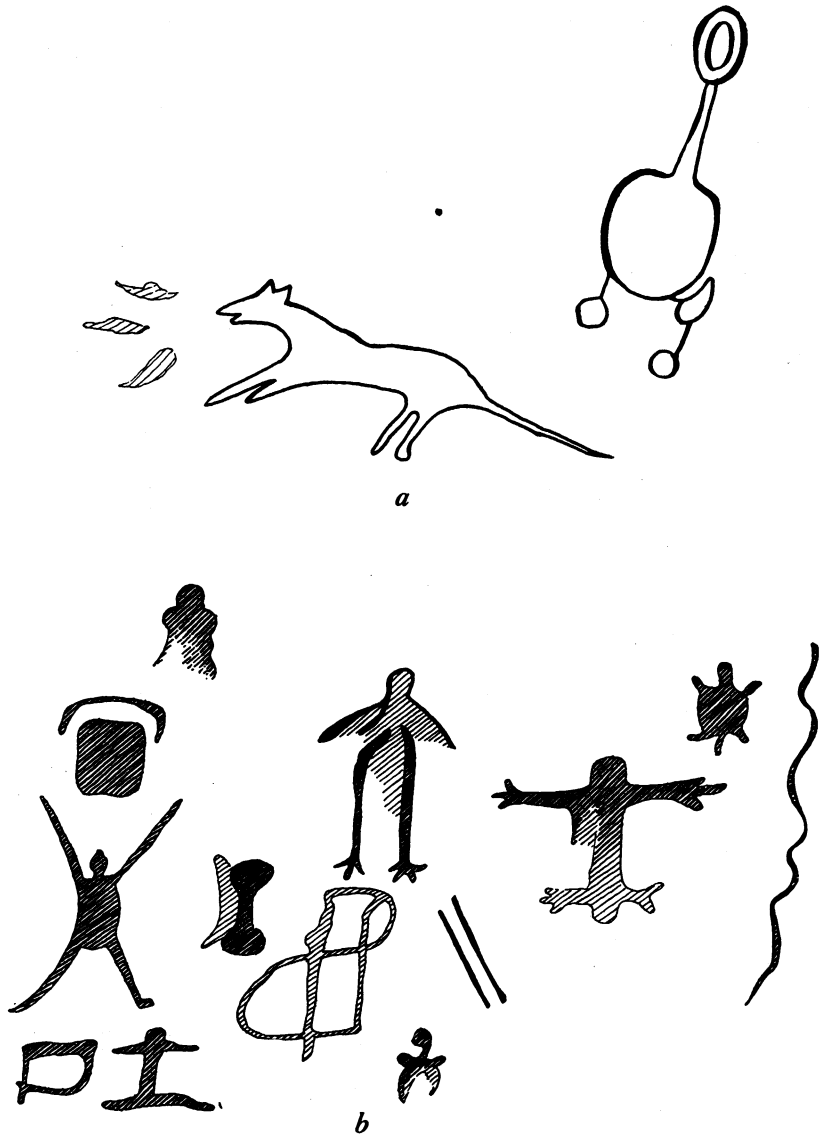


Fig. 59. Pictographs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

across and distinct. Drawn by George W. Stewart." Figure 60f "was all in red and quite distinct. The long line was crossed by 60 short ones; the character below had 34 horizontal lines. Drawn by George W. Stewart."

In this group the "fence" (fig. 60f) is the most distinctive geometric element. Human figures are similar to several already described (figs. 57-59). The animals however, with the exception of the round-bellied horned toad or

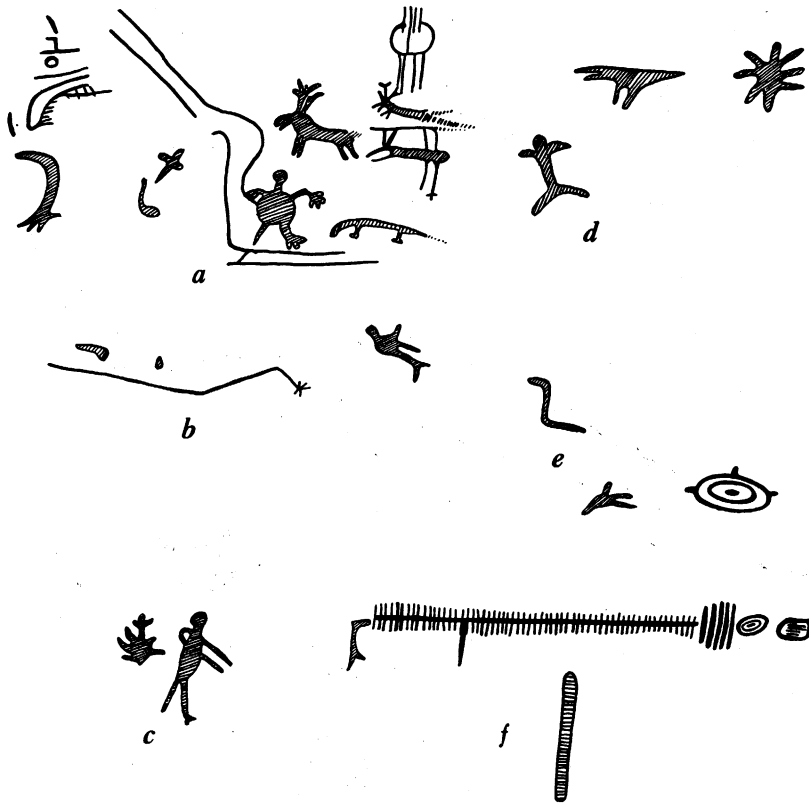


Fig. 60. Pictographs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)



Fig. 61. Painted petroglyphs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

turtle, are unique. This is the only site in Tulare county where the elk (possibly deer) is portrayed (fig. 60a). There are several amoeba-like daubs which are common in Tulare county.

Figure 61 "is on an outcropping of exceedingly hard granite and on a flat surface facing the east, and is a combined petroglyph and pictograph. The main portion is incised, the cups being  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches deep and the connecting lines usually about  $\frac{1}{2}$  inch deep. The largest cups, about 3 inches in diameter and the lines 1 to  $1\frac{1}{2}$  inches across had been rubbed smooth and many of them had

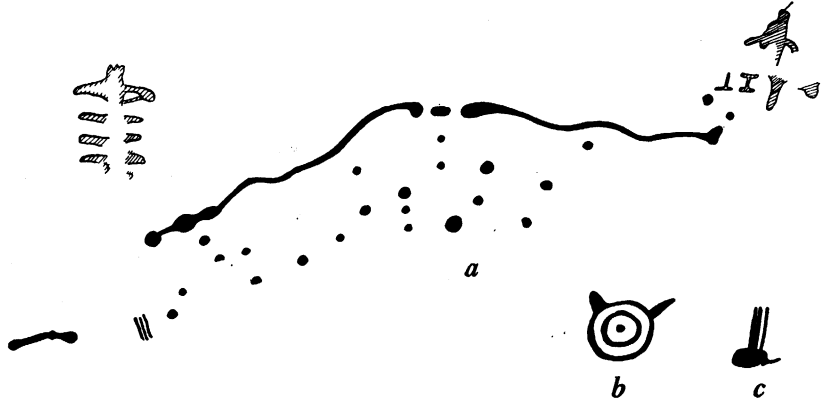


Fig. 62. Petroglyphs from near Orosi, site 118, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

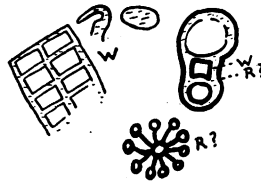


Fig. 63. Pictographs from near Fountain springs, site 119, Tulare region.

been colored with red paint. A number of the cups were painted red, others had red circles around them, and the large V-shaped incised character to the right had a number of cross lines in red paint. Above this figure and to the extreme right were a number of pictographs in red paint. Petroglyph was copied by Miss Eleanor Butterfield and Mr. George W. Stewart; pictographs by Miss Marguerite Roueche. On the same granite rock three or four feet to the right and not shown here were a few other cups, deeply cut into the granite and a number of them colored red. The petroglyph occupied a space about 5 feet high and 11 feet wide. The pictographs in the upper right hand portion occupied a space 16 inches long and those to the right occupied a space three feet across and the same in height. Miss Ruby Serrano, after the figures were copied, traced over the incised portion, the red markings, but it is impossible to show in a copy in black what portion was incised and what part of the original was done with red paint. Miss Serrano also redrew in black all of the original copies in red, and her drawings are the ones reproduced here."

These petroglyphs stand out as rather unique in an area devoted almost exclusively to pictographs. Large dots (cups in this case) connected by straight lines in various arrangements is, however, a common element in Owens valley, to the east of this site (compare pl. 29*d*, Fish springs, site 39 Pt, and Little lake, pl. 39*a*, site 48 Pt, also fig. 19*b*).

Figure 62*a* is of pictographs and petroglyphs "on a large boulder which had evidently been split vertically at one time and fallen apart. It is from the opposite portion from that of figure 61. The long line about 6 feet in length and the round dots below are incised and were rubbed entirely smooth. The cups are from 1½ to 3 inches in diameter. In the upper right hand and left hand corners are indistinct figures in red paint. The rock is about 12 feet high. Drawing made by G. W. Stewart." Figure 62*c* is "on the back part of



Fig. 64. Pictographs from Visalia, site 102, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

the boulder referred to and near the top is a small figure in red paint. Drawing made by G. W. Stewart." Figure 62*b* is "on a granite face about 12 feet in height and 16 feet in width, located in a cave near the top of the same hill. A circle 4 inches in diameter with a small inside circle and red center appear with no other characters. Drawing made by G. W. Stewart."

119 PC. FOUNTAIN SPRINGS, TULARE COUNTY.—This site is in the foothills of the Sierra Nevadas, east of Lindsay (photographs from Mr. C. D. Paine, Porterville, California, letter of March 8, 1927). Copies of these are shown in figure 63 and plate 55*a-c*. The Santa Barbara and southern Sierra Nevada style of outlining figures of one color in some other color is evident. Plate 55*a* shows a large number of red(?) dots outlined in white or yellow which are grouped about a long, sinuous line of white or yellow outlined with red or black. Plate 55*c* has large central figure which may be the head and arms of some creature. Above this and to the left is a sun disk. Plate 55*b* shows a human(?) figure in white (or yellow) outlined by some dark color. Extending from the head are two long curved "horns," each doubly outlined, first in a light color and out-

side of this a dark color. Figure 63 shows an interesting variation of the sun-disk design in having a small loop at the end of each of the rays. This appears to be done in red.

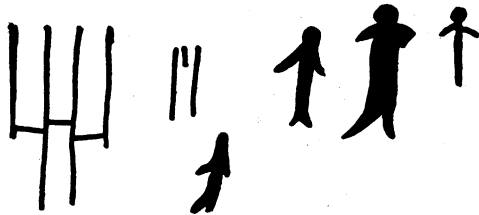


Fig. 65. Pictographs from near Lemnecove, site 122, Tulare region.  
(Drawings by courtesy of Mr. George Stewart)

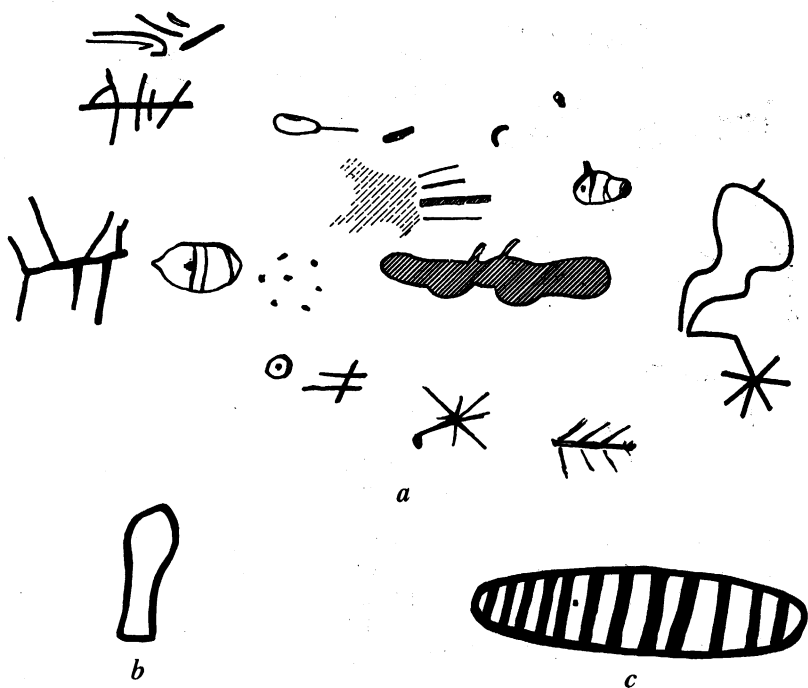


Fig. 66. Pictographs from Tulare region, site 122 Pc.  
(Drawings by courtesy of Mr. George Stewart)

Colonel George W. Stewart, in a letter of October 6, 1927, comments on the pictographs in plate 55a as follows: "The white portion of a long curved figure and smaller ones and numerous circles, were not in solid lines as if done with a brush but were formed by rows of small round dots placed closely together. The red interiors of the circles and the dim red lines next to the white in the large figure are shown by a magnifying glass to have been made in the same manner."

120 PC. KINGS RIVER, FRESNO COUNTY.—A painted rock occurs on the middle fork of the Kings river, about six miles above its junction with the south fork, and about a mile below Tehipite valley. The rock is painted with figures of snakes, birds, and other animals (Miss Anna H. Gayton, field notes).

Miss Gayton informs us that the painted rocks which are so common in the southern Sierra Nevada are believed by the Yokuts living in the region to be the caches of medicine men or doctors. The doctors, who were very wealthy, buried their money at the base of these rocks upon which they placed their

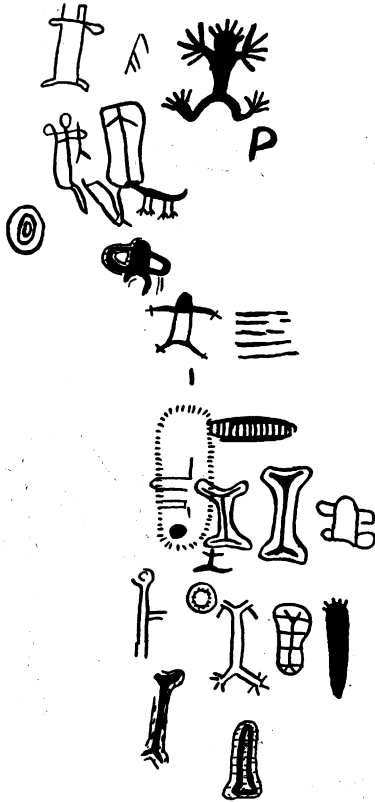


Fig. 67. Pictographs from Tulare county, California.

“signs.” These signs were in the form of animal or other figures by which they were known (not guardian spirits or helpers) and several doctors might use the same rock.

The above mentioned rock on the middle fork of the Kings river, however, figures in the mythology of the Western Mono according to the following excerpt from one of their stories recorded by Miss Gayton:

“Quina then went to Etipu, a straight rock on the north side of Middle Fork. All his friends followed him. There were some fish down in the water and Quina sent Musigi down after them. The rattlesnake got them but was so exhausted that he collapsed right at the foot of the rock. His picture is now there on the rock. Then Quina sent others down, each getting a little farther

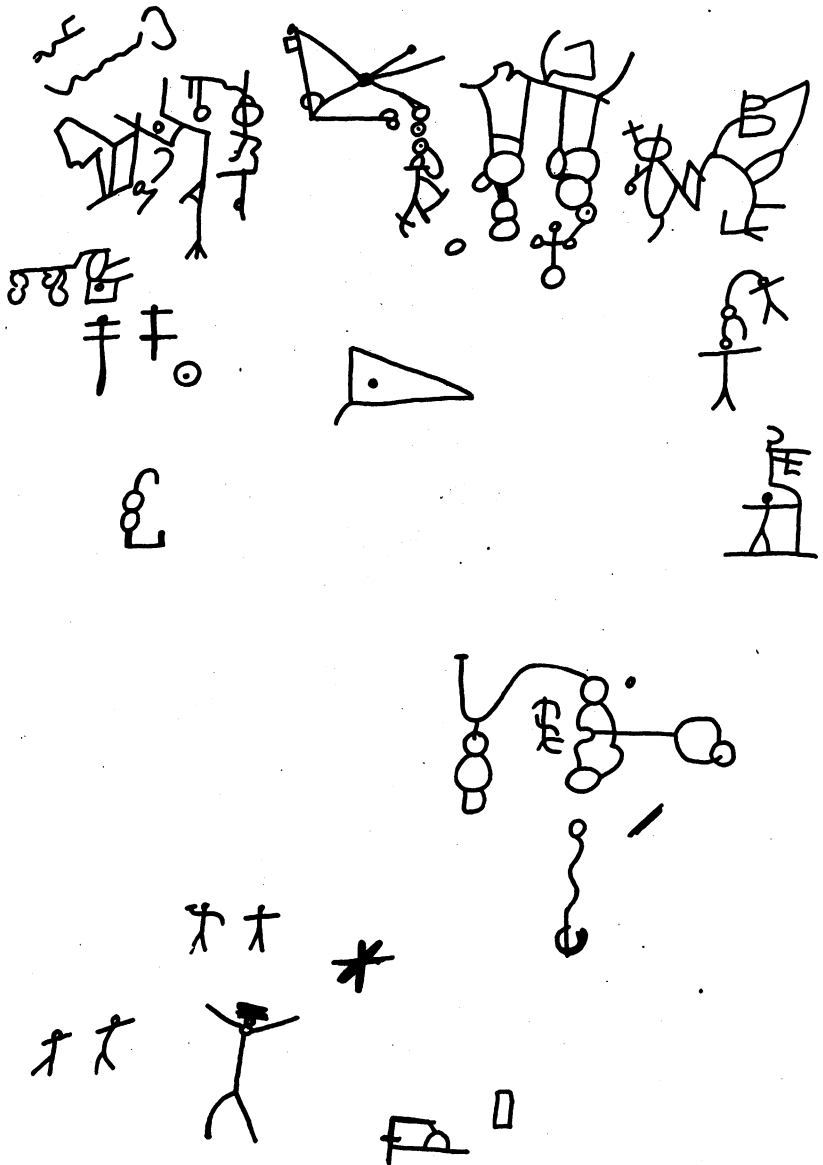


Fig. 68. Pictographs from Rock House canyon, site 123, southern California.

than the one before, but giving out at the point where their pictures are now on the rock. The creatures that went are the following and in order: King snake, Race Horse snake, Kingfisher (a spring came out where his picture is), Cooper crane, and then all the little larks, Pikidigi, Kowohuna, Moquiyana, Pachai, Tatatana, Meitu, Kini, Kwidawe, Tasobeni, Kutpadza, Quina, Sanaquina, and Wihotoihiji. Kini had a little hole to go into his home which was just like a window.



“Then Shabuj said he was going to be Quina and they would all fly off. The boys agreed but sent him down for some water. He got a big basket and went. Then they all flew off. Shabuj and Puk stay down here.

“At Etipu one can see rocks all around which by their form show the sex and animal character of all those who were there. The rock is flat on top and these ‘monuments’ are sitting all around.” (Informant cannot describe nature of the pictures.)

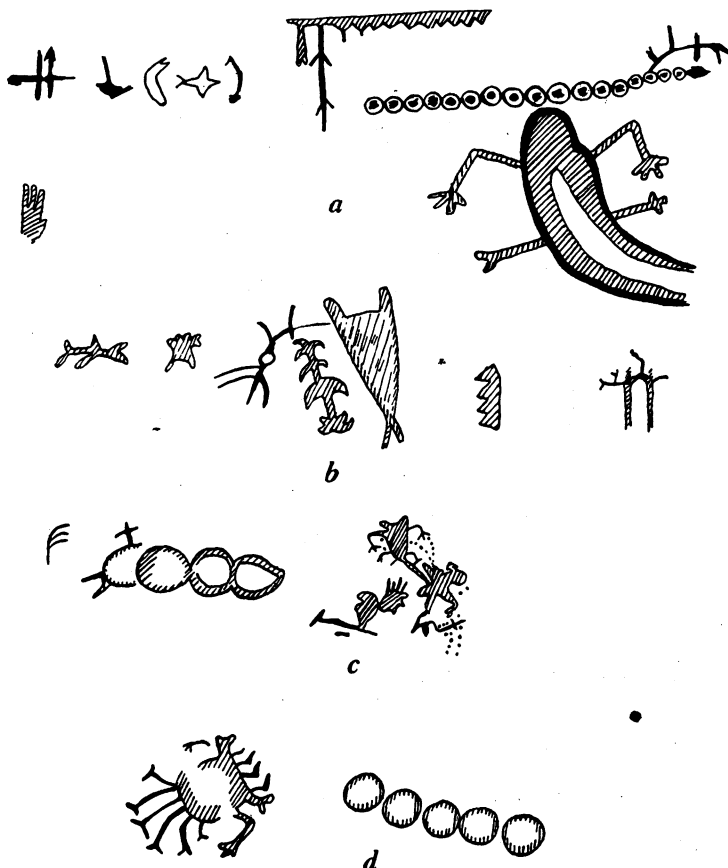


Fig. 69. Pictographs from San Marcos pass, site 85, Santa Barbara region. All in red except for outline of large figure and centers of circles in a. (Drawings by courtesy of Mr. J. V. Frederick)

The inscription of these figures antedates the memory of all the living Indians. They are willing, however, to offer explanations. Whether their explanations are correct or are merely rationalizations cannot at present be determined.

121 P.C. FULLER'S MEADOW, MADERA COUNTY.—There is a painted rock in a cave in this locality. It is said to be the picture of an Indian's dream (information from a Western Mono to E. W. Gifford).

122 P.C. LEMON COVE, TULARE COUNTY.—Figure 65 was reproduced by Colonel George W. Stewart, Sacramento, California, who writes: “This pictograph is on

a cliff on the north fork of the Kaweah river, about 2½ miles above Lemon cove. The copy was made from a boat by G. W. Stewart." These ill-proportioned humans are in typical Tulare county style.

The pictographs in figure 66 are in Tulare county but cannot be more precisely located. They were supplied by Colonel Stewart, who writes: Figure 66a is a "pictograph copied several years ago by George W. Stewart at some point in Tulare county. Data concerning same not available at present." Figure 66b "is a single pictograph in red paint given me about 30 years ago and I have not

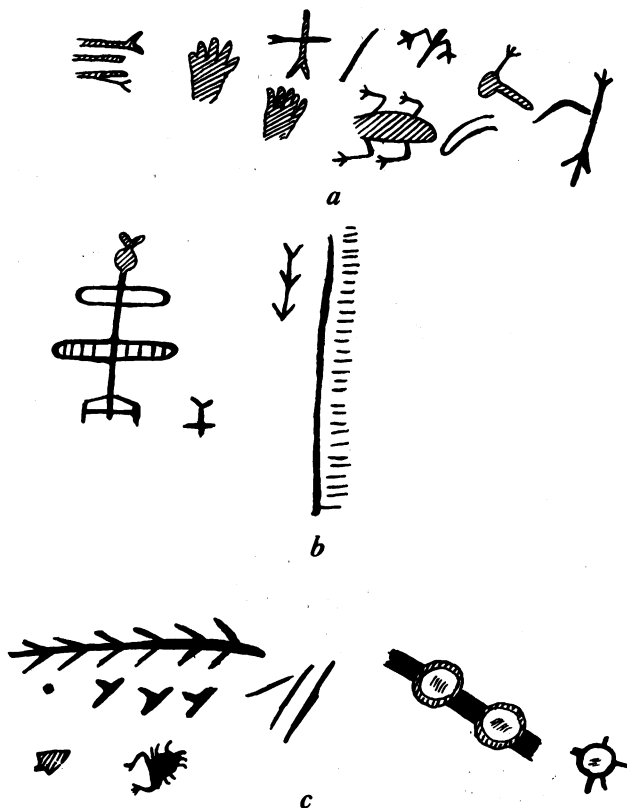


Fig. 70. Pictograph from San Marcos pass, site 85, Santa Barbara region.  
a and b entirely in red.

(Drawings by courtesy of Mr. J. V. Frederick)

available the notes showing in what part of Tulare county it is located." Figure 66c is a "pictograph in red paint about one foot in length, given to me by the late Stephen Barton, who was one of the earliest writers on the Yokuts Indians. It is from some place in Tulare county but I do not remember from what location or whether the character was in a horizontal or vertical position."

Figure 67 shows another group from Tulare county for which no data are available. These figures were copied from a photograph and are in their natural relation to one another. The whole group is probably twelve feet high. The zoomorphic figure at the top is interesting in the possession of radiating lines from the head and because of the vastly exaggerated fingers and toes. The

rectangular figure in the upper left-hand corner and that in the center, both of which are probably human, are comparable to one at Carriso rock, site 93 Pc (pl. 54a).

123 Pt. [See under Southern California.]

124 Pc. [See under Santa Barbara.]

125 Pc. STOKES VALLEY, TULARE COUNTY.—Mr. A. L. Dickey, of Dinuba, California, writes: "About 12 miles due east of Dinuba in Stokes valley there is a limited number of pictographs. About 18 miles southeast of Dinuba there is quite a large number and mostly well preserved" (letter of May 17, 1927).

126 Pc. [See under Santa Barbara.]

127 Pc. BAKERSFIELD, KERN COUNTY.—Mr. Arling Steinberger calls our attention to a pictograph in red in the hills to the northeast of Bakersfield and east of Famosa (letter of May 16, 1927).

128 Pt. [See under Southern California.]

129 Pc. [See under Santa Barbara.]

## NEVADA

### *Western Nevada—Sites 200-212*

200 Pt. STAR CANYON, NEVADA.—These petroglyphs occur on a vertical rock surface, about three hundred feet southeast of portal, Sheba tunnel, in Star canyon, Pershing county, Nevada. This is on the NE  $\frac{1}{4}$ , SW  $\frac{1}{4}$ , Sec. 32, T 31 N, R 34 E. The markings are one-half to three-quarters inches wide, about one-eighth inch deep, and very smooth and regular (John A. Runner and Paul S. Reid, Lovelock, Nevada). These figures are entirely curvilinear, the main design being the circle which occurs in various sizes and arrangements, although usually several circles are associated and connected by straight lines (fig. 71).

201 Pt. LOVELOCK, NEVADA.—Petroglyphs are reported from the vicinity of Lovelock, Nevada.

202 Pt. YERINGTON, NEVADA.—For the excellent photographs of petroglyphs from this site, which is in the vicinity of Yerington, Nevada, we are indebted to the kindness of Mr. Edward E. Clarke, editor of the San Francisco Sunday Examiner. Most of these are located on a large hill approximately thirty miles south of Yerington. They are covered with desert varnish and have the appearance of great antiquity (pls. 57-64).

The geometric figures in these petroglyphs are nearly all typical of the Great Basin style, which is predominantly one of curvilinear figures or circles grouped and connected by various arrangements of straight or curved lines. This is illustrated in plates 58*d*, 59*a*, *e*, *f*, 60*e*, 62*c*, 63*a*, and 64*a*, *c*. Wavy lines are not uncommon (pls. 57*f*, 59*f*, *g*). The chains of circles in plates 57*c*, 59*e*, and 63*a* recall similar ones from Washo county, Nevada, shown on plate 66*d*. Crossed and concentric circles, sun disks, and several spirals also occur. An interesting sun disk is shown in plate 61*d*. The stippled zigzags in plate 63*b* suggest petroglyphs from Connor's springs, Utah, site 230 Pt (pl. 80*d*). Many of these geometric designs have a degree of symmetry seldom encountered in petroglyphs, for example the upper figure of dots and lines in plate 59*g*, and another in plate 60*c*, and the circles in plate 59*e*. Dots occur both as parts of larger figures and in separate groups.

Attention should be called to the chain of triangles (pl. 62*a*) and to the concentric circles surrounded by points in plate 61*a*, both of which have parallels in the pictographic art of Santa Barbara county (see Carriso rock, site 93, pl. 53*b*, and Painted cave, site 83, pl. 50*b*).

The realistic art comprises several kinds of animals and a few human figures. Among quadrupeds are several which may be coyotes or more likely, dogs, for example, plates 57*f* and 58*d*. One excellent mountain sheep occurs. Plate 57*b* shows a ram in an unusual posture. The head is turned partly to the front view, showing the massive horns sweeping to each side of the head. The ears are also depicted, a feature rarely found in petrographic representations of this species. Plate 58*c* shows what is probably a full view of a mountain

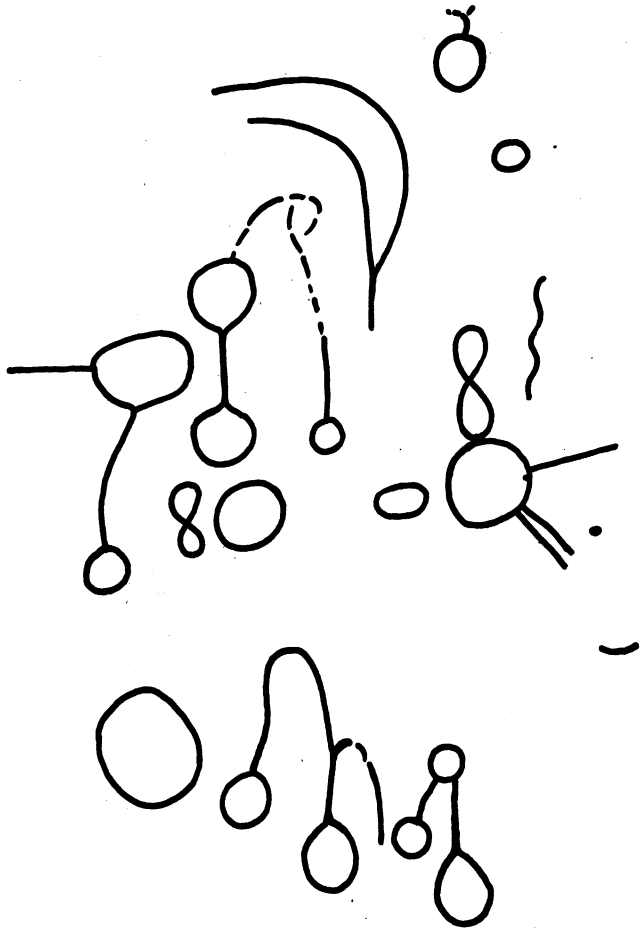


Fig. 71. Petroglyphs from Star canyon, site 200, western Nevada.

sheep head, and seemingly portrays the skull. The unchalked figure in plate 58*e* may also be a full view of a mountain sheep head. Plate 57*c* may depict a deer or elk. Plate 57*e* is probably a deer or elk as seen from above although it may be a horned toad, endowed by the native artist with excessive horns. Plate 57*a* is probably a mythical quadruped of some kind. A number of lizards occur (pl. 57*f*, 58*a*). Some of the spirals and wavy lines may be snakes, for example, plates 58*e*, 59*c*, 60*a*, *b*, and 64*a*. A curious, large-footed, long-billed bird with a looped tail is shown in plate 58*b*. A number of bear tracks occur (pl. 59*a* and in the lower left-hand corner of pl. 62*c*).

Several human figures occur. In plate 59*e* is one with outstretched arms which terminate in circles, and in *f* another whose legs terminate in circles which form a part of the elaborate design of circles. The symmetrical arrangement of connected circles which forms the central unit in *e* may be a highly conventionalized human figure. In plate 60*e* are three human figures, two of which possess loops as heads with small "horns" or ears projecting above. Compare these with Coso springs, site 46, plate 34*f*. A totally different style is again seen in plate 58*a*.

What may be several plants appears a number of times in the form of somewhat modified herringbone designs, for example, plates 57*f* and 60*c*.

203 Pt. PYRAMID LAKE, NEVADA.—On rocks at the lower end of Pyramid lake petroglyphs were found (Mallery, 92).

204 Pt. RENO, NEVADA.—"At Reno a heavy black rock a couple of feet across is beautifully engraved to represent a bull's eye of 4 rings, an arrow with a very large feather, and one which may mean a man" (Mallery, 94, 95).

"Many other places on the Truckee river have such rocks all very much alike, and yet each bearing its own distinct features in the marking. Near a rock half a mile east of Verdi, a station of the Central Pacific railroad, 10 miles east of Reno, lie two others, the larger of which has lines originating in a hole at the upper right-hand corner, all running in tangents and angles, making a double-ended kind of an arrangement of many-headed arrows, pointing three ways. A snail-like scroll lies between the two arms, but does not touch them. Below are blotches, as if the artist had tried his tools.

"This region has been roamed over by the Washo Indians from a remote period, but none of them know anything of these works. One who has gray hair and more wrinkles than hairs, who is bent with age and who is said to be a hundred years old, was led to the spot. He said he saw them a heap long time ago, when he was only a few summers old, and they looked then just as they do now" (Mallery, 93).

"They are very peculiar in many respects, and the rock is wonderfully adapted to the uses to which it has been put. Wherever the surface has been broken the color has changed to gray, and no amount of wear or weather seems to turn it back. The indentation is so shallow as to be imperceptible to sight or touch, and yet the marks are as plain as they could be made, and can be seen as far as the rock can be distinguished from its fellows" (Mallery, 93, 94).

205 Pt. RENO, NEVADA.—"In a steep canyon 15 miles northeast of Reno, in Spanish Spring mountains several cliffs are well marked, and an exposed ledge where the Carson river has cut off the point of a hill below Big Bend is covered with rings and snakes by the hundred. [Probably connected circles.] Several triangles, a well-formed square and compass, a woman with outstretched arms holding an olive branch, etc., are there" (Mallery, 95). We may well doubt the "compass" and "olive branch."

206 Pt. HOPKINS SODA SPRINGS, NEVADA.—A large collection of petroglyphs are on a ledge at Hopkins Soda springs, "about 12 miles south of the summit on the Central Pacific railroad." This rock is similar to that at Carson river (site 111 Pt), "but the groundwork in this case is a solid ledge, 10 feet one way and perhaps 40 the other, all closely covered with rude characters many of which seem to point to human figures, animals, reptiles, etc. The ledge lies at an angle of 45°" (Mallery, 93).

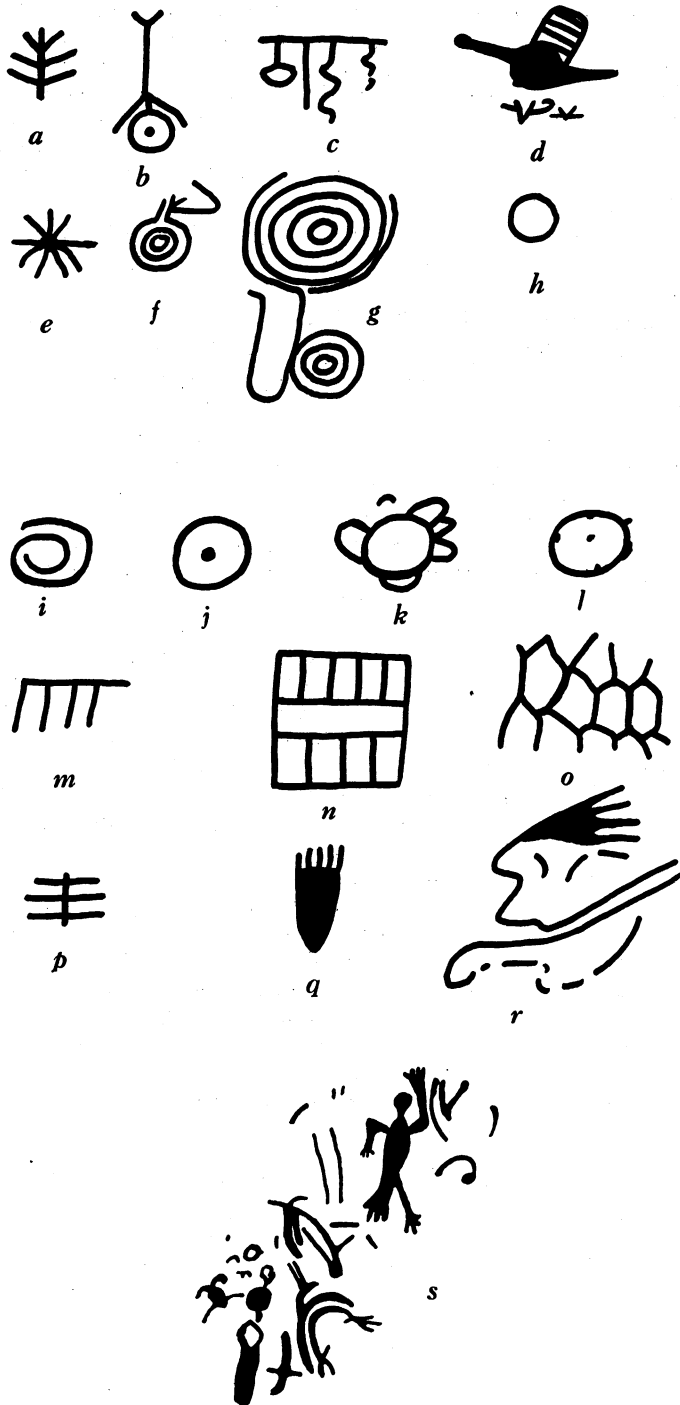


Fig. 72. Petroglyphs from Virginia City, site 208, western Nevada.

207 Pt. FALLON, NEVADA.—“On basaltic rocks . . . within fourteen miles of Fallon, Nevada. There are perhaps more than a dozen rocks with carvings on them, some quite distinct and some faint but readily traceable (H. A. Pinger, Fallon, Nevada, letter of August 19, 1924, to San Francisco Examiner).

Three photographs taken by Mr. Pinger and kindly loaned to us by Mr. Clarke are shown in plate 65*b-d*. They show the curvilinear designs, chains of circles occurring twice and several groups of wavy lines associated with other indefinite figures.

208 Pt. VIRGINIA CITY, NEVADA.—Some eight or ten miles from Virginia City is a large group of petroglyphs carved on the smooth faces of outcropping boulders. The Indians have no knowledge of the meaning of these. (Information and photographs from Mr. John A. Reid, Reno, Nevada, through the kindness of Dr. J. C. Merriam, letter of January 5, 1904.)

A variety of designs occurs among these petroglyphs. One of the most striking is the rectilinear type which is more common in southern Nevada. Plate 67*d* shows a large design made up of a rectangular figure filled in by perpendicular and diagonal cross-lines. Above this is a dim design of cross-lines. Wavy lines form several groups as seen in plates 66*a, b* and 67*b*. A rectilinear design strikingly of the type found at Grapevine canyon, southern Nevada, site 227 and the vicinity, is shown in plate 66*a* and figure 72*n*. Groups of dots are shown in plates 66*b* and 67*b*. Concentric circles occur, figure 72, and a wheel design in plate 67*b*. A small spiral is shown in figure 72*i*. A few curvilinear designs of the Great Basin type are seen in plate 67*b, c*. In the former we find the combination of circles connected by straight lines. A mountain sheep is shown in plate 67*a*. The m-like curves in plate 67*b, c* may be mountain sheep horns, conventionalized in a manner similar to those at Yerington, Nevada (compare plate 58*c, e*, mentioned above). A human figure is shown in figure 72*s*, with exaggerated hands and feet much like those found in pictographs in Tulare county. In figure 72*q* is a “bear track.”

Spanish springs, Nevada.—This site is also near Virginia City (Dr. B. F. Chappelle, University of Nevada). These carvings are both rectilinear and curvilinear. Concentric circles occur several times (pl. 66*d*) as well as chains of circles, both in vertical and horizontal series. We also find circles connected by straight lines and circles grouped in other ways. The rectilinear figures are chiefly in the nature of groups of parallel lines, some of which are partially framed by rectangular figures. Plate 66*c* shows several large, unified designs. The central one has a cross, the top and arms of which terminate in tri-prong forks, rising from a pyramidal base. An inverted “rake” appears to the left of this while above it is a large curvilinear figure. On either side are groups of dots.

209 Pt. CARSON RIVER, NEVADA.—“On a rock on the Carson river, about 8 miles below old Fort Churchill. It is the largest and most important one of a group of similar characters. It is basaltic, about 4 feet high and equally broad.

“Mr. Fulton gives the following description:

“The rock spoken of has an oblong hole about 2 inches by 4 and 16 inches deep at the left end, which has been chipped out before the lines were drawn, if it was not some form of the ancient mill which is so common, as it seems to be the starting point for the whole scheme of the artist. The rock lies with

a broad, smooth top face at an angle towards the south, and its top and southeast side are covered with lines and marks that convey to the present generation no intelligence whatever, so far as I can learn.

'A line half an inch wide starts at the hole on the left and sweeping downward forms a sort of border for the work until it reaches midway of the rock, when it suddenly turns up and mingles with the hieroglyphics above. Two or three similar lines cross at the top of the stone, and one runs across and turns along the north side, losing itself in a coating of moss that seems as hard and dry and old as the stone itself. From the line at the bottom a few scallopy looking marks hang that may be part of the picture, or it may be a fringe or ornament. The figures are not pictures of any animal, bird, or reptile, but seem to be made up of all known forms and are connected by wavy, snake-like lines. Something which might be taken for a dog with a round and characterless head at each end of the body looking towards you, occupies a place near the lower line. The features are all plain enough. A deer's head is joined to a patchwork that has something that might be taken for 4 legs beneath it. Bird's claws show up in two or three places, but no bird is near them. Snaky figures run promiscuously through the whole thing. A circle at the right end has spokes joining at the center which run out and lose themselves in the maze outside'' (Mallery, 92, 93).

A group of petroglyphs from this site are pictured (Mallery, 92, fig. 54). They are of the curvilinear style, the circle element being predominant and joined by straight and wavy lines in different combinations. Spirals are also important and are woven into the design.

210 Pt. LONE BUTTE, CARSON DESERT, NEVADA.—'Petroglyphs occur in considerable numbers on the western slope of Lone butte in the Carson desert. All of these appear to have been produced on the faces of boulders and rocks by pecking and scratching with some hard mineral material like quartz'' (Mallery, 92).

211 Pt. SMITH VALLEY, NEVADA.—We have no more precise location of these petroglyphs. Photographs are shown in plates 68 and 69.

The petroglyphs are almost entirely of the Great Basin curvilinear style, for example, plates 68*a, b, d, e, f*, and 69*a, b, d, e, f*. The elaborate design in the lower right of plate 68*a* may be comparable to that in plate 37*e*, Little lake, site 48. The small symmetrical figures in plates 68*d, g* and 69*a, f* may be conventionalized human figures similar to those at Yerington (see above, p. 139). There are no animal representations, with the possible exception of the wavy line in plate 69*e*, which appears to be a snake. A large number of tracks are shown on the boulder (pl. 68*c*). The larger may be bear and the smaller deer or mountain goats. The larger are not of a hoofed animal.

212 Pt. WALKER RIVER, NEVADA.—'The Indian drawings in the Walker river section are on a point of black rocks that extends out into and turns the course of the river, on what is known as the Old Webster ranch. It is thirty miles southeasterly of the town of Yerington, Nevada, and on the east fork of the Walker river. The rock is on the north side of the river and the rocks on which the drawings appear are on the south side of the river. The rocks are literally covered with drawings. Most of the drawings are of trees and animals, those of the coyotes and mountain sheep are the best, though many of the others are very good'' (extract from letter of W. F. Frazer, Berkeley, California, September 17, 1916). Mr. Frazer further writes: "A drawing of



crossed war clubs[?] is located on a boulder about two-thirds of the distance between the upstream end of the point of rocks and the wire fence and a little to the left. The boulder is not a large one. Just to the left of the point of the rocks on a sort of a small flat there appears to be what may have once been some sort of an arrangement of the rocks into a sort of parallelogram for some purpose. Owing to the drawings being small and the rocks having in some manner become tilted, care must be exercised or some of the best ones I saw might be overlooked. I am told they occur more or less all along the whole of the rock ridge, though those I saw were on and near the upstream end of the ridge."

"Great numbers of incised characters of various kinds are also reported from the walls of rocks flanking Walker river, near Walker lake, Nevada. Wavy lines, rings and what appear to be vegetable forms are of frequent occurrence. The human form and footprints are also depicted" (Mallery, 95).

*Southern Nevada—Sites 213-229, 291, 292*

213 PT AND 214 PT. MANHATTAN VALLEY, NEVADA.—"There are two such rocks near this place, some 12 to 15 miles distant, and say 10 miles apart. One on the east (site 213) and one on the west side (site 214) of Monitor valley. They are reported to be covered entirely with 'Indian writing,' but even the oldest of the present tribes here know nothing of them" (H. G. Clinton, Mammoth Mining Company, Manhattan, Nevada, letter of February 24, 1920).

215 PT. BELMONT, NEVADA.—"Eight miles below Belmont, in Nye county, Nevada, an immense rock which at some time has fallen into the canyon from the porphyry ledge above it has a patch of marks nearly 20 feet square" (Mallery, 94).

216 PC. ELY, NEVADA.—Pictures painted but not incised upon the walls of several caves bearing evidence of human occupation in the way of a large number of artifacts of various sorts.

The pictures are "located in a series of caves on Baker creek, White Pine county." The covers are a mile and a half from Lehman caves. "The caves containing the pictographs are three in number, the middle one however being, strictly speaking, a deeply receding rock shelter. Cave number three, so designated in the report of Drs. Chappelle and Fransden to Governor Scrugham, is the most important of the three from the point of view of the petroglyphs already exposed. [Probably meaning pictographs.] The realistic representations of Rocky mountain sheep in black are unusually striking. The older drawings in the cave are red, geometric forms, conventionalized figures and realistic portrayals of animals. Pictographs of the human hand in red also occur. The drawings in this cave extend to its innermost recesses and some of them have been uncovered by partial excavation along the right hand wall. Still more drawings have been found as the excavation work proceeds and remnants of crude pottery, teeth, bones, and bits of flint are uncovered daily. Cave number two has for its chief drawing card, eight circular marks and a series of lines in red on the right wall. Cave number one is richly decorated with drawings in red ochre which represent primarily conventionalized human figures and counting signs. The former are represented in groups on the flat rock surfaces to the right of the entrance on the lower levels. They have been partially destroyed through erosion. Larger figures of the same type and

material appear in an excellent state of preservation on the upper levels. On the surface facing the interior of the cave the drawings are very numerous both in red and black. To the left of the entrance the red ocher drawings are also numerous, although many of them have been partly defaced by vandals of present years. Perhaps the most striking figure of this cave is a representation of a reclining human being drawn in red. All of the pictographs are formed by colors laid on the flat rock surfaces. There are no pecked or incised forms. The materials used in their production are red ocher (hematite) for the greater part of cave number one; for all the markings in cave number two and for about one-third of the drawings exposed in cave number three. The blacks are made up of ochers, dyes extracted from plants, possibly, and charcoal. They are most richly represented in cave number three. The drawings in red appear to be the oldest as is shown in the numerous cases of superimposition. All are monochromes with the exception of one pictograph which appears to be a polychrome" (Nevada State Journal, August 24, 1924).

217 PT. PIOCHE, NEVADA.—"Ten miles south of Pioche are about 50 figures cut into the rock, many of them designed to represent mountain sheep" (Mallery, 95).

218 PT. KANE'S SPRING, NEVADA.—"Eighty miles farther south, near Kane's spring, the most numerous and perfect specimens of this prehistoric art are found. Men on horseback engaged in the pursuit of animals are among the most numerous, best preserved, and carefully executed" (Mallery, 95).

219 PT. REVELLE, NEVADA.—"Marked rocks" (Mallery, 94).

Petroglyphs from near Reveille are shown by Mallery in his figure 55 (p. 94). These comprise circles and wavy lines. One group constitutes a vertical series of three circles, the uppermost of which is made into a human face with eyes, nose, and mouth. Other designs are single wavy lines, circles connected by straight lines, two spirals, one of which has radiating lines from its lower half.

220 PT. GOLD CRATER, NEVADA.—Twenty-eight miles east of Goldfield are carved rocks. There are others in the vicinity of Gold Crater (A. L. Snider, Goldfield, Nevada, letter to San Francisco Examiner, October 20, 1924).

Mr. W. H. James, of Chalfant, California, also mentions petroglyphs near the mines at Gold Crater, Nevada. He states that they are "due north from the prospect dumps at a tufa bluff. At one point a large block of tufa has broken off from the cliff. This is inscribed with the main group of figures although scattered smaller boulders have wavy lines" (letter of May 17, 1927).

221 PT. BRICKYARD SPRINGS, NEVADA.—This site is seven miles west of Goldfield (A. L. Snider).

222 PT. FISH LAKE VALLEY, NEVADA.—"In the northwestern corner of Fish Lake valley, Esmeralda county, Nevada, between the Old David Davis ranch and Trail canyon are hieroglyphics in great number carved on hard stone" (Douglas Robinson, Covelo, California, letter of August 19, 1924, to Edward E. Clarke, San Francisco Examiner).

223 PT. FISH LAKE VALLEY, NEVADA.—"There is a cave on the road from Silver peak to Fish Lake valley that contains inscriptions" (A. L. Snider, Goldfield, Nevada, letter of October 20, 1924, to San Francisco Examiner).

224 PT. NEAR GOLDFIELD, NEVADA.—"Fifty miles south of Goldfield is a rock with markings resembling those found near Yerington" (W. H. Barlow, Goldfield, Nevada, letter of September 15, 1924, to San Francisco Examiner).

A few sketches accompanying this letter show two spirals, a figure eight, and several circles-and-straight lines.

225 PT. NEAR LAS VEGAS, NEVADA.—“One hundred and fifty miles north of Las Vegas, Nevada, and about that far southwest [east probably] of Goldfield. I don't think it was ever seen by over a dozen white men as it is fifty miles off from traveled highways and can only be got into as far as I know by riding horses and packing for 25 or 30 miles.” The site is a “deep box canyon, the walls being 500 feet high or more and perfectly perpendicular and covered with ancient hieroglyphics and inscriptions, the writings covering the wall from top to bottom for over two miles. These figures and writings are not painted on the rocks but are cut in or chiseled with tools of some kind and cover every loose rock in the vicinity besides the walls of the canyon. . . . There were also monuments built on the edge of the canyon and small circles of stone, etc. Also I found a few small pieces of pottery in a large cave” (O. S. Lodwick, Las Vegas, Nevada, letter of August 26, 1924, to Edward E. Clarke, San Francisco Examiner).

226 PT. “LOST CITY” OR “PUEBLO GRANDE DE NEVADA,” NEVADA.—Located on the east bank of the Muddy river, one mile north of St. Thomas and twenty miles south of the Arrowhead trail. The “city” occupies an area approximately two miles wide and six miles long stretching along the Muddy and extending back upon the ridges that run out from a range of hills that parallels the river. Petroglyphs are numerous in the vicinity of Lost City. (For the information and the excellent photographs shown in plates 70–71 we are indebted to the kindness of Mr. Phil T. Hanna of Touring Topics, Automobile Club of Southern California, Los Angeles, California. See also Touring Topics, June 1926.)

The most common figure among these petroglyphs is the mountain sheep. Plate 70*b* shows some twenty-five of these, clearly defined and rather well executed. Associated with the sheep, however, are several figures of men on horseback, evidently wearing wide sombreros (pl. 70*c*). In the lower right-hand corner of this picture may be seen a man leading a horse. A saddle on the horse is evident. While these men on horseback do not give us a definite age for this group, they place its maximum age as four hundred years. Judging by the unweathered condition of the figures, where the darkened rock has been chipped or pecked off, they are probably much younger than this. Other figures also appear here. In about the center of plate 70*a* is a human figure with elongated fingers and toes. This is strongly suggestive of a similar figure found at Virginia City (compare fig. 70*s*). Plate 72 shows several mountain sheep. In the lower left-hand corner of the photograph are several rectilinear designs which recall those found at Grapevine canyon in southwestern Nevada. Among these are two “gridirons” of the type found in Owens valley, notably near Bishop and as far north as Virginia City, Nevada. In this group we also find a series of circles connected by straight lines, typical of the northern desert region. Concentric circles and “spoked wheels” also appear. Wavy lines and various indefinable curvilinear designs are abundant. Many of these designs have been put over older designs, some of which are very indefinite. Whether this unclearness is due to the underlying designs being less deeply carved than the more recent cannot be determined, but they give the appearance of considerable weathering. Among those designs which stand out more sharply none are essentially different from the older ones except the spoked wheels and concentric circles which appear in only clear-cut designs, completely hiding the figures under them. Attention should be called to the uppermost figure of this group, somewhat to the left of the center, which resembles a foot with the toes pointing downward and has a line running from it upward and

to the left. This is very much like a similar figure which occurs in the Virginia City group (fig. 72r—see also River canyon, Utah). Plate 71 shows interesting groups of what appear to be mostly imaginary figures. To the extreme left (pl. 71a) are several monstrous, many-legged creatures associated with a mountain goat, and several mountain sheep (the latter have been chalked in; compare with Tulare county). To the left in the main group are several “bugs” or fat lizards and a spiral that may represent a snake. Below is a large “bear’s foot.” In the center of this group is a monstrous horned beast (compare with Yerington, Nevada, site 202 Pt, pl. 57e) standing above a wavy line below which is a sort of cross. From the beast, a line runs to the right to a large “bear’s foot.” This line may give some unity to this group, and the sheep and wavy lines may be related to the whole. Other unchalked figures, including several more “bear’s feet,” appear around this large bear’s foot. To the extreme right is a gigantic elk or deer, on the neck of which apparently stands a man with a greatly enlarged right hand. This hand, however, may simply be a “bear’s foot,” accidentally associated with the man. *b* shows other monstrous creatures. In the center, just to the left of the human figure, a many-legged creature is emerging from behind the rock in the foreground. Just below this is a complex curvilinear design resembling the northern curvilinear style. Several spirals also occur.

227 PT. GRAPEVINE CANYON, NEVADA.—“At Grapevine canyon there is a dike of fine-grained granite-like rock, consisting of feldspars, quartz, and hornblende, classified as a granite-porphry, upon which there are many carvings. At the base of the dike a hole six feet deep was dug and the carvings still show on the rocks at that depth” (A. P. Miller, Needles, California. We are indebted to Mr. Miller for the splendid photographs shown in plates 73–77).

Grapevine canyon has without question the greatest representation of the rectilinear style of petroglyphs. On the basis of complexity and frequency of these symbols it must be regarded as the center and possibly the point of origin of this style. Plates 74, 75b, 76, and 77 show a large variety of rectilinear design. There is a certain similarity of style throughout these figures, however. The most simple form is a plain rectangle filled in with parallel lines, a rectangular “gridiron,” or with a cross-work of two sets of parallel lines perpendicular to one another, for example, plate 74c. This occurs many times. A slightly more complex design is the rectangle filled in with various combinations of straight lines, for example, figure 73h, *q*, or plate 74f, or with straight and wavy lines, plates 74a, 75b (lower figure). An unusually complex design of this sort is found in plate 76c (central figure).

The use of the meander is a basic characteristic of many of these designs. At times it is used alone and formed by a single line or a double line, as in plates 75b, 76a, and figure 73, or a triple line, plate 76b, or it may be used as a margin of an enclosing rectangular figure, as in plate 77a, *b*, *d*, or in other combinations. Several examples of “mazes” are shown on plate 94a–*d* (compare pl. 38c from Little lake, site 48).

Diamonds occur a number of times, for example, plates 77b, figure 73b (compare with Little lake, fig. 19c). The latter, especially, is very similar to several designs in Owens valley. The lower right-hand design of a cross surrounded by a double line in plate 77d is identical with one at Little lake (see uppermost design in fig. 19c). Also compare with Piute springs, plate 40f.

A number of sun disks occur, for example, plate 75a, *b*, figure 73u, *v*. We also have the “spoked wheel” (fig. 73u) and concentric circles (fig. 73e).

Although the Great Basin curvilinear style is completely overshadowed by this rectilinear style, it is not lacking. There are traces of it in the different combinations of circles seen in plates 73*b*, 74*c*, *d*, 75*a*, 76*a*, and figure 73*w*.

Animal representations seemed restricted to mountain sheep. The five sheep running across the rock in plate 73*c* show unusual action and grace. As usual, they are in profile, with both horns and four legs shown. Details such as the ears, however, are lacking. Probably in plate 73*c* and obviously in plate 73*a*, *b*, the primitive artist has failed to recognize that the mountain sheep has not a tail. Of unusual interest are the mountain sheep in plate 73*a*. The rectilinear

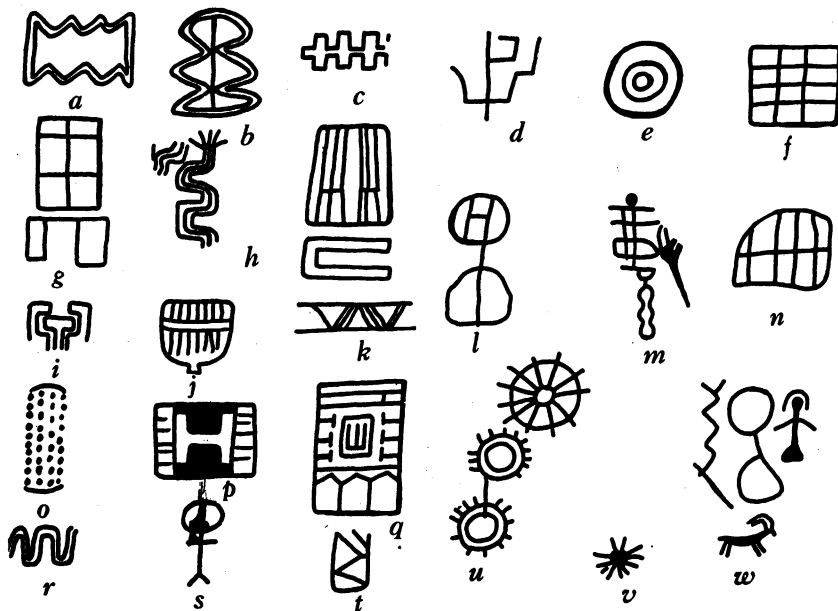


Fig. 73. Petroglyphs from Grapevine canyon, site 227, southern Nevada.  
(Reproduced from photographs; not natural grouping)

style so pronounced in the Grapevine canyon petroglyphs as a whole has made itself felt even in these realistic representations, with the result that these sheep are executed in a distinctly rectilinear style. Several such mountain sheep occur also in Owens valley. The conventionalization has been so great that apparently in one figure at least the animal has deteriorated into a rake design in which the four legs became the four prongs of the rake and the head and horns are lost.

Human representations at this site are rare, if not entirely lacking. Figure 73*w* may be intended as such. The large design in plate 74*b*, made up of a rectangle and surmounted by a circle, may also be a highly conventionalized human and is executed upon the same plan as several observed elsewhere (Little lake, site 48, pl. 37*e*, and Fort Bayard, New Mexico, site 282, pls. 90, 91).

Grapevine canyon has been visited and the petroglyph site studied by Professor Blackwelder of Stanford University. He and Mr. Edward E. Clarke have kindly allowed us to use his geological report on the site:

The carvings are made on a hard granite porphyry and have been cut through a patina of hydrous iron and manganese oxides. Subsequent to the cutting of some of the figures, however, this "desert varnish" has re-formed in different degrees, causing some figures to be scarcely noticeable. These seem to be the older and are probably very ancient for the formation of desert varnish is a very slow process. Another point favoring the great antiquity of these petroglyphs is that granite surfaces with carvings have exfoliated. Plate 78*a* gives a general view of this site. A more incisive piece of evidence in favor of antiquity is that the rock cliff containing the petroglyphs is buried by a deposit of twenty-two or more feet of gravel. The terrace was excavated by Captain LeBaron and the petroglyphs found to extend to a depth of at least 20 feet (pl. 78*b*). This terrace is but part of a large alluvial fan formed by a small intermittent stream. A gradual rather than a torrential accumulation of the deposit is indicated by the mixture of sand and fine gravel and the stratification into thin, even beds (pl. 78*c*). This deposit is at the mouth of a narrow canyon where boulders might be expected were torrents the cause of this fan, but none were encountered. Since forming the fan, the stream has cut it down, leaving the twenty-two-foot terrace which now covers the petroglyphs (see pl. 78*d* for a general view of this terrace). That this occurred long ago is shown by the presence in the bottom of the wash of willow trees with 150 annual growth-rings. It is also to be noted that precipitation in this region at present is very slight (average annual rainfall, about two and one-half inches). The water-worn pebbles making up the granite are somewhat cemented together and show a high degree of decay, which again points toward considerable antiquity. The presence of desert varnish, not forming at present, suggests a more moist climate and hence also indicates antiquity.

Even an approximate date for these petroglyphs is out of the question. We may be safe, however, in placing their age at a minimum of several hundred years and we may have to multiply this many times in the light of further evidence.

One fact is outstanding in this connection. The petroglyphs covered by the gravel terrace are in all points of style the same as those located well above the gravel, and include meanders, elaborated rectilinear figures, connected circles, and mountain sheep. The implication of this is that those above and below the gravel are the same in age. This conclusion is confirmed by Professor Blackwelder.

228 Pt. HIKO SPRINGS, NEVADA.—"Hiko springs and Grapevine canyon are in Nevada just over the California line, 40 and 45 miles north of Needles. Paiute springs is 36 miles northwest of Needles in California. Eagle pass is 7 miles west and Chemehuevi valley is 40 miles south of Needles and Granite springs is 18 miles north. These places all have carvings" (Mr. A. P. Miller, Needles, California).

Several petroglyphs from this site are shown on plate 79. Plate 79*a* shows several designs made up of rectilinear components, especially the meander. These are identical with several Grapevine canyon petroglyphs. Plate 79*d* is probably of the same type. Wavy lines and unchalked circles and curves in *b* resemble the Great Basin curvilinear type as do perhaps several unchalked figures in *c*. The main figures in *c* may be designated "hands" and may actually have been intended as such, as each has five fingers.

229 Pt. DEAD MOUNTAIN, NEVADA.—Located "at the base and in the recesses of Dead mountain, and the abode of dead bad Indians according to Mohave

mythology" (Mallery, 95; fig. 56 shows several figures from this site). Several of these figures resemble branches of leaves. There is what appears to be a small, possibly a young bird, a quadruped, two human figures with animal or bird heads, a simple human figure, and other indefinite designs.

291 Pt. VIRGIN RIVER, NEVADA.—There is a group of petroglyphs in this region. We have been unable to locate them exactly. They are shown on plate 93*a-d*. Their affiliation with the petrography of southern Utah and a number of sites in northern Arizona is obvious from the representations of kachina-like figures (pl. 93*c, d*). Other figures are of the Great Basin curvilinear style (*a, b, e*) and dots are abundant in *b*.

292 Pt. COLORADO RIVER, NEVADA.—For the following information we are indebted to Mr. E. E. East of the Automobile Club of Southern California, who writes: "Along the Colorado river, thirty miles northerly from the town of Needles, there is a canyon extending for a length of about four miles to the river. A few hundred feet below a point where the Needles Tri-State road crosses this canyon is a spring and camping place. On the rock walls of the canyon near this spring are found many petroglyphs and also down the canyon for a distance of a mile or more" (letter of May 9, 1927).

## UTAH AND COLORADO

### *Northern Utah—Sites 230-232*

230 Pt. CONNOR'S SPRINGS, UTAH.—This group of petroglyphs is located at Connor's springs, near Promontory point, north of Salt lake. (The information and photographs were furnished through the courtesy of Professor Andrew Kerr, Department of Archaeology, University of Utah.)

The designs are chipped on the face of an outcropping of rock, some of which has apparently broken off, carrying part of the design with it (pl. 80). The designs comprise concentric circles, "spider-webs," sun disks, and several linear designs decorated on the edges by a large number of short, perpendicular lines. Plate 80*d* shows a succession of triangles across the top of the rock, highly suggestive of tipis with which are associated human and animal figures and below which other human figures appear. Plate 70*a* shows two animal figures, apparently deer or elk.

231 Pt. PROVO RIVER, UTAH.—At the mouth of Provo river, about 7 miles from Provo. "A human hand is conspicuous, being cut (probably pecked) to a depth of at least one-third of an inch, and so with representations of animals" (Mallery, 117).

232 Pt. SAN PETE VALLEY, MANTI, UTAH.—Mallery's figure 81, showing petroglyphs from near Manti, comprises three figures, the central one consisting of two circles, one above the other and slightly removed, which are joined by straight lines that pass from one to the other instead of completing the circle, thus forming a rectangle between the circles. This is drawn in a triple line. To the left of this is a human(?) figure with an oval neck and oval head above this and over the head a curved line. Other lines appear to the right of the central figure (Mallery, 117, 118, fig. 81).

*Southern Utah—Sites 233-241*

233 PT. THOMPSON SPRINGS, UTAH.—This site is located “in a canyon of the Book cliff containing Thompson’s spring, about 4 miles north of Thompson’s station, and the Denver and Colorado railroad, Utah” (Mallery, 117).

234 PT. FRUITA, UTAH.—These petroglyphs are located near Fruita, Nayco county, Utah (the photographs in pls. 81 and 82 were furnished through the kindness of Professor Andrew Kerr of the University of Utah).

The figures are incised on the smooth face of a rock cliff. Two types of figure prevail. One type is closely similar to some of the kachina dance costumes of the Pueblo Indians and is not surprising as these pictures are associated with cliff dwellings. The bucket-shaped mask with projecting feathers and neck ornaments are unmistakable (pls. 81*a-c*, 82*a, b, d, e*). The other figures are mostly animal. Mountain sheep are present in plate 81 and a deer in plate 82*c, e*. The mountain sheep are of the general Great Basin style, although the body tends to be squarish rather than crescent-shaped. Possibly a dog is shown in plate 81*d*. In plate 82*c* a spiral appears. Plate 81*a* shows a group of wavy lines which is said to be a map of the region in which they occur, but in the opinion of Dr. Kerr this is very doubtful.

235 PT. MOAB, UTAH.—These petroglyphs are associated with a cliff dwelling near Moab, in eastern Utah. Photographs of them were furnished through the kindness of Professor Andrew Kerr, Department of Archaeology, University of Utah. Two groups or rectilinear figures occur, one being filled in by crossed lines, the other by parallel lines (pl. 83*a*). Some sort of animal figure resembling a scorpion or centipede appears just below and to the right of these. On the right-hand side of the picture is a large snake, and two parallel wavy lines, much like those encountered at Fruita. There are in addition to these designs, several mountain sheep, two human figures, and one “hand.” Plate 83*b* shows a group of carvings on the smooth surface of a rock wall. Perhaps the most common design is the hand which occurs in large numbers, either singly or connected with arms or attached to long, thin lines. At the top of plate 83*c* are several figures which appear to be human figures with dance regalia. Zigzags and wavy lines occur and animals, mountain sheep, goats, and perhaps a horse are shown. Several hand and foot prints also occur.

236 PT. SHINUMO RUINS, UTAH.—On the Colorado river at the mouth of the Dirty Devil river, Utah. The pictures occur on the walls back of the cliff dwellings. “Some of the sheltered groups were painted, in various colors, but most of them were chiseled” (Mallery, 118, Dellenbaugh’s account). Mallery’s figure 82 shows a group of these pictures which include human, animal, and bird figures.

Another group is shown by Mallery (fig. 83, p. 119) from five miles below the mouth of the Dirty Devil river, which include several rectilinear figures, a cross, and a human(?) figure with horns, which appears to be wearing a poncho. Near this group is another (Mallery, fig. 84, p. 119) which is painted in the form of two groups of concentric circles, one of which has a human hand in the center, the other a circle of paint in which a human hand is left unpainted. Mallery’s figure 87, page 120, shows human figures which are similar to the kachina-like figures at Moab, having long dance regalia and bucket-like masks. Mallery’s figure 89, page 121, shows a number of painted pictures from Shinumo which comprise human hand and footprints, a bear’s track(?), and horned human figure



with arms outstretched and an object held in each hand, a large number of mountain goats, several buffalo, and an elk or deer. One small human figure seems to be in the act of shooting a buffalo.

237 Pt PC. TEMPLE CREEK CANYON, SOUTHEASTERN UTAH.—(The location of this site is approximated on the map.) On the northeast wall of the canyon. The figures are etched, rubbed, and partially painted. Fragments of pottery, flints, and a metate were found at the foot of the wall on which the figures were drawn. “ ‘There have been many dates of inscriptions, and each new generation has unscrupulously run its lines over the pictures already made. . . . The period during which the work accumulated was longer by far than the time which has passed since the last. Some fallen blocks cover etchings on the wall, and are themselves etched. Colors are preserved only where there is almost complete shelter from rain. In two places the holes worn in the rock by swaying branches impinge on etchings, but the trees themselves have disappeared. Some etchings are left high and dry by a diminishing talus (15 to 20 feet). . . . The painted circles are exceedingly accurate and it seems incredible that they were made without the use of a radius.’

“ ‘In the collection contributed by Mr. Gilbert there are at least fifteen series or groups of figures, most of which consist of the human form (from the simplest to the most complex style of drawing), animals, either singly or in long files—as if driven—bird tracks, human feet and hands, etc. There are also circles, parallel lines, and wavy or undulating lines, spots, and other characters’ ” (Mallery, 117).

238 Pt. BLACK ROCK SPRING, UTAH.—On Beaver creek, north of Milford. “ ‘A number of fallen blocks of basalt at a low escarpment are filled with etchings upon the vertical faces. The characters are of an ‘unintelligible’ nature, though the human figure is drawn in complex forms. Footprints and circles abound’ ” (Mallery, 117, fig. 1093 on p. 681).

The figures shown here comprise a squarish design with rays like a sun disk, a crude animal, and three other indefinable figures.

239 PC. FOOL CREEK CANYON, UTAH.—Three human figures from this site are shown on Mallery's figure 1094, page 681. Two stand with their hands joined. One of these is depicted with the genitalia in the form of a cross; the other appears to have horns. The lower third figure also has horns and bird's feet. Site not entered on map on account of uncertainty of location.

240 Pt. ST. GEORGE, UTAH.—“ ‘All along the sandstone cliffs are strange figures like hieroglyphics and pictures of animals cut in the rocks, but now often worn dim.’ ” (Mallery, 117).

241 PC. RIO VIRGIN, UTAH.—These pictographs are in the Rio Virgin canyon, Zion National Park. They are on a cliff of reddish sandstone about three hundred yards from a cliff dwelling and are on the same level. The cliff dwelling is located on the southwestern side of the Rio Virgin, about three miles from the mouth of the canyon and several hundred feet above the stream. The pictures are painted in red, white, and yellow. The chief design is the human figure, several of which occur grouped together in similar postures as though engaged in a dance. Just below and to the left of the main group of dancing figures is a figure with a squarish head, highly suggestive of the kachina figures at Fruita, Utah, site 234 Pt. Other designs below in white and yellow are geometric and more or less highly conventionalized, plate 86*d*. (Visited by the author.)

*Southwestern Colorado—Sites 242-244*

242 PT. YELLOW JACK, COLORADO.—“Perhaps the largest group of these pictographs occurs on an eroded boulder near the mouth of the Yellow Jack canyon, just below the great promontory separating it from McElmo, on the surface of which are the remarkable dwellings composed of slabs of stone set on edge.

“At many places covered by this reconnoissance there were found interesting collections of engraved figures of ancient date cut on boulders or vertical cliffs. These are generally situated in the neighborhood of ruins, but sometimes exist far from human remains. They generally have geometric forms, rectangular and spiral predominating. Associated with these occur also representations of human beings, birds, and animals, and figures of bird tracks, human hands, and bear claws. There is a remarkable similarity in all these figures, which sometimes occur on the stones composing the masonry of the buildings, which indicates they were contemporaneous. They were pecked on the stone with rude stone chisels, but as a rule show no indication of paint. . . . Their general character indicates rather clan symbols; in some instances spiral forms were probably made to indicate the presence of water. The incised figures on the walls of buildings were probably decorative in character, the first efforts of primitive man to embellish the walls of his dwellings. . . . There are, however, indications that these figures were covered with plaster and were therefore invisible, so that we might suppose them to be masons' signs, indicating the clan kinship of those who constructed the walls” (Fewkes, 1919:65; pl. 33).

243 PT. SANDSTONE CANYON, COLORADO.—“Another large cluster, the members of which are of the same general style as that already mentioned, was seen in Sandstone canyon, a few miles south of the road from Dolores to Monticello. There are several groups of pictographs in the neighborhood of the large towers. . . . The most noteworthy of these is situated at the head of the south fork of Square Tower canyon on a vertical cliff below the ruined Tower 4. The face of the cliff is very much eroded, and the figures are in places almost illegible. They consist of bird designs, accompanied by figures of snakes, rain clouds, and other designs, portions of which are obliterated and impossible of determination. As a rule these pictographs resemble very closely those in the cliff houses of the Mesa Verde and add their evidence of a uniformity of art design in these two regions” (Fewkes, 1919:65).

244 PC. SANDSTONE CANYON, COLORADO.—“In addition to pictographs cut on the surface of the cliff we also find in sheltered caves others not incised but with indications of color, showing the former existence of painted figures. Some of these, however, are not ascribed to the Indians who built the towers, but to a later tribe who camped in this region after the house builders had disappeared. They were probably made by wandering bands of Ute Indians” (Fewkes, 1919:65, 66).

## ARIZONA AND NEW MEXICO

*Northern Arizona—Sites 245-254*

245 Pt. PIPE SPRING, ARIZONA.—“From a vertical surface 10 by 16 feet in area, half way up the ascent to the geodetic point west of ‘Windsor Castle,’ Pipe spring. The human forms are similar in general design to the greater number of such representations made by the Shinumo Indians” (Mallery, 119, fig. 86 on p. 120). This figure shows the kachina-like figures closely similar to those encountered at Moab, Utah, site 235 Pt.

246 Pc. NORTH OF KAYENTA, ARIZONA.—A large number of both petroglyphs and pictographs are reported and pictured by Kidder and Guernsey from the cliff-dwelling region north of Kayenta in northeastern Arizona (1919:192-199, pls. 89-97, figs. 96-102).

Mountain sheep or goats are by far the most common figure and in one instance (pl. 93*b*, Kidder and Guernsey) a group is shown among which sheep and human tracks appear as well as a human figure in the act of lassoing a sheep. Some of these have been copied (fig. 88*w*, *x*). Another group shows a human figure in the act of shooting a sheep with a bow and arrow. A human figure frequently associated with the sheep is a peculiar humpbacked figure, usually represented in a reclining position and with definite phallic manifestations. He holds a long object to his mouth that appears to be a flute. “This personage may be defined as a humpbacked creature connected in some way with hunting, with phallicism, and with flute-playing (p. 196). Similar figures appear “in Fewkes canyon, Mesa Verde; there are painted on the wall of a room in what seems to be a ceremonial building, humpbacked phallic individuals shooting mountain sheep; in a caveate cliff-room on the Pajarito plateau in central New Mexico is carved a series of humpbacked phallic figures lying on their backs and ‘playing flutes’; a still more distant example may perhaps be recognized in the humpbacked male figures of the erotic figurine groups from Casas Grandes, Chihuahua, Mexico” (p. 196).

Other figures shown include the sun disk, the spiral, hand prints, and a number of human figures, several of which from their wide shoulders and squarish heads resemble the kachina-like figures already noted in southern Utah.

“It is true that most if not all of the rock-cut examples collected by us were found at or near cliff-dwellings and were probably a product of (the Cliff-dweller) culture and also that certain painted figures are probably Basket-Maker. The general distinction however does not hold good, for we have seen painted pictographs so placed on cave walls that they could have been made only by people sitting or standing on the roofs of the cliff-houses themselves. Such a series representing sheep, tailed anthropomorphic creatures and snakes was present in ruin 7. Also in cliff-dwellings are seen hand prints in red or white paint, generally slapped on with the wet hand . . .” (p. 197).

“These large and very peculiar anthropomorphic representations (square-shouldered figures) we believe to be of Basket-Maker origin because we found them on the walls of the strictly Basket-Maker Cave II and because at Ruin 4 where they are very abundant they and their attendant hand prints are obviously older than the Cliff-House structure. Similar figures are also common in Butler’s Wash, Grand Gulch, and other typically Basket-Maker Canyons and are, so far as we know, absent from the Mesa Verde and other localities which the Basket-Makers do not seem to have inhabited” (p. 198).

“Of quite different style, but surely recent and probably also made by the Navaho are the strange creatures reproduced in figure 102. Some of these are incised, some are drawn in charcoal. They presumably depict dance characters or mythical personages, but we were unable to collect any information as to whether they were the work of children (like the charcoal drawings) or whether they were made with some more serious purpose by adults. It will be noticed that the bodies are of hour-glass shape, a feature not observed in any of the ancient examples” (p. 199).

Kayenta region, Arizona.—Plate 13 of Guernsey and Kidder shows several groups of pictographs from this locality. One group includes several mountain sheep painted in profile in solid white. These are more or less unique in being painted, for the vast majority of representations of mountain sheep occur only in petroglyphs. With these is a human figure with a round head, also a wavy line terminating in a loop as though meant for a snake. This group is from Sayodneechee canyon, the picture occurring in a cave. Another figure in red occurs in Sagiotososi canyon, also in a cave. Guernsey and Kidder's plate 13b is of interest in representing a view of some animal form as looking down from above, a kind of representation common in southwestern California. Another group shows six human figures with triangular bodies done in white and also from a cave. These, with the kachina-like representations from southern Nevada and northern Arizona, are shown in figure 85a-j. The pictures in Guernsey and Kidder's plate 13f, from a cave, are in charcoal. The sombrero-like hat in some of the humans points to a relative recency of this group. This is thought to be the work of Ute or Navaho. In addition to red and white, yellow has also been used. Hand prints are also common at this site (Guernsey and Kidder, 1921, pl. 13).

247 PC. NAVAHO NATIONAL MONUMENT, ARIZONA.—Pictographs occur at Betatakin cliff-dwelling ruins (Fewkes, 1911, pl. 12).

248 PC PT. NAVAHO CANYON, ARIZONA.—Of one of the cliff dwellings in Navaho canyon, West writes: “the most interesting and characteristic part of this ruin is its hundreds of rock etchings that are cut and pecked into the wall of rock back of and above the various rooms on the lower ledge. They were undoubtedly examples of ancient paleography. They consist of spirals, horned animals resembling antelope (probably mountain sheep), rain clouds, frogs, birds, turtles, snakes, earth symbols, meanders, circles, and human figures. Several circles and other objects in white paint were also found. The painted pictures seem to be of a later culture than that to which the etchings belong and may have been the work of the Apache, who, according to tradition, drove out the cliff dwellers. Rock etchings were also found along the toe holes leading to the ruins. . . .” (West, 13).

West's figure 10 shows a pecked herringbone design; his figure 14, two concentric circles in white surrounding a white dot; his figure 15, petroglyph of a large-bodied figure with small legs and a swan-like neck; his figure 16, four mountain sheep in profile, pecked; his figure 18 shows a pecked or incised zigzag with a snake-like head and two vertical lines through a circle. West's figures 38 and 41 have concentric circles in white; 40, possibly handprints in white, as though slapped on the wall. His figure 43 shows five parallel lines bisected by a longer perpendicular line. This is carved or pecked.

West states of one of the ruins: “The wall pictures of this ruin were principally of painted circles, hand imprints and a few other designs, apparently

of comparatively recent date and evidently drawn after the dwellings were deserted by their original builders. . . . The paintings may be of Apache origin. Examples of these designs are shown in figures 38, 39, 40, and 41'' (West, 25).

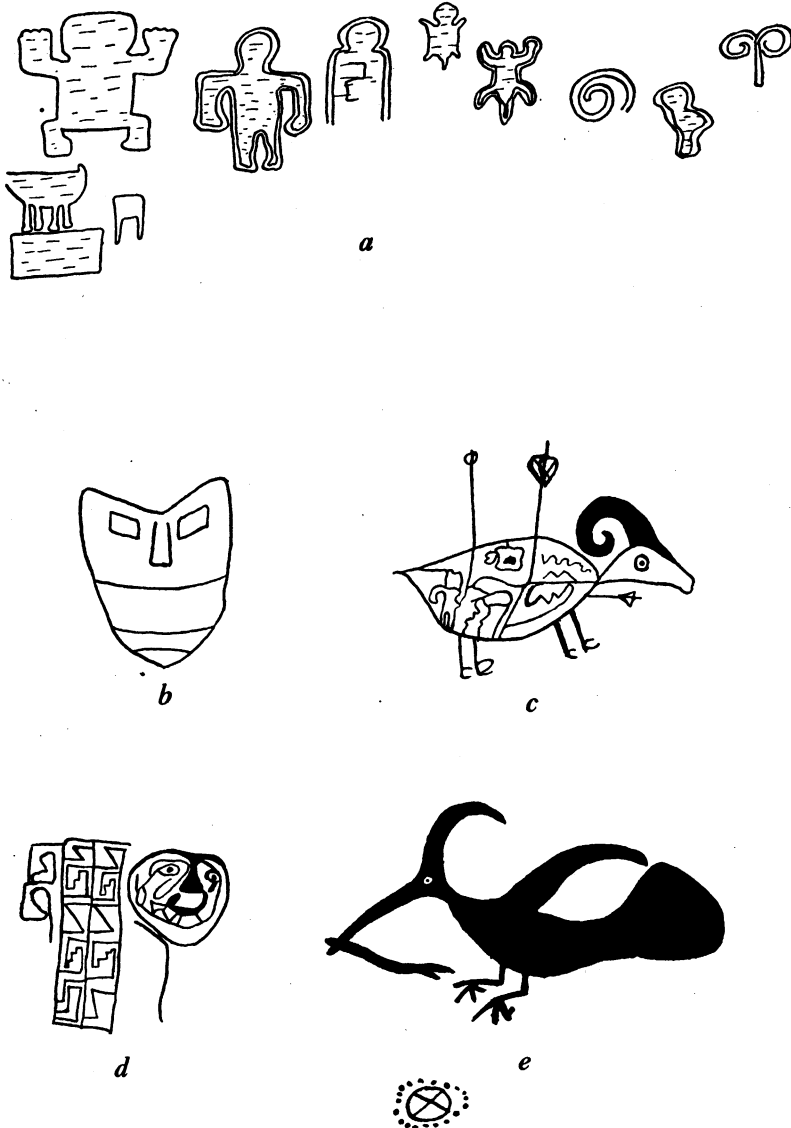


Fig. 74. Pictographs. *a*, from Havasupai canyon, site 249, northern Arizona; *b-e*, from Fall ranch, site 255, central Arizona.

249 PC. HAVASUPAI CANYON, ARIZONA.—A few crude sketches of several of these pictographs are shown in figure 74. The predominant color is white and most of the figures are outlined in the Tulare county manner. Several human figures, a quadruped, a bird, two lizards(?), and a spiral appear.

250 PT. CHIULEE (OR CHILALI) CREEK, ARIZONA.—Thirty or forty miles from its confluence with the San Juan river. "A photograph shows the characters to have been outlined by pecking, the designs resembling the Shoshonean type of pictographs, and those in Owens valley, California" (Mallery, 51).

251 PT. PARTRIDGE CREEK, NORTHERN ARIZONA.—". . . where the Beale wagon road comes in to it from the east. . . . 'Some of the inscriptions are so fresh as to indicate that the locality is still resorted to'" (Mallery, 50).

252 PT(?) KEAM'S CANYON, NORTHEASTERN ARIZONA.—(Mallery, 50).

253 PT. EAST OF PEACH SPRINGS, COLORADO PLATEAU, ARIZONA.—"Some of the figures observed by W. J. Hoffman in 1872 were rather elaborate and represented the sun, human beings in various styles approaching the grotesque, and other characters not understood. All of these observed were made by pecking the surface of basalt with a harder variety of stone" (Mallery, 50).

254 PC. MUMMY CAVE RUIN, CANYON DE CHELLY, ARIZONA.—"Back of the rooms west of the tower there are some old pictographs on the cliff wall at the place where the roof abutted on it. In the first room there is a pictograph of a man, in the second a semicircle, both done in light green paint."

Cliff dwelling on ledge near the mouth of Del Muerto: "The cliffs back of the ruin and for 200 feet west of it are covered with pictographs in white and colors."

At ruin no. 49: "The cliff walls, both of the lower and upper ledges, are covered with pictographs in white, red, and yellow" (Mindeleff, 113, 114, 118, 133).

At ruin no. 46: "Some places on the cliff which were apparently back-walls of rooms, were plastered and coated with white, and there are many pictographs on the rocks" (Mindeleff, 144).

A cave marked 2 on the map: "In the southern cave there are no traces of masonry, but the back of the cave is covered with handprints and pictographs of deer" (Mindeleff, 152).

In another ruin there are pictographs on the wall of the cliff which formerly formed part of the room. "Examples almost identical with those shown here are abundant in the Mancos ruins. It is probable that they are of ceremonial rather than of decorative origin, and in this connection it may be stated that Mr. Frank H. Cushing has observed the ceremony of marking the sides of a kiva hatchway with white bars. . . . This ceremony occurs once in four years, and the purpose of the marks is said to be to indicate the cardinal directions. In the ceremonials of the Pueblo Indians it is necessary to know where the cardinal points are: a prayer, for instance, is often addressed to the north, west, south, and east, and when such ceremonials were performed in a circular chamber some means by which the direction could be determined was essential.

"In the principal kiva in Mummy Cave ruin, however, there is a painted band on the front of the bench which appears to be really an attempt at decoration. Over the white there is a band 4 or 5 inches wide, consisting of a meander done in red. The design is similar to that used today. . . . Bands with points sometimes occur on walls of rectangular rooms" (fig. 91*h*; Mindeleff, 178-181).

#### *Central Arizona—Sites 255-273, 293*

255 PT. FALL RANCH, ARIZONA.—This is a large group of petroglyphs, a few of which are shown in figure 74*b-e*. Figure 74*b* is a representation of a mask, highly suggestive of some of the kachina dance masks of the Pueblo Indians. Figure 74*e* is a bird, with a large, sweeping crest, shown in flight with fish in its mouth. It may be a kingfisher with an exaggerated crest. Figure 74*d*

shows again what appears to be a mask with a rectilinear design to the left of it suggesting on the one hand "maze" designs found elsewhere and on the other a very common decorative element occurring on pottery. Figure 74c is evidently a mountain sheep, with internal anatomy portrayed, pierced by three arrows.

256 PT. AWATOBI MOUND DWELLING, AWATOBI MESA, ARIZONA.—"There are many fine pictographs, some of which are evidently ancient, on the cliffs of the Awatobi mesa. These are in no respect characteristic, and among them I have seen the *awata* (bow), *honani* (badger's paw), *tcua* (snake), and *omowúh* (rain cloud). On the side of the precipitous wall of the mesa south of the western mounds, there is a row of small hemispherical depressions or pits, with a groove or line on one side. There is likewise, not far from this point, a realistic figure of a vulva, not very unlike the *asha* symbols on Thunder mountain, near Zuni" (Fewkes, 1898:626).

257 PT. SAN FRANCISCO MOUNTAIN, ARIZONA.—"Thirty-five miles east and southeast of San Francisco mountain." The material on which these petroglyphs are cut is red sandstone. "About these are mealing stones, fragments of pottery and chipped flints." "The drawings in every case but one were produced by blows upon the surface of the rocks, breaking through the film of rock discolored by weathering so as to reveal (originally) the color of the interior of the rock. The single exception is the first pattern in Fig. 6, similar to the patterns on pottery and blankets, produced by painting with a white pigment on red rock."

These pictures are shown by Mallery, figures 5 to 7. The designs include two reverse spirals, and several wavy lines among the geometric figures. Animal figures include several mountain sheep, lizards(?), several insects(?), a centipede, which Mallery rightly remarks resembles those from the Santa Barbara region (fig. 6), and a horse or donkey with very short legs (fig. 7). There are several bear or human tracks. A human figure shown in figure 6 is of the general form of those encountered in southern Utah and seems to bear horns (Mallery, 48, 49, figs. 5-7).

258 PC. PALATKI RUIN 1, RIO VERDE VALLEY, ARIZONA.—"On the perpendicular wall which forms the rear of enclosure B, many feet above the top of the standing front wall, there are several pictographs of Apache origin. The height of these above the level of the former roof would appear to indicate the existence of a third story, for the hands which drew them must have been at least 15 feet above the present top of the standing wall" (Fewkes, 1898:556).

259 PC. HONANKI RUIN, RIO VERDE VALLEY, ARIZONA.—"The pictographs on the face of the cliff above Honanki are for the greater part due to the former Apache occupants of the rooms, and are situated high above the tops of the walls of the ruin. They are, as a rule, drawn with white chalk, which shows very clearly on the red rock. The figure of a circle, with lines crossing one another diametrically and continued as rays beyond the periphery, possibly represent the sun. Many spiral figures, almost constant pictographs in cliff ruins, are found in several places. Another strange design, resembling some kind of insect, is very conspicuous.

"A circle painted green and inclosed in a border of yellow is undoubtedly of Apache origin. There is at one point a row of small pits, arranged in line, suggesting a score of enumeration of some kind, and a series of short parallel lines of similar import was found not far away" (Fewkes, 1898:567, 568).

260 PT. CLARKDALE, ARIZONA.—Some eight miles north of Clarkdale at "Joe Joranson's" (J. W. Blankinship, Kelseyville, California, letter of May 31, 1925, to San Francisco Examiner).

Plate 84a shows a photograph from this site. A "centipede" appears in the upper right-hand corner. Below this is an indistinct animal figure, perhaps a dog or a mythical creature. At the bottom of the picture is a human figure which stands with arms akimbo.

261 PT. NEAR MONTEZUMA WELL, VERDE VALLEY, ARIZONA.—"The pictured rocks (figure gives tracings) near Cliff's ranch, on Beaver creek, four miles from Montezuma well, have a great variety of objects depicted upon them. These rocks, which rise from the left bank of the creek opposite Cliff's ranch, bear over a hundred different rock pictures. The rock surface is a layer of black malpais, through which the totem signatures have been pecked, showing the light stone beneath, and thus rendering them very conspicuous. Among these pictographs many familiar forms are recognizable, among them being the crane or blue heron, bear's and badger's paws, turtles, snakes, antelopes, earth symbols, spirals, and meanders" (Fewkes, 1898:548, pl. 97).

262 PT. COURTHOUSE, ARIZONA.—"There are some good pictographs on the foundation rock of that great pinnacle of red rock, called the Courthouse, not far from Schürmann's ranch. Some of these are Apache productions, and the neighboring caves evidently formed shelters for these nomads, as ash pits and half burnt logs would seem to show" (Fewkes, 1898:550-551). Site not entered on map on account of uncertainty of location.

263 PT. MONTEZUMA CASTLE, ARIZONA.—These petroglyphs are near Montezuma castle, which is near Camp Verde, Arizona. The pictures are very abundant on the vertical face of a smooth, perpendicular rock (pl. 86a). The figures comprise concentric circles, zigzags, and cross-work such as that which occurs abundantly at Fort Bayard, New Mexico (pl. 91). Several insect-like figures occur at the top of the photograph and many animal figures of a rather indefinite nature which may represent anything from the dog to deer or mountain sheep. There are a number of human figures showing the front view and one apparently in profile, all of which are extremely crude. One or two "bear tracks" also occur.

264 PT. PRESCOTT, ARIZONA.—These carvings appear very old and weathered (J. W. Blankinship, Kelseyville, California, letter of May 31, 1925, to San Francisco Examiner). Four photographs from this site are shown in plate 85. The figures are curvilinear, being composed of disorderly curved lines, dots, and circles.

265 PT. RIO VERDE VALLEY, ARIZONA.—"Few pictographs [petroglyphs] were found in the immediate neighborhood of the cavate dwellings; indeed the rock in their vicinity is too soft to preserve for any considerable time any great number of these rock etchings. Examples of ancient paleography were, however, discovered a short distance higher up the river on malpais rock which is harder and less rapidly eroded. A half buried boulder near Wood's ranch was found to be covered with the well-known spirals with zigzag attachments, horned animals resembling antelopes, growing corn, rain clouds, and similar figures. These pictographs [petroglyphs] occur on a black, superficial layer of lava rock, or upon lighter stone with a malpais layer, which had been pecked through, showing a lighter color beneath. There is little doubt that many examples of aboriginal pictography exist in this neighborhood which would



reward exploration with interesting data. The Verde pictographs [petroglyphs] can not be distinguished, so far as designs are concerned, from many found elsewhere in Colorado, Utah, New Mexico, and Arizona.

“An instructive pictograph [petroglyph], different from any which I have elsewhere seen, was discovered on the upturned side of a boulder not far from Hance's ranch, near the road from Camp Verde to the cavate dwellings. The boulder upon which they occur lies on top of a low hill, to the left of the road, near the river. It consists of a rectangular network of lines, with attached key extensions, crooks, and triangles, all pecked in the surface. This daedalus of lines arises from grooves which originate in two small, rounded depressions in the rock, near which is depicted the figure of a mountain lion. The whole pictograph [petroglyph] is 3½ feet square and legible in all its parts.

“The intent of the ancient scribe is not wholly clear but it has been suggested that he sought to represent the nexus of irrigating ditches in the plain below. It might have been intended as a chart of the neighboring fields of corn and it is highly suggestive, if we adopt either of these explanations or interpretations, that a figure of the mountain lion is found near the depressions, which may provisionally be regarded as ancient reservoirs. Among the Tusayan Indians the mountain lion is looked on as a guardian of cultivated fields, which he is said to protect, and his stone image is sometimes placed there for the same purpose.

“In the vicinity of the pictograph [petroglyph] last described other boulders, of which there are many, were found to be covered with smaller rock etchings in no respect characteristic, and there is a remnant of an ancient shrine a few yards away from the boulder on which they occur” (Fewkes, 1898:545, pl. 93).

266 PT. GRANITE SPRINGS, ARIZONA.

267 PT(?). YAMPAIS SPRINGS, WILLIAMS RIVER, ARIZONA.—“The spot is a secluded glen among the mountains. A high shelving rock forms a cave, within which is a pool of water and a crystal stream flowing from it. The lower surface of the rock is covered with pictographs [petroglyphs?]. None of the devices seem to be of recent date” (Mallery, 50).

268 PT. CHAMBERS, ARIZONA.—These petroglyphs include deer, dogs(?), lizards, several human figures, hand and foot prints, bear tracks, spirals, and two rectilinear, maze-like designs (W. M. Peterson, Albuquerque, New Mexico, letter of June 6, 1910; pl. 87).

269 PT. TEMPLE, ARIZONA.—A rock wall is incised with a series of human figures. The photograph, plate 86c, was furnished by M. A. Bolton, 1899. There are ten figures in this group. From left to right, the first four are posed with the left hand on the hip and the right hand raised; the next three figures have joined hands, and the one to the left holds a long, curved object like a cane in his left hand. The remaining three are somewhat above the others and in different poses. The middle of these three appears to be wearing some sort of a headdress. Below the “dancers” is a long wavy line probably intended as a snake. To the right of the snake is what may be a lizard. Two small dogs (or goats) stand off to the right and look on. Above the dancers is another small animal probably a mammal.

270 PC. PHOENIX, ARIZONA.—Mr. L. R. Free of Los Angeles, California, gives us the following information: “About four miles northeast of Phoenix, Arizona, there is a dry wash or gully and one place where the water flows

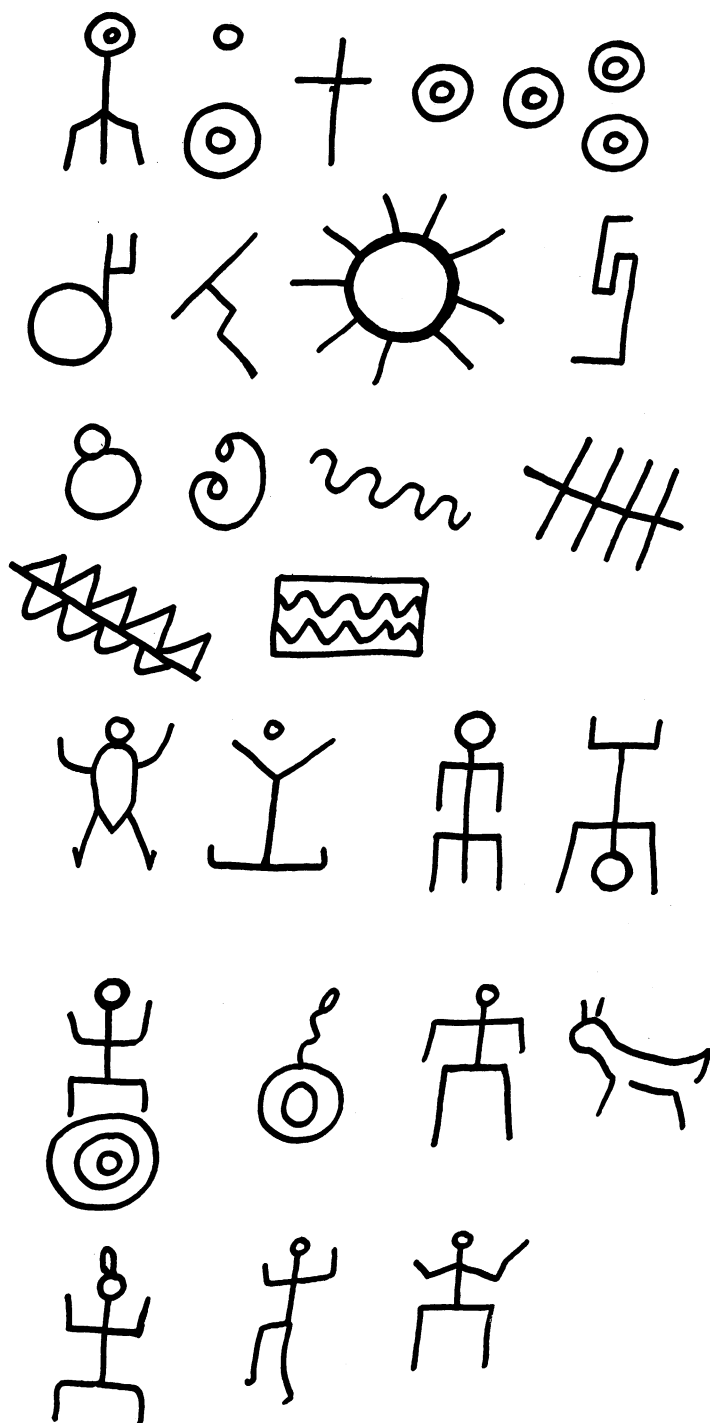


Fig. 75. Petroglyphs from south of Phoenix, site 271, southern Arizona.  
(Not natural grouping)

when it rains there is a little place where is a drop over a rock about 8 or 9 feet. Part way up on the rock is a . . . spiral . . . in white on the grey rock. There are no other writings that anyone knows of in that side of the valley. It is between Squaw peak and Camelback mountain on comparatively flat land'' (letter of May, 1927).



Fig. 76. Petroglyphs from south of Phoenix, site 272, southern Arizona. (Not natural grouping)

271 Pt. SOUTH OF PHOENIX, ARIZONA.—Seven miles south of Phoenix "in east end of the mountain range south of Salt river. There are numerous petroglyphs in this range, some deep and distinct, others mere faint scratches. The human figures found average about eight inches in height; some designs of two feet. This group is given in full" (fig. 75; A. G. Colley, field notes).

Concentric circles and a sun disk occur as well as the many sketchy humans (compare especially the upper left corner with fig. 86).

272 Pt. AZTEC CANYON, ARIZONA.—On E. P. Shelley's homestead in Aztec canyon, several miles to the west of site 271. This group of petroglyphs is shown in figure 76 (A. G. Colley, field notes). These comprise many sketchy human figures in various postures, several birds, snakes(?), lizards or Gila monsters and horned toads, and sun disks. Compare the outlined cross in the lower right-hand corner with Grapevine canyon, site 227, and Little lake, site 48.

273 Pt. NEAR PHOENIX, ARIZONA.—Seven miles south of Phoenix there is a rock inscribed chiefly with curvilinear petroglyphs. There is little arrangement to the rambling curves. One more or less rectilinear figure occurs in the form of a rectangle filled in with horizontal cross-lines (pl. 86b).

293 Pt. PARKER, ARIZONA.—Mr. Randall Henderson of the Calexico Chronicle writes that these petroglyphs "are some miles south of Parker, Arizona, along the mountains that skirt the east side of Parker valley on the Colorado river Indian reservation. There are no great number of them, but a few symbols can be found at several points. Mohave Indians, residing on the reservation, disclaim any knowledge as to the origin or meaning of the symbols" (letter of May 27, 1927).

#### *Southern Arizona—Sites 274–280*

274 Pt. CASA GRANDE, ARIZONA.—"Casa Grande is situated in a plain and in the immediate neighborhood there are no outcroppings of rocks available for pictographs, although it is probable that certain pictures on rocks distant about a mile date back to the time when Casa Grande was inhabited. As a rule, these pictographs [petroglyphs] are pecked into the rock, paintings, if any, having been washed or worn away. The largest cluster of pictographs [petroglyphs] lies in the outcropping lava on the north side of the Gila, opposite the settlement of Pima, called Blackwater.

"There are also many pictographs on the 'pictured rocks' a few miles east of Florence, and still others in the Casa Grande range west of the ruins. The pictographs near Sacaton are perhaps the best known in this section, although those farther down the Gila are more extensive. There is a general similarity in all these picture writings, some of which are regarded with reverence by the modern Pima" (Fewkes, 1912:148, 149).

Some of the petroglyphs from this site are shown in figure 77. The birds and human figure with a feather in the hair are similar to several in figure 76, from site 272 (compare the cogged-wheel and concentric circles with one at Yerington, Nevada, site 202, pl. 61a).

275 Pt. POWERS BUTTE, ARIZONA.—"Mr. Paul Holman, of the United States Geological Survey, reports that eight miles below Powers butte, on a mesa bordering on the Gila river and rising abruptly to the height of 150 feet, are pictographs covering the entire vertical face. Also on the summit of Oatman mountain, 200 yards from the Gila and 300 feet above it, are numbers of pictographs. Many of them are almost obliterated where they are on exposed surfaces" (Mallery, 49.) Site not entered on map on account of uncertainty of location.

276 Pt. GILA BEND, ARIZONA.—"Lieutenant Colonel Emory reports that on a table-land near the Gila bend is a mound of granite bowlders blackened by augite and covered with unknown characters. . . . Others occur on the Gila river at 32° 38' 13" N lat. and 109° 7' 30" long." (Mallery, 49).

277 Pt. GILA RIVER, ARIZONA.—One hundred and twenty-five miles from the mouth and north of the Gila river, on red sandstone walls of an arroyo, pecked and carved. There are “hundreds covering more than five hundred square feet of both walls of the arroyo. Many eroded and barely traceable. Some resemble tattoo markings copied from Indians encountered. . . . A close correspondence between numbers 4, 7, and 24 or facial [decorations] and some of the petroglyphs is suggested.” Chittenden states: “An intelligent Yuman Indian told me that his forehead tattoo mark, identical with number 6 copied from the sand-

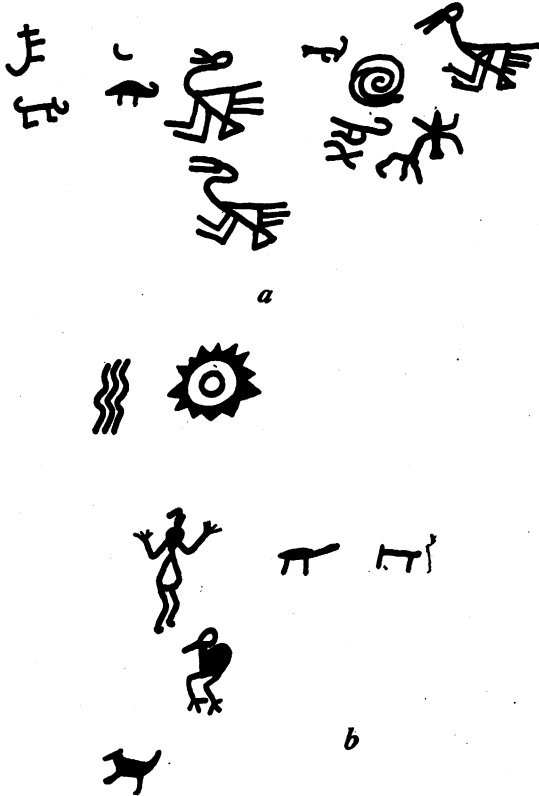


Fig. 77. Petroglyphs from Casa Grande, site 274, southern Arizona.  
(Two natural groups)

stone, had descended from his ancestors, and that they originated in honorary titles bestowed upon their braves distinguished for exploits in warfare” (Chittenden, 106-110).

This crudely reproduced group is given in figure 78a. The first four designs are clearly sun disks, three of which are somewhat elaborated. Then follow several rectilinear figures of a simple type. Several human figures are shown which are very much of the style of those in figures 76 and 77, and which have circles as heads. Those on horseback, fourth and fifth rows, are of interest as dating this grouping within the last four hundred years. We cannot but feel, however, that some of these figures are slightly idealized in accordance with the author's notion of how they should have been drawn. The probability, for example, that the horses' eyes were actually represented, is very slight.

For the purpose of comparison, the tattoo marks given by Chittenden are shown below, figure 78*b*. The rectilinear character of some of these is not unlike several of the petroglyphs, and the use of dots is a widespread feature of petrographic art. We are not prepared, however, to support any close relationship of purpose or meaning between these two sets of characters.

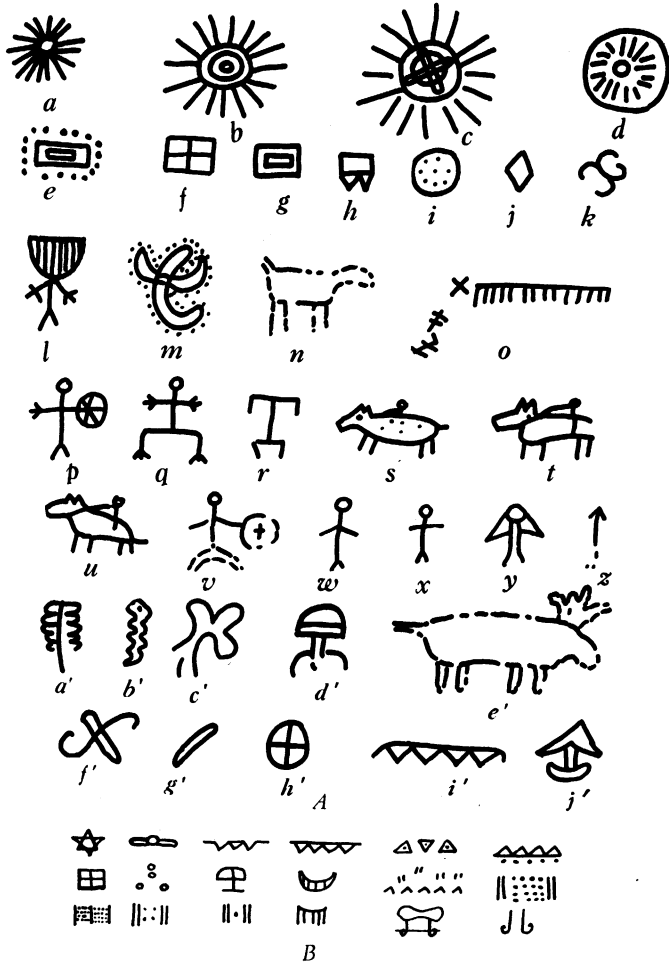


Fig. 78. A, petroglyphs from Gila river, site 277, southern Arizona. B, tattoo marks from Indian tribes in this region.

278 PT. GILA RIVER, ARIZONA.—Approximately fifty miles from Yuma, according to Bartlett “hundreds of these boulders covered with rude figures of men, animals, and other objects of grotesque forms, all pecked in with a sharp instrument. Many of them, however, were so much defaced by long exposure to the weather, and by subsequent markings, that it was impossible to make them out. . . . A few seemed recent; the others bore the marks of great antiquity” (Bartlett, 195).

These plates (Bartlett) show mainly the curvilinear type of northeastern California and northern Nevada. Circles, concentric circles, wavy lines, and spoked wheels are common. There are two or three figures which are more or less rectilinear. A sun disk and rake design also occur. Of realistic figures there are several crude human figures, lizards(?), and coyotes(?).

279 PT. GILA RIVER, ARIZONA.—About 100 miles from Yuma, or nine days' travel according to the journal of Bartlett. "After crossing a plain for four or five miles we reached the object of our search, which consisted of a pile of large boulders heaped up some forty or fifty feet above the plain and standing alone [undoubtedly natural]. Such of these rocks as present smooth sides are covered with sculptures, rudely pecked in, of animals and men as well as of various figures apparently without meaning. There are hundreds of them so ornamented showing the place has long been the resort of the Indians for this purpose; for there seems nothing else to attract them here. Many of the inscriptions, like those before described, bear the stamp of great age, others having been made over them repeatedly, rendering it impossible to trace out either the earlier or the later markings" (Bartlett, 206).

The pictures shown are somewhat like those in the last group but have a larger proportion of realistic figures. These comprise human figures, lizards(?), coyotes(?), horse, and antelope(?). There are several circles and wavy lines, but one rectilinear figure stands out as being closely similar to the Grapevine type.

280 PT. TUCSON, ARIZONA.—These petroglyphs are located nine miles from Tucson, Arizona. (We are indebted to Professor Andrew Kerr, University of Utah, for the photographs and information. They were secured through Mrs. Mary L. Kirk, Brigham City, Nevada.)

The carvings are on a smooth, vertical rock wall and comprise human and animal figures (pls. 88, 89*a*, *b*). The animals (pl. 88*a*, *c*, *d*) are evidently cattle, judging by the forward curving horns and large bodies with short legs and long tails. Possibly sheep and other quadrupeds are portrayed in plate 88*d*. The two mountain sheep in plate 88*b* are of interest as showing a tendency toward an unusual style of conventionalization. Each is drawn with simple straight lines except for the semicircular bellies and long, curving horns. The upper one standing alone would scarcely be recognized as a mountain sheep. A lizard and possibly a Gila monster and a centipede are also depicted here as well as several human figures.

The eight human figures with flamboyant headdresses and locked hands, which seem to be dancing under a large spiral (pl. 89*a*), are not unlike several encountered in California; a simpler human figure appears in plate 89*b*.

#### *New Mexico—Sites 281, 282*

281 PT. ZUÑI, NEW MEXICO.—This is a group of petroglyphs carved on a smooth rock wall in the vicinity of Zuñi, New Mexico. The pictures comprise both conventional designs and animal figures (pl. 89*c*). At the right-hand side is a large "monster" filled in solid by pecking, with what appears to be a deer(?) below and to the right of it. To the left of this "monster" is what may be a human figure with arms akimbo. In the upper central part of the picture is an elongated creature with a sharp muzzle and a long thin tail which stretched forward the length of the body with the tip poised over the head.

To the left and above the monster and to its right appear two rectilinear figures which are strongly suggestive of the "maze" encountered elsewhere. The remaining three figures are circular in outline. The central circle is filled in by pecking and has a head like that of a bird. The right-hand circle has its lower half filled in by pecking with its upper half bisected by a vertical line and a solid circle "hanging" on either side of this central, bisecting line. The left-hand circle is entirely bisected by a vertical line, from which "fins" project into the right-hand half of the circle. In the left side of the circle are two smaller circles, one solid, the other in outline with a straight line running off from it. Other irregular curves and waves are associated with this left-hand circle.

282 PT. FORT BAYARD, NEW MEXICO.—(For the photographs from this site, pls. 90 and 91, we are indebted to the courtesy of Field Museum of Natural History, Chicago, Illinois.) These petroglyphs are carved on low, vertical rock cliffs and on rocky outcrops at the foot of the cliffs. The designs are a very elaborate grouping of rectilinear and curvilinear figures. The large design in the center of plate 91 resembles a trellis, while a similar one in plate 90 resembles netting. Many concentric circles appear, some of which are connected with one another by straight lines. To the extreme right of plate 91 is a human figure with an ornate rectangular body. This figure has the unusual feature of the nose and eyes being indicated. In general style it is not unlike figures encountered at other places, for example, Little lake, site 48, figure 19 and plate 37*e*. Just below and to the left of this is a small lizard(?). This same picture also shows a "hand" on the rock in the foreground. At the bottom center of this photograph is a symbol which resembles the Zuni symbol for the female genitalium. (A similar design occurs in Lower California at El Oso canyon—see figure 79*u*.) The rectilinear designs are again somewhat similar to many of the groups of Lower California.

#### *Lower California—Sites 283–290*

283 PT. EL OSO CANYON, LOWER CALIFORNIA.—This is the first large canyon north of Cajon canyon, San Felipe valley, on the eastern face of the San Pedro Martir mountains. (The Providencia and Arroyo Grande canyons to the north also have petroglyphs according to Mr. Gilbert, cattleman. El Oso petroglyphs examined by W. D. Strong.)

Characters from this site are shown in figure 79. One of the rocks has a pecked design on the top, holes about one-half inch deep over its upper surface in the form of a spade (fig. 79*a*).

The design shown in figure 79*l* is isolated and is very large and striking. This is in the form of a triangle decorated on the interior by symmetrically arranged straight lines and circles. *k* shows a symbol from the Arroyo Grande canyon which resembles the Moki or Pueblo rain symbol.<sup>3</sup> The other figures in this group include several groups of circles or loops (*d-i*), and a human figure filled in with solid pecking (*c*). The upper design in *d* resembles a cross planted in a flower pot. *q* is said to be a human figure. *j*, *o*, *r*, *v*, made up of cross-work, suggest some of the cross-work figures from southwestern California. *m* resembles a long vase with a pointed base and has six short lines projecting from the top. In *n* we see again the succession of circles strung on a straight line. This is a common arrangement in Owens valley, California.

<sup>3</sup>North, 249, fig. 73.



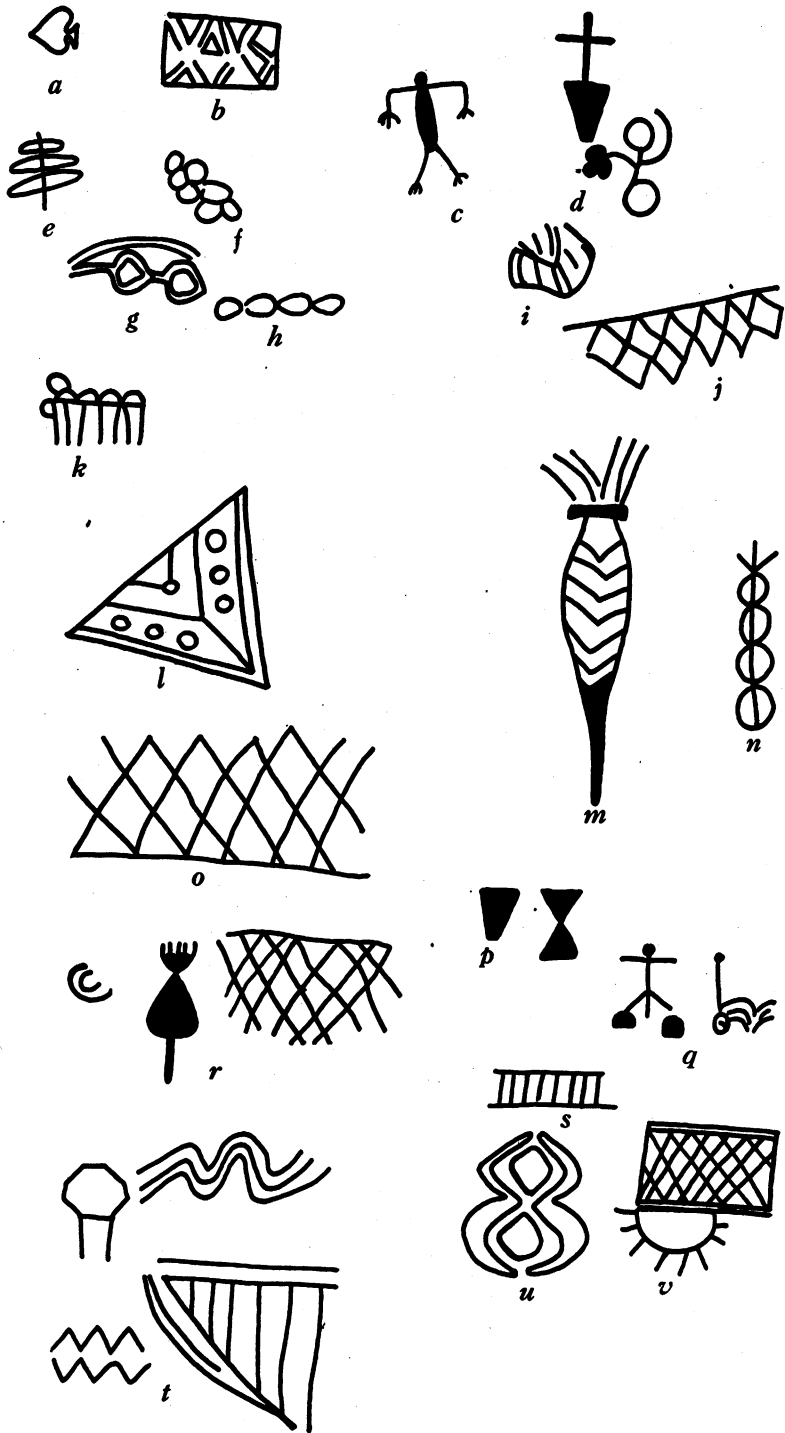


Fig. 79. Petroglyphs from El Oso canyon, site 283, Baja California.

These are in crumbling granite or sandstone scratched in through the brown surface. They are directly on and above El Oso, which means the bear (a water hole about fifty feet away), and run along smooth-faced slabs all of which are overhanging except the two circular designs about one and a half feet each on a smooth granite slope just below the group of designs shown in *p, q, s, u, v*, which are a quarter of a mile up the canyon. The loop designs and circular designs on the smooth slope below this group show that they are not overly ancient, for heavy slides or rains would wear them down in the course of a scant century at least.

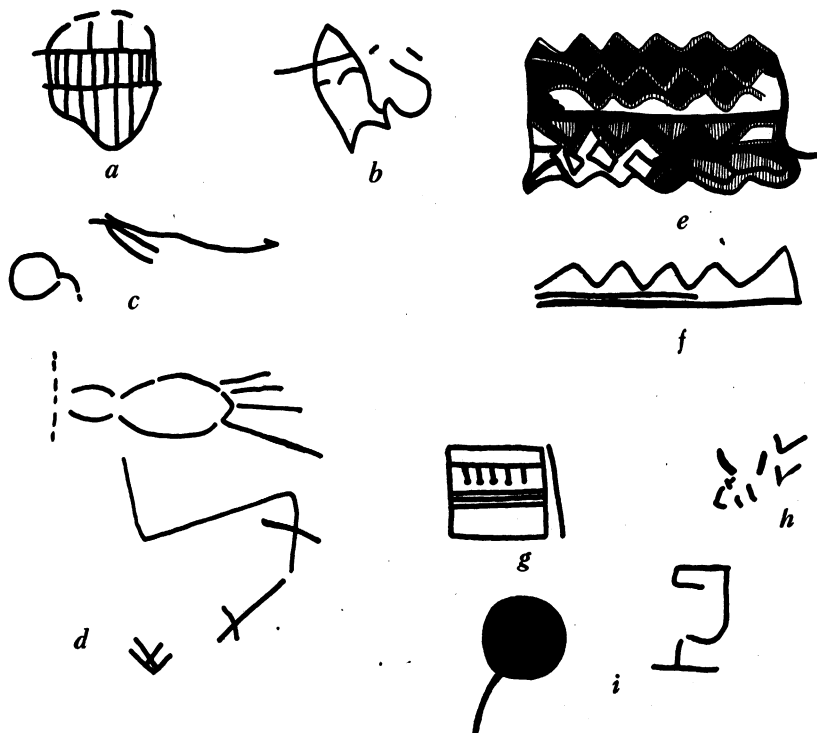


Fig. 80. Pictographs from Cajon canyon, site 284, Baja California.

The group of solid, rectilinear figures in *s, u, v*, are sixty feet up on the cliff at the mouth of the canyon. The cross-work design again occurs with what appears to be half of a sun disk appearing below it. To the left of this is a complex figure comprising two rough diamonds, one over the other, enclosed by a "double" chevron on either side. A horizontal "ladder" is just above this, while toward the top we find a human figure crudely done.

284 Pt PC. CAJON CANYON, LOWER CALIFORNIA.—Figures are painted in black on the roof of a cave formed by decomposing granite boulders which are piled. This is on the north side of the canyon, two hundred yards east of the old cement wall, almost in the middle of the canyon. The main figure is shown in figure 80*a*. It is roughly circular, trisected by two horizontal lines which are joined by vertical parallel lines. Figure *b* is ten feet up the canyon in a similar "cave" with a western exposure. *c* is on the bottom of the boulder

forming the roof of this cave and is in black. On the western side of the same pile of rocks on the roof of a low cave, is the group of figures shown in *c*, *d*, done in charcoal which are faint and not decipherable. (Pl. 92*b*, *c* shows photographs of pictographs from Cajon canyon, painted on granite boulders. The zigzag element appears in *c*.) Two hundred yards down the canyon from the last group there is a pictograph on the northern side of the canyon shown in figure 80*e*. Associated with this are several fake pictures drawn in with charcoal in modern times. This large complex figure is done in red and black. The black appears as such while the red is cross-hatched. The zigzag in 80*f* is the same as shown in the photograph and is in a small cave (roof) on the northern

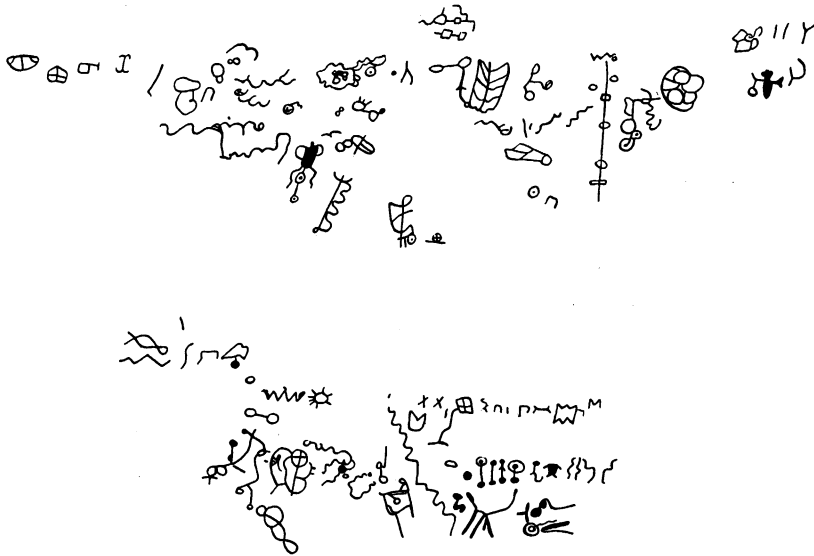


Fig. 81. Petroglyphs from San Luis, site 285, Baja California.

side of the entrance to Cajon canyon. *g* and *h* are on the southern wall at the corral at the mouth of the canyon, thirty feet above the corral. *i* is a petroglyph, very faint, on the southern wall of the canyon. (Site examined by W. D. Strong.)

285 Pt. ARROYO SAN LUIS, LOWER CALIFORNIA.—This group, apparently petroglyphs, although our data are not specific, occurs in the Arroyo San Luis, on a wall of schist. (Robert B. Moran and Thomas H. Frothingham kindly furnished the sketches, an excellent blueprint, from which figure 81 is traced.) This group comprises a large number of figures, both curvilinear and rectilinear. Among the former are various curved designs admitting of no brief description, groups of circles like rosettes, circles strung on straight lines, a sun disk, several human figures. Among the rectilinear figures are many small squares, zigzags, rectangles, and various combinations of these.

286 Pt. SAN MARCOS, LOWER CALIFORNIA.—This group is about thirty miles east of San Antonio del Mar (about 170 miles south of Ensenada). The figures are on a large split boulder, on the southernmost of two knolls at the eastern end of San Telmo canyon, about fifty feet above the valley floor. They have been much disfigured by modern vandals. There are about six designs, each six inches across. The boulder faces to the north. These designs comprise a

sun disk, a circle with a straight line running from it, vaguely suggesting the water(?) symbol, two vertical lines crossed by several horizontal lines, and a crude, ovoid figure crossed by perpendicular lines (fig. 82a).

287 Pt. SAN JOSE, LOWER CALIFORNIA.—This is a group of petroglyphs at San Jose, in the San Pedro Martir mountains. The carvings are on the face of a large boulder which is but one of a huge pile of boulders. Figure 82b shows two main figures, the left-hand one of which is several incomplete diamonds in

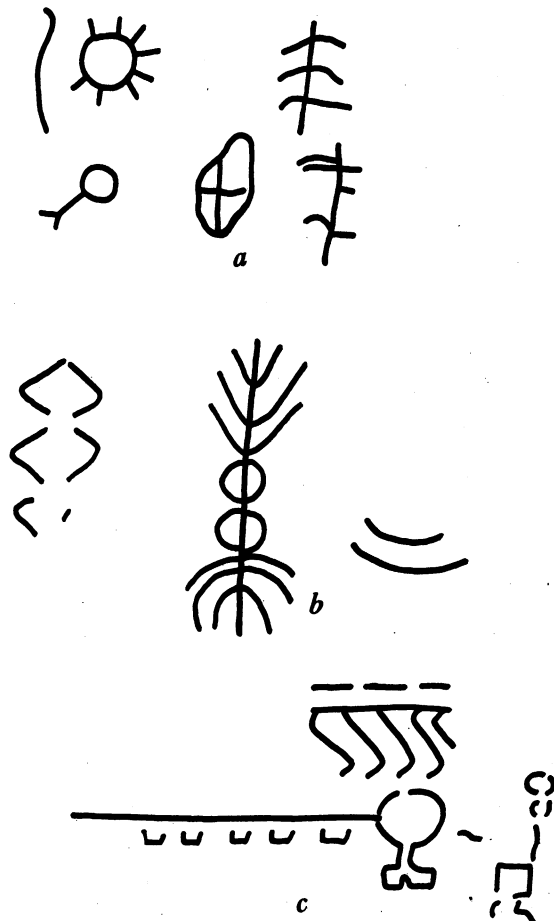


Fig. 82. a, petroglyphs from San Marcos, site 286, Baja California.  
b, c, petroglyphs from San José, site 287, Baja California.

a vertical series, and the central one is a vertical straight line, crossing two circles at its center. Above the circles are three chevrons projecting upward; below are three projecting downward also crossed by the straight line. Figure 82c shows another group of figures from the same locality. (Site examined by W. D. Strong.)

The photograph (pl. 92d) is in the same locality. It is carved on the smooth surface of a granite boulder, and shows buff (gray) lines on a brown background. It faces to the east. The rock is on a rise of ground about three

hundred yards east of San Jose creek. The figure is about twenty feet from the ground, but is easily accessible. Local Mexicans and Indians call this "the devil's writing." There are other almost obliterated scratches on the boulder. This human figure is about one foot ten inches in height. The arms are raised to the side, the legs likewise are spread-eagle. The features are represented. Four dots appear across the breast suggesting ornaments while the four circles across the "belt" may also be ornaments.

Petroglyphs and pictographs are mentioned in the vicinity of the Sierra de San Pedro Mártir by North.<sup>4</sup> He describes four different groups, all facing east. One group shows a large "netting" design and two pine trees, the trees being represented by two vertical lines crossed by three sets of double rectangles. Another figure is hourglass-shaped. There are also several human figures some of which are painted, and a quadruped(?) with human head and shoulders.

288 Pt. SAN FERNANDO MISSION, LOWER CALIFORNIA.—Mr. P. Meiggs of the Department of Geography, University of California, kindly furnished us with the photograph shown in plate 92a. The main design is rectilinear and is stylistically affiliated with the Grapevine canyon petrography. There appear also to be several curvilinear designs. A number of human figures occur which are roughly similar to those found in Arizona.

North mentions petroglyphs from this site "which according to the native legend were made by a race of great stature who inhabited the country long before the coming of the Indians" (pp. 245, 246). This would seem to indicate that the petroglyphs had not been made in comparatively recent times, at least. It is interesting that above the petroglyphs the padres had added, according to North, a Latin or Spanish "cross" to dispel the devil. The figures appear to be more or less incomplete but as far as can be ascertained are generally curvilinear in style with but one definitely rectilinear figure resembling a "Roman numeral."

289 Pt. ARROYO GRANDE, LOWER CALIFORNIA.—"The arroyo Grande is an immense dry river bed that debouches into the desert immediately southwest of the mouth of the Colorado river. It is a deep chasm in the midst of an excessively barren region. In one of the many rocky gorges that intersect the arroyo Grande from the northwest there are eight or nine *tinajas* or natural cisterns where rainwater—when there is rain—collects and the petroglyphs are cut shallowly into the face of a dark granite boulder set above the largest of the *tinajas*" (North 248, 249).

Several designs from this group given by North include a wavy line, possibly a serpent, a "rain symbol," and several crude  $\phi$  symbols, a crossed circle, and several other scattered circles and indefinite elements.

290 Pt. PC. CALMALLI PUEBLO, LOWER CALIFORNIA.—This site is located to the west of Calmalli Pueblo on the shores of the Pacific ocean. "On the cliffs of an arroyo near the shore appears a petroglyph showing unusual skill for this region since the human figures and the designs represented are extremely well executed and enduringly elaborated with pigment" (North, 250).

291 Pt. [See under Southern Nevada.]

292 Pt. [See under Southern Nevada.]

293 Pt. [See under Central Arizona.]

<sup>4</sup> North, 246-248.

## PART II. GENERAL CONSIDERATIONS

The practice of making petroglyphs and pictographs is, or has been, world-wide. There is not a continent which does not have abundant examples of petrography. In America there are also countless sites outside our area. They have been found in all parts of the United States, in Canada, and in Mexico, and groups are described from all regions of South America. Most of these groups are petroglyphs but this is to be expected in view of the much greater perishability of pictographs.

As a rule, all examples of petrography are extremely crude. From the point of view of art and execution they are vastly inferior to ceramic, textile, or other decorative arts. It is only in such regions as Central America, where stone sculpturing reached a high perfection, that they are really good. Here, however, stone sculpturing was a specialty and the elaborate, nicely finished carvings can hardly properly be designated "petroglyphs." In British Columbia some of the best examples of petroglyphs are very inferior to similar carvings in wood. Many of the figures, it is true, have certain good impressionistic qualities, as, for example, many life-like groups of mountain sheep. But as a rule the figures are no better than a child might do. Probably the highest peak of artistic merit was reached in the Santa Barbara region, California, but even here some of the best figures are placed ruthlessly over older ones, resulting in a confusion which detracts from the merits of the pictographs.

### PETROGLYPHS

It is probably unfair to put too much emphasis on petroglyphs as products of art. In the first place, the difficulties of marking rough rock surfaces with sharp boulders preclude any high degree of finish. In the second place, the kind of figures represented and the localities in which the groups are placed show clearly that artistic merit was secondary in the mind of the creator. Elaborate figures consisting of circles, wavy lines, rake designs, and a multitude of other indescribable geometric elements with human, animal, and possibly plant representations worked in as parts of the designs; total lack of symmetry and

not infrequent superimposition—all with a general absence of care in execution, can scarcely be regarded as attempts to give aesthetic pleasure. The usual remoteness of these groups from habitation sites is a further indication that they were generally not intended for the scrutiny of the community at large.

The technique of making petroglyphs is usually simple. A comparatively smooth and even rock surface, usually vertical, is chosen and the characters are formed by pecking with a hammerstone. Small boulders showing unmistakable evidence of such use are frequently found in association with petroglyphs. Sometimes rubbing is also employed. Most figures show clear evidence of hasty or careless execution. Straight lines are seldom straight, wavy and zigzag lines are uneven, circles are rarely true, and the few attempts at symmetrical figures fall far short of true balance. Anyone who has attempted to make a petroglyph, however, knows that it is a laborious task and that considerable pains are rewarded by very unpleasing results.

Petroglyphs are with few exceptions simple linear figures. Geometric designs while often complicated in their combination of elements are generally simple in detail. Realistic figures are similarly simple in detail. They are seldom more than body, arms, legs, and head; and while the general impression is good, details and nicety of finish are lacking. For this reason few quadrupeds can be identified. Mountain sheep are characteristically represented by a crescent-shaped or roughly oval body of solid pecking with four "pins" of legs, and a shapeless head. Ears are usually omitted but the long, recurving horns of the ram are clearly represented. Deer (or elk) may usually be distinguished by their antlers. But to venture a guess concerning the identity of other quadrupeds is extremely hazardous. Several examples of these are shown in figure 87.

Humans are likewise crudely done. These are discussed below. The height is reached in the kachina-like figures (fig. 85*a-j*).

#### PICTOGRAPHS

Pictographs as a rule are superior in form to petroglyphs. Lines are straighter, symmetry greater, and general execution is superior. We have no evidence of the method employed in making them, but assume that some kind of a simple brush was used.

The colors comprise red, black, white, yellow, and orange. Blue and green have been reported from Modoc county, California, but are

rare. Red is by far the most common color in all areas. Black and white are next in importance in Modoc county, the Santa Barbara-Tulare county regions, and northeastern Arizona. We cannot definitely state the ingredients used since few analyses have been made of the pigments. Red, however, is probably often haematite or ocher and possibly cinnabar; black is charcoal or some manganese compound; white may be lime; yellow is probably ocher. Many mortars containing traces of pigment show that the paint was probably mixed with grease and ground in these.



### PART III. ANALYSIS OF PETROGRAPHY

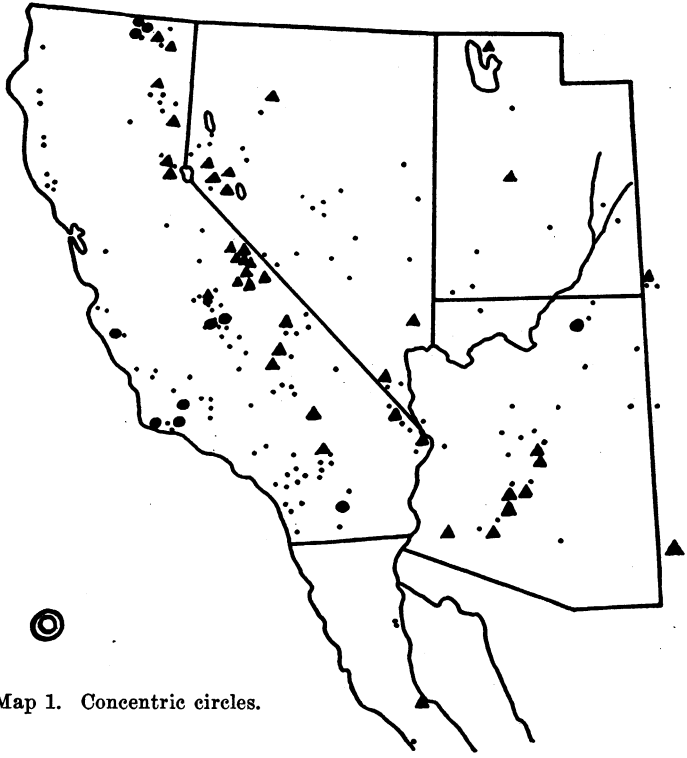
#### METHOD

In order to ascertain the relationships of the petrographs in our area we have analyzed the component designs, which make up the bulk of the petrographs, into fifty elements. This plan has seemed superior to classifying sites according to realistic, geometric, etc., figures, as most groups comprise many quite different kinds of figures. Moreover, lacking meaning and definite identity of elements, this is our only hope to correlate the various sites.

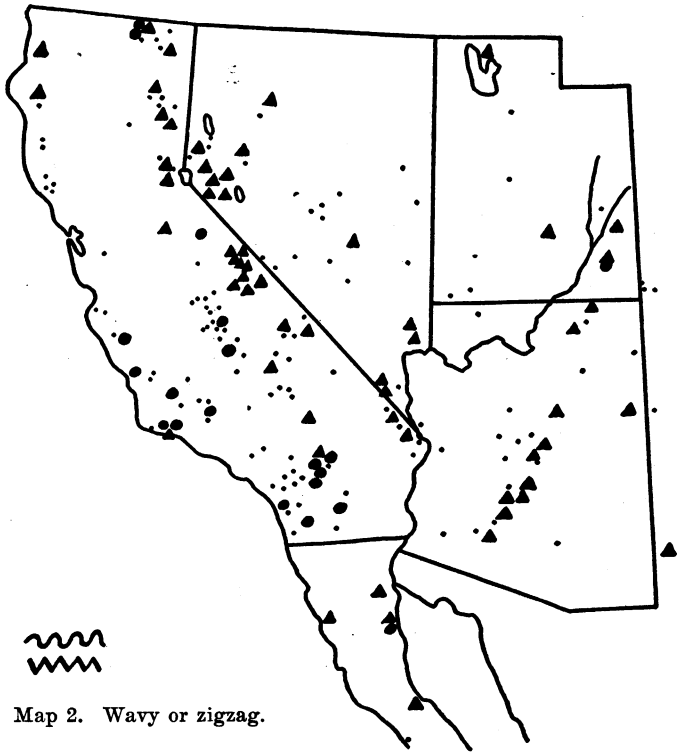
The elements chosen by no means exhaust the design components. We have selected only those which seemed fairly definite and clear-cut, and which are repeated a number of times at different sites. That the subjective element in this procedure (which is undoubtedly very great) is probably not serious is shown by the results obtained. There are many elements occurring at only two or three sites, which we have omitted. Such elements are useful in showing relationships of a detailed and special nature which are beyond the scope of this study.

Maps 1—45 (pp. 178—218) show the distribution of the elements selected. A circle indicates a pictograph, a triangle, a petroglyph. Where there is doubt concerning the identity of an element it is indicated by a question mark. Such elements are extreme variants from the simple standard which is illustrated on each map. Where the doubt is serious the site is omitted from the map.

The order of these maps and the elements discussed in connection with them follow more or less their areal occurrence. This is also shown in tables 1 and 2, where the elements are listed in the same order, so as to group them more or less according to area. Thus, elements 1—4 are of general distribution; 5—24 are found most frequently east of the Sierra Nevada mountains in California, and in Nevada, and, to a less extent, in Utah, Arizona, and Lower California; 25 is limited to southern California; 26—29 occur most frequently in California and Nevada; 30—38 occur mainly in the Santa Barbara—Tulare regions; 39—45 occur mainly in southeastern Utah and in Arizona.



Map 1. Concentric circles.



Map 2. Wavy or zigzag.

In the tables many sites have been omitted for which we have either no data or data which are too fragmentary to aid in our analysis. Similarly, a few design elements of rare occurrence have been omitted.

The tables are of value in showing (1) distribution according to area and (2) association of elements. The second, however, must be taken with caution, as our data seldom make clear whether the several designs at any given site actually are so situated as to make it probable that they were made by the same people. In many cases it is likely that they have been made at widely separated periods.

Area A includes California east of the Sierra Nevada mountains, Nevada, and Lower California. Area B includes Utah and Arizona. Area C is the eastern part of southern California. Area D includes the Santa Barbara and Tulare regions. (See map D, p. 220.)

#### ELEMENTS OF GENERAL DISTRIBUTION

*Concentric circles.*—We have considered as concentric circles two or more circles whose centers are the same. This is of general distribution and is undoubtedly a simple device which may be expected to occur as part of the geometric designs of any site. A distinction, however, must be made between its occurrence among petroglyphs and among pictographs. Among the latter, especially in the region of Santa Barbara and Tulare counties, it generally takes the form of concentric bands of alternating colors, giving the effect of a target. As this distinction seems important, the latter style has been given on map 34. The style most common among petroglyphs is concentric rings and has been given on map 1.

*Wavy or zigzag lines.*—Although there may be a significant distinction between the wavy and the zigzag line in some localities, these have been considered as identical here, not only because they usually occur together in the same groups and their distribution is the same, but also because it is frequently almost impossible to distinguish them on account of crudeness of execution. This element has the widest distribution and is one of the most commonly employed devices. It is evidently a simple figure which is one of the first of geometric designs to be used. It is used both as an isolated element and is interwoven into complex figures. There is no reason to believe that its widespread occurrence indicates any fundamental connection between the localities where it is found. Its distribution is shown on map 2.

*Human figures.*—The representation of figures with essentially human form is another element which does not characterize any areas but is universal. This is shown on map 3. Particular forms of human representations which do have limited areal distribution are considered later.

Figures 83 and 84*a-u* give a series of human representations taken from various sites. There is no dominant characteristic in these

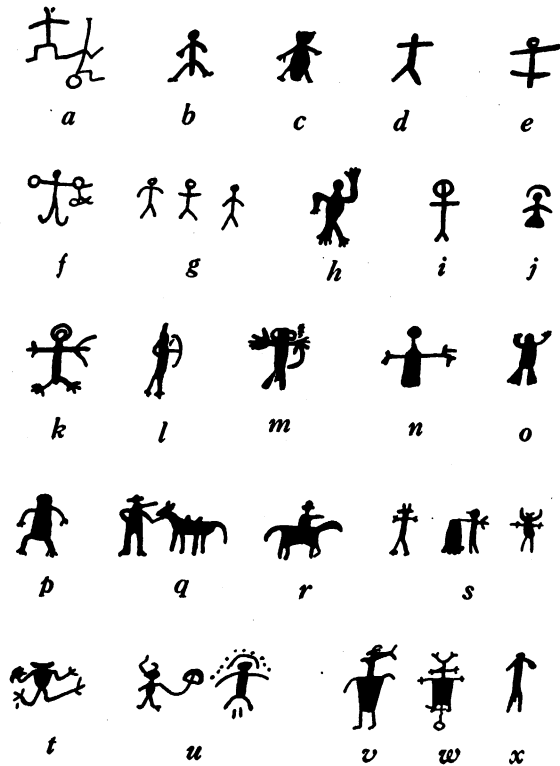


Fig. 83. *a*, Benton, site 35; *b*, *c*, Deep springs, site 40; *d*, *e*, Keeler, site 41; *f*, *g*, Yerington, site 202; *h*, Virginia City, site 208; *i*, *j*, Grapevine, site 227; *k*, *l*, *m*, Coso Hot springs, site 46; *n*, Little lake, site 48; *o-s*, Lost City, site 226; *t*, *u*, Connor's spring, site 230; *v-x*, Moab, site 235.

unless it be the lack of detail, especially that of the face. Features are depicted in but three instances, figure 84*m*, *o*, and *x*. Fingers and toes are seldom drawn and when they do occur usually number three or four. A variety of attitudes and dress are represented. Figure 83*q* is of unusual interest in portraying a man with a sombrero holding a saddled horse by the bridle, and *r* shows a man mounted on a horse.

It is very probable that a large number of apparently geometric figures are in reality highly conventionalized human or animal representations. This is especially true of crosses and of many figures

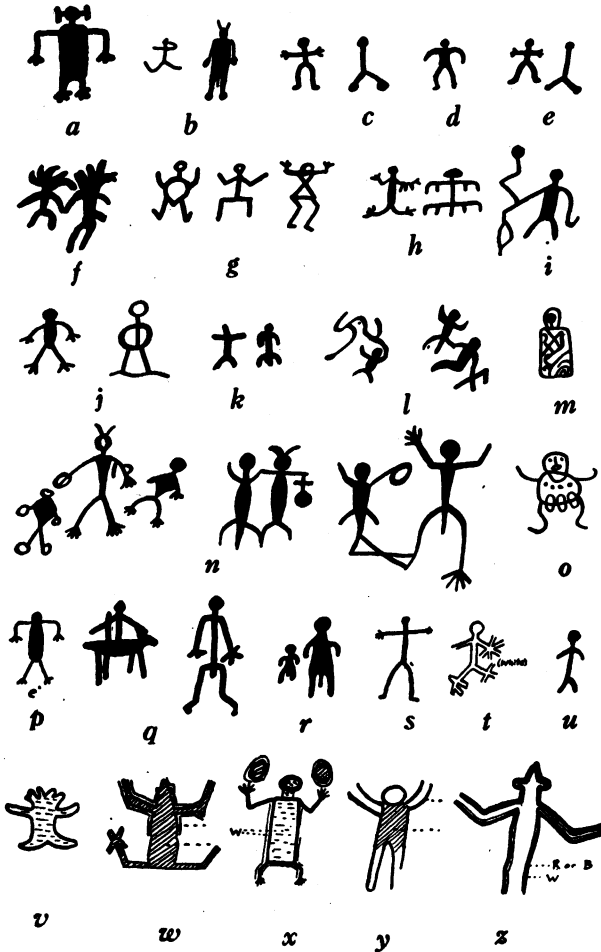
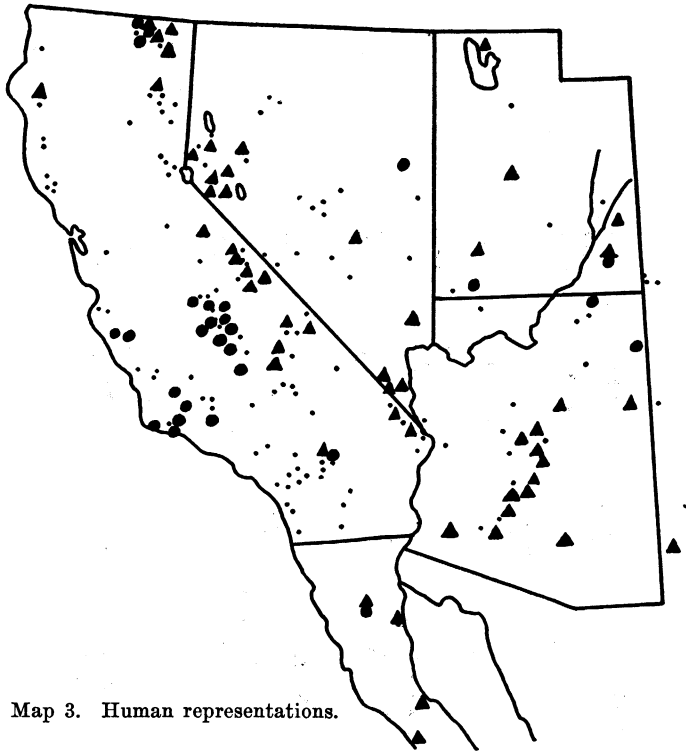
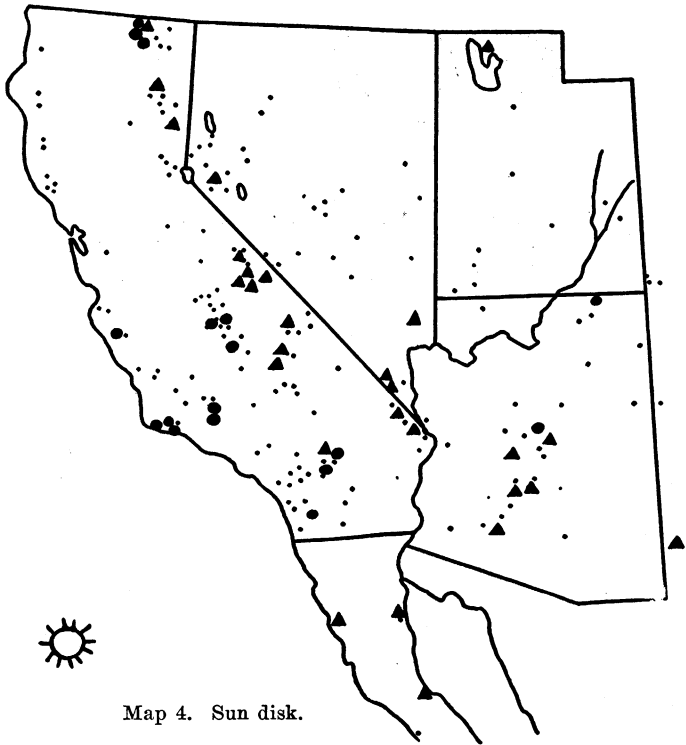


Fig. 84. *a*, Navajo, site 248; *b*, Chambers, site 268; *c*, Montezuma, site 261; *d*, Tucson, site 280; *e*, Montezuma, site 261; *f*, Tucson, site 280; *g*, Phoenix, site 272; *h*, Arizona; *i*, Gila, site 279; *j*, Lower Gila, site 278; *k*, Wood's ranch, Arizona; *l*, Gila, site 277; *m*, Fort Bayard, site 282; *n*, Gila river, site 277; *o*, San José, Lower California, site 287; *p*, El Oso, Lower California, site 283; *q*, Imperial valley, site 63; *r*, Saratoga, site 43; *s*, Exeter, site 109; *t*, Kings river(?); *u*, Orange cove, site 116; *v*, Exeter, site 109; *w*, Painted cave, site 85; *x*, Carriso rocks, site 93; *y*, Kern river, site 103; *z*, Tule reservation, site 106.

which combine circle elements. In some cases, the association of such figures with obvious human figures leaves little doubt of this. Figure 86 gives a large number of such figures which probably were intended as humans.



Map 3. Human representations.



Map 4. Sun disk.

Other human figures from Area B are shown in figure 85*k-y*. These show no uniform characteristic.

A large number of human representations are apparently phallic. See figures 84*b, l, n, r*, and 85*k, o, w*, (*w* has been mentioned before).

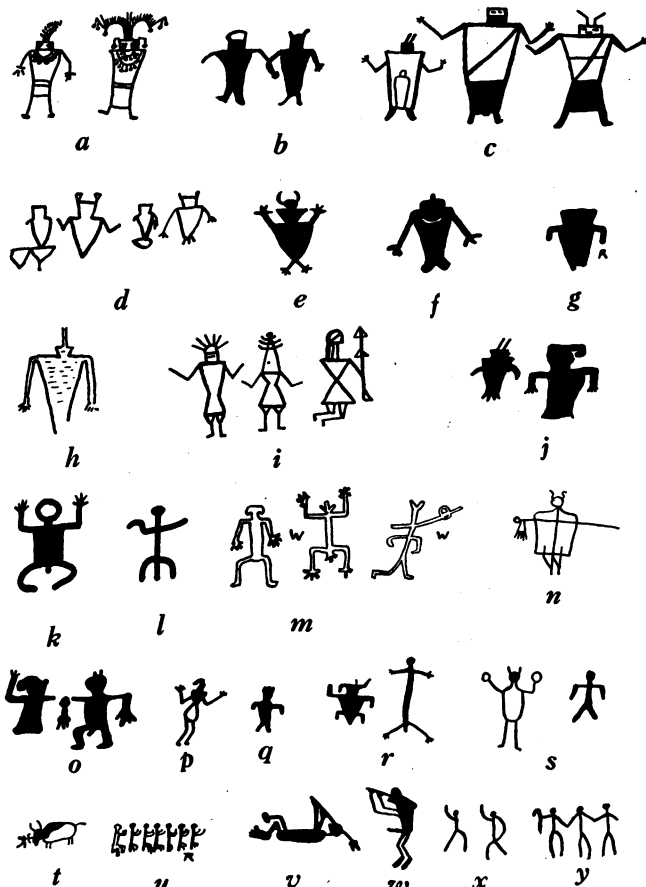


Fig. 85. *a, b*, Fruita, site 234; *c*, Colorado river, Utah; *d*, southwestern Nevada; *e*, Honanki, site 259; *f*, Navajo, site 247; *g*, Zion, site 241; *h, i*, north of Kayenta, site 246; *j*, Shinumo, site 236; *k*, Pajarito, New Mexico; *l*, Yellow Jack, site 242; *m*, Canyon de Chelley; *n*, Dirty Devil, site 236; *o*, Pajarito canyon; *p*, Casa Grande, site 274; *q*, Dirty Devil, site 236; *r*, Pipe springs, site 236; *s, t*, Shinumo, site 236; *u*, Zion, site 241; *v, w*, Kayenta, site 246; *x, y*, Temple, site 237.

Some of the human pictures may be intended as dancers. Undoubtedly this is the purpose of the kachina-like figures (fig. 85*a-j*). Figure 85*u, x, y*, also seems to be clearly dancers.

Occasionally hunting scenes are portrayed. Thus figure 85*t* shows a very small man shooting a buffalo with a bow and arrow. Again, the humpbacked figures playing the flute seem to be associated with hunting (see above).

Figure 84*f, v*, shows an interesting parallel in the portrayal of a flamboyant headdress; *f* is from near Tucson, Arizona, and *v* from near Exeter, Tulare county. The former is pecked, the latter painted in solid white.

*Sun disk*.—Of equally wide distribution is the “sun disk” (map 4). While it is probable that this figure is a pictorial representation of the sun, the term “sun disk” is used in this section merely as a descriptive term for a design which is sufficiently unique to warrant such consideration. Although the size of the circle and the number and length of the rays vary considerably the design is essentially the same everywhere.

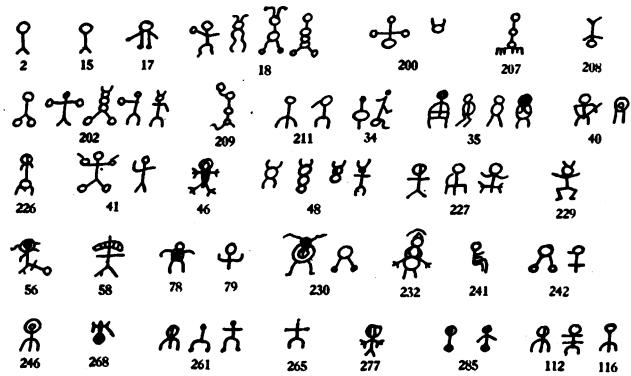


Fig. 86. Conventionalized figures, probably mostly human, from various sites.

ELEMENTS OCCURRING IN THE GREAT BASIN, AREA A, AND OCCASIONALLY IN AREA B

The following elements are limited in distribution more or less to the area included between the Sierra Nevada mountains of California and the eastern boundary of Nevada. This is the area of interior drainage and is distinguished mainly by the present Shoshonean linguistic stock.

*Quadrupeds*.—The representation of quadrupeds other than those which are readily distinguishable as mountain sheep has a wide distribution but is strongest in Arizona. Only a few examples occur among pictographs in Tulare county and in northern Arizona. The animals included here undoubtedly comprise a large number of species. A few are clearly deer (fig. 87*j, m, o, q*); one is a buffalo (fig. 87*o*); another appears to be a cow (fig. 87*i*). Figure 87*v* is a man on horseback. Others may be dogs, bears, mountain lions, rabbits, etc. We



have attempted no further identification as in all cases the figures are too crude to permit of more than the merest guess. There is seldom more than the minimum characteristics of a quadruped—body, head, ears, four legs, and tail. The proportions of some suggest llamas,

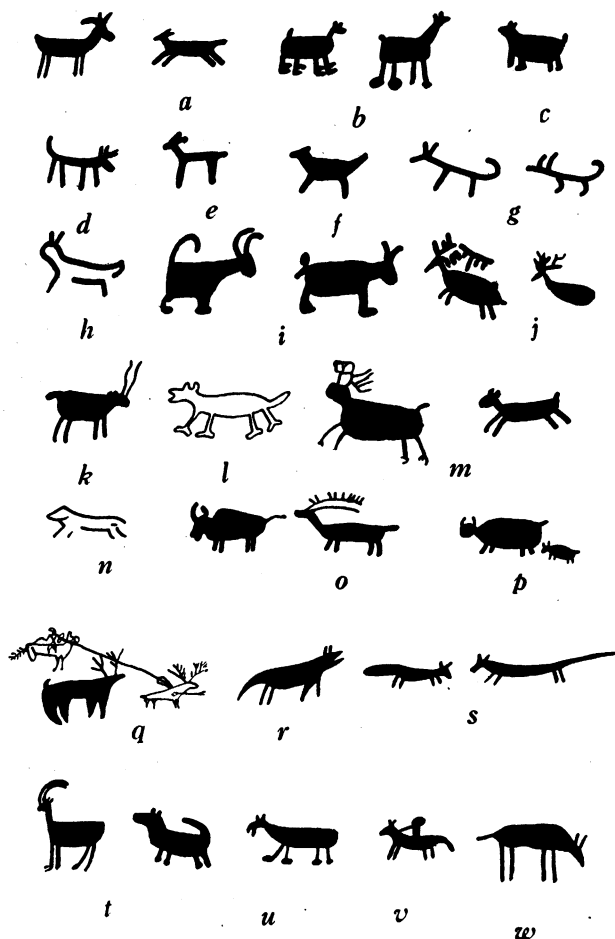
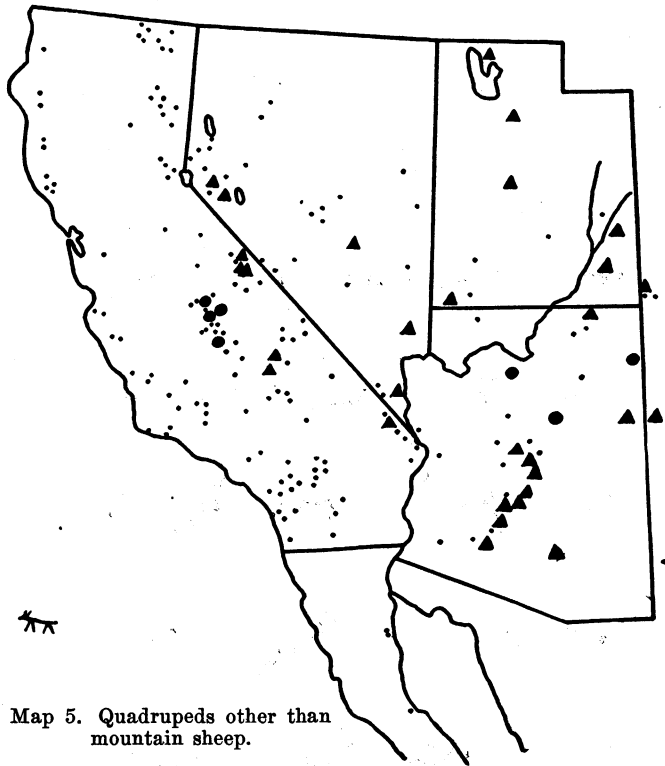
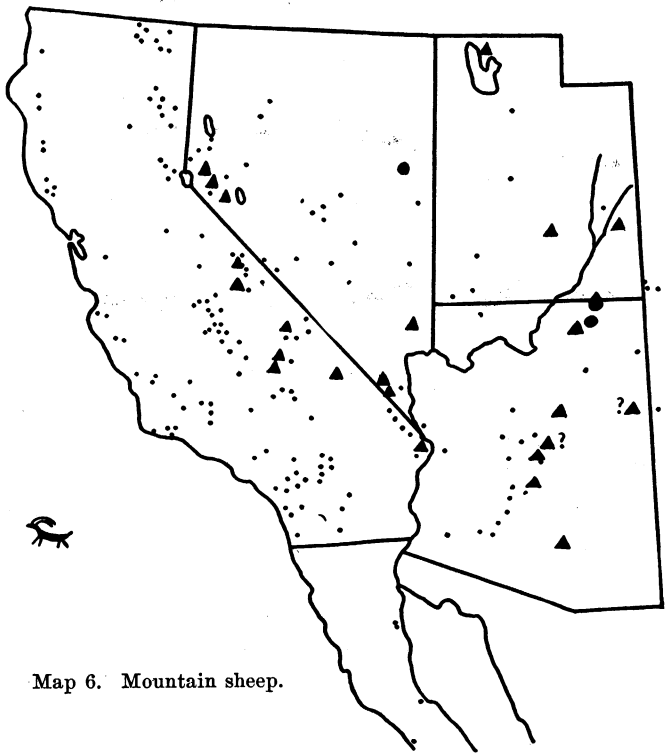


Fig. 87. Various animal figures from different sites. *a*, Utah; *b*, 268; *c*, *d*, 263; *e*, 105; *f*, 274; *g*, 272; *h*, 271; *i*, 280; *j*, 230; *k*, 257; *l*, Tulare région; *m*, 35; *n*, 229; *o*, *p*, 236; *q*, 246; *r*, 278; *s*, 279; *t*, 234; *u*, 235; *v*, 279; *w*, 271.

camels, dragons, and other forms which could not have occurred in North America. This is not surprising, however, for mythical creatures are frequently represented in primitive art and the range of characteristics of such monsters is so large that on a basis of chance we should expect to find many which resemble animal forms occurring only outside of North America or non-existent. The distribution is given on map 5.



Map 5. Quadrupeds other than mountain sheep.



Map 6. Mountain sheep.

*Mountain sheep.*—The mountain sheep is the most readily identified of all larger quadrupeds which are represented. The large, recurving horns of the male are a striking characteristic which was fully utilized by the native artist. Figure 88 shows a number of mountain sheep

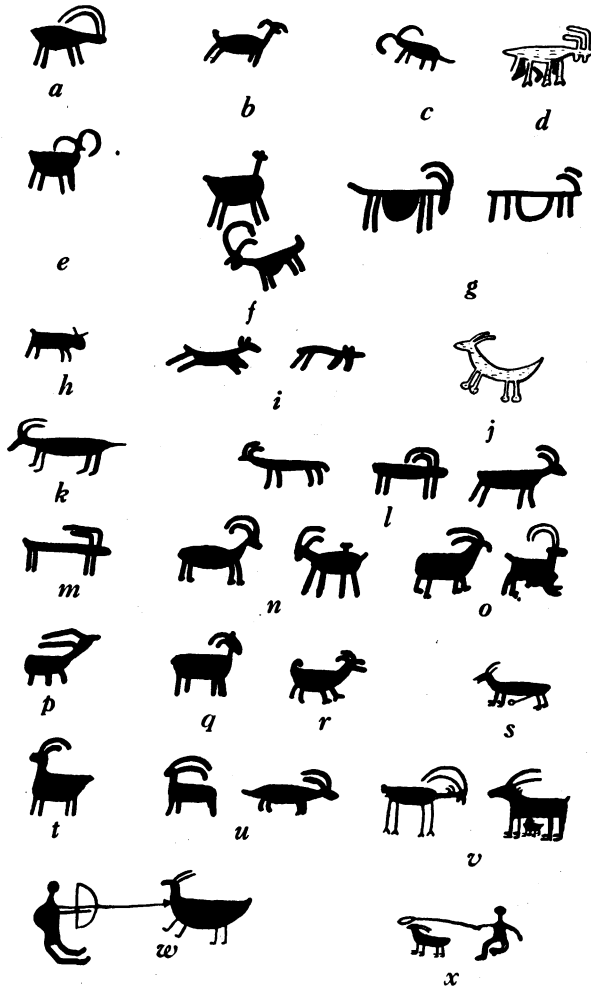
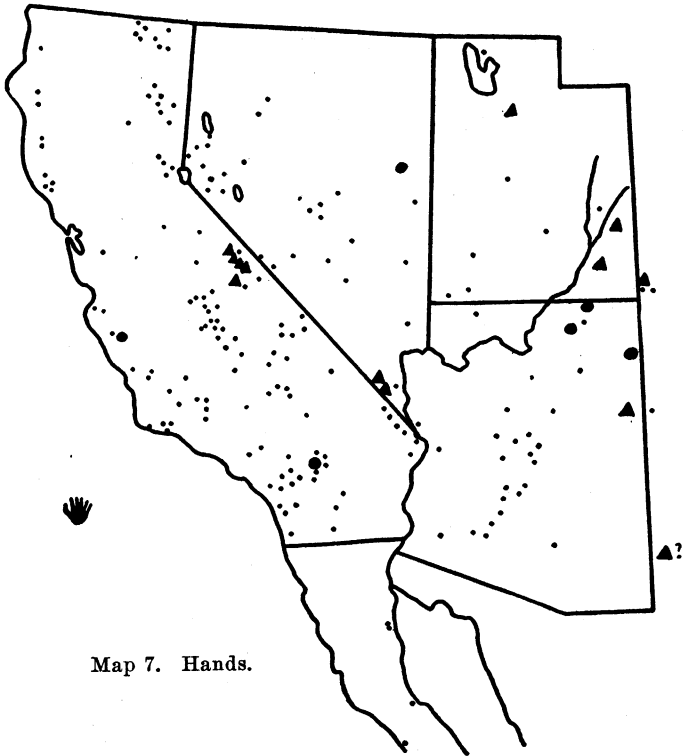
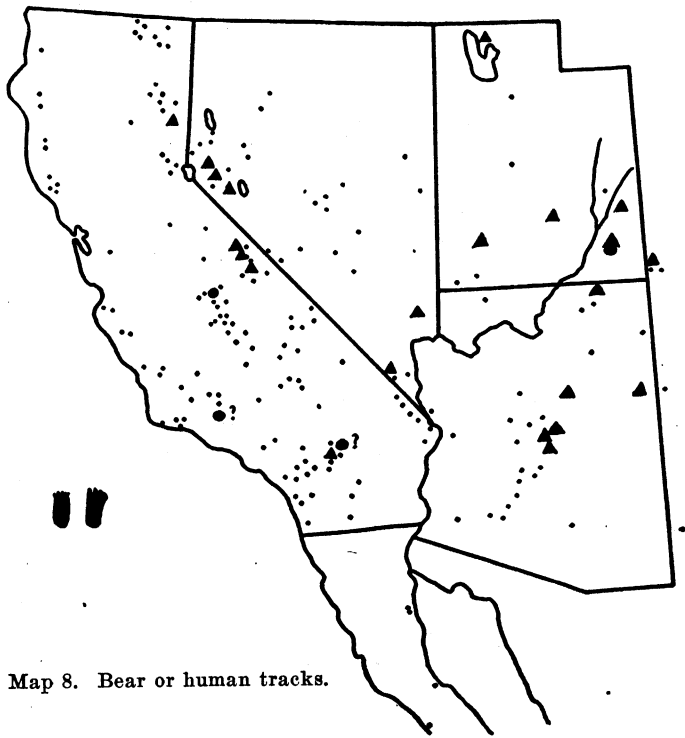


Fig. 88. Representations of mountain sheep from various sites. a, 31; b, c, 46; d, 246; e, f, 48; g, 280; h, 56; i, 59; j, 246; k, 208; l, m, 227; n, 226; o, p, 234; q, 235; r, 248; s, 246; t, 35; u, 235; v-y, 246.

from different sites where there can be no doubt as to the species intended. The body is usually either crescent-shaped or roughly oval and the legs but four straight lines. It is interesting, however, that in so many instances the artist should have failed to note that mountain sheep do not have well developed tails and should have endowed



Map 7. Hands.



Map 8. Bear or human tracks.

so many sheep with tails such as one would see on cows or dogs. The female with its short, prong-like horns is represented in many cases but is not always distinguishable from other species as this feature may be mistaken for large ears.

There is rarely any attempt at composition although at several sites the animals are grouped as though to represent a herd (pl. 70c) while at others they appear to be in action. At one site a man is shown in the act of lassoing a sheep (fig. 88x) and in another in the act of shooting with the bow and arrow.

With but three exceptions (sites 216, 246, and 247) sheep are restricted to petroglyphs.

The distribution of representations of mountain sheep is shown on map 6.

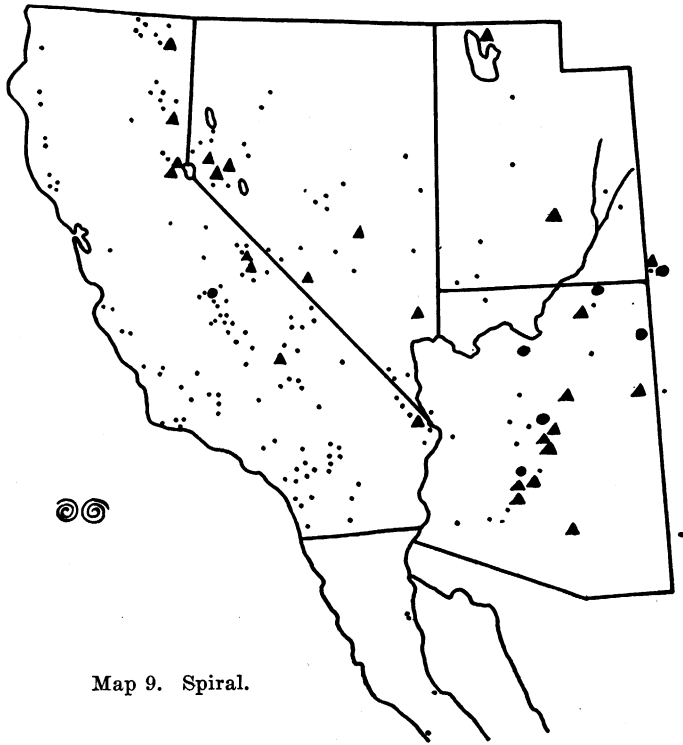
*Hands.*—Human hands occur in widely distributed places (map 7). There are few in California however, such representations only occurring in three petroglyphs and one pictograph. They are found more commonly in northeastern Arizona and southeastern Utah, where they are associated with cliff dwellings. Here they are found as both pictographs and petroglyphs.

*Human or bear tracks.*—These two elements are included together here because in most instances it is difficult to distinguish them, and because the two occur together frequently. In Utah and Arizona are a number of occurrences of well executed human footprints. There are several also in western Nevada but along with them are tracks with very slender toes which may either be bear claws or very poorly executed human toes. The distribution is shown on map 8.

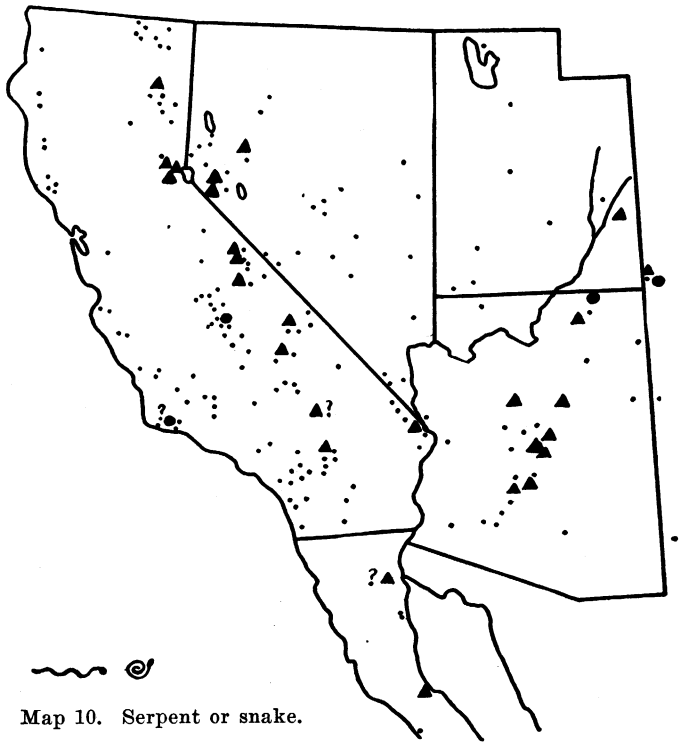
*Spirals.*—The spiral, in one form or another, is one of the widespread elements of design in the southwest. This occurs from the Pueblo area to southern California. In California and Nevada it is a simple, single spiral. In the southwest it is frequently double and sometimes suggests the maze form, to which it may be related. It occurs but four times in pictographs.

Map 9 shows the distribution of the spiral. Figure 89 shows spirals from various sites. More elaborate forms occur to the east in the cliff-dweller region of Arizona. This would suggest an origin of this element of design in that region. A further fact seems to support this, namely the use of a similar design on pottery of the southwest.

“One of the most interesting of the pictographs pecked in the rock is a figure which, variously modified, is a common decoration on the



Map 9. Spiral.



Map 10. Serpent or snake.

cliff-dweller pottery from the Verde valley to the ruins of San Juan and its tributaries. This figure has the form of two concentric spirals, the ends of which do not join. The concentric spirals, with broken lines, the Hopi say, are symbols of the whirlpool, and it is interesting to find in the beautiful plates of Chavero's *Antigüedades Mexicanas* that the water in the lagoon surrounding the ancient Aztec capital was indicated by the Nahuatl Indians with similar symbols.<sup>5</sup>

*Snakes.*—While it is possible that many wavy lines and zigzags are intended to be snakes, we have chosen only those figures having a

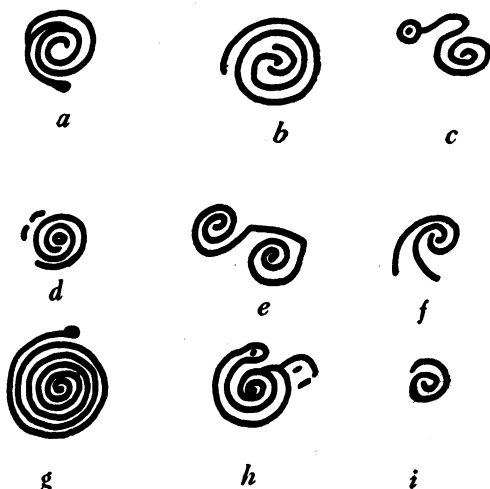


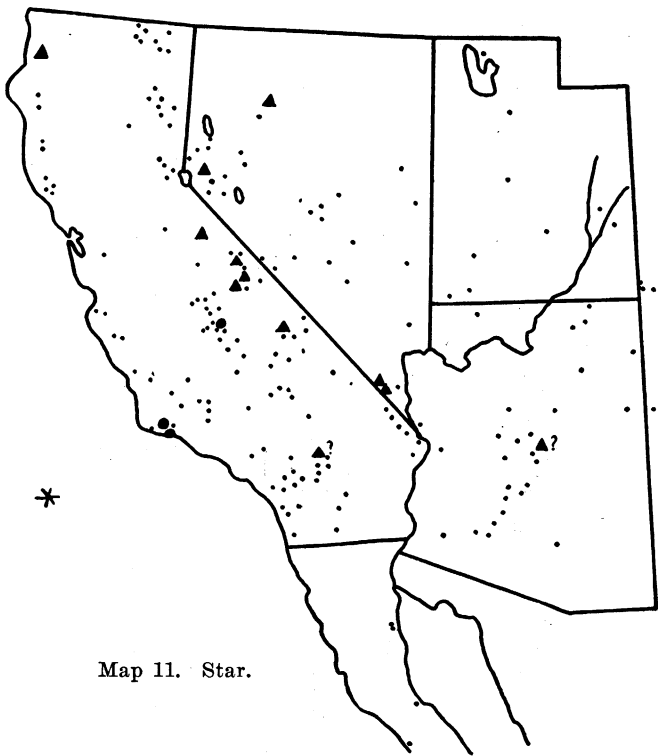
Fig. 89. Examples of more elaborate spirals from Area B. *a*, 274; *b*, Arizona; *c*, 261; *d*, Pajarito, New Mexico; *e*, *f*, 272; *g*, 243; *h*, *i*, 242.

definite enlargement at one end which quite obviously is meant as a head. With but few exceptions there is little variation from or elaboration of this simple form. Occasionally the snake is in the form of a spiral. In a few instances the wavy lines have dots placed between each wave—for example, Yerington, site 202. For distribution, see map 10.

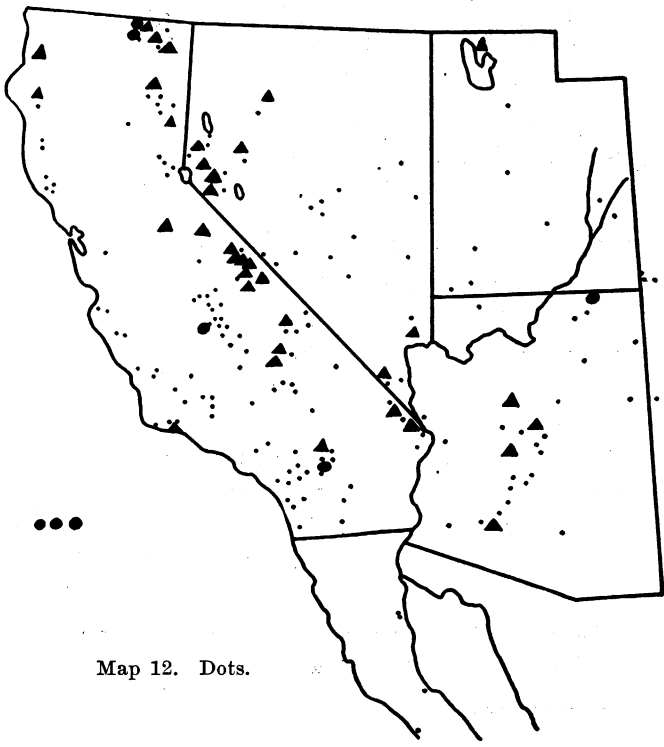
*Stars.*—The star is a simple device of three or four lines crossing one another at the same point. A cross composed of two lines has not been classified under this heading. Map 11 shows the distribution of this element. It occurs chiefly among the petroglyphs of eastern California.

*Dots.*—The use of dots for parts of designs in petroglyphs is very common in eastern California and western Nevada (map 12). They

<sup>5</sup> Fewkes, 1898:568, 569.



Map 11. Star.



Map 12. Dots.



occur but twice in pictographs outside of northeastern California. There is seldom any definite arrangement when dots are used. They may be in several straight lines or they may be spread at random over wide surfaces. Frequently they are part of a more elaborate design, being used to fill in a circle or rectangle.

ELEMENTS OCCURRING IN THE GREAT BASIN, AREA A, AND  
IN LOWER CALIFORNIA

*Connected circles.*—Under this heading are included those designs which are composed of circles, either single or concentric, which are thrown together to form more or less elaborate unitary designs. At times they are adjacent, at times connected by straight or curved lines and frequently combined with other elements characteristic of the area in which they occur. It is chiefly these designs which give the petrography of the Great Basin its predominantly curvilinear character. While “connected circles” are not definite elements as such, and while the same arrangement seldom occurs more than once, the manner of building up these composite figures is so definite that we are warranted in including them here with the simpler and more easily defined elements.

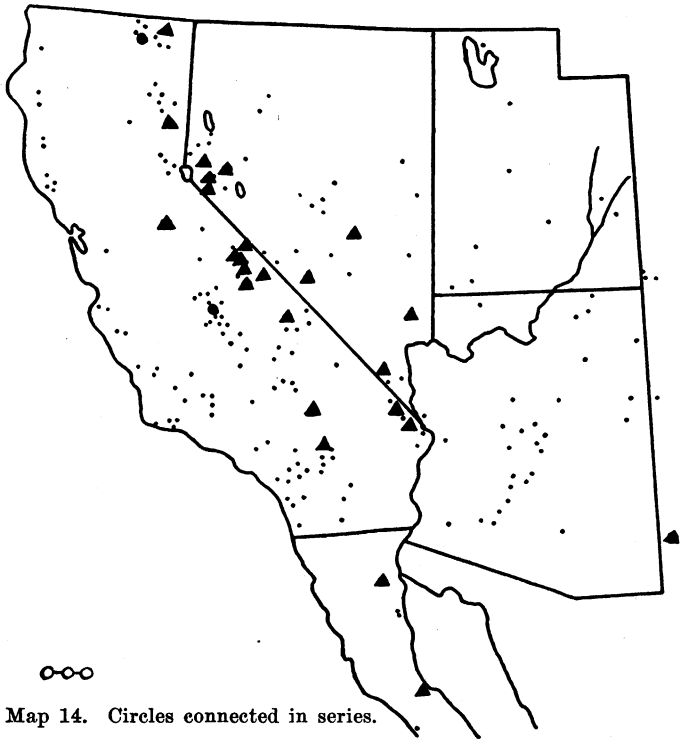
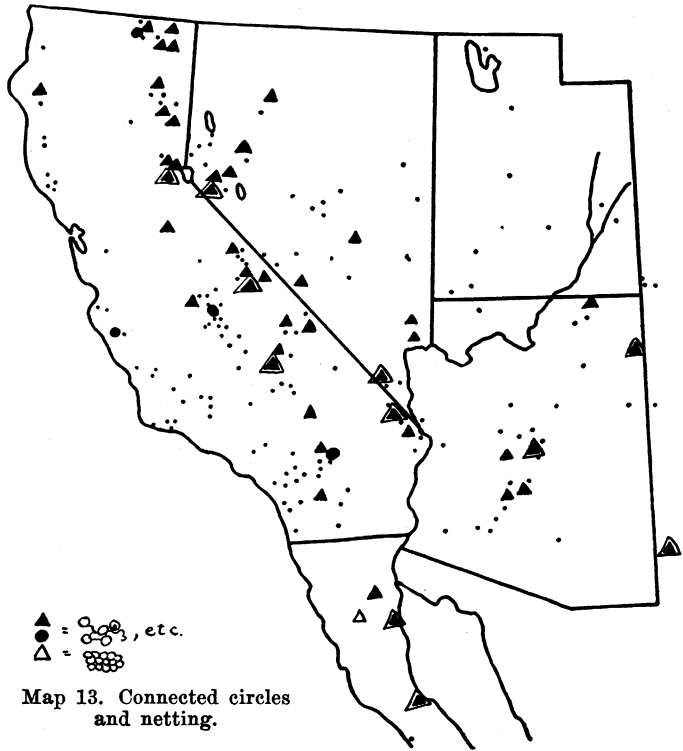
These are a Great Basin element extending also into Arizona and are found almost exclusively in petroglyphs (map 13).

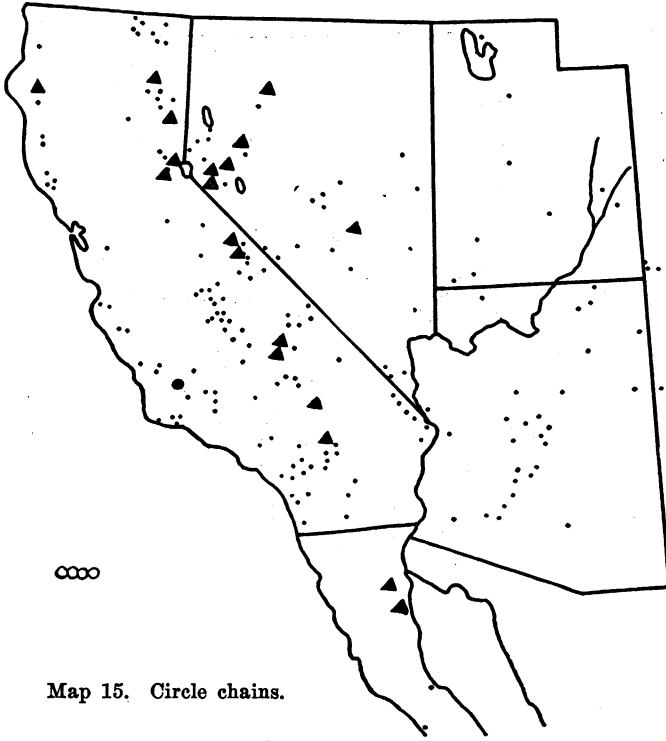
*Netting.*—Another design, probably closely related to “connected circles,” is the use of a large number of crude circles placed closely together so as to form a kind of netting. The distribution of this is also indicated on map 13.

*Circles connected in series.*—This element of design is undoubtedly a special type of the last and its distribution is coincident with “connected circles” but more restricted (map 14). Its importance lies in indicating more special connections between the sites where it occurs.

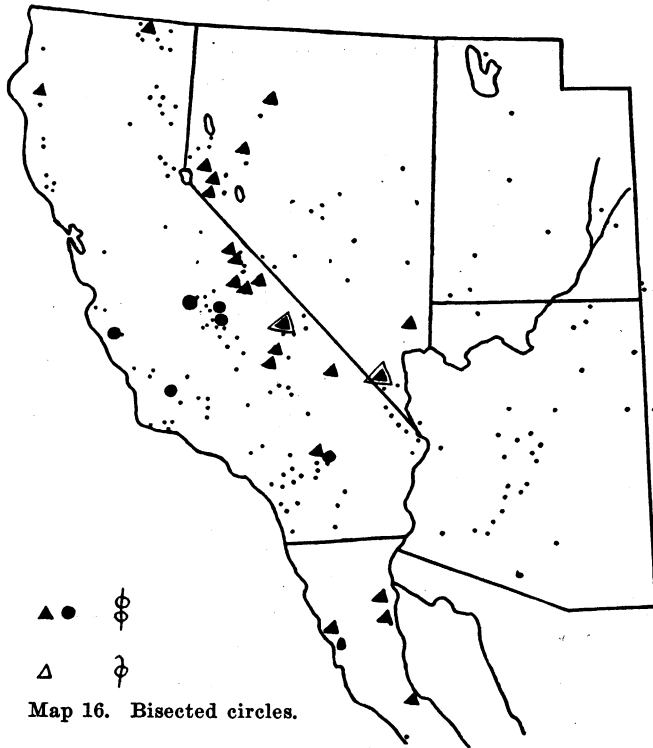
In its simplest form it is but a series of circles connected in a straight line by short, straight lines. The circles, however, frequently contain crosses, dots, or another concentric circle.

*Circle chains.*—Like the last, this is probably but a special type of “connected circles.” It is simply a straight series of adjacent circles. Its distribution, however, is more concentrated in the north (map 15) whereas the last seems to be more abundant in the Owens valley region.

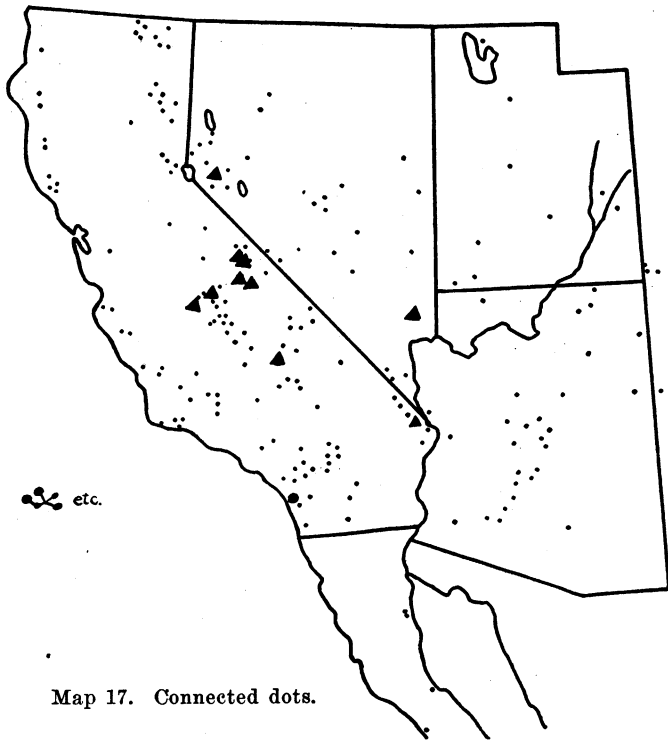




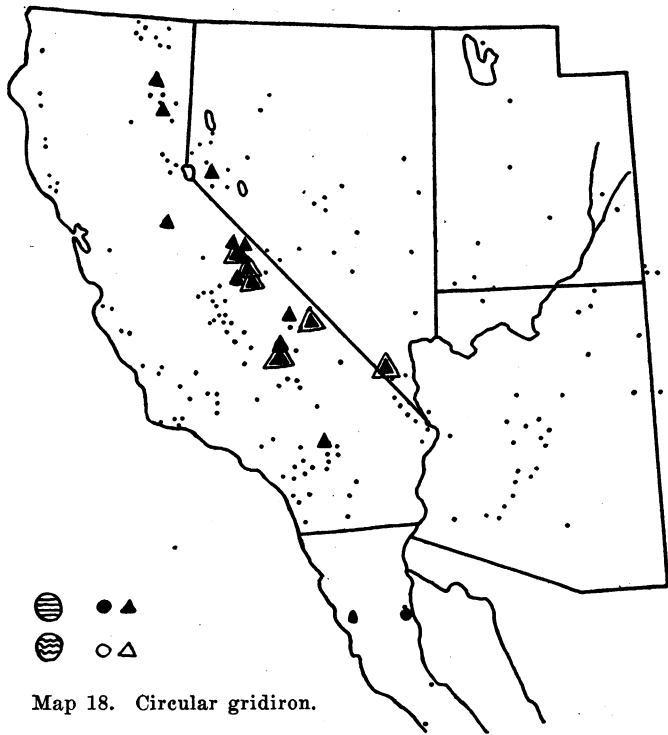
Map 15. Circle chains.



Map 16. Bisected circles.



Map 17. Connected dots.



Map 18. Circular gridiron.

*Bisected circles.*—The simplest form of this element is a single circle through which passes a straight line forming the Greek  $\phi$ . In this form it is most abundant in the Owens valley region. It also occurs as a straight line passing through a series of circles. That this is an elaboration of the latter is evident from the continuous distribution of the two (map 16).

A special form of this occurs at sites 41, Keeler, Owens valley region, and 227, Grapevine canyon, southern Nevada. Here the line passing through the circle terminates in a hook.

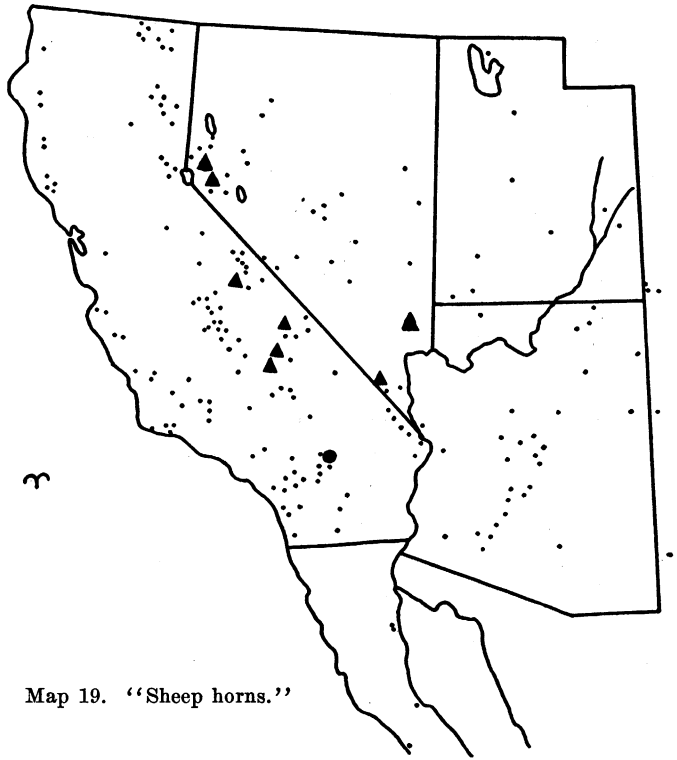
*Connected dots.*—In addition to the use of dots arranged in vague patterns or scattered among other elements, a somewhat different type of design, where they are joined together by straight lines, is found in eastern central California. For example, see plate 29. With two exceptions the patterns so formed are devoid of symmetry and definite pattern. At sites 202, Yerington, Nevada, and 35, Owens valley, California, dots are employed in symmetrical devices made up of curved lines. This may indicate a special relation between these two sites (map 17).

*Circular gridirons.*—This element is essentially a circle filled with parallel straight lines. The instances in which there is a complex interior arrangement of straight lines is probably but an elaboration of this (map 18).

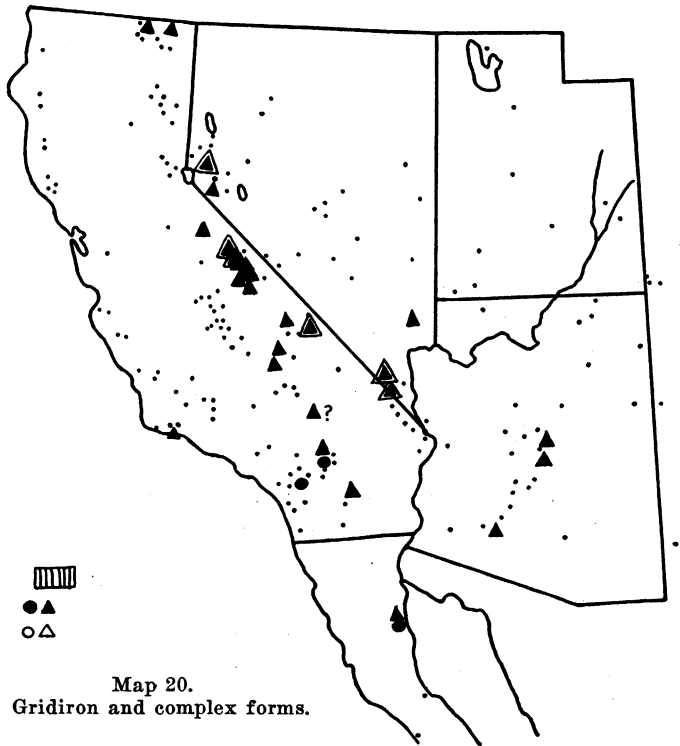
A special form of the circular gridiron is also shown on this map, and is indicated by special site symbols. In this form the interior, parallel lines are not straight but wavy.

*Sheep's horns.*—It seems probable that in many instances the front view of the mountain sheep is represented as an M-shaped figure, the horns curving to each side forming the two halves of the M. In some instances, for examples sites 78, 202, and 208, it is quite clear that sheep are intended in such figures. The distribution of other occurrences of this falls within the limits of the distribution of mountain sheep and they are probably the same (map 19).

*Rectangular gridirons.*—In its simplest form this element is a square or rectangle filled with parallel straight lines. In addition to this simple form we find rectangles filled with elaborate combinations of straight lines. The wavy line is seldom used. In some instances the angular meander is woven into the pattern and in others it forms the outline. The designs most intimately associated with the rectangular gridiron are also characterized by straight lines and square corners. Map 20 gives the distribution of this element. The underlined numbers have also the more elaborate forms.



Map 19. "Sheep horns."



Map 20.  
Gridiron and complex forms.

*Cross-hatchings.*—In general the use of cross-hatching seems to be most intimately associated with rectilinear figures. It also occurs alone, however, in isolated patches, and in a few instances is employed to fill in a circle or oval (map 21).

*Angular meanders.*—The angular meander is found in the southern part of eastern California, the Owens valley and Mohave regions, and in Arizona. Its occurrence is limited entirely to petroglyphs. At site 227, Grapevine canyon, it is intimately associated with rectangular gridirons and other rectangular figures which find their greatest elaboration at this site and both there and at several other sites forms parts of rectangular figures (map 22).

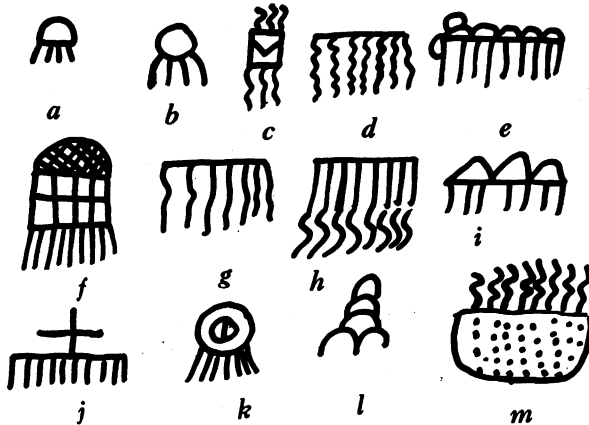
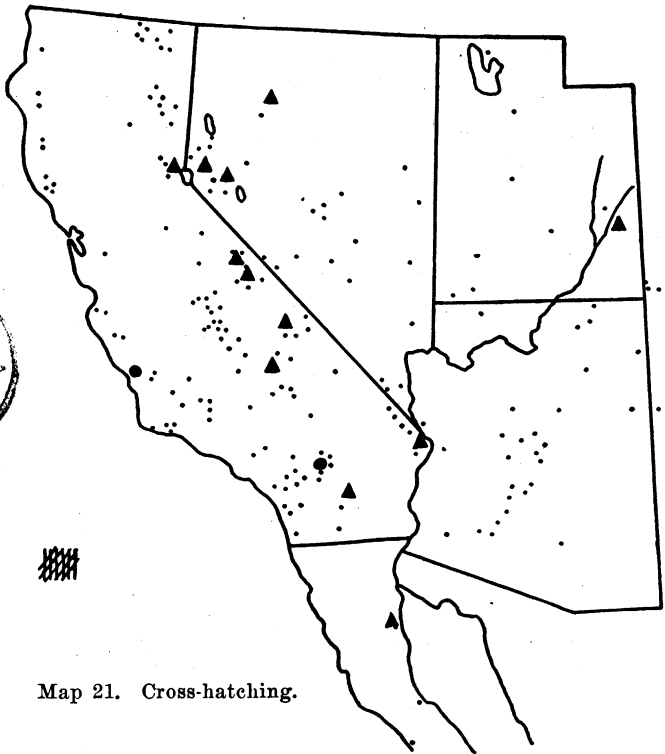


Fig. 90. Rain symbols(?) from various sites. *a*, Arizona; *b*, 17; *c*, *d*, 208; *e*, 291; *f*, 35; *g*, 30; *h*, 259; *i*, 227; *j*, 202; *k*, 226; *l*, 53; *m*, 48.

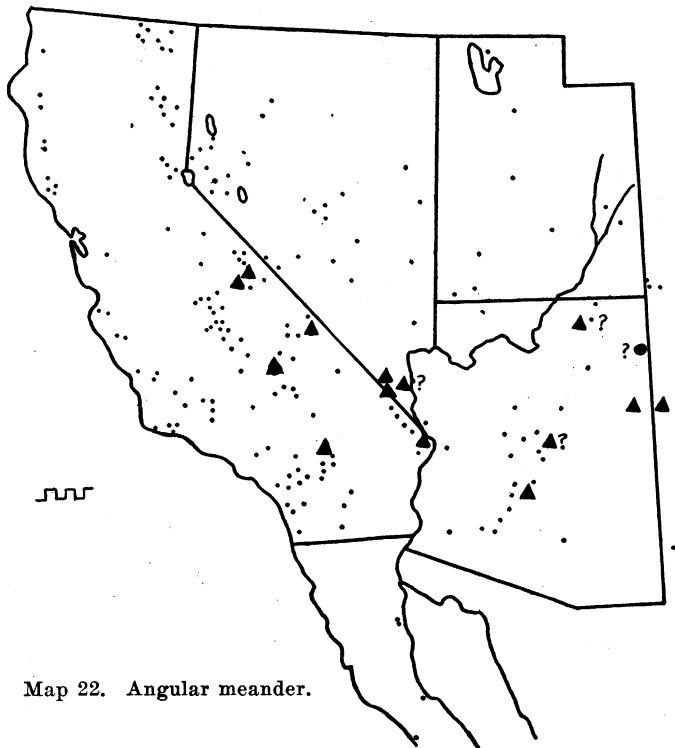
*Bird tracks.*—It is frequently difficult to determine what is intended as a bird track and therefore the distribution of this element on map 23 may be more restricted than it should be, as only obvious cases have been chosen. The form of this element is illustrated in the legend to map 23.

This is another element which is limited entirely to petroglyphs and with one exception is found only in northeastern and east central California.

*Rain symbols.*—A number of designs which may be rain symbols are shown in figure 90 and their distribution is given on map 24. They all have the common feature of straight or wavy lines "dropping" (in every case but one, site 48) from some kind of design. As these dropping lines (rain?) are more or less alike in each case, it may be that this is simply an elaboration of the rake design or that the rake design is a simplification of this.

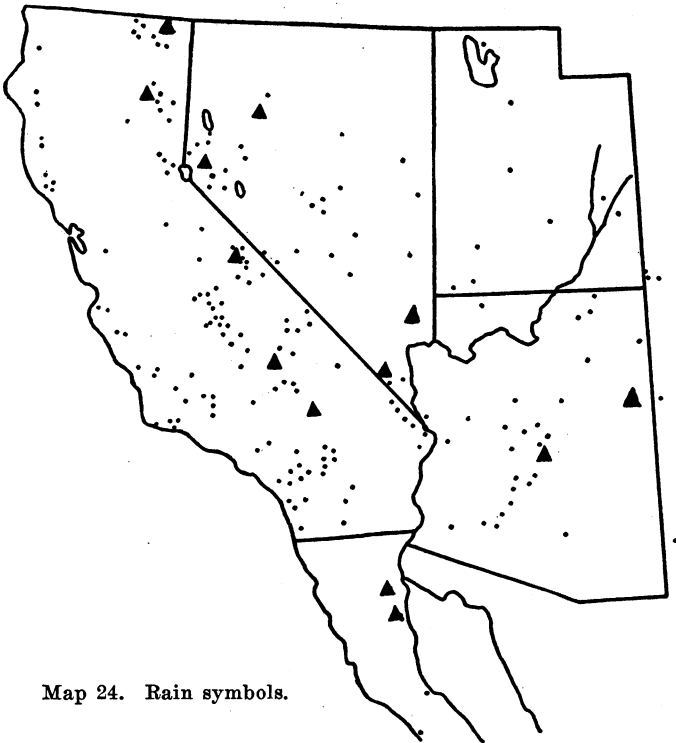
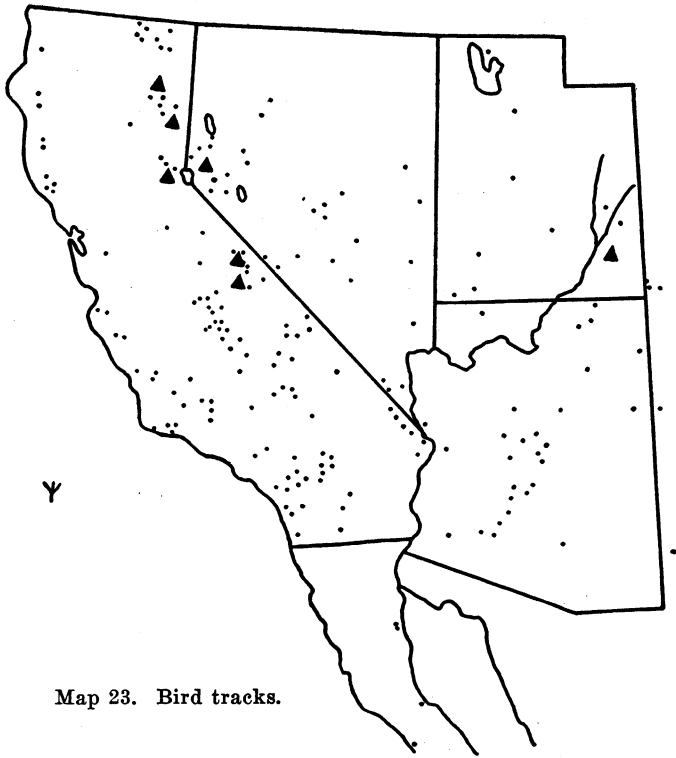


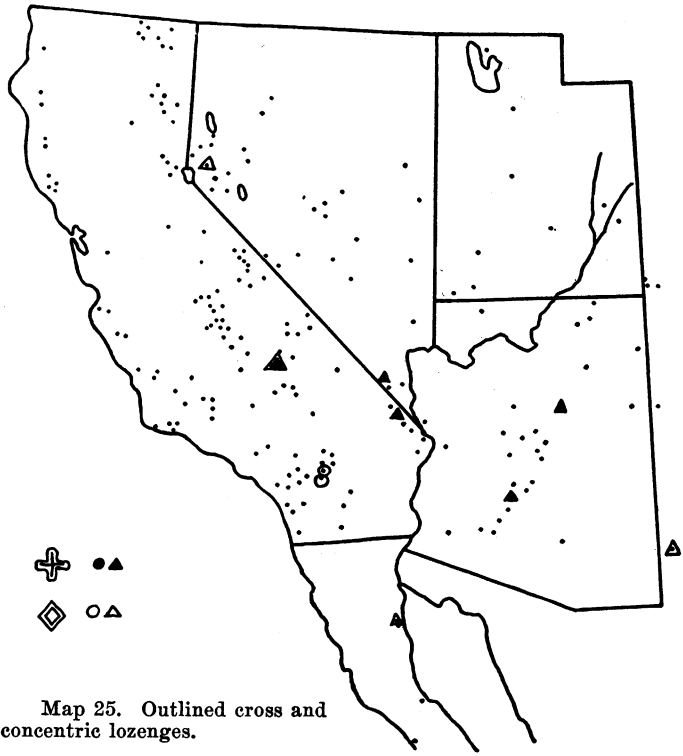
Map 21. Cross-hatching.



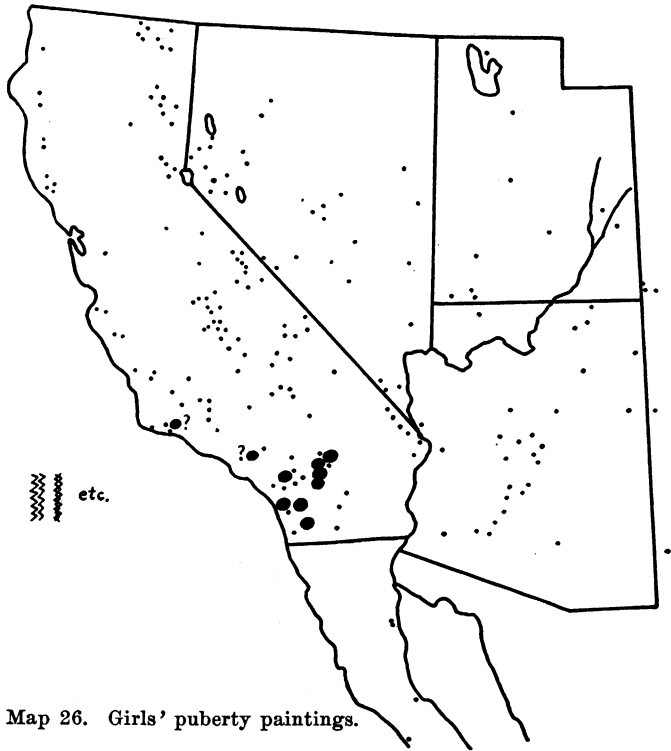
Map 22. Angular meander.







Map 25. Outlined cross and concentric lozenges.



Map 26. Girls' puberty paintings.

*Outlined crosses.*—This is another element of limited distribution (map 25). Its very unique form, however, probably indicates a special relation between the sites where it occurs. It consists of a simple cross made up of two lines enclosed in an outline also in the form of a cross.

This element, like the angular meander, suggests a connection between the lower Colorado region and Arizona.

*Concentric diamonds.*—This element consists of two diamonds, one within the other. While it is not sufficiently frequent in occurrence, it is sufficiently unique to warrant special consideration. It occurs at the following sites: 208, western Nevada; 48, Owens valley; 64 and 75, Riverside county; and 283, Lower California. The two sites in southern California are pictographs. See map 24 for distribution.

#### ELEMENTS OCCURRING IN SOUTHWESTERN CALIFORNIA, AREA C

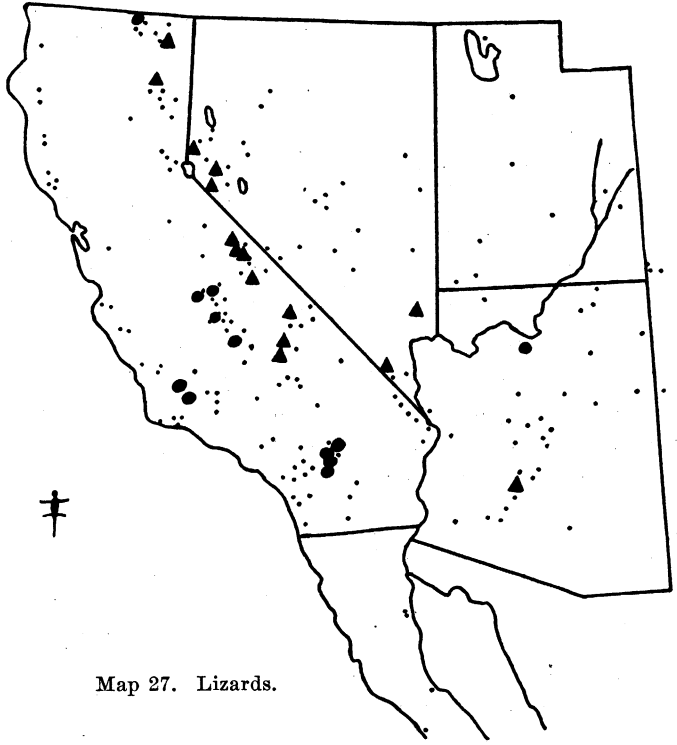
Pictographs are predominant in this region.

*Parallel zigzags and series of diamonds.*—The designs indicated on map 26 are included under this heading because they stand apart from zigzags found elsewhere, not only in being painted and assembled in a characteristic manner but because they are connected with the girls' puberty ceremonies in the region in which they occur. In this region zigzags are combined in many ways. Generally there are several groups. These are made up of a number of parallel zigzags placed close together, or of zigzags superimposed in such a way as to form chains of diamonds. The color is almost invariably red.

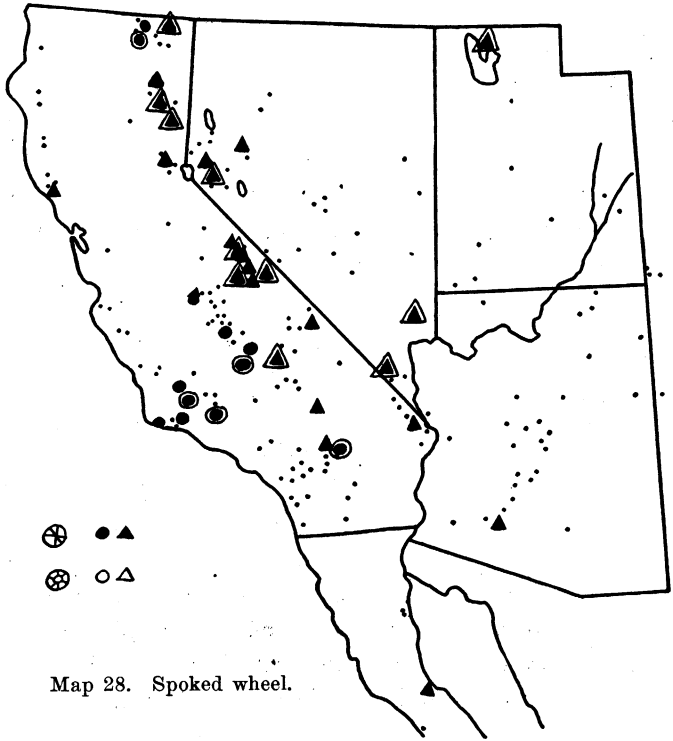
Their distribution falls entirely in southern California, running up the coast possibly to Painted cave, site 83, Santa Barbara county. Few other designs occur within this area.

#### ELEMENTS OCCURRING IN CALIFORNIA

*Lizards.*—The representation of lizards occurs throughout our area. In the eastern part, however, lizards are represented in a very characteristic manner. See below, page 215. In California and Nevada, including Santa Barbara and Tulare regions of California, the lizard is represented as shown in the legend to map 27. This style of representation is distinctly more realistic than that in eastern Utah and Arizona and therefore probably does not indicate any great degree of connection between the petroglyphs and pictographs of California. It shows rather that an element of general distribution has taken on a peculiar style of conventionalization in a limited area.



Map 27. Lizards.



Map 28. Spoked wheel.

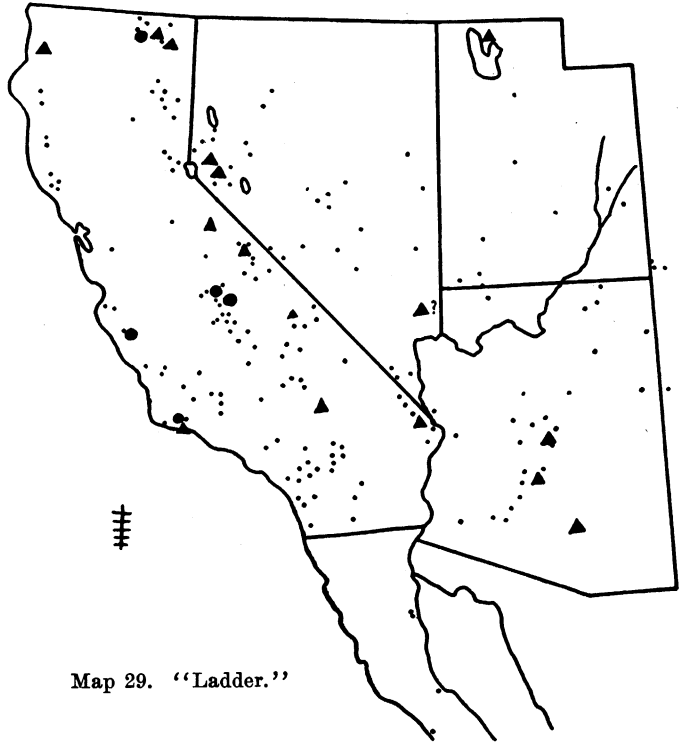
*Spoked wheels.*—This is one of the most simple and widespread of the geometric elements of the basin area. It occurs also, however, in the Santa Barbara and Tulare county regions. Its simplest form is a circle enclosing a cross made up of two lines, thus having four "spokes." The number of spokes, however, varies. A special form, shown together with the simple form on map 28, is made up of an outer and inner circle which are concentric and which are connected by spokes passing from the outer to the inner circle. The distribution of this form, however, is more or less within that of the simpler form.

There is no important distinction in this design between petroglyphs and pictographs except that some of the latter in the Santa Barbara region are much more elaborate than those found elsewhere.

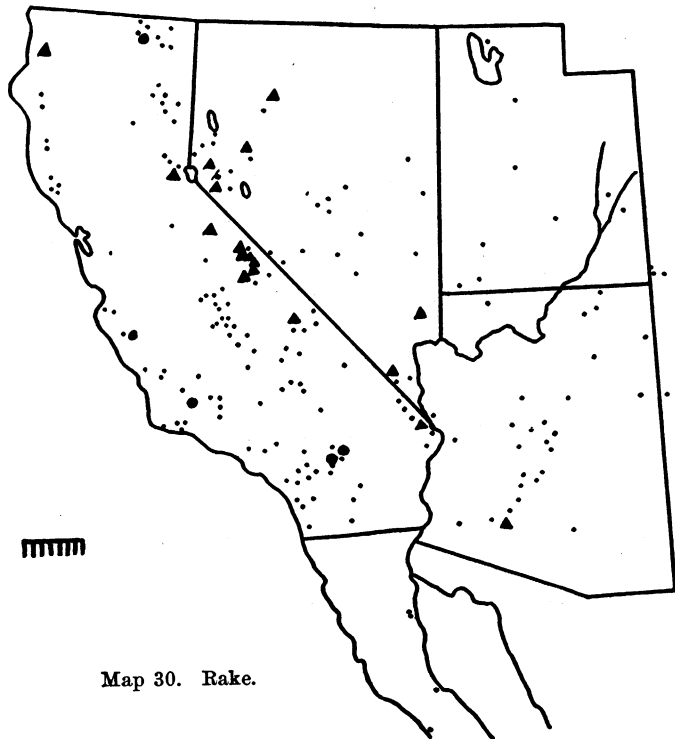
*Two-edged saws.*—This unique element occurs at sites 41 and 48, Owens valley, and 56 and 227 on the Lower Colorado river. It may also be found at sites 271 and 277 in southern Arizona and at site 283 in Lower California. It consists of two sets of "saw teeth," three or four in number, projecting from both sides of a straight line. The occurrence of this element at the above sites may strengthen the relation between them.

*Ladders.*—Under this heading are included those elements composed of a straight line crossed at regular intervals by short straight lines, similar to the device used to represent railroads on an ordinary map. It occurs most abundantly in eastern California and western Nevada but is also found in the Santa Barbara and Tulare county regions. In the last two, however, it may in many cases be nothing more than the remnant of a more complex design. At sight 230, near Salt lake, at sites 263 and 280 in southern Arizona, and at site 226, southern Nevada, it occurs in a special form where the long line is crossed at very short intervals by very small lines. This may indicate a special relation between these sites (map 29).

*Herringbones.*—This is a term used to cover a wide range of figures which have in common the use of a midrib with parallel lines branching off at an angle from either side. There are several occurrences of these in north and east central California and in the Santa Barbara and Tulare regions. With the exception of the Santa Barbara figures it does not appear as a well defined element. Here, however, it occurs at several sites as a very small, feather-like figure, usually done in white.



Map 29. "Ladder."



Map 30. Rake.

*Rake designs.*—The rake design is widespread in California and western Nevada and occurs in pictographs as well as in petroglyphs. Its concentration, however, is in eastern central California and the adjacent part of Nevada (map 30). This may be related to the rectangular gridiron and other rectilinear figures.

ELEMENTS OCCURRING IN SANTA BARBARA AND TULARE REGIONS,  
AREA D

The following elements and features occur almost exclusively within the regions of Santa Barbara and Tulare counties and to a slight extent up to Monterey county.

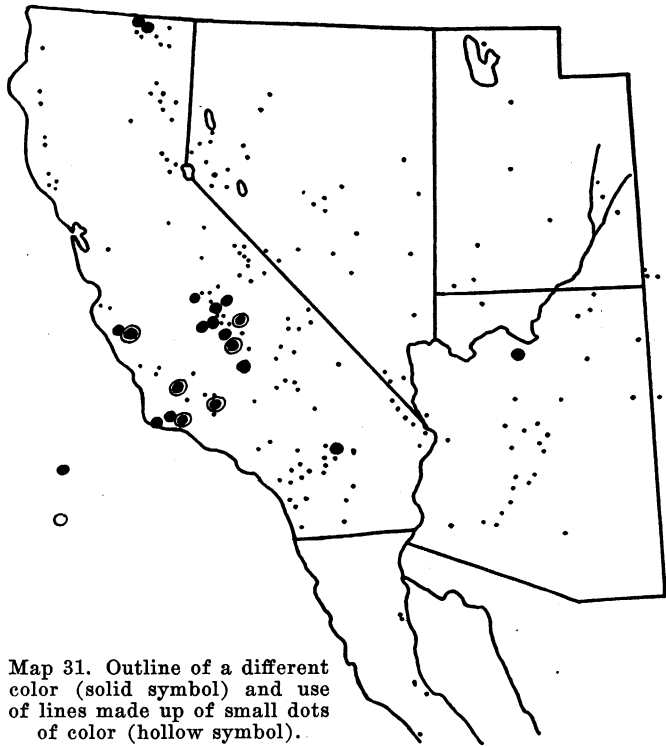
*One color outlining another.*—This stylistic feature is common in the Santa Barbara-Tulare region. It occurs also, however, in northeastern California. It was a common practice to outline figures of all kinds with another color. A human in red, for example, is bordered by a line of white. Sometimes figures are surrounded by two or more outlines, each of a different color. For the distribution of this device see map 31.

*Dotted lines.*—Within the distribution of the last feature but more limited and occurring chiefly in the Santa Barbara region is the substitution, in pictographs, of broken lines made up of closely placed dots for full, strong lines. This is done especially in white lines (map 31).

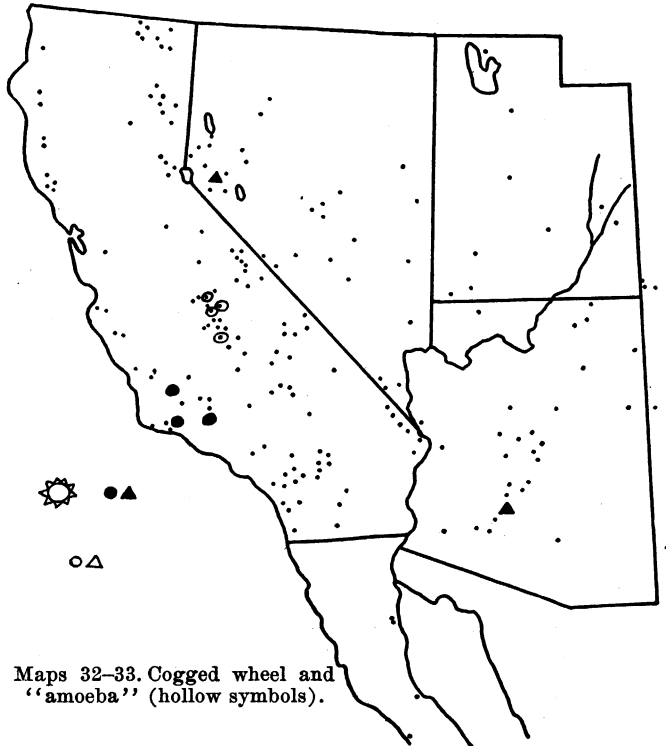
*Cogged wheels.*—This is a circle surrounded by “cogs” or saw teeth. It occurs several times among the pictographs of Santa Barbara county but is also found in petroglyphs at two widely separated sites, site 202, Yerington, Nevada, and site 274, in southern Arizona (map 32, solid symbols).

*Amoebas.*—This term is used because of the lack of form of these designs. In Tulare county we find a number of occurrences of daubs of paint which are clear-cut and seem to be complete and yet are totally devoid of form and no two are alike (map 33, hollow symbols).

*Concentric bands of color.*—This element of design is considered separately from concentric circles because it is executed in pictographs in such a way as to give a distinctive effect. Concentric bands of different colors, white and red or black, alternate in such a way as to resemble a target. It is typical of the pictographic art of Santa Barbara and Tulare regions and occurs nowhere else (map 34).

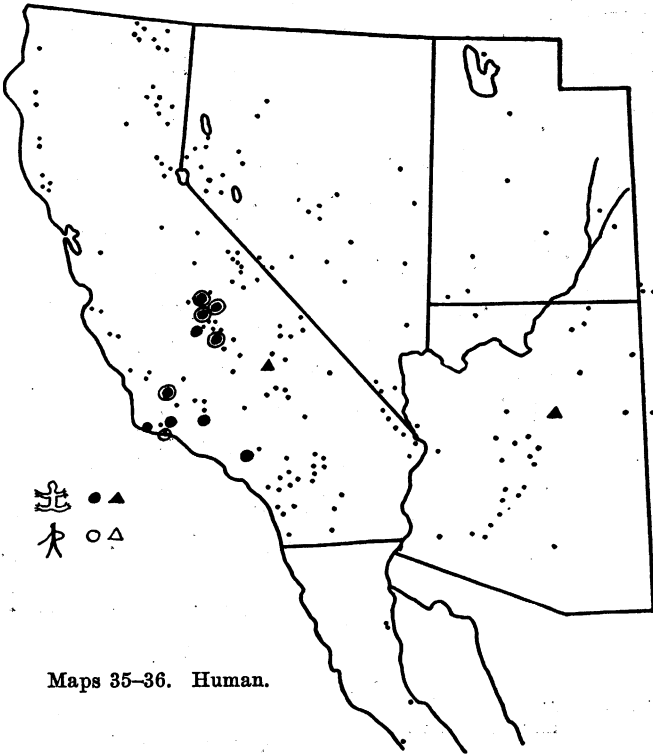
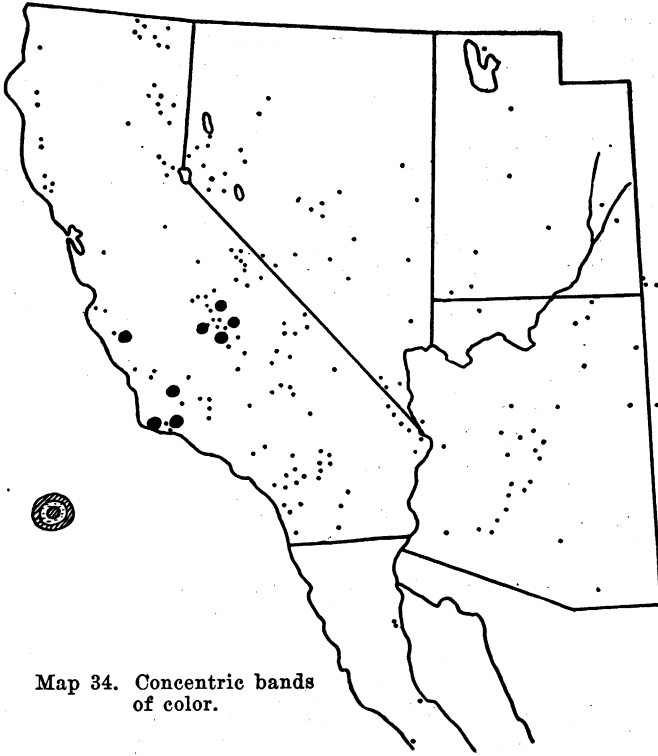


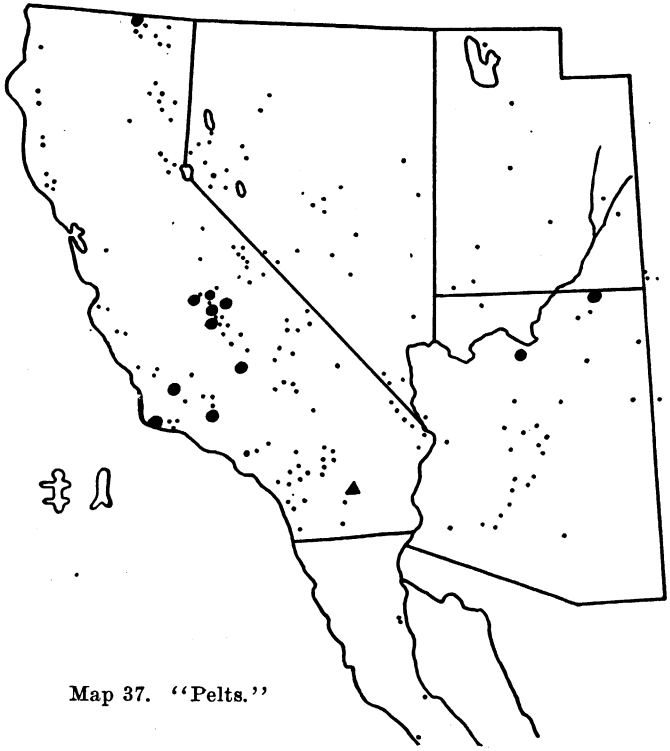
Map 31. Outline of a different color (solid symbol) and use of lines made up of small dots of color (hollow symbol).



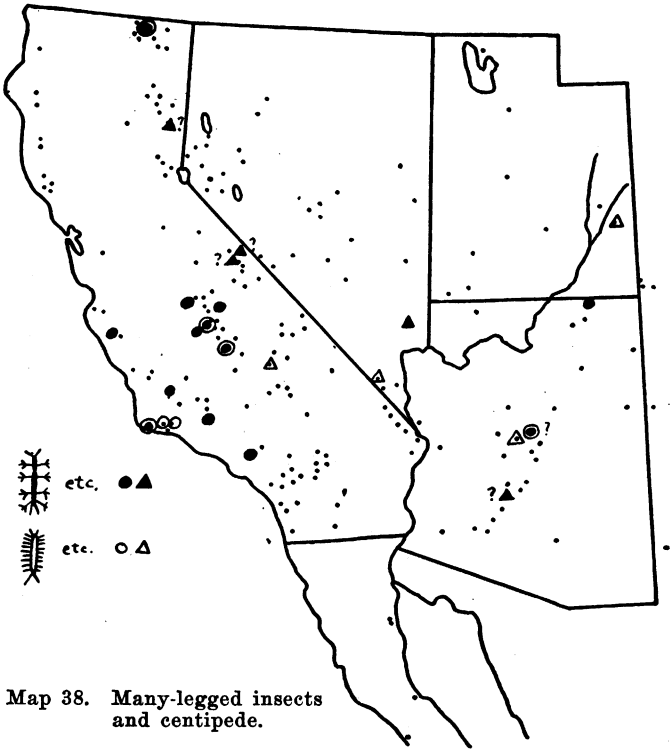
Maps 32-33. Cogged wheel and "amoeba" (hollow symbols).







Map 37. "Pelts."



Map 38. Many-legged insects and centipede.

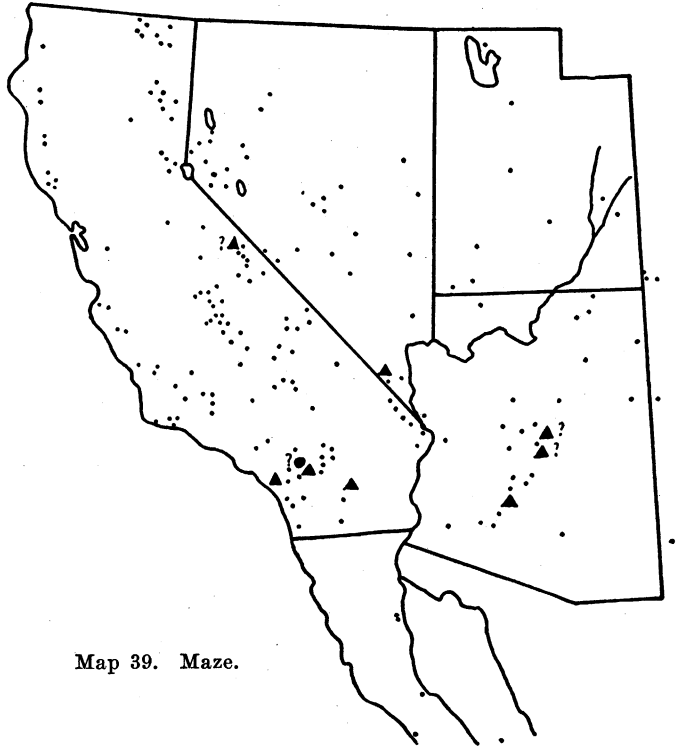
*Human figures.*—Human representations occur throughout our area, as has been indicated above, page 180. Two distinctive forms, however, are found in the Santa Barbara-Tulare county areas. One form, as illustrated in the legend to map 35, solid symbols, is always shown with the legs and arms outstretched and the fingers and toes greatly exaggerated. This may conceivably be intended as a toad or frog. The other form shows small humans standing with one arm on the hip and the other outstretched. The arms, and in some cases the entire upper part of the body, are very thin (map 36, hollow symbols).

Other human representations from the Santa Barbara-Tulare region are shown in figure 84*v-z*. These are clearly different from the others in general style and also possess the local characteristic of being executed in one color and outlined in one or more other colors.

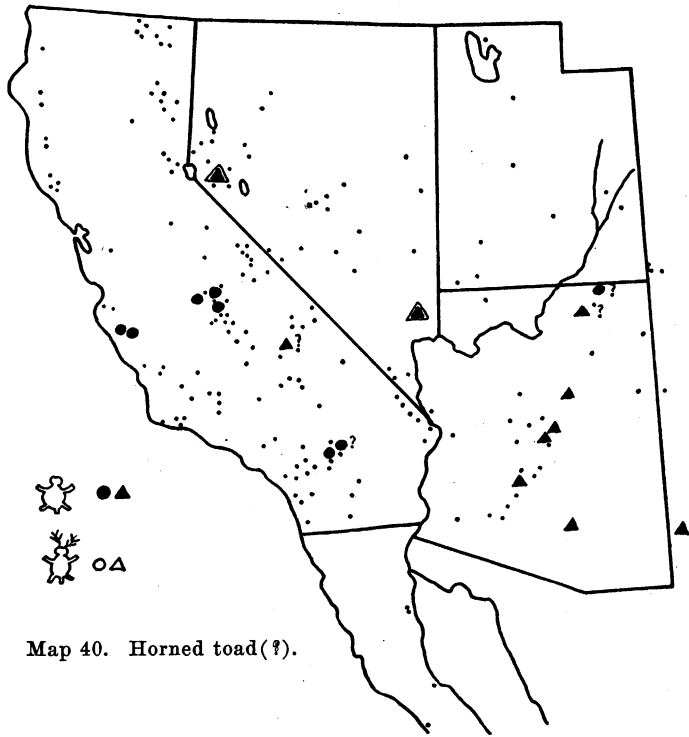
*Pelts.*—This term is applied to such pelt-like figures as are shown on map 37. With one exception in southern California, they are always painted. Outside of the Santa Barbara region there are but two occurrences of this. Both are in northern Arizona, and at site 246 they are associated with Basket Maker culture. In the Santa Barbara-Tulare region there are eight occurrences of this design. Here it is often outlined with a color different from the one in which it is painted. As the stylistic difference between California and Arizona is so great, it is doubtful whether there is any connection.

*Many-legged insects.*—In the Santa Barbara-Tulare county region there are ten occurrences of this curious figure. In this region it is always in a pictograph and is in the form of a long insect with many pairs of legs. Some have the appearance of two or more insects united end to end. There are several occurrences of somewhat similar representations outside of California. Slightly similar figures are found at site 35, Owens valley region, and closer parallels at site 226, southern Nevada. There are three scattered occurrences in Arizona, and several in pictographs in northeastern California (map 38). It is doubtful, however, whether these are the same.

*Centipedes.*—We have chosen here only representations which seem obviously to have been intended as centipedes. The center of these is in the pictography of the Santa Barbara-Tulare region. There are also scattered occurrences in southern Nevada, Arizona, and Utah—four occurrences in all (map 38).



Map 39. Maze.



Map 40. Horned toad(?).

## ELEMENTS OF SCATTERED DISTRIBUTION

The following elements of design are of wider distribution than the preceding ones and occur in both southern California and Arizona, but are much commoner in Arizona.

*Mazes.*—This is a complex figure, usually rectilinear but occasionally curvilinear, whose essential characteristic is a labyrinth opening

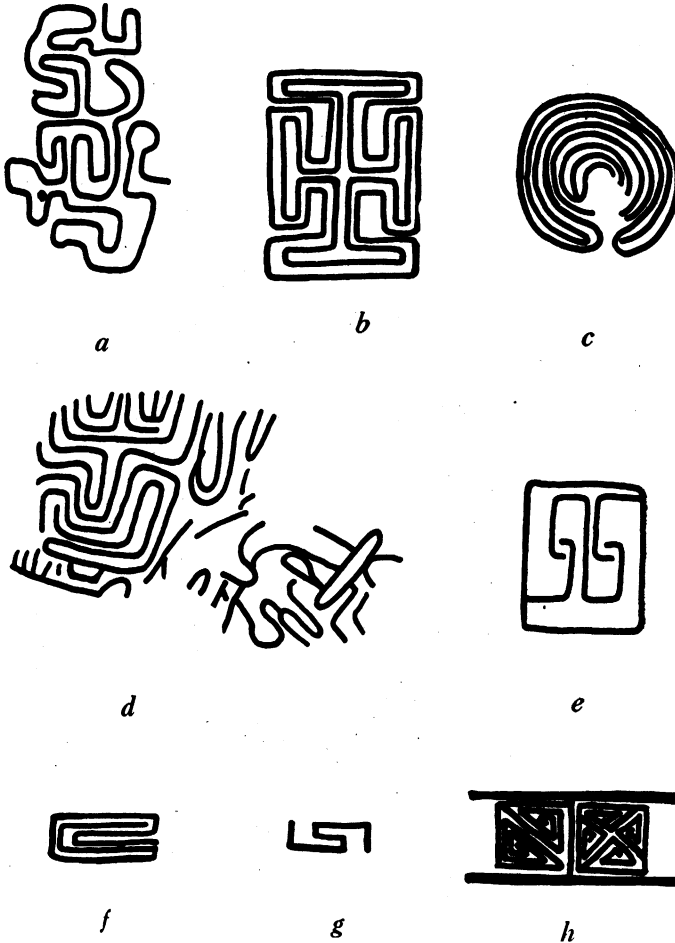
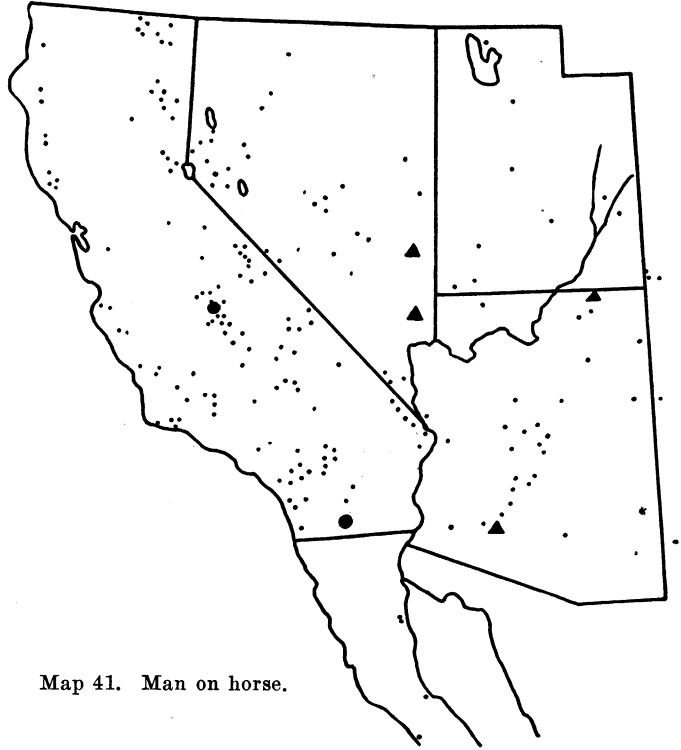
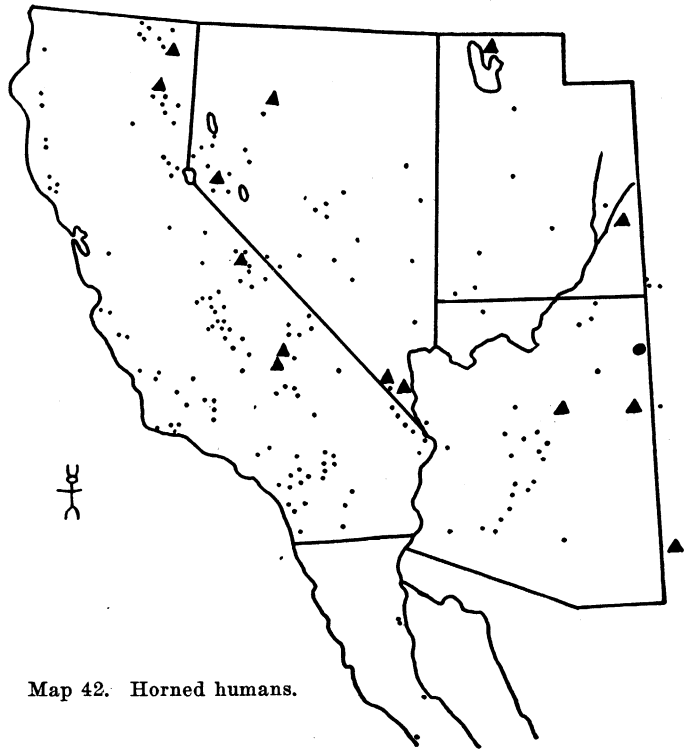


Fig. 91. Examples of maze or labyrinth designs. *a*, Mesa Verde, Colorado; *b*, 61; *c*, 274; *d*, Arizona; *e*, 281; *f*, 261; *g*, 271; *h*, 254.

to the outside and running through a devious passage to some interior point in the design. The best examples of it are done in the rectilinear pattern, sites 70 and 73, southern California (pl. 94*e, f*). A number of the complex rectilinear figures at Grapevine canyon, Nevada, site 227, have the appearance of representing the same thing (pl. 94*a-d*).



Map 41. Man on horse.



Map 42. Horned humans.

At site 261, central Arizona, a greatly simplified rectangular maze occurs. At site 274, southern Arizona, there is a roughly semicircular maze. This figure, called by the Pima "House of Tehuhu," has been discussed by Fewkes.<sup>6</sup> A figure slightly similar to this but much simpler occurs at site 265, central Arizona. The distribution of these mazes is shown on map 39.

Figure 91 shows several mazes in detail, also several other designs of this character.

*Horned toad.*—Representations regarded as horned toads are round bellied creatures, with four legs and a head, drawn as viewed from above. See legend to figure 40. It is possible that some of these, especially those in Arizona, were intended as frogs. The similarity in style, however, between southern California and Arizona, where these figures are most common, seems to point to some relationship. Two special occurrences of this in California show "horns" on the head.

*Men on horseback.*—Figures representing men on horseback are of importance not as elements of design but because they enable us to assign a maximum age to the groups in which they occur. This representation does not characterize any given area but occurs at widely separated sites (map 41).

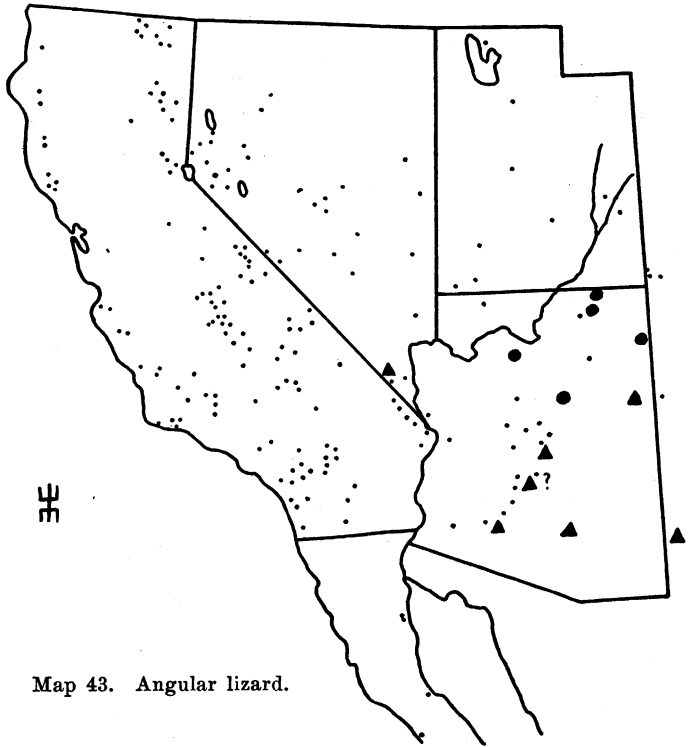
*Horned humans.*—In the wide range of human representations the representation of horns is one of the most common features. Two upright lines project from the top or sides of the head and curve upward. This feature is independent of the remainder of the figure, which is represented in a large variety of ways. Its distribution is from eastern California to the eastern limits of our area. It appears but once as a pictograph. See map 42.

#### ELEMENTS OCCURRING IN UTAH AND ARIZONA, AREA B

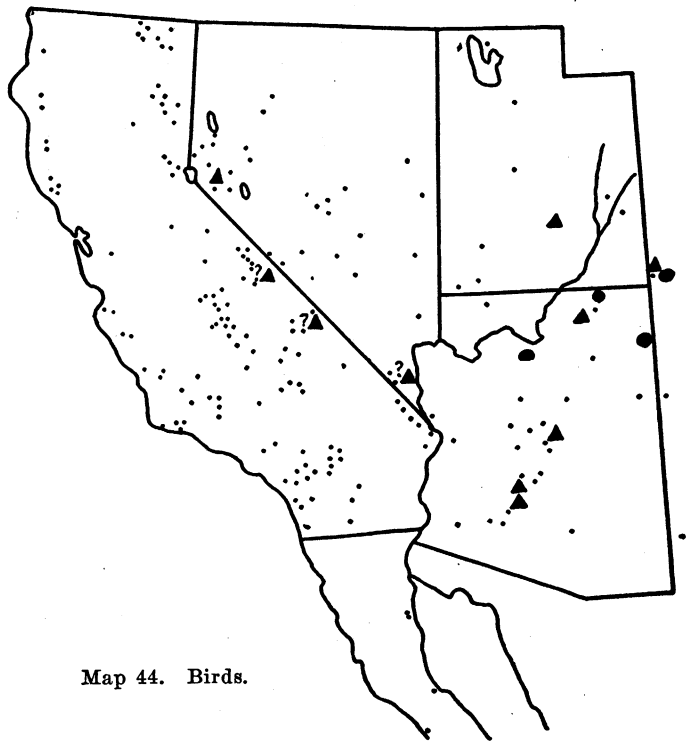
The following elements characterize the extreme eastern part of our area, i.e., the eastern half of Arizona and Utah, respectively.

*Lizards.*—The lizard represented in this region is stylistically quite different from that of the west. It has become conventionalized into a very symmetrical, almost decorative, angular figure (map 43). While it is found chiefly at petroglyph sites it also occurs in four pictographs in northern Arizona. It is found again at site 227, southern Nevada, where the rectilinear style finds its greatest elaboration.

<sup>6</sup> Fewkes, 1912:149, pl. 40; also 1907:510-512.



Map 43. Angular lizard.



Map 44. Birds.



*Birds.*—The representation of birds is also an eastern feature, with the greatest concentration of its distribution in Arizona. It occurs there both as petroglyphs and pictographs. Outside of Arizona it occurs three times to the north and east and several times along the Nevada–California boundary. Two of the four western occurrences however are doubtful. In most instances it is all but impossible to even guess at the species, and the methods of representation have a wide variety. The most we can say is that the custom of depicting birds was strongest in Arizona (map 44).

Several examples of birds are shown in figure 92.

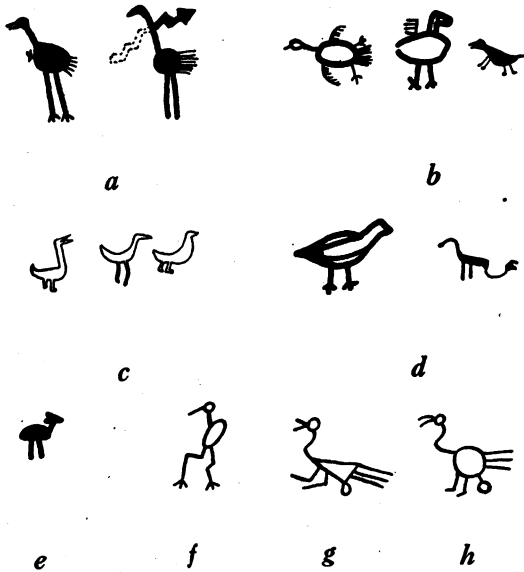
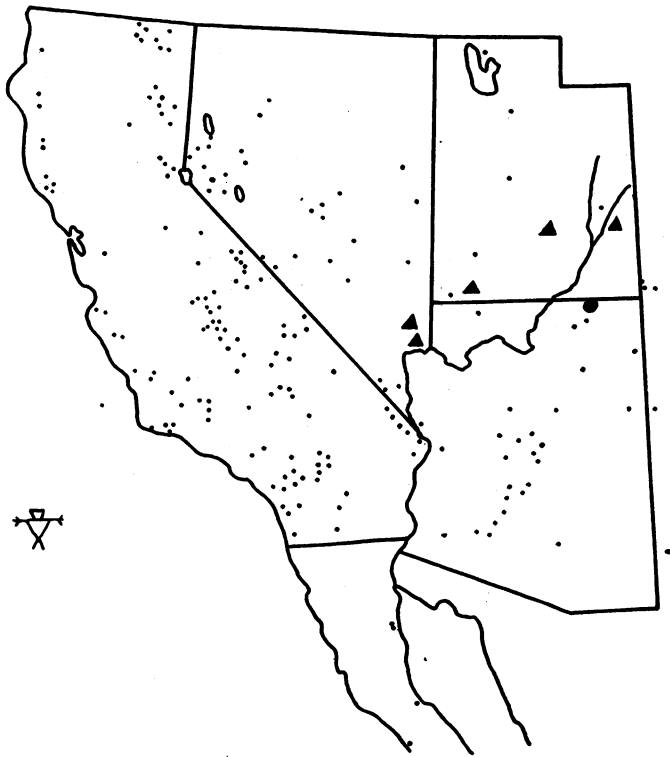


Fig. 92. Examples of bird representations from various sites. *a*, 246; *b*, Pajarito, New Mexico; *c*, Canyon de Chelly; *d*, 242; *e*, 261; *f-h*, 272.

*Kachina-like figures.*—These figures have been discussed before (pp. 180–184). A simple, typical figure is shown on map 45. The distribution of these is limited to northern Arizona, southern Utah, and the adjacent part of Nevada. At several sites where they were executed in northern Arizona it was the belief of Kidder and Guernsey that they were the product of Basket Makers (see above, p. 155). In Utah and Nevada, however, they were made as petroglyphs but associated with ancient cliff dwellings. In all probability these were also done by Basket Makers or people closely contemporaneous. This

would simply show that the habit of making either pictographs or petroglyphs to the exclusion of the other was not so strong among these people as elsewhere.

Several examples of these are shown in figure 85a-j.



Map 45. Kachina-like figures.

#### PART IV. SYNTHESIS OF ELEMENTS OF PETROGRAPHY AND AREAL DISTRIBUTION

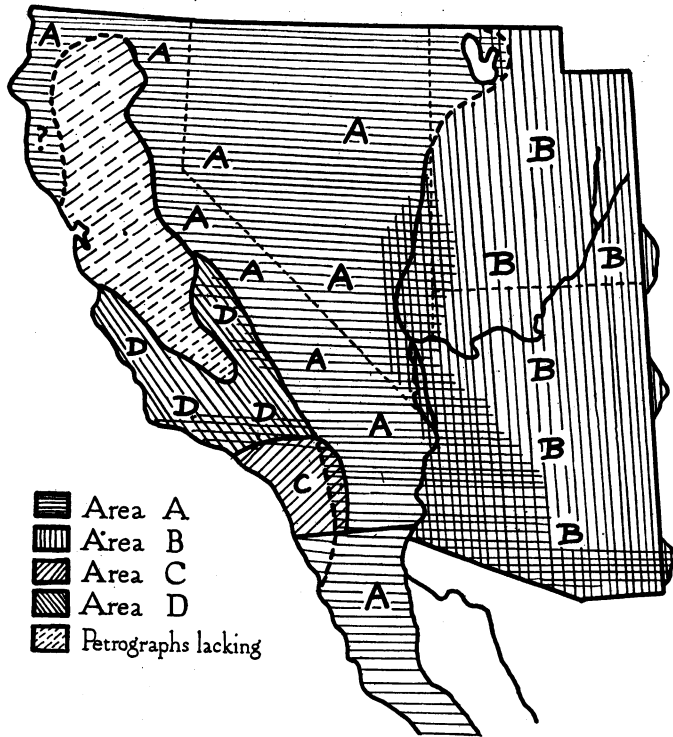
The obvious distinction between pictographs and petroglyphs is clearly more than a distinction of mediums and technique. In eastern California, Nevada, Utah, Arizona, and Lower California, petroglyphs are by far the most abundant, and in the region of eastern California and Nevada almost the sole forms. Most of the pictographs which occur in southern Utah and northern Arizona are probably of different periods than the petroglyphs in the same region. The pictographs of California, except for the northeastern region, are stylistically quite different from the petroglyphs in adjoining regions and the elements of design composing them are largely distinctive.

In California, the Sierra Nevada mountain range has been an effective barrier to the westward spread of petroglyphs. The great central valleys are totally devoid of any examples of petrography. In northern California it seems likely that the petrography of the northeastern regions has spread across the State to the coast. But, while our data are very limited for northwestern California, occurrences of petrography are probably rare and most of the examples of petroglyphs bear little resemblance to those found elsewhere. Farther south, the Sierra Nevada range sharply divides the Owens valley region of petroglyphs from the Tulare county region of pictographs. In southern California where the Sierra Nevada mountains cease to be a definite barrier, the dividing line between petroglyphs and pictographs is less distinct. Nevertheless petroglyphs are typical of the eastern part of southern California and pictographs are typical of the west, especially of the coast, from the southern boundary of the State to Monterey county.

The grouping of elements of designs on tables 1 and 2 show four major areas of petrographic and pictographic work. These areas are also shown on map D. Areas A and B are predominantly areas of petroglyphs. Areas C and D are almost exclusively areas of pictographs.

Area A includes California east of the Sierra Nevada mountains, Nevada, and Lower California. The petrography of this area is characterized by a large number of geometric elements (elements 12-

24, tables 1 and 2). The curvilinear designs are of the widest distribution. The circle occurs in many combinations. There are innumerable other curvilinear elements, many of which are too indefinite to be suitable for analysis. The best examples of these curvilinear groups are found in northeastern California. If, in our analysis, we have erred by breaking up an essentially unitary type of



Map D. Major petrographic areas.

design, variable as it may be, into many parts (elements 13-16, tables 1 and 2), this is compensated by the repeated occurrences of designs of this type in the northern part of the region.

Rectilinear figures—rectangular gridirons, cross-hatching, angular meanders, etc.—are more restricted in distribution and center in the Owens valley region, although the site at which they are most abundant is in southern Nevada, Grapevine canyon, site 227. These also occur to a limited extent in western Nevada, Arizona, and southern California. The justification for considering these as generically related and probably actually associated in origin lies not only in their

definite areal distribution but in their intimate association at Grapevine canyon, where they all seem to be contemporaneous expressions of the same culture. The circular gridiron is apparently a hybrid between curvilinear figures and the rectangular gridiron but its distribution throws it with the latter.

Other elements which characterize Area A are more naturalistic (elements 5-11, tables 1 and 2). These are quadrupeds of various kinds, hand prints, bear or human tracks, mountain sheep, snakes and spirals, which may also have been intended as snakes, and stars. These figures are less common than the geometric elements although associated with them, especially with rectilinear groups.

In Lower California geometric elements, especially of the curvilinear type, are most abundant. Realistic or naturalistic figures, especially animal representations, are rare. Several rectilinear figures occur, however, at site 228, and a few pictographs are found in Lower California.

The most widespread and apparently basic type of design in California is curvilinear. The existence of this type throughout a rather well defined area is apparent from a consideration of the general style of the ensemble groups as well as an analysis of the elements which make up the figures. This type then may be the older. Sun disks, wavy or zigzag lines, and human figures are coincident with this. As more specialized types we have the rectilinear designs and naturalistic or realistic figures associated with them.

The most numerous pictographs in this area are found in northeastern California. While on the whole many of them resemble the curvilinear style which is prevalent in this area, there are a number of surprising resemblances to the Santa Barbara-Tulare pictographs. These include the use of one color to outline a figure of another color, groups of short dashes of color, several insects, "pelts," rows of outlined triangles, and other figures strikingly like some found in Tulare county. On the other hand, several designs occur which are rather unique so far as our area is concerned. The many sun disks, angular figures, and others, as well as points of general style, resemble much more the pictographs found north of California.

Area B includes Utah and Arizona. With Area A it shares the universal elements (elements 1-4, tables 1 and 2) and also the naturalistic and realistic elements (elements 5-11)—quadrupeds, mountain sheep, hand prints, human or bear tracks, snakes and spirals, and to a

less degree, dots and "connected circles." With the exception of the last two, however, all of these elements are much more abundant in Area B. While all these elements are associated to a certain extent with dots and "connected circles," the ensemble of the groups where these two occur makes them somewhat distinctive and more like the groups of Area A.

In addition to the above elements which Area B shares with Area A, there are a number which are more distinctive of the former. These are also realistic or naturalistic—birds, horned toads or frogs, lizards of the special rectilinear style, and kachina-like humans. These are associated with one another and with those which also occur in Area A. We may regard B, then, as an area of predominantly realistic or naturalistic figures. The slight admixture of geometric elements does not essentially alter the dominant character of the style and where geometric curvilinear elements do occur the realistic or naturalistic is not so strong.

Area C, the eastern part of southern California, is the most unique of our areas. The predominant design is the zigzag in various arrangements and combinations. This is the girls' adolescence ceremony symbol. A few other elements occur, chiefly the lizard, but these, as elements 1-4—concentric circles, wavy or zigzag lines, human figures, and sun disks—are widely distributed and are of no significance in characterizing areas. The only sites in this area where the designs are at all anomalous are where petroglyphs occur. But at the most important petroglyph site (site 79) the figures are very definitely of the geometrical style of Area A and show the site to be related to that. Most of the other petroglyphs in southern California are also marginal to Area A. Several maze designs occur in petroglyphs in this area, but these are definitely related to Areas A and B.

Area D includes the Santa Barbara and Tulare regions where pictographs prevail. With Area A it shares several simple elements: lizards, which are universal except for Lower California (but executed in a distinctive style in Utah and Arizona), spoked wheels, the "ladder" (an element of doubtful identity), and the rake design. The area has a number of distinctive features. Foremost is the practice of outlining figures of one color with one or more borders of a different color. We also find many figures made up of a series of dots instead of solid lines. There are a number of geometric elements—herringbones or feathers, alternating straight bands of color, zigzags,

and others which are worked into designs so elaborate as to defy analysis. This very elaborateness, however, is distinctive of the area, especially the Santa Barbara region. Target-like designs of concentric rings of color are also distinctive. A less distinctive but common element is a series of short dashes of color. Other figures are realistic or semi-realistic. There are also "pelts" and several kinds of insects including curious many-legged creatures and several centipedes. Beavers seem also to be represented several times in the Tulare region.

The Santa Barbara and Tulare regions have several distinguishing features. The former is given more to elaborate geometric figures—at its best sites at least—although naturalistic figures, especially anthropoid, are not lacking. The geometric figures of the Tulare region are more simple and less abundant. Naturalistic and more or less realistic representations, both human and animal, are abundant. Conventionalization, however, has been carried to such an extent in many figures that they have passed beyond recognition and have degenerated into mere amoeba-like daubs of paint which nevertheless have the appearance of completeness.

In Area D there are several petroglyphs. Those at sites 116 and 118 in Tulare region have many features which place them with the geometric petroglyphs of Owens valley region, directly to the east across the Sierra Nevada mountains. At the same time the two occurrences of pictographs in the Owens valley region, sites 38 and 48, have simple dashes of red, and rake designs which vaguely resemble some of the geometric designs in the Tulare region. The other petroglyph sites in the Santa Barbara-Tulare region and southern California seem also to be more or less related to the petroglyphs of eastern California, Nevada, and Lower California.

## PART V. MEANING AND PURPOSE

Innumerable attempts have been made to ascertain the meanings of petroglyphs and pictographs from Indians living at present in the regions where they occur. These have invariably met with failure. The Indians disclaim all knowledge of their meaning or origin. This can hardly be due to reticence for intelligent Indians have themselves made efforts to ascertain something about the inscriptions with no success. In many instances the Indians are aware of the inscriptions and often regard them with fear. This is of little value to us, however, for it explains nothing concerning their origin or antiquity. Usually it is probably no more than the fear of what they recognize as unnatural.

Many attempts have been made by various authors to deal with this vexing problem. Some explanations are guesses which fall within the bounds of probability. Others are theories of extreme absurdity and have not the least iota of truth. The worst offenders are the many popular writers who proceed on a purely imaginative basis. Their theories are generally too far-fetched to merit comment.

The meaning and purpose of petroglyphs and pictographs can only be ascertained through careful study of art and symbolism of present Indian groups and a comparison of these with petrographic elements. This is beyond the scope of this paper. We shall not attempt here more than a brief sketch of the probable type of explanation of this rock work.

We know that petrography was done by Indians. And, as pointed out above, even the oldest petroglyphs probably do not date back more than a few thousand years at the most. Most of the groups were probably made by the ancestors of present tribes living at or near the regions of the groups. There is, however, no great correlation between petrographic areas and present Indian groups. In general Area A coincides with Shoshonean culture and language. Areas C and D also coincide vaguely with cultural areas in California. Area B, however, is more indefinite and if there has been correlation with cultures it was probably with prehistoric ones. Various periods of petrography may be brought out by a more detailed study of Area B. Moreover, the elements which connect Areas A and B probably show an early influ-



ence of B on A which is not so evident in present cultures. This undoubtedly greatly antedated the concentration of Pueblo cultures in their present areas.

It has frequently been stated that petroglyphs and pictographs are but meaningless figures made in idle moments by some primitive artist. The facts of distribution, however, show that this cannot be true. Since design elements and style are grouped in limited areas, the primitive artist must have made the inscriptions with something definite in mind. He must have followed a pattern of petrography which was in vogue in his area. He executed, not random drawings, but figures similar to those made in other parts of the same area. The elements of design, then, must have had some definite significance which was the same over wide areas.

We can probably never know precisely why many of the petroglyphs and pictographs were made. But we can guess that many of them were made for some religious or ceremonial purpose. Among the Quinault on Puget Sound, Mr. R. Olson states, pictographs were made by boys at their puberty ceremonies and the figures represented mythical water monsters seen by the boys in their visions. Among the Nez Percé, Spinden reports a number of pictographs made by girls during their puberty ceremonies and representing objects seen by them in dreams or connected with the ceremonies.<sup>7</sup> And among the Cupeño and Luiseño of southern California pictographs were also made by girls during their adolescence ceremonies. (See below.) These facts do not of course prove that all petroglyphs were made during puberty ceremonies. But it does strongly suggest that most if not all were undoubtedly more than the results of idle moments, even of efforts to produce works of art.

The elements which are shared by Areas A and B and those which occur in Area B were undoubtedly a more or less definite system of symbolism. Their origin may be connected with religious or clan symbolism of early cultures in the cliff-dweller area. As the symbols diffused outward from this center, somewhere in Area B, the meanings may have changed. Possibly the meanings of many of them, however, may be ascertained through a detailed study of present Pueblo symbolism.

The representations of some of the petroglyphs in Areas A and B are obvious. These are the realistic mountain sheep, a few deer, pos-

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<sup>7</sup> Spinden, 231-232, pl. x.

sibly dogs and coyotes, lizards, hands, bear and human tracks, spirals and stars, sun disks, and human figures. But we cannot say why they were made. Lizards and mountain sheep have practically as wide distribution as the occurrences of these species. The others are more arbitrary. Mountain sheep may have had to do with the hunt, or with the magical increase of the herd in a country where they were important as game. This hypothesis is similar to that offered for many of the cave paintings in Europe. But it is little more than a guess. Other realistic figures probably had quite different explanations—possibly clan symbols, individual guardian spirits, or shamans' powers. In Tulare county some of the strange pictographs are believed by the Western Mono and Yokuts, according to Dr. Gayton, to be "doctors' marks." These may represent shamans' powers although it is unlikely that all were for this purpose.

Many of the geometric elements may have been taken from realistic figures. Some of the crude circle arrangements, for example, seem to be intended as humans. (See above, p. 181 and figure 86.) Crosses and other figures may in some cases be highly simplified humans. Others may be highly conventionalized animal figures. It is probable that many are pictorial but not identifiable. Some of the gridiron and rectilinear elements suggest a textile or ceramic origin. But the purpose is unknown. The spiral has been considered by some as a form of maze. In many instances it appears to be intended as a snake. Many of the circles and other curvilinear designs occurring in Area A, one of great aridity, have been regarded as water symbols and maps. The spiral has also been regarded as a water symbol. This may be true, but a cogent objection is that most of the so-called water symbols occur immediately at water holes. There is no reason why one should need a symbol to indicate water after he has already arrived at the spring, unless the designs have supernatural significance. Moreover, these supposed water symbols occur in combinations and at localities where they can have nothing to do with water. Many of the elaborate combinations of connected circles, wavy lines, etc., have been regarded as maps. This seems to be a plausible explanation and may be true in some instances. Nevertheless many such arrangements have been studied by the authors and it is clear that they do not represent at all the country surrounding the site where they are found. It seems hardly possible such maps could have been of great use unless someone were on hand to explain their meaning to the wanderer and in that case they would scarcely be necessary.

From the Luiseño and Cupeño we have definite explanations of the meaning and purpose of the types of pictographs in Area C. Among the Luiseño the girls went through an elaborate ceremony at puberty. This consisted in placing the girls in a pit with heated rocks for three days. On the morning of the fourth day they left the pit and their faces were painted black for a month. For the second month vertical white lines were painted on their faces, and for the third month, wavy, red horizontal lines. The last was called the "rattlesnake" design. After further ceremonies in which a ground painting was used the girls had a race to a certain rock. Here relatives of the girls stood to give them red paint when they arrived, and they painted diamond-shaped designs, representing the rattlesnake, on the rock. Among the Cupeño the ceremony is much the same. The girls spent a period in a pit, went through ceremonials in which a ground painting was the central feature, and finally raced to a rock where they painted rectilinear designs with red iron oxide. Examples of such paintings are abundant in Area C and are practically the only design found there.

In the Santa Barbara-Tulare regions, Area D, we find a large number of realistic figures. Many of these seem to be humans of rather fantastic form. Others are animals, apparently beaver, deer, possibly bear, coyotes, and others. The purpose of these cannot be ascertained unless we assume that the Indians who believed those in the Tulare region to be doctors' marks were correct and that they therefore represent the doctors' powers. We have already noted that at site 93, Santa Barbara region, figures which are very similar to those in the Tulare region underlie the more elaborate ones. These may also be of similar import. The groups of parallel dashes of color, possibly the oldest pictographs of Area D, may be simply tally marks. Similar groups of dashes are also found in northern California and on the Columbia river.

The elaborate designs of the Santa Barbara region have some points of similarity with ground-paintings which occur in southern California and among the Navaho and other Southwestern tribes, and it is possible that the uses were the same as in southern California, namely, in connection with adolescence ceremonies. If the underlying connection is with the Southwest, however, there has been a considerable divergence from the Southwest in local style and possibly in use. The frequent occurrence of these in caves points to some supernatural significance. The concentric circles and cogged wheels suggest earth

symbols, the curious insect and animal forms may be "avenging animals," while the sun disks and various peculiar anthropoid figures may be deities.

To summarize: Petrography is old and occurs throughout the world. In the western hemisphere the most widespread rock inscriptions comprise circles, zigzags, sun disks, human representations, zoomorphic and many naturalistic figures, and a large number of curvilinear designs. In the territory dealt with in this paper, the first four of these elements occur in every area.

Area A (California east of the Sierra Nevada, with Nevada and Lower California) has most in common with petroglyphs in other parts of the western hemisphere, especially in its abundance of curvilinear designs. These are probably among the oldest elements. The rectilinear figures are more specialized and distinctive of Area A and other special representations connect it with Area B.

Area B (Utah and Arizona) is characterized by many naturalistic and realistic figures which occur to a less extent in Area A. The cultural association of these in Area B shows that many of them date back to Basket Maker times but that the greatest number are probably of the early Pueblo cliff-dweller period. This type of petrography may have been selected out of a larger range and more widespread type of rock symbolism in about the Basket Maker period and carried to its highest development in Area B in the early Pueblo period. In the course of cultural development in the Southwest this petrography undoubtedly drew away from its earlier more primitive character and became more sophisticated. To a certain extent there was undoubtedly a diffusion to the westward from centers in Area B.

Area C (western part of southern California) and Area D (Santa Barbara and Tulare regions) undoubtedly have an ancient connection with petrography elsewhere, but the present pictographs are comparatively recent and highly specialized.

## PART VI. CONCLUSIONS

At the present time it is impossible to present an elaborate scheme of the detailed relationships and relative chronology of the petrographic and pictographic work of our area. We can do little more than to present general hypotheses and state a number of the problems.

Areas A and B are clearly more closely related than any of the other areas. Their greatest relationship lies in the great use of naturalistic and realistic figures—quadrupeds, sheep, hand prints, bear or human tracks, spirals, snakes, and stars. To this list, however, are added other more or less realistic elements which occur chiefly in Area B.

The various types of petrography in Area B are too intricate to attempt any great analysis or assignment to cultures on our scant data.

The petrographs of Area B seem on the whole to be fairly old. They probably date from the Basket Maker to Cliff Dweller or early Pueblo culture. For example, Fewkes found petroglyphs of geometric forms, spirals and rectangular figures, bird tracks, human hands, bear claws, birds, animals, snakes, and humans apparently contemporaneous with the cliff dwellings at Yellow Jack canyon, Colorado, site 242 (see above, p. 154). At Sandstone canyon, site 243, however, he found similar painted figures associated with the cliff houses. And Guernsey and Kidder found pictographs of this general type at Kayenta associated with Basket Maker culture.<sup>8</sup> These included square-shouldered, kachina-like figures, which we also find in petroglyphs in southern Utah and southern Nevada, and which are also associated with bear or human tracks, human hands, quadrupeds, and other realistic or semi-realistic figures. Guernsey and Kidder believe that some of the pictographs in the Kayenta region may have been Cliff Dweller.<sup>9</sup> (Others are probably Navaho.) Both petroglyphs and pictographs in Area B however include, as far as our data show, naturalistic and realistic elements. Again, West<sup>10</sup> found at a cliff dwelling in Navajo canyon many petroglyphs including spirals, horned animals, rain clouds,

<sup>8</sup> Guernsey and Kidder, 89-97.

<sup>9</sup> *Loc. cit.*

<sup>10</sup> West, 89-97.

frogs, birds, turtles, snakes, earth symbols, meanders, circles, and human figures. These all fall in with the general petrography of this early period.

Speaking of the pictographs in the Rio Verde valley, Fewkes states:

There is evidence of at least two kinds of petroglyphs, indicative of two distinct peoples. One of these was of the Apache Mojave; the other, the agriculturists who built the cliff homes and villages of the plain. Those of the latter are almost identical with the work of the Pueblo peoples in the cliff-dweller stage, from southern Utah and Colorado to the Mexican boundary. It is not a difficult task to distinguish the pictography of these two peoples, wherever found. The pictographs of the latter are generally pecked into the rock with a sharpened implement, probably a stone, while those of the former are usually scratched or painted on the surface of the rocks. Their main differences, however, are found in the character of the designs and the objects represented. This difference can be described only by considering individual rock drawings, but the practiced eye may readily distinguish the two kinds at a glance. The pictographs which are pecked in the cliff are, as a rule, older than those which are drawn or scratched, and resemble more closely those widely spread in the Pueblo area, for if the cliff-house people ever made painted pictographs, as there is every reason to believe they did, time has long ago obliterated them.<sup>11</sup>

Again, the pictographs of Apache origin, described by Fewkes from Palatki, Ruin I, although of later inscription than the Cliff Dweller pictographs, were at least made before that dwelling had crumbled, for the height above the ruin indicates the presence of a third story, since fallen.<sup>12</sup>

The spiral, discussed elsewhere (p. 189) may be connected, as well as those associated with it, with the Cliff Dweller pottery, as a similar design occurs on this pottery. Another point strengthening the Cliff Dweller period as time of origin of many petroglyphs, especially those which are realistic or naturalistic, is the similarity of many of the elements of design to Pueblo designs.

The majority of ancient pictographs in the Red-rock country, like those I have considered in other parts of Verde Valley, are identical with picture writings now made in Tusayan, and are recognized and interpreted by the Hopi Indians. In their legends, in which the migrations of their ancestors are recounted, the traditionists often mention the fact that their ancestors left their totem signatures at certain points in their wanderings. The Patki people say that you will find on the rocks of Palatkwabi, the "Red Land of the South" from which they came, totems of the rain-cloud, sun, crane, parrot, etc.<sup>13</sup>

<sup>11</sup> Fewkes, 1898:548.

<sup>12</sup> *Ibid.*, 556.

<sup>13</sup> Fewkes, 1898:568.

The freshness of the pictographs in Verde valley, on the other hand, point to a more recent origin, and their style to Apache art.

In addition to these sites we may mention several where the petroglyphs are strongly suggestive of the curvilinear style of Area A—sites 230, 263, 264, 271, 277, and 282. Strongly associated with this, however, in both Areas A and B, is the spiral which also is important at other sites in Area B. Other elements characteristic of Area B, elements 5–11 and 39–45 in particular, also occur in association with these curvilinear figures but not to any great extent.

In Area A we have much evidence of considerable antiquity of the petroglyphs. At many sites where typical examples occur the weathering of the rocks and the condition of the petroglyphs show that they must be fairly old. At Yerington, Nevada, site 202 for example, the petroglyphs are covered with desert varnish. Sites 35, 37, 39, 40, 41, and 48 also appear very old. The petroglyphs at Grapevine canyon, Nevada, site 227, are also undoubtedly many hundreds of years old. This has been discussed above, pages 148–150. The rectilinear element is very abundant here. At site 37, however, the rectilinear elements appear to be superimposed upon less distinct curvilinear figures. This would place the latter as older. The wider distribution of the latter adds weight to this. At site 227 there are also mountain sheep, angular meanders, and lizards of the style typical of Area B. This connection would suggest a close association of these figures of site 227 and Area A in general, which shares most of the designs of site 227, with the older petroglyphs and pictographs of Area B. Moreover, Lost City, site 226, which also has most of the elements which occur at site 227, has kachina-like figures.<sup>14</sup> Harrington ascribes the ruins at Lost City, to some culture between post-Basket Maker and early Pueblo, but we cannot be certain of the association of the petroglyphs with this culture. At site 61, discussed above, petroglyphs of a distinctly rectilinear type, including one maze, occur under a deposit of travertine. As the formation of this deposit dates back between three hundred and a thousand years, these petroglyphs must be at least three hundred years old and are possibly more than a thousand, for they may have been made long before the deposit occurred. (See above, p. 84.)

At site 226, however, representations of mountain sheep which are clearly very old, occur intimately associated with excellent representations of men and horses. These figures, then, are less than four

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<sup>14</sup> Harrington, 276, 277.

hundred years old. For this apparent anomaly there are three possible explanations: (1) sheep were made continuously over a long period from about the Basket Maker period until comparatively recent time; (2) all the sheep and associated figures were made within the past four hundred years; (3) the men and horses are not truly associated with the mountain sheep but were made much more recently. Of these the first seems the most probable. In view of the great mass of evidence of antiquity at other sites, it is difficult to believe that all of the petroglyphs of the types at sites 226 and 227 were made so recently. And as the association of the mountain sheep with horses seems to be very real (pl. 70c) we must assume that all the figures at site 226 were not made at the same time. The assumption that many were made in comparatively recent times is perhaps justified by the fact that we find many petroglyphs standing out as extraordinarily fresh at sites which on the whole appear very old when the petroglyphs are weathered or coated with desert varnish. That is to say, there are probably few groups where all of the petroglyphs are contemporaneous. As the type of design of the figures which appear to be later seldom differs from the older ones, we cannot assume any fundamental difference in petrography in the later figures. Whether they were done by the same people or for the same purpose as the older ones, we can probably never know. It is likely that many are imitations and some have undoubtedly been done by whites. The later pictographs in Area B, which are Navaho or Apache, are generally realistic much in the same way as the petroglyphs. It is not unlikely that later inhabitants of these regions merely copied or reproduced figures already found by them, perhaps without the motivation of the original makers.

It would seem that the petroglyphs of both Areas A and B date back at least to the periods of the early beginnings of Pueblo culture in the Southwest. Perhaps some are Basket Maker culture which dates back to 1500 to 2000 B.C.<sup>15</sup> Most groups are probably as recent as early Pueblo. But to assign groups and styles to definite cultures in the Southwest will require a detailed study of that area. Such a study might also aid in differentiating local styles and periods in Area A. The stimulus for animal figures seems to have been strongest in Area B where quadrupeds of various kinds—mountain sheep, deer, horned toads or frogs, lizards, birds, snakes—are most abundant. With these were associated hands, human or bear foot tracks, spirals,

<sup>15</sup> Kidder, 119.



stars, and perhaps mazes. Most of these elements spread westward and northwestward into the Great Basin area of Nevada and eastern California—Area A. In the southern part of this area, however, the realistic elements give place in part to geometric elements, notably rectilinear designs, gridirons, connected dots, etc., which center in the regions of western Nevada, Owens valley, Mohave, and along the Colorado river. The style of some of the rectilinear elements suggests an ultimate origin in the ceramic or textile art of Area B. The same may be true for the maze which is associated with rectilinear gridirons, and which occurs well into Area B, in fact also down into Mexico.<sup>16</sup> The curvilinear designs are characteristic of the desert of the Great Basin—Area A. While in the southern part of Area A they occur along with other elements they are most pure in the extreme northern part. Lower California is similar in most respects to the southern part of Area A.

The pictographs of Area B may be somewhat later in date than the petroglyphs but, except for those made by the Navaho and Apache, are generally of the same type as petroglyphs. The pictographs of the extreme northern part of Area A have much in common with the petroglyphs of that area but are probably later and seem to be peripheral to a region of pictographs which centers farther north. Their resemblances to the pictographs of Area D cannot be explained in view of the wide areal separation.

The pictographs of Area C are probably much more recent than the petrography of Areas A and B. We know that some of them were made in comparatively modern times, and the excellent preservation of many of the groups as well as the occurrence of what is probably a man on horseback in this area also point to recency. Most of these pictographs are of the distinctive girls' puberty type. The occurrence of lizards at several sites may be due to a continuation of the impetus to animal representations derived from Area B.

The pictographs of Area D are also probably fairly recent. Some of the best groups have weathered appreciably during the past twenty-five years so that their age can hardly be more than a hundred years. Some may be older than this, however, for in the Tulare region present Indians disclaim any definite knowledge of their meaning or origin.

The elements which distinguish the regions of Santa Barbara and Tulare have already been pointed out. We may note, however, that

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<sup>16</sup> Lumholtz, 168.

underlying some of the more elaborate designs at site 93 are simpler ones which are more closely related to the pictographs of Tulare region. A still older group of geometric elements may underly the pictographs in the Santa Barbara-Tulare area. In Tulare region we find a number of geometric designs, chief among which are groups of parallel dashes of color. These generally appear quite old. Such figures are also found in Owens valley, sites 38 and 48, and in Monterey county, both of which localities are marginal to Area D. The only pictographs that occur on Santa Cruz island are also of this type and seem to be fairly old.

With California in general, especially Area A, Area D shares spoked wheels, ladders, and rake designs. These are perhaps derived from older elements of Areas A and B. The same is true of the lizard. The frequent occurrence of horned toads or frogs, on the other hand, links Area D with Area B, and may again have been derived from the strong impetus to naturalistic figures in Area B.

Although on account of the perishability of pictographs we cannot trace their relationship so far back as we can the petroglyphs, it seems not unlikely that an early impulse to petrography may have come from the Southwest. A distinctive local style has developed, however, and the connection of Area D with any other area is remote, except possibly for a few animal figures. Its connection in fact seems to be greater with northeastern California, but our data are too meager for the latter region at present to do more than mention the existence of certain similarities between the two regions. The occurrence of a number of sites of petroglyphs in Area D, most of which are of the types of Areas A or B, suggests that the original impulse was through petroglyphs but that a shift was made at an early date to pictographs.

Underlying the petrography of the areas discussed in this paper there was undoubtedly an older and more widespread development of this art. In widely separated parts of both North and South America are found innumerable groups of both petroglyphs and pictographs. The widespread petroglyphs are frequently strikingly similar to those in our areas. The most common designs are curvilinear and many are indistinguishable from those in Area A. Human representations, sun disks, concentric circles, and wavy lines are found everywhere. Animal representations are also widespread and vary only with the local species. Hand prints, bear tracks, and bird tracks occur throughout the United States.<sup>17</sup>

<sup>17</sup>. Mallery.

The relation of our area to other areas can be determined only by a study of those areas. It may be that many of the geometric figures, particularly the curvilinear, are the natural result of crude conventionalization of symbolism and hence in separated areas represent many cases of independent origin with totally different purpose and significance.

Moreover, types and styles found within our area undoubtedly have a much wider distribution. The high development of naturalistic and realistic figures in Area B probably also extends into New Mexico and part of Colorado and even into Mexico. Mountain sheep represented in petroglyphs occur as far north as the Columbia valley where, together with other animal or zoomorphic figures, they stand out in sharp contrast to the pictographs which comprise totally different characters. A connection of the Columbia region with Area A is probable.

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*a*



*b*



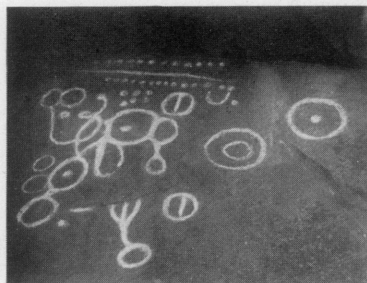
*c*



*d*

NORTHWESTERN CALIFORNIA

*a*, Trinity county, site 2; *b*, Klamath river, site 1; *c*, Willits, site 4;  
*d*, Cazadero, site 8



*a*



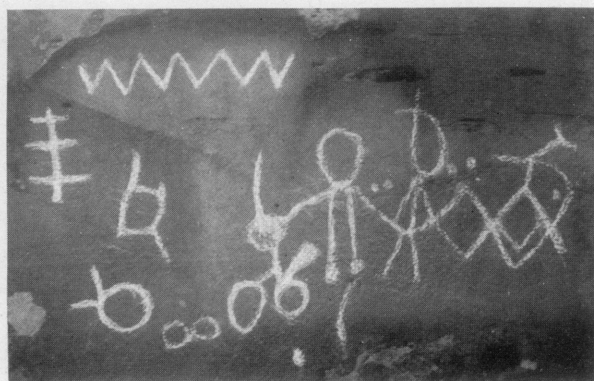
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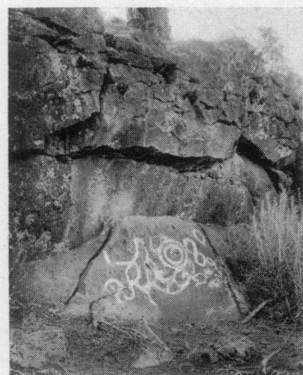
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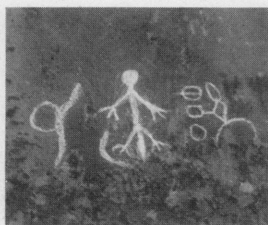
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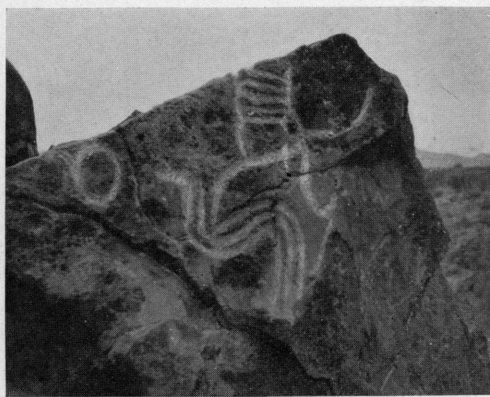
*a*



*b*

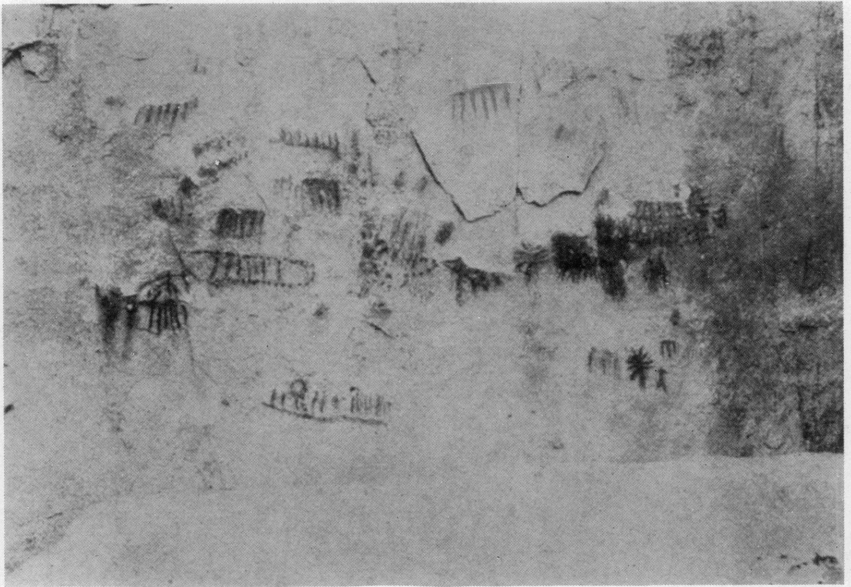


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NORTHEASTERN CALIFORNIA, DRY VALLEY, SITE 18



*a*

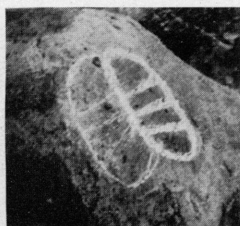


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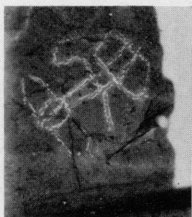
NORTHEASTERN CALIFORNIA, PATE VALLEY, SITE 33



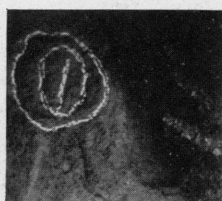
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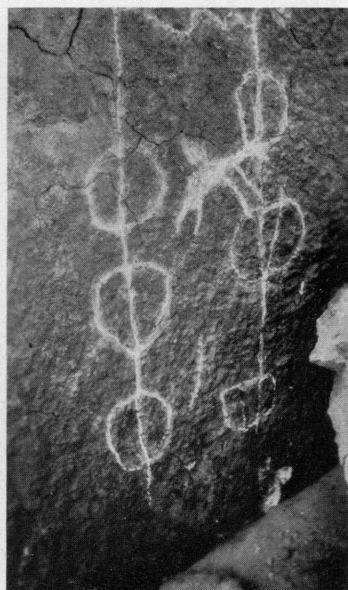
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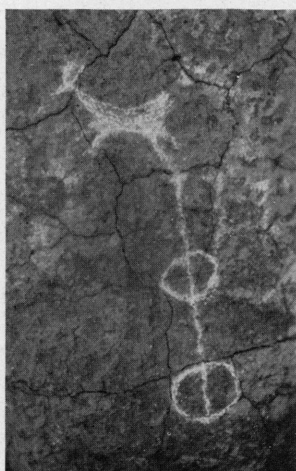
*c*



*d*



*e*



*f*



*g*



*h*



*i*



*a*



*b*



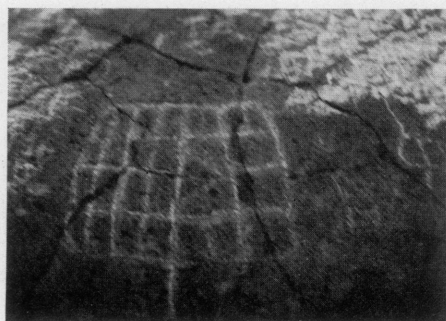
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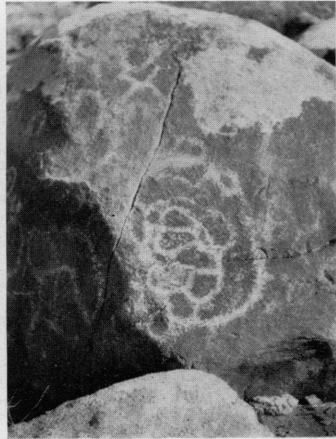
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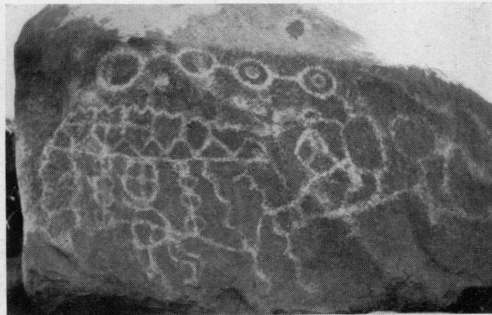
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*c*



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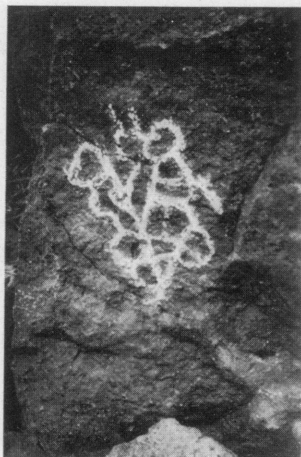


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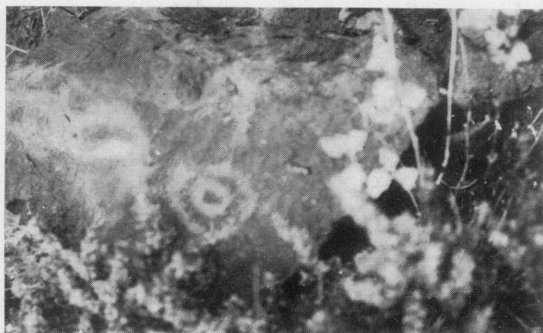


*f*

OWENS VALLEY REGION  
*a*, site 38; *b*, site 37; *c-f*, site 40



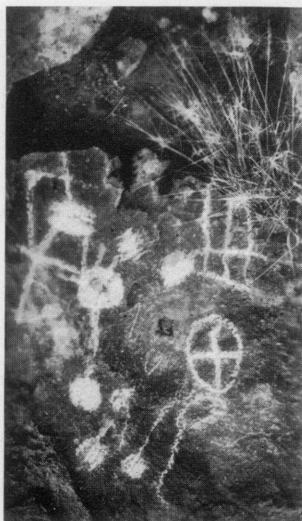
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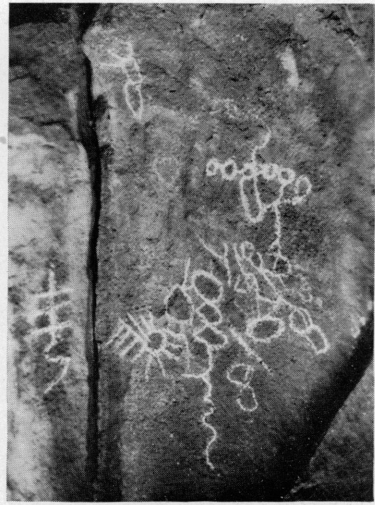
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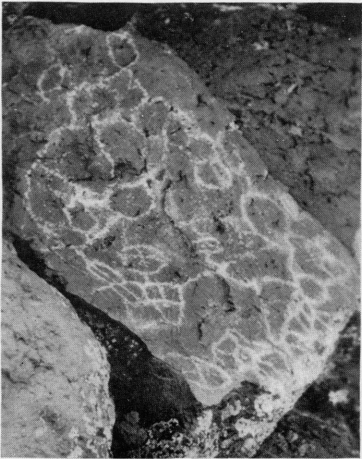
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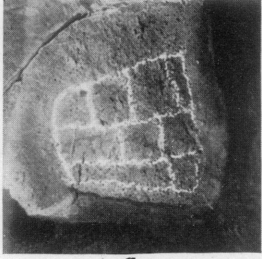
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*a*



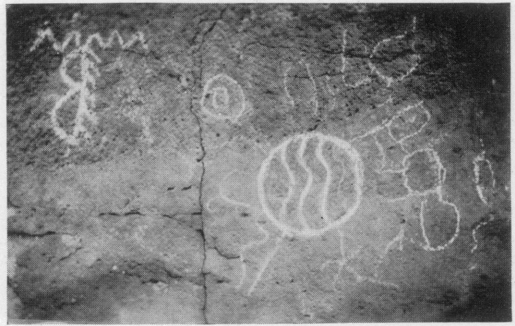
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*c*



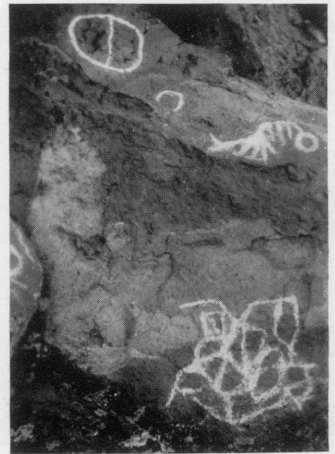
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OWENS VALLEY REGION, FISH SPRINGS, SITE 39

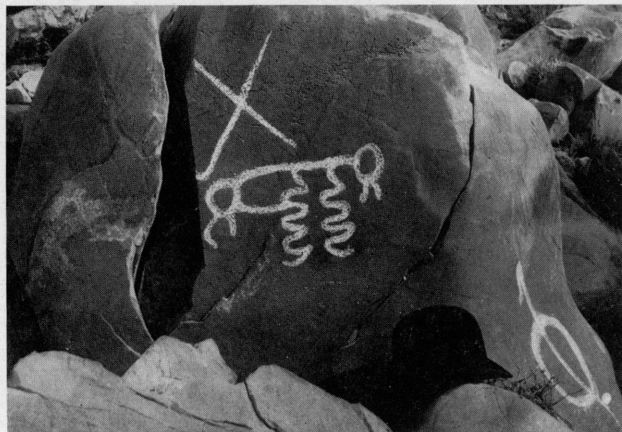




a



b



c

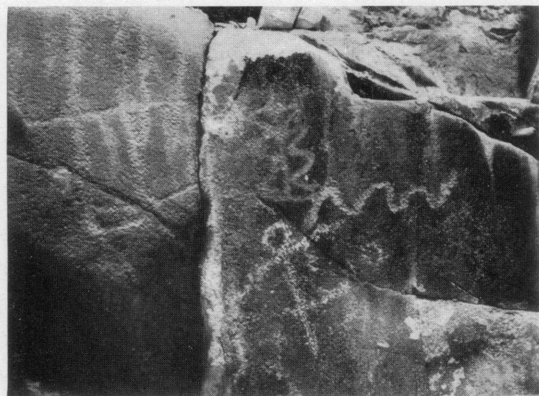


d

OWENS VALLEY REGION, KEELER, SITE 41  
(Courtesy of W. L. Skinner)



*a*



*b*

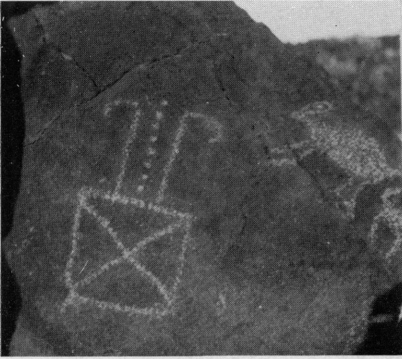


*c*

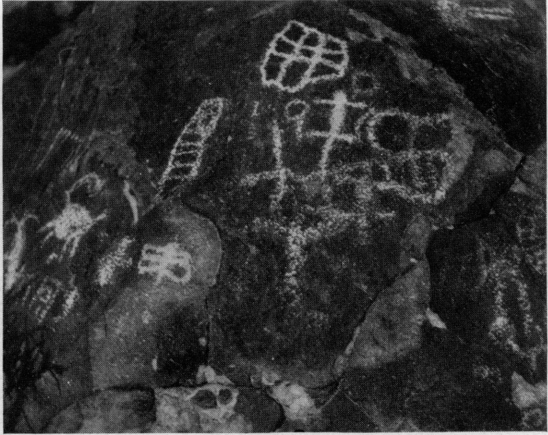


*d*

OWENS VALLEY REGION  
*a, b*, Coso springs, site 46; *c, d*, Keeler, site 41  
(Courtesy of Mr. Guy C. Earl)



a



b



c



d



e



f

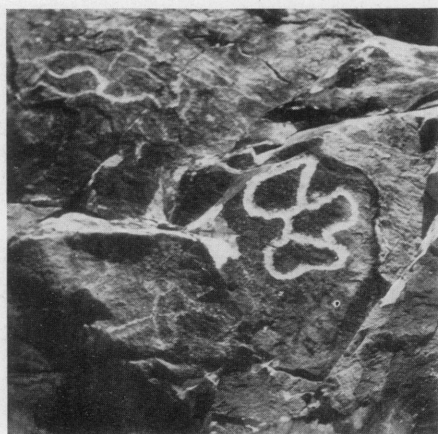
OWENS VALLEY REGION, COSO SPRINGS, SITE 46  
(Courtesy of W. L. Skinner)



*a*



*b*

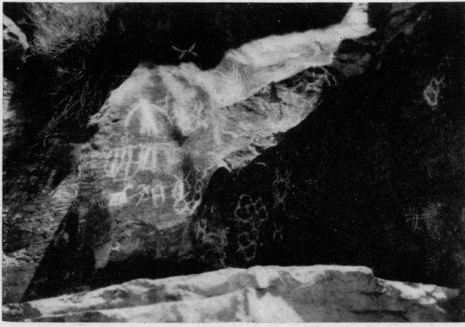


*c*



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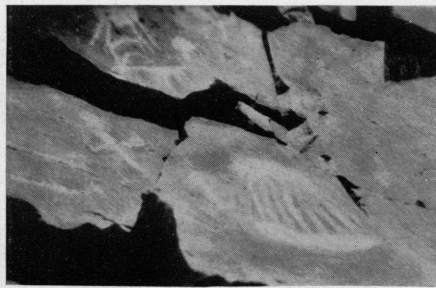
OWENS VALLEY REGION, COSO SPRINGS, SITE 46  
(Courtesy of Mr. Guy C. Earl)



*a*



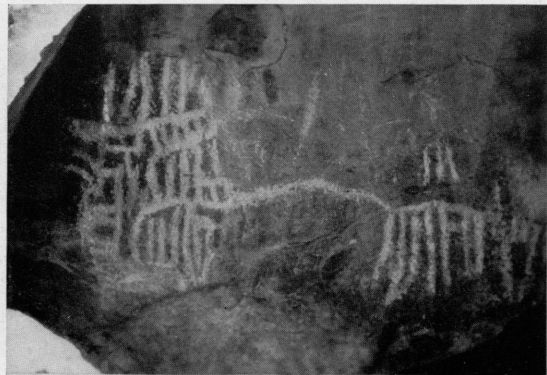
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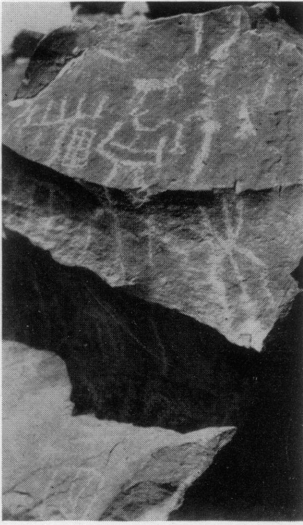


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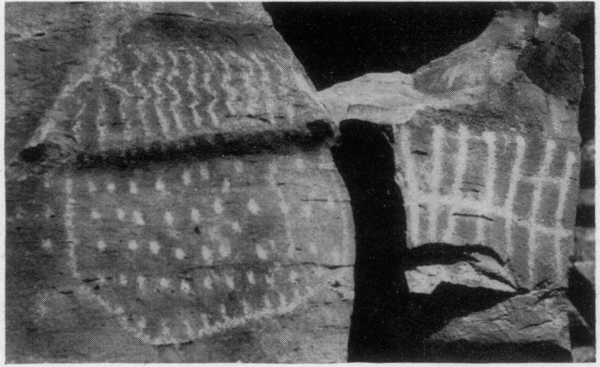


*e*

OWENS VALLEY REGION, LITTLE LAKE, SITE 48  
(Courtesy of Mr. Guy C. Earl)



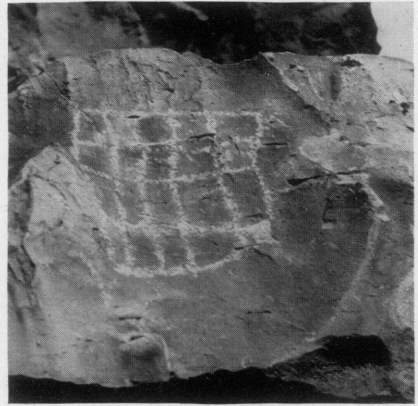
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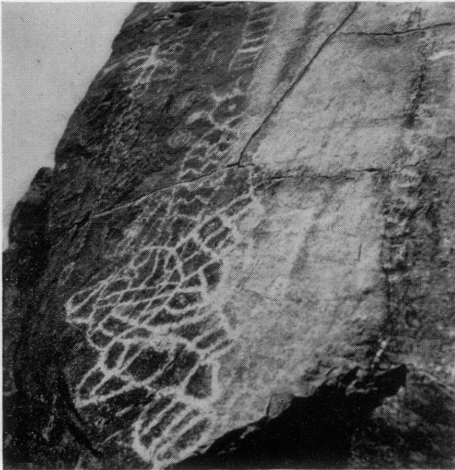
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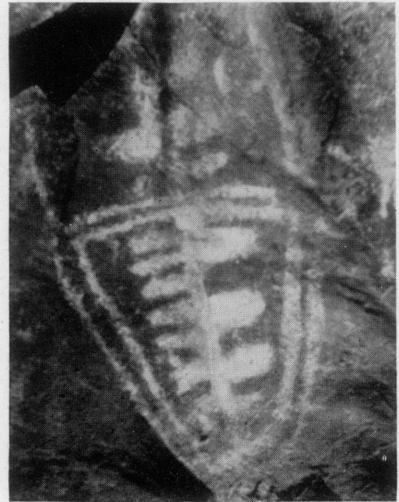
*c*



*d*



*e*



*f*

OWENS VALLEY REGION, LITTLE LAKE, SITE 48  
(Courtesy of W. L. Skinner)



*a*



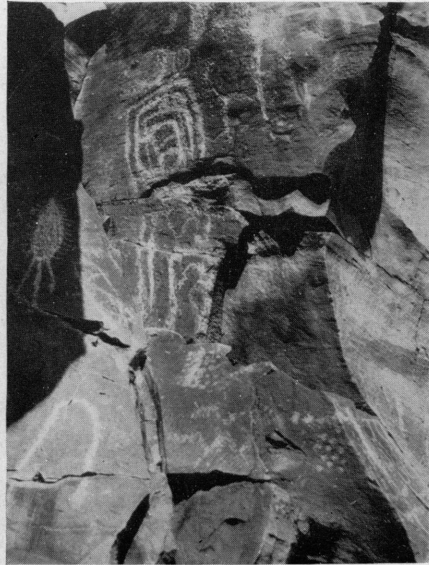
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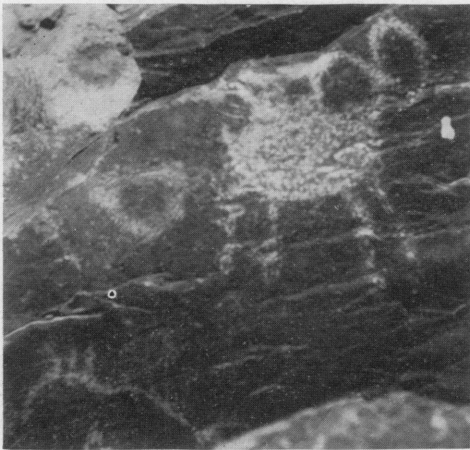
OWENS VALLEY REGION, LITTLE LAKE, SITE 48  
(Courtesy of W. L. Skinner)



*a*



*b*



*c*



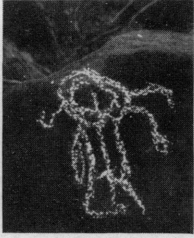
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OWENS VALLEY REGION, LITTLE LAKE, SITE 48  
(Courtesy of W. L. Skinner)





*a*



*b*



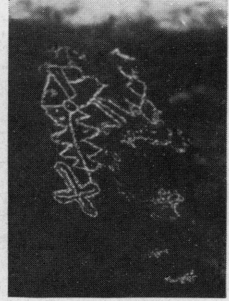
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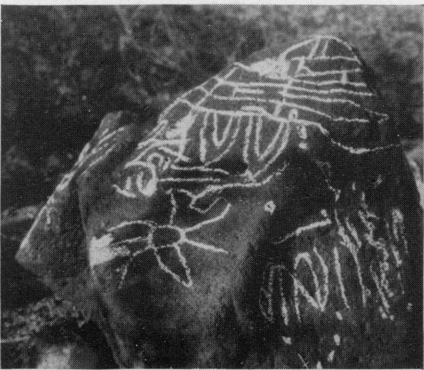
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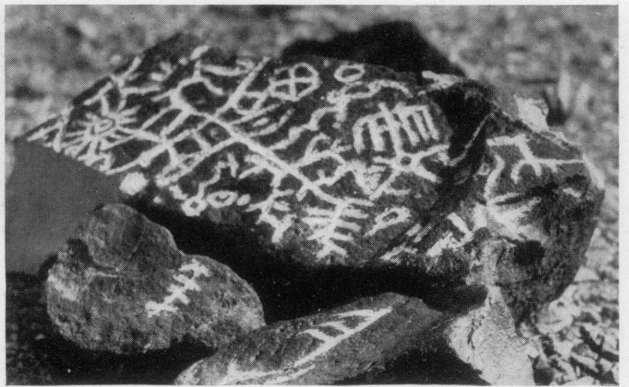
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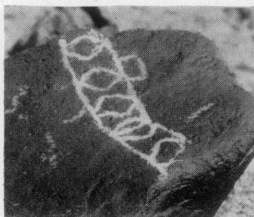
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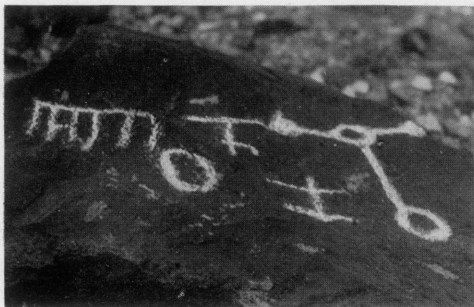
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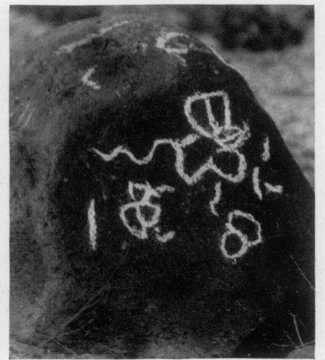
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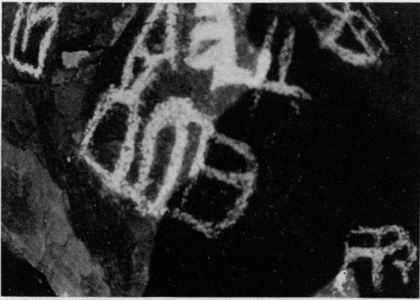
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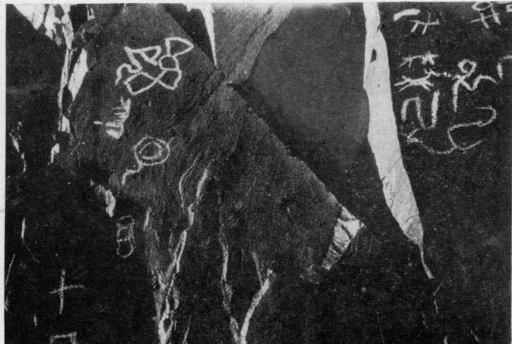
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*a*

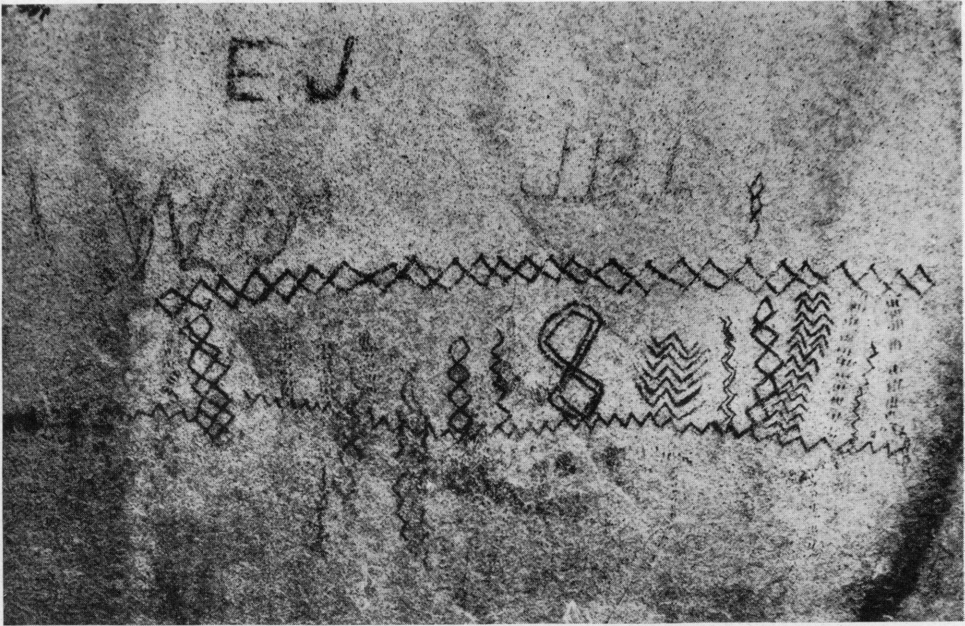


*b*

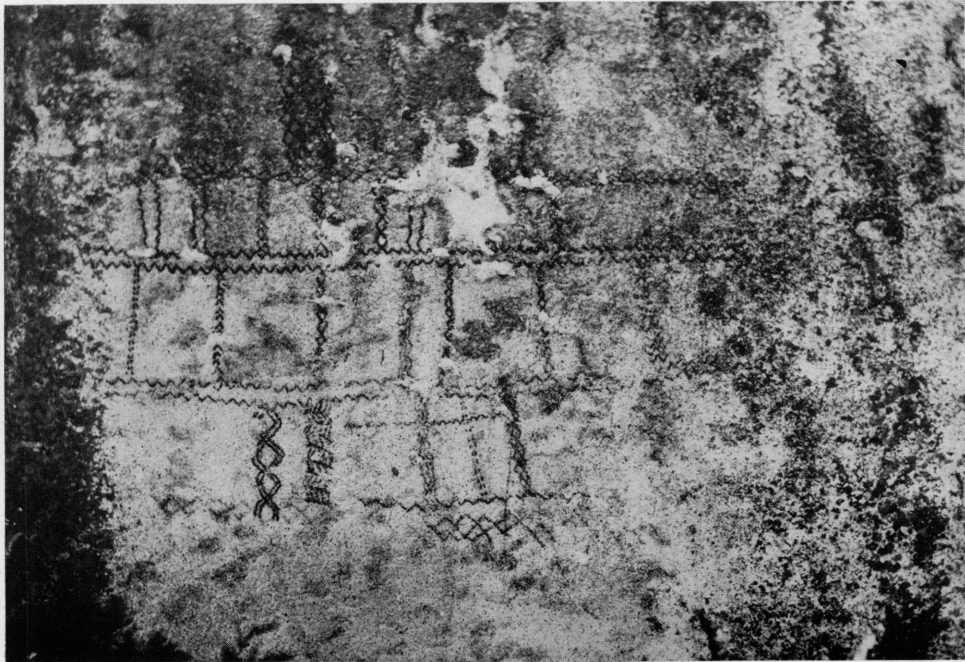


*c*

SOUTHERN CALIFORNIA, SALTON SEA  
*a*, site 62; *b*, *c*, site 63

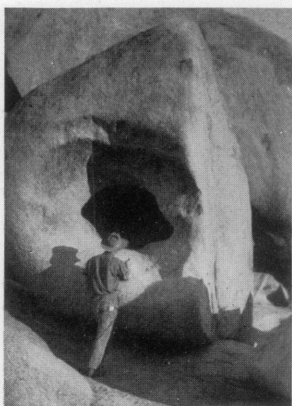


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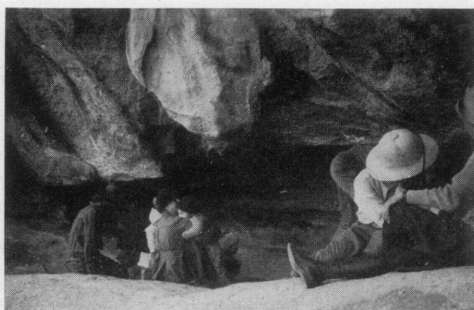


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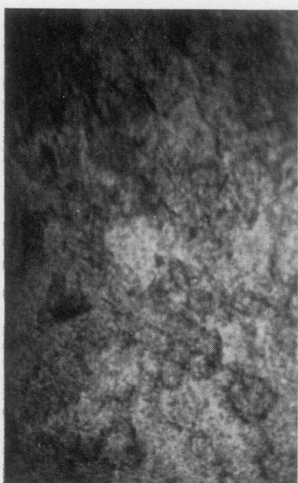
SOUTHERN CALIFORNIA, IDYLLWILD, SITE 64



*a*



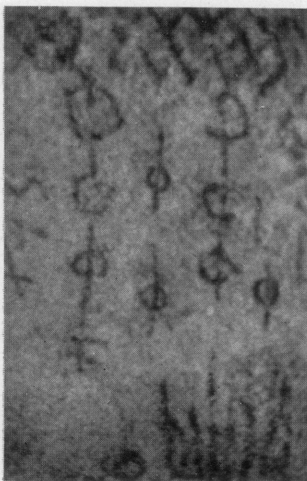
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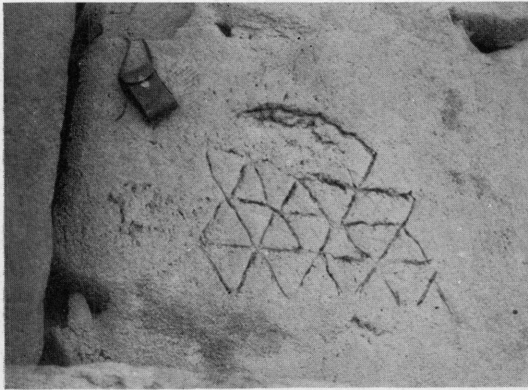
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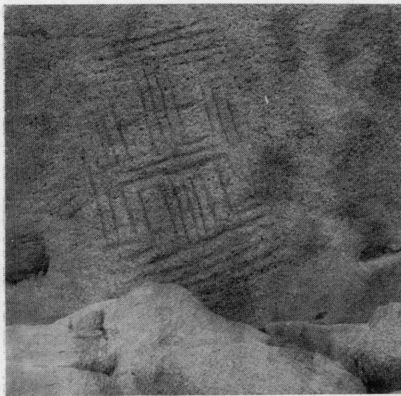
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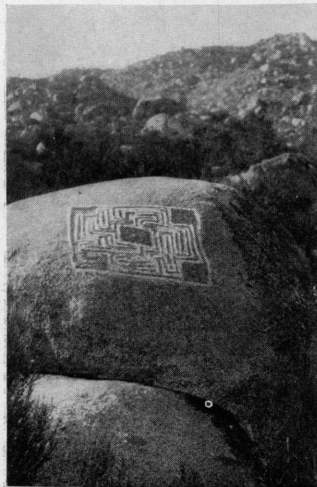
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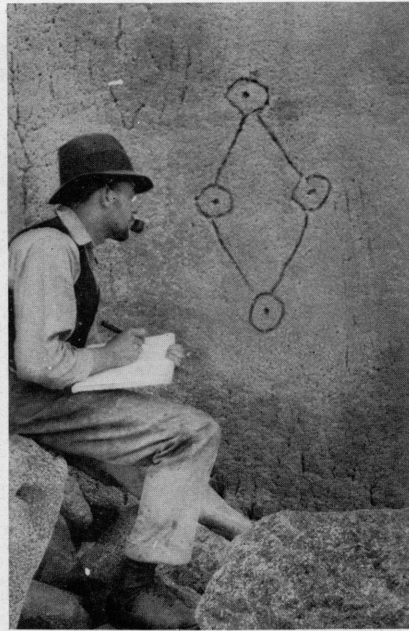
*a*



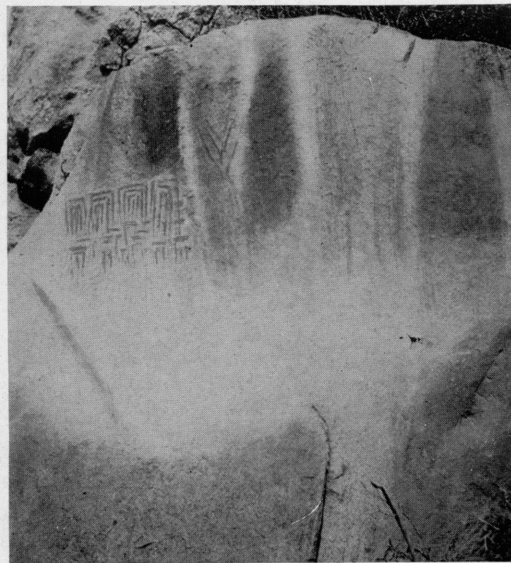
*b*



*d*



*c*



*e*

SOUTHERN CALIFORNIA

*a-c*, Fig Tree John, site 61; *d*, Rheinhart canyon, site 73; *e*, Trabuco, site 70  
(Courtesy of Field Museum of Natural History)



a



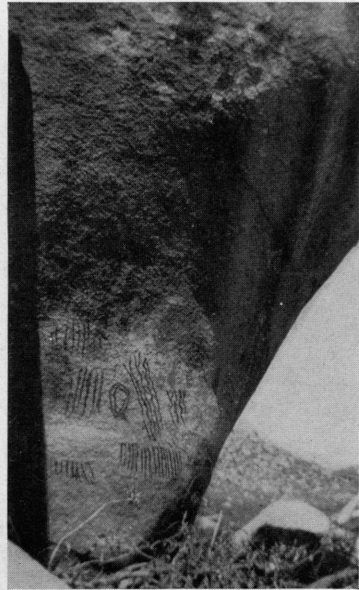
b

SOUTHERN CALIFORNIA, BLAIR VALLEY SPRINGS, SITE 77

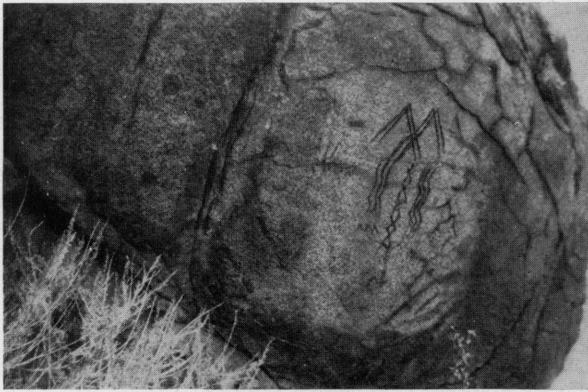




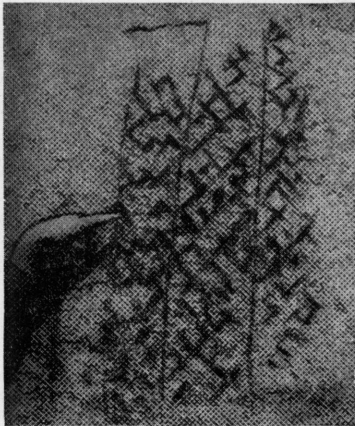
*a*



*c*



*b*



*e*



*d*

SOUTHERN CALIFORNIA

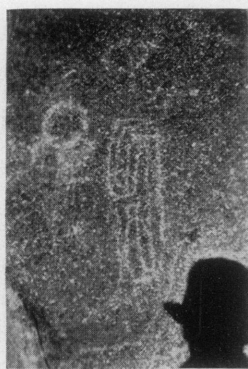
*a*, Winchester, site 72; *b-d*, Idyllwild, site 64; *e*, Palomar mountain, site 68



*a*



*b*



*c*



*d*



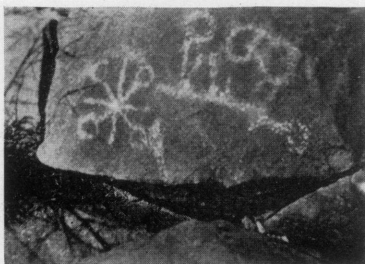
*e*



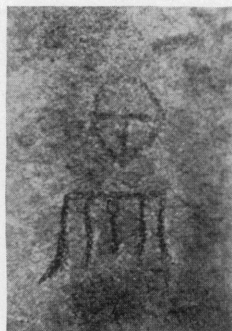
*f*



*g*



*h*



*i*

SOUTHERN CALIFORNIA

*a-h*, Coyote wells, site 79; *i*, Willow holes, site 76

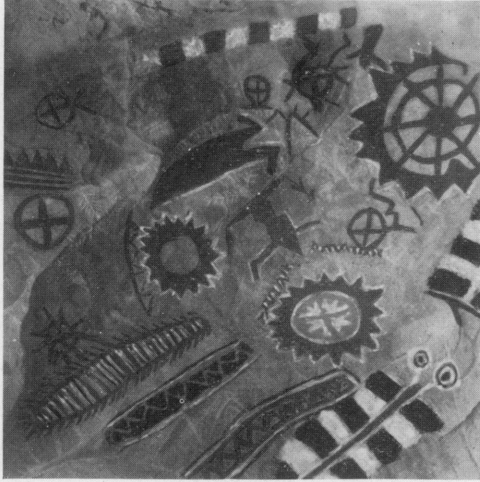


*a*

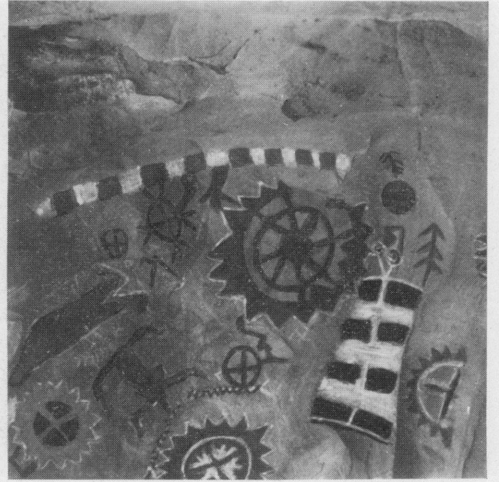


*b*

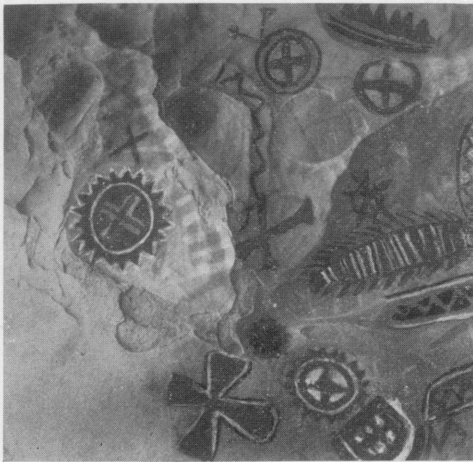
SANTA BARBARA REGION, PAINTED CAVE, SITE 83



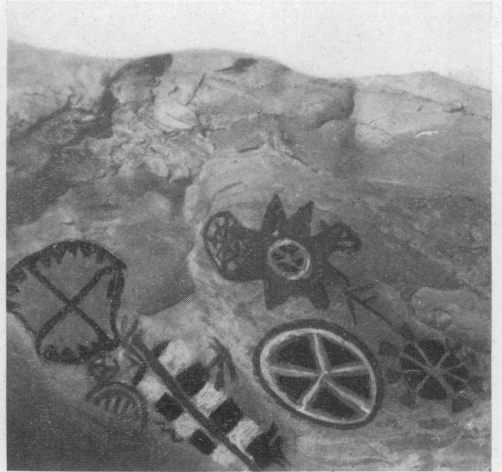
*a*



*b*



*c*

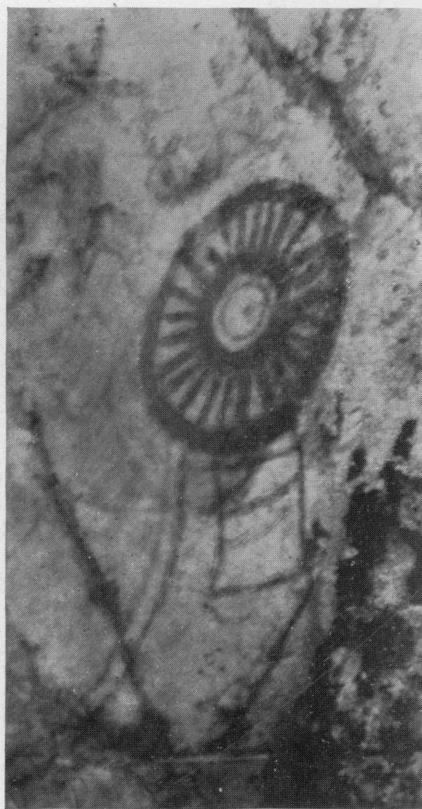


*d*

SANTA BARBARA REGION, PAINTED CAVE, SITE 83



*a*



*b*



*c*



*d*

SANTA BARBARA REGION. *a*, Pleito canyon, site 88; *b*, Cuyama valley, site 91  
TULARE REGION. *c-d*, Kern river, site 103

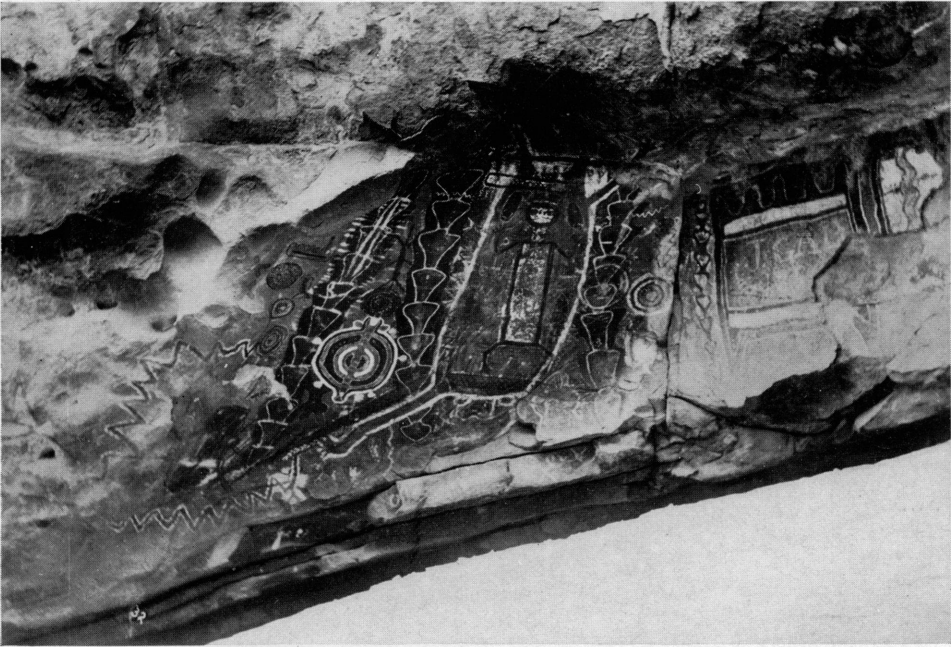


a



b

SANTA BARBARA REGION, CARRISO ROCK, SITE 93

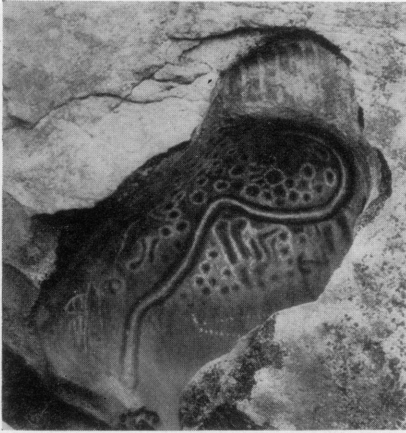


a



b

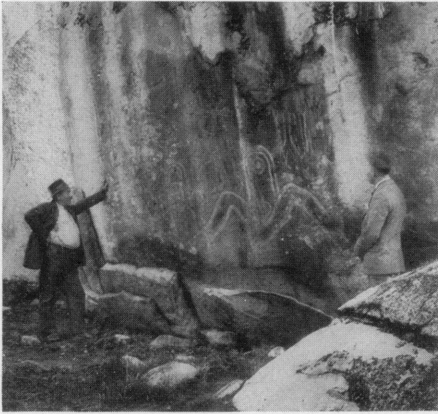
SANTA BARBARA REGION, CARRISO ROCK, SITE 93



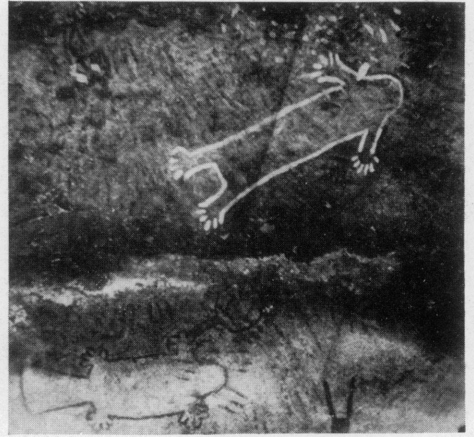
*a*



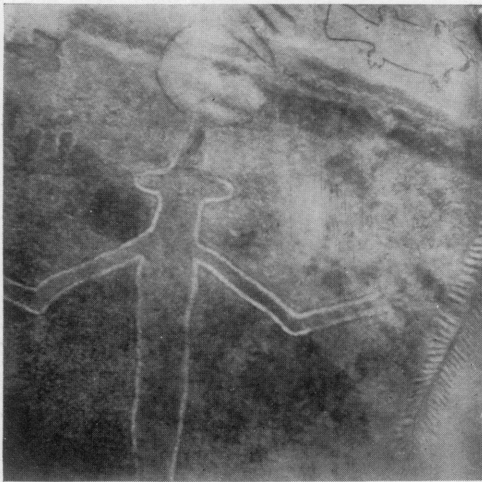
*b*



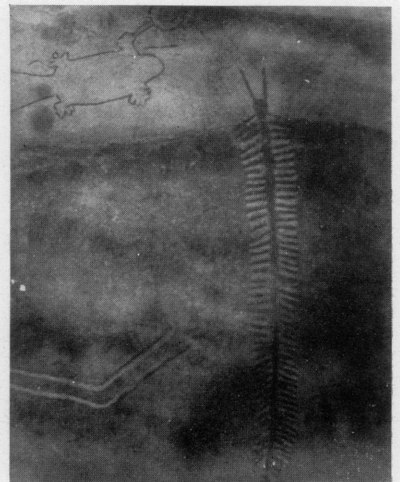
*c*



*d*



*e*



*f*

TULARE REGION

*a-c*, Fountain springs, site 119; *d-f*, Tule River Indian reservation, site 106.





*a*

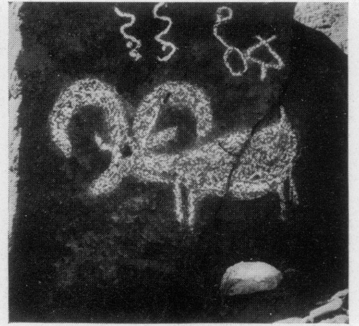


*b*

TULARE AND SANTA BARBARA REGIONS  
*a*, Hospital Rock, site 112 (courtesy of L. Eddy);  
*b*, Tassajara, site 100 (copyright, L. S. Slevin)



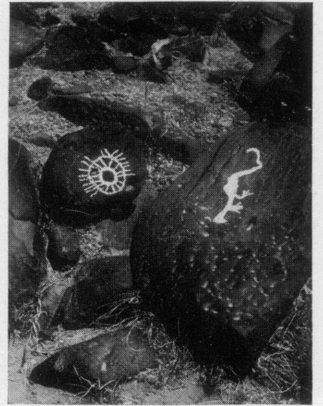
a



b



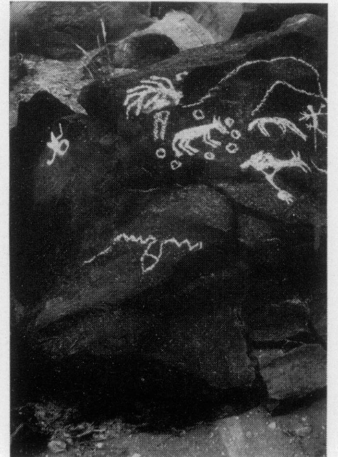
c



d



e

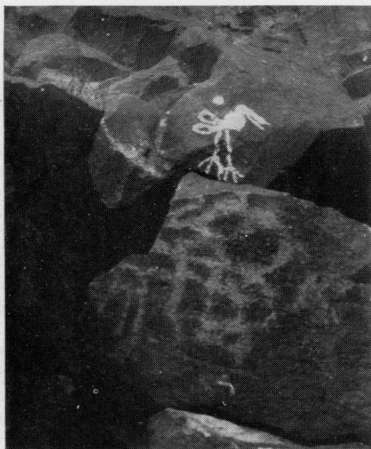


f

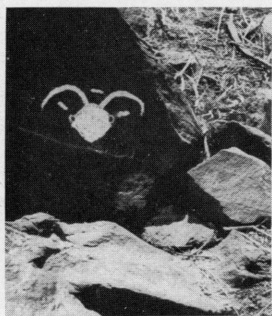
WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke, San Francisco Examiner)



*a*



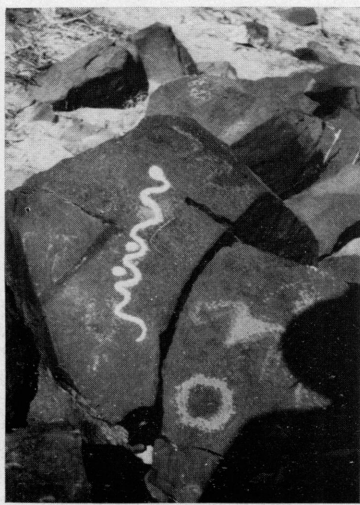
*b*



*c*



*d*



*e*

WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke, San Francisco Examiner)



*a*



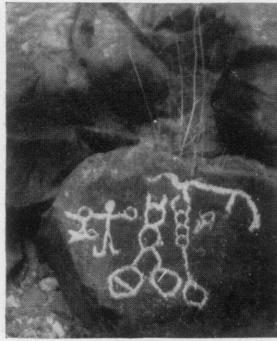
*b*



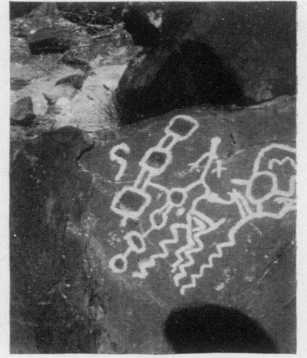
*c*



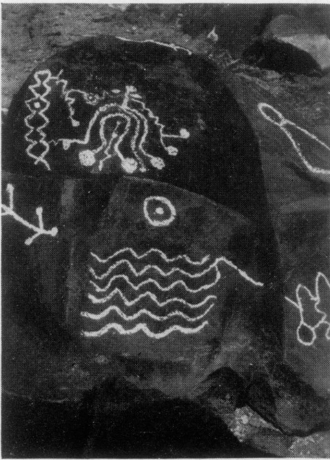
*d*



*e*



*f*



*g*



*h*

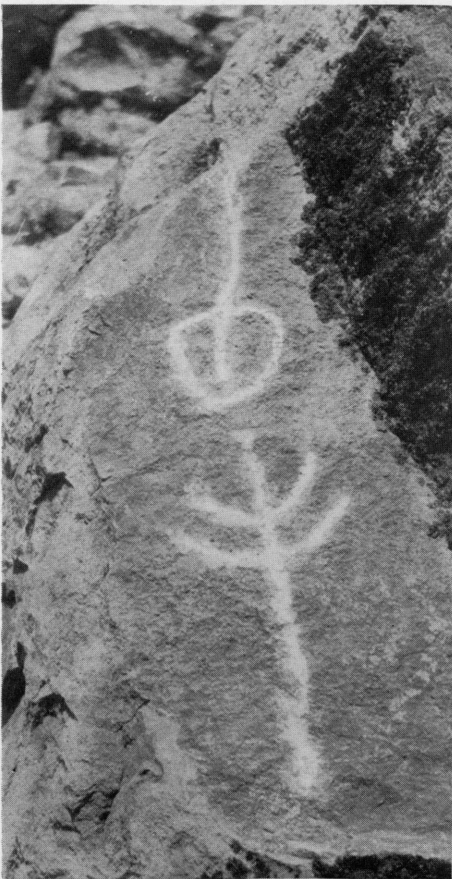
WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)



a



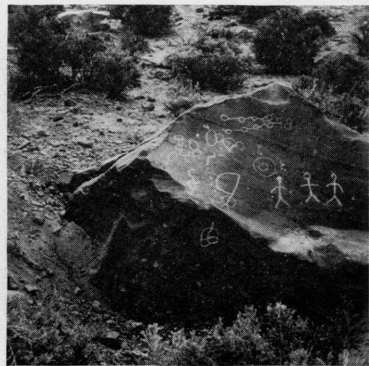
b



d



c



e

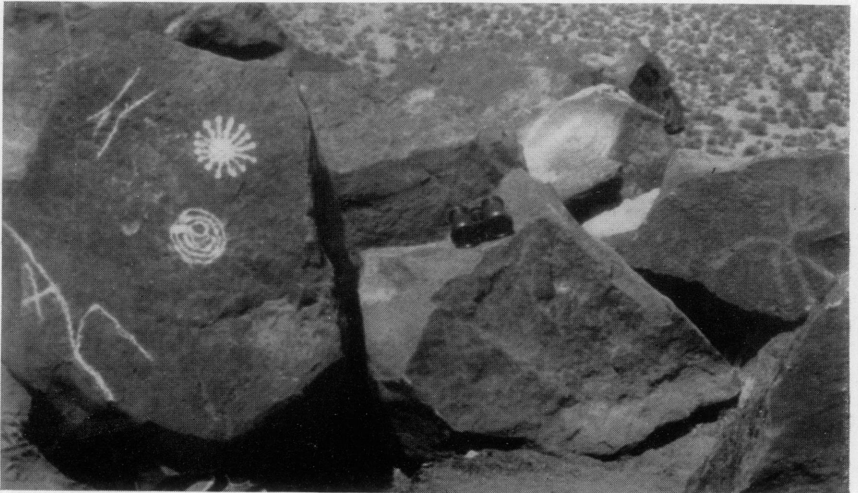
WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)



*a*



*b*

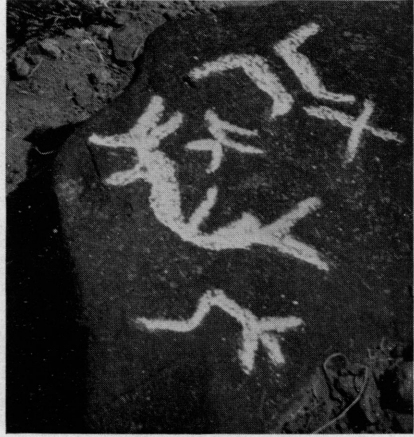


*c*

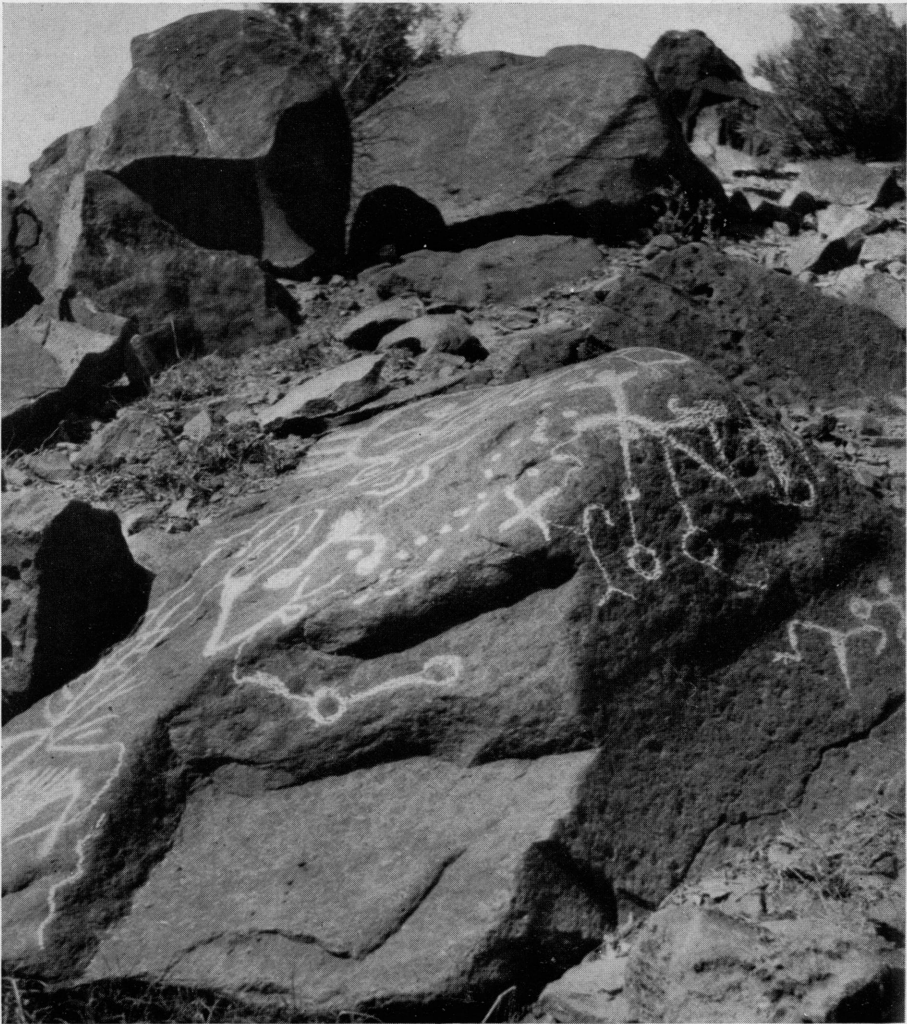
WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)



**a**



**b**



**c**

WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)



*a*



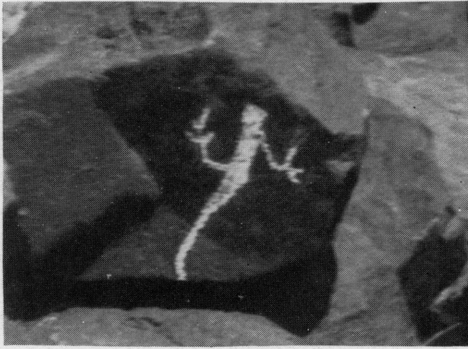
*b*

WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)

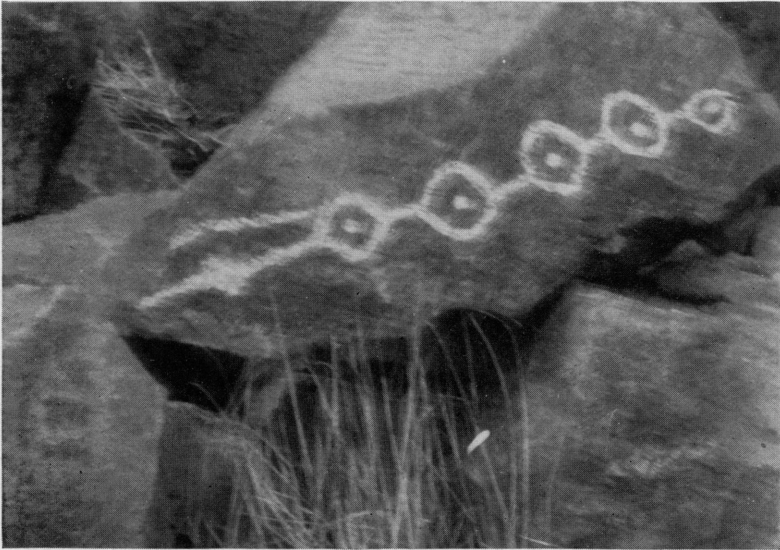




*a*



*b*



*c*

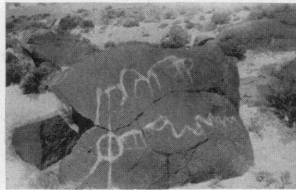
WESTERN NEVADA, YERINGTON, SITE 202  
(Courtesy of Edward E. Clarke)



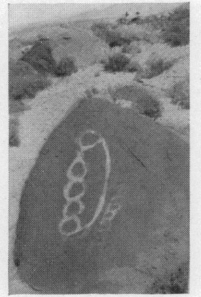
a



b



c



d

SOUTHEASTERN NEVADA (a)  
WESTERN NEVADA. b-d, Fallon, site 207



*a*



*c*



*d*

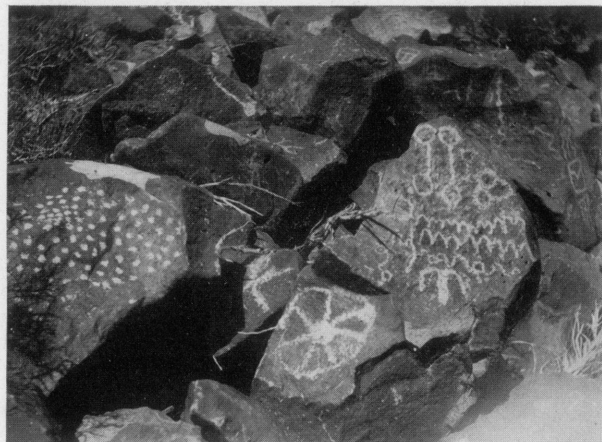


*b*

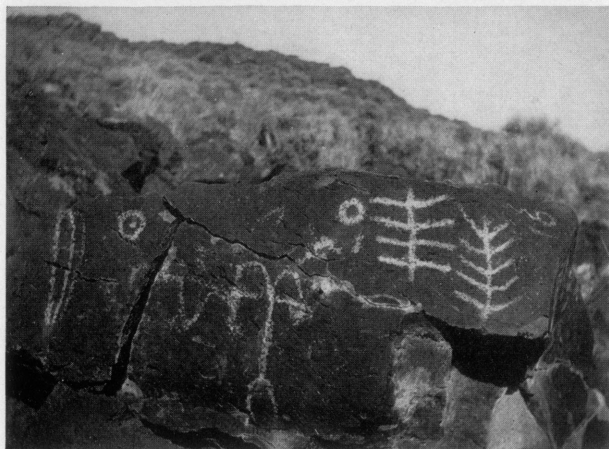
WESTERN NEVADA  
*a, b*, Virginia City, site 208; *c, d*, Spanish Springs



*a*



*b*



*c*



*d*



*a*



*b*



*c*



*d*



*e*



*f*

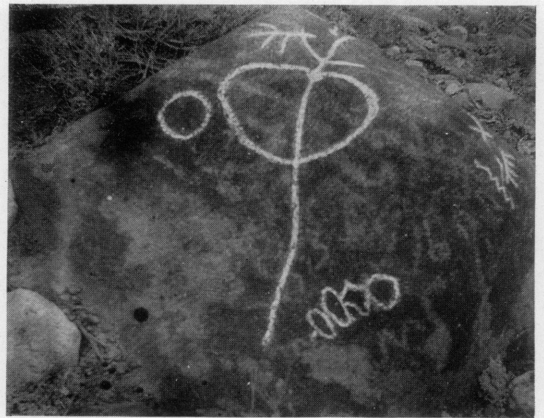


*g*

WESTERN NEVADA, SMITH VALLEY, SITE 211  
(Courtesy of Field Museum of Natural History)



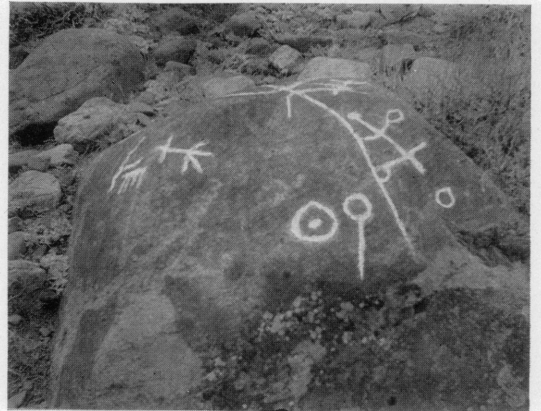
a



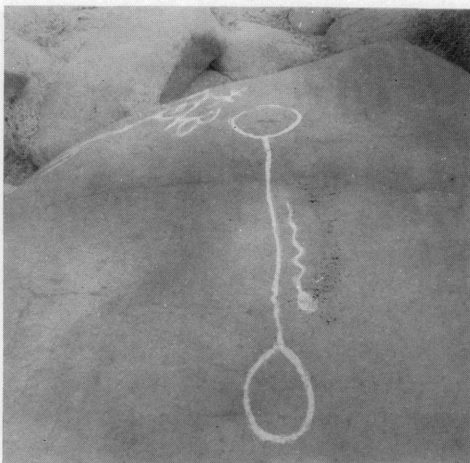
b



c



d



e

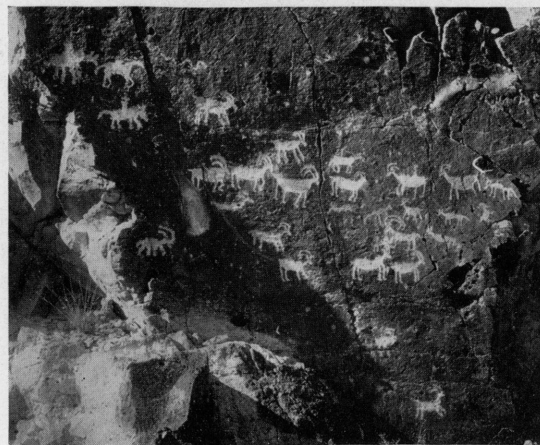


f

WESTERN NEVADA, SMITH VALLEY, SITE 211  
(Courtesy of Field Museum of Natural History)



*a*



*b*



*c*

SOUTHERN NEVADA, "LOST CITY," PUEBLO GRANDE DE NEVADA, SITE 226  
(Courtesy of Touring Topics)



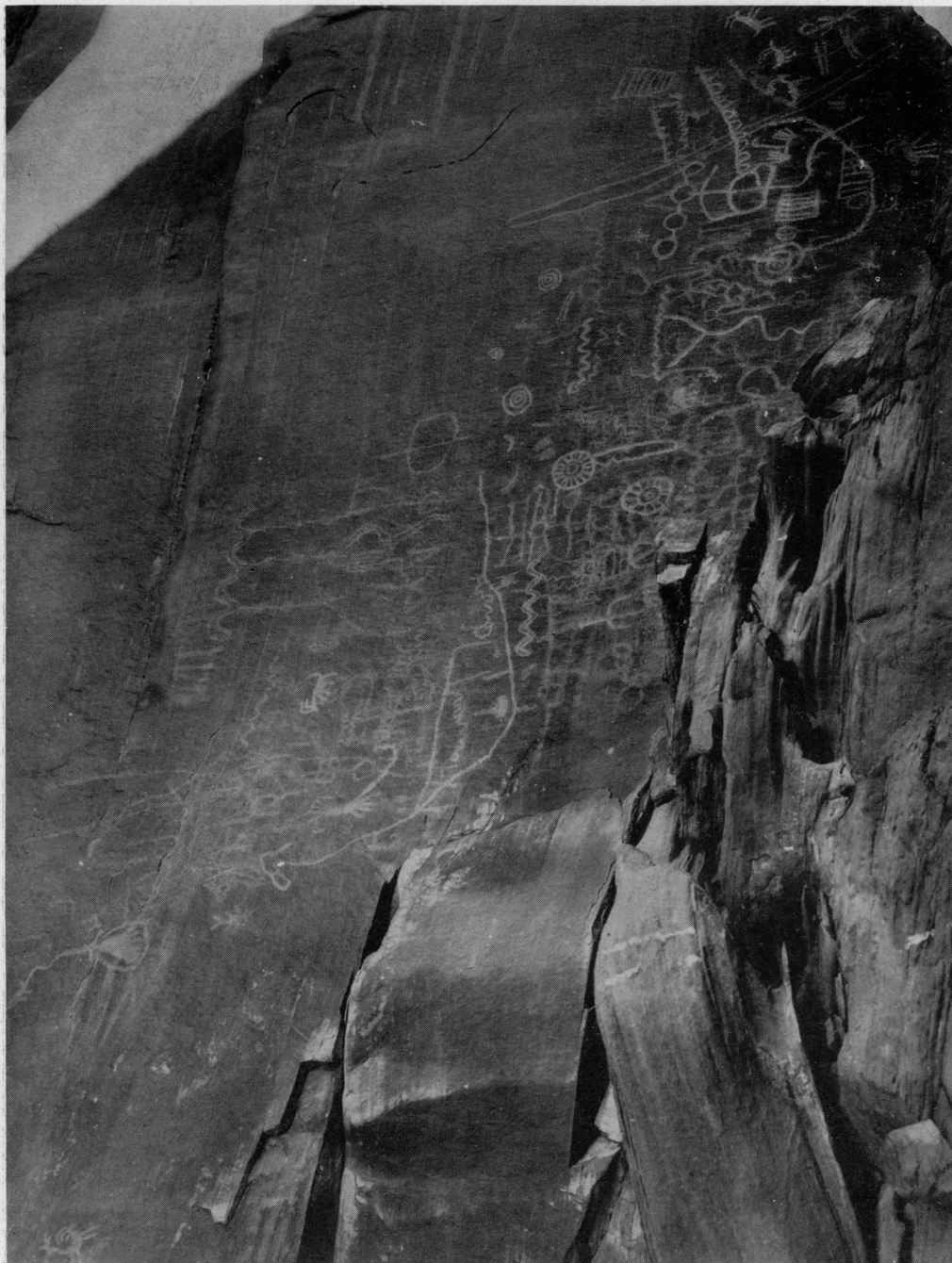
a



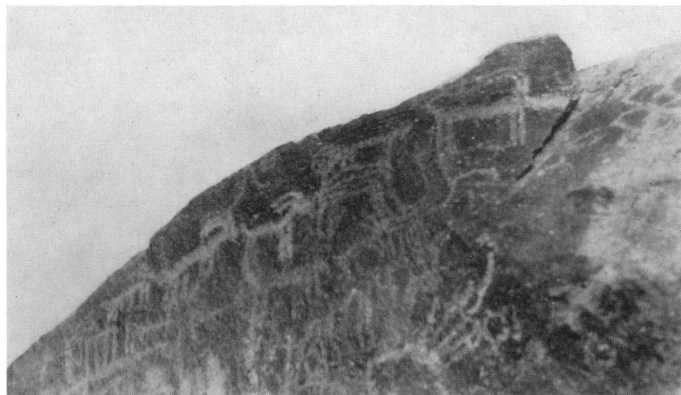
b

SOUTHERN NEVADA, "LOST CITY," PUEBLO GRANDE DE NEVADA, SITE 226  
(Courtesy of Touring Topics)

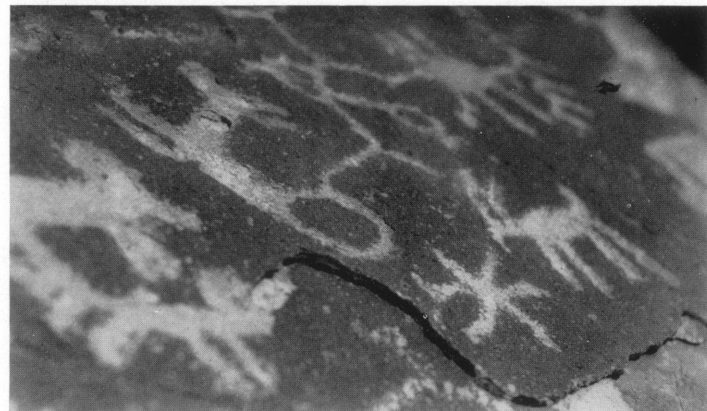




SOUTHERN NEVADA, "LOST CITY," PUEBLO GRANDE DE NEVADA, SITE 226  
(Courtesy of Touring Topics)



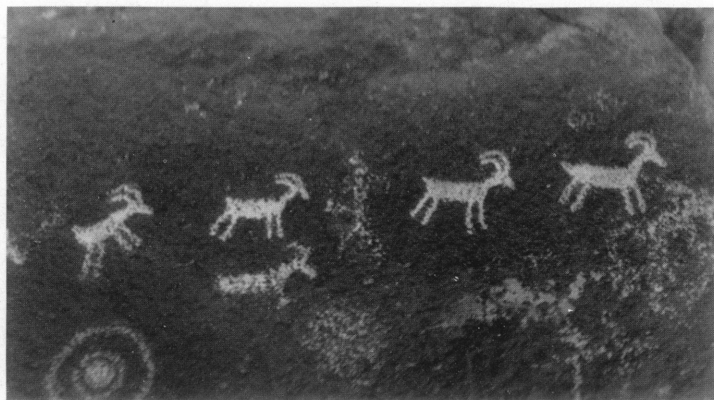
*a*



*b*



*c*



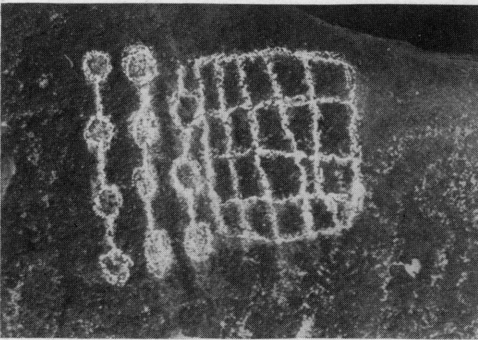
*d*



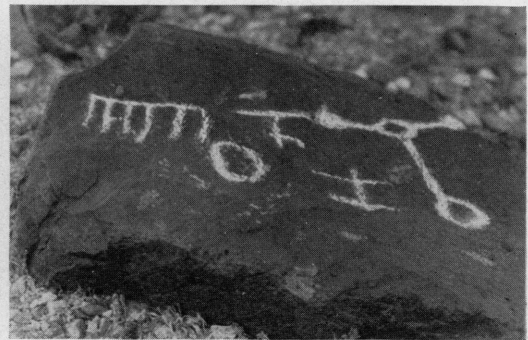
*a*



*b*



*c*



*d*



*e*

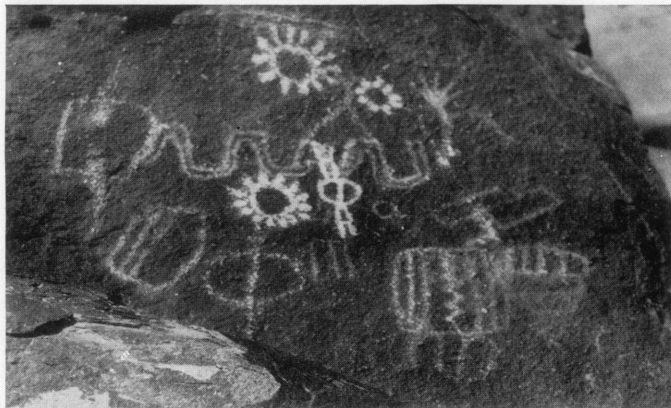


*f*

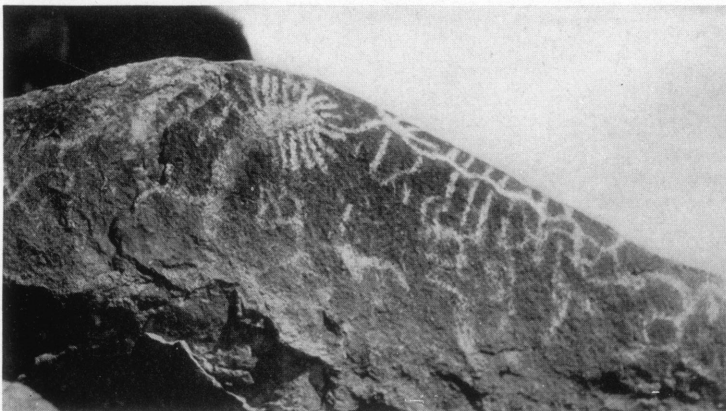
SOUTHERN NEVADA, GRAPEVINE CANYON, SITE 227  
(Courtesy of A. P. Miller)



*a*



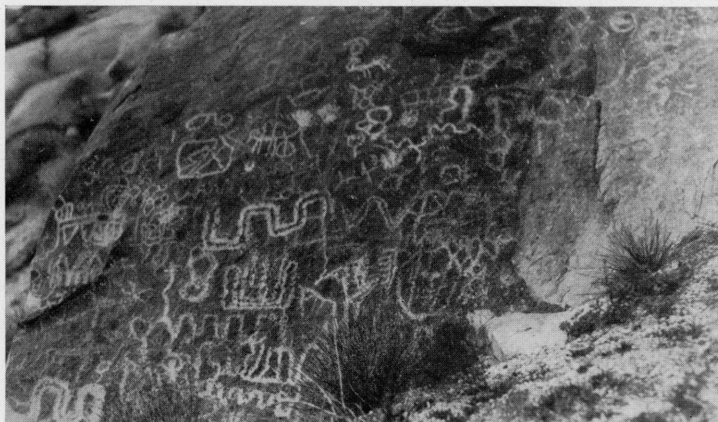
*b*



*c*



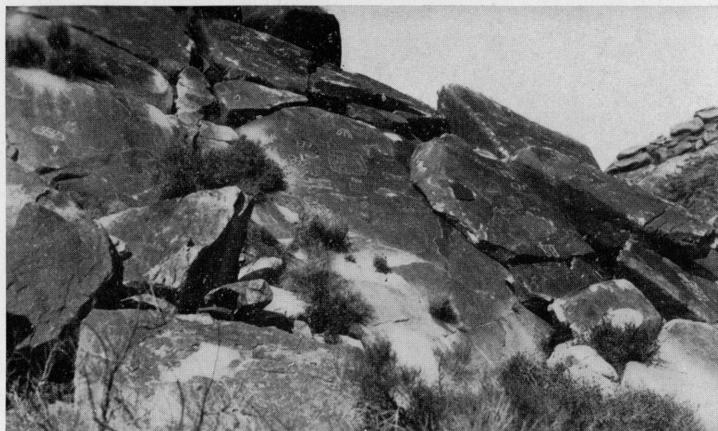
*d*



*a*



*b*



*c*



*d*

SOUTHERN NEVADA, GRAPEVINE CANYON, SITE 227  
(Courtesy of A. P. Miller)



*a*



*b*

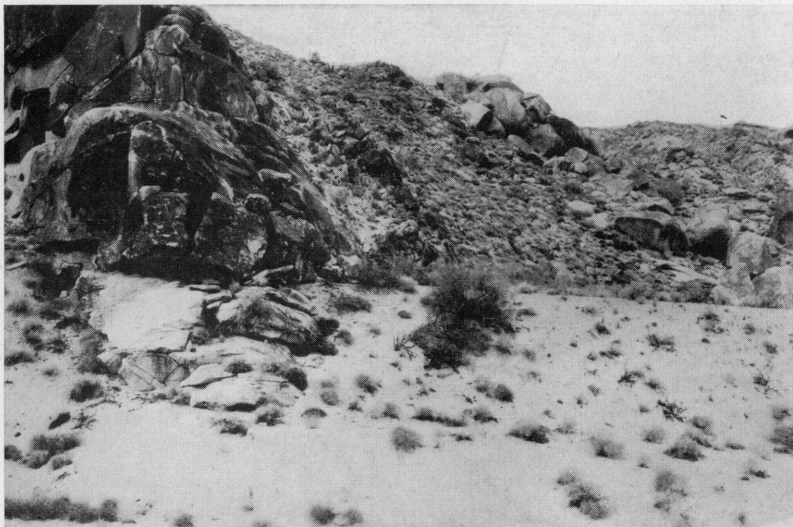


*c*



*d*

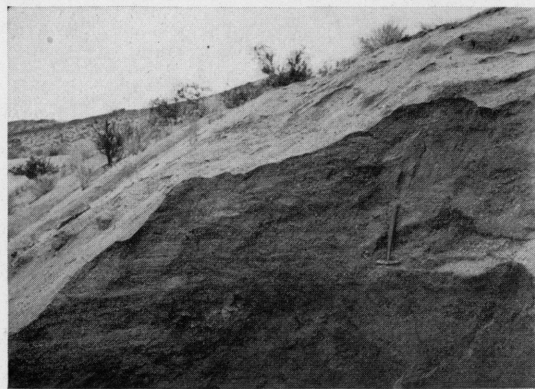
SOUTHERN NEVADA, GRAPEVINE CANYON, SITE 227  
(Courtesy of A. P. Miller)



*a*



*b*

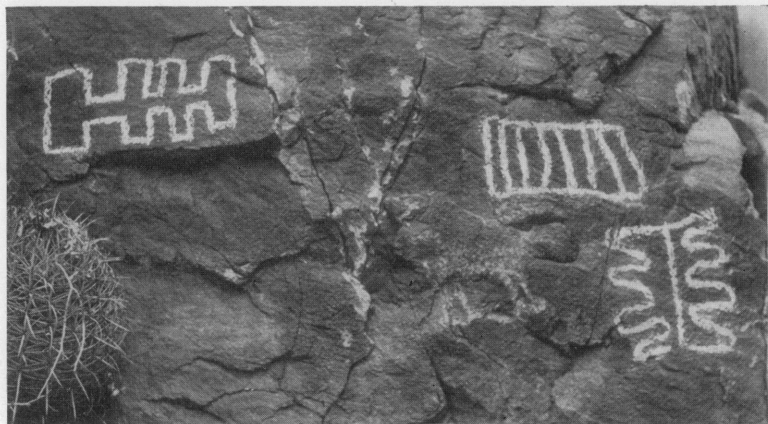


*c*



*d*

SOUTHERN NEVADA, GRAPEVINE CANYON, SITE 227  
(Courtesy of Eliot Blackwelder and Edward E. Clarke)



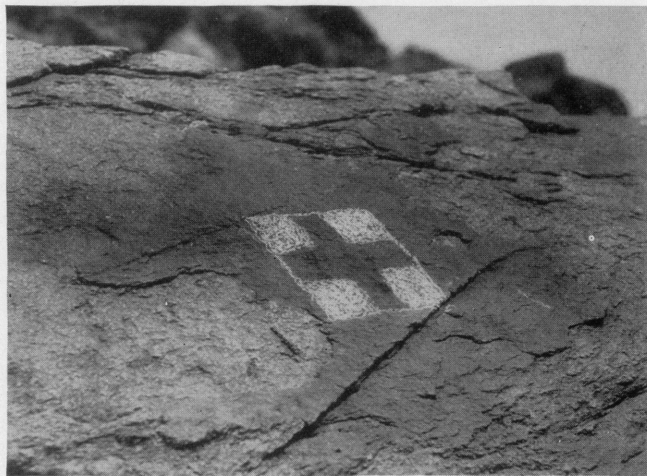
a



b



c



d





*a*



*b*

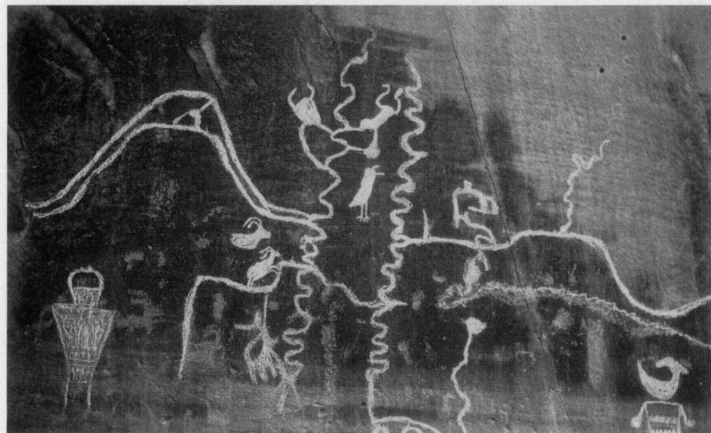


*c*

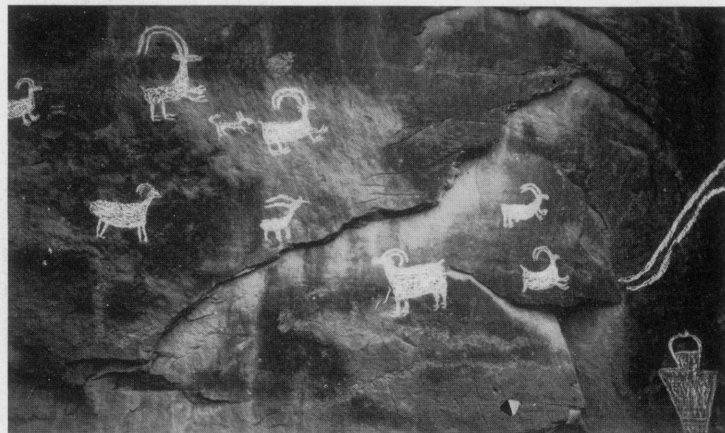


*d*

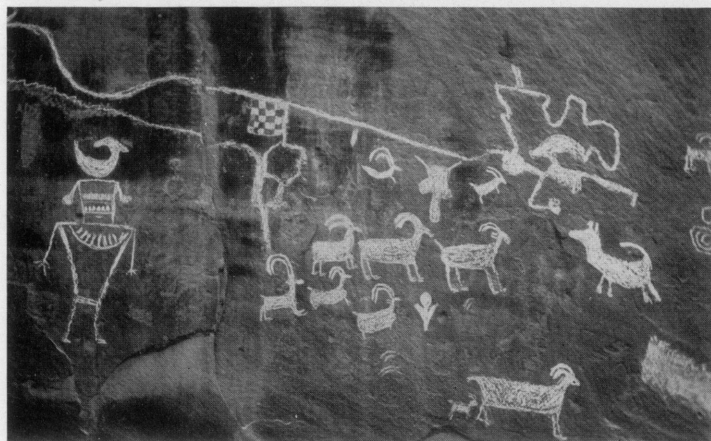
NORTHERN UTAH, CONNORS SPRINGS, SITE 230  
(Courtesy of Andrew Kerr)



a



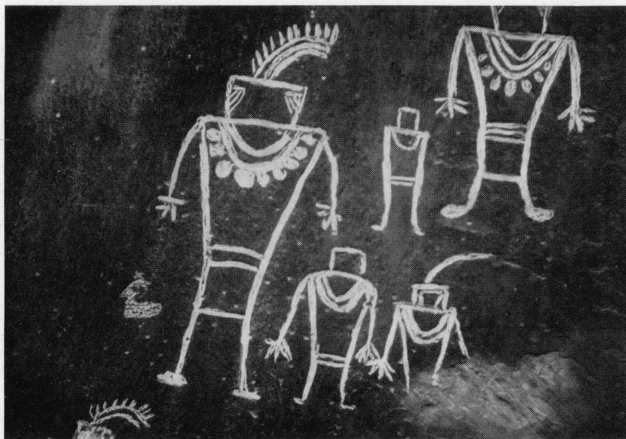
b



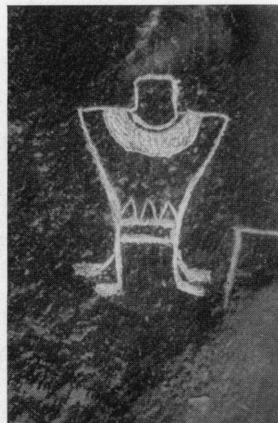
c



d



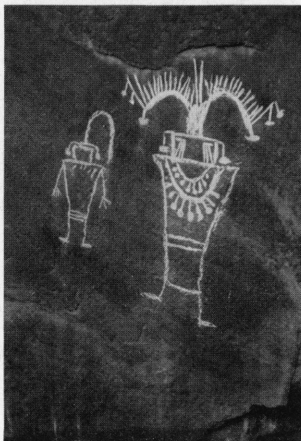
*a*



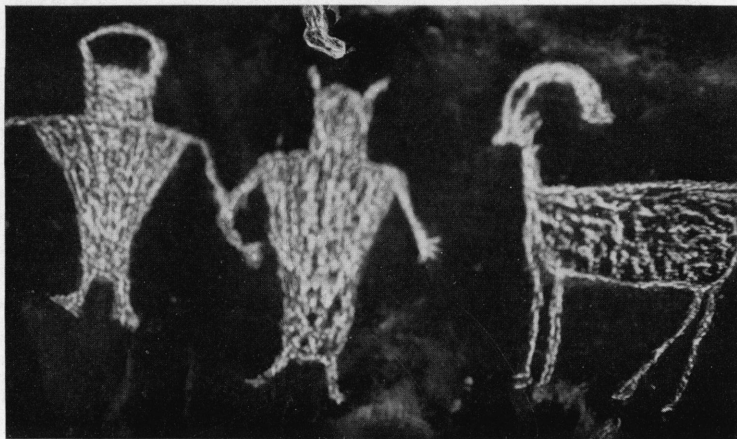
*b*



*c*

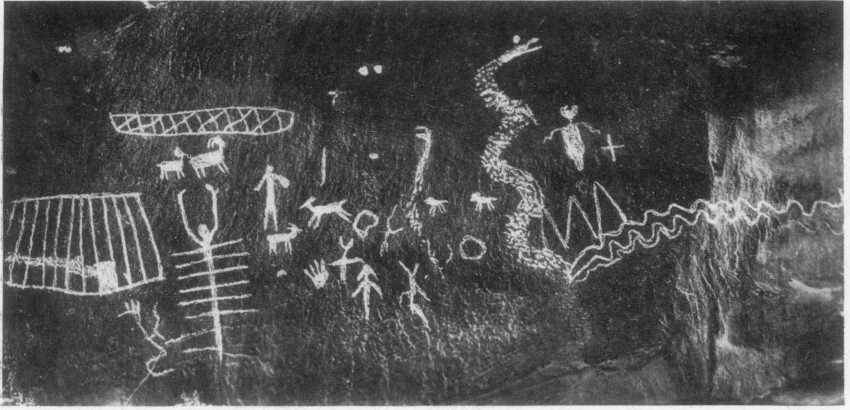


*d*

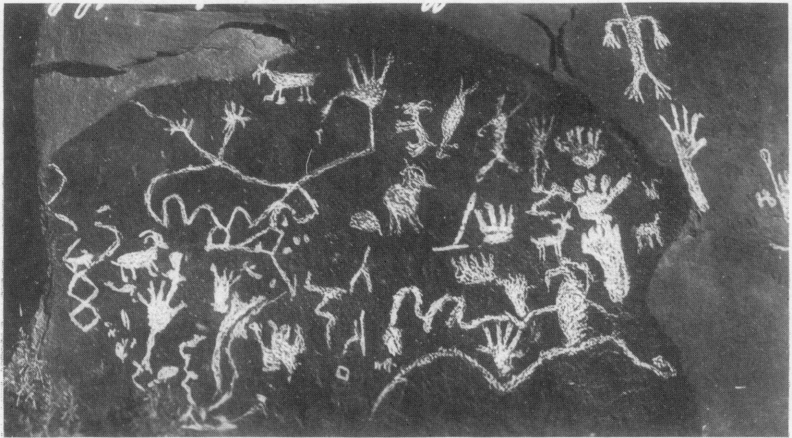


*e*

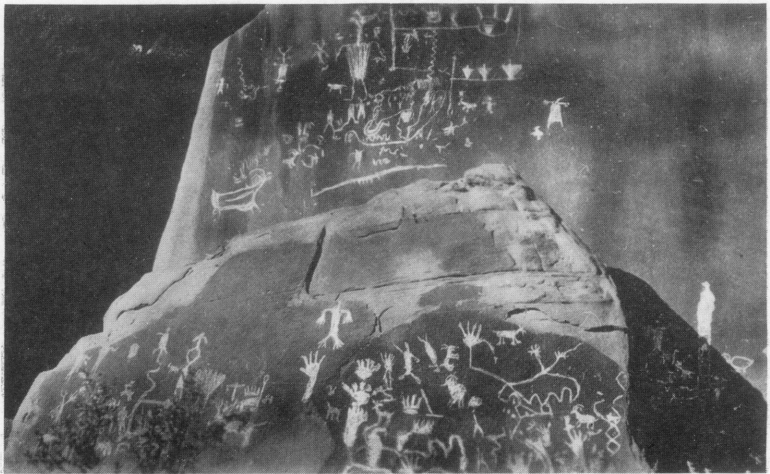
SOUTHERN UTAH, FRUITA, SITE 234  
(Courtesy of Andrew Kerr)



*a*

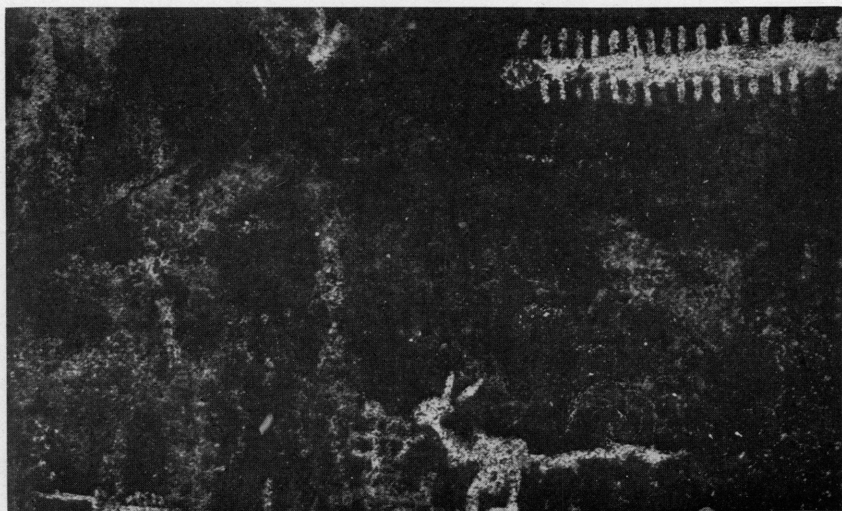


*b*



*c*

SOUTHERN UTAH, MOAB, SITE 235  
(Courtesy of Andrew Kerr)



*a*



*b*

*a*, CLARKDALE, SITE 260, CENTRAL ARIZONA; *b*, NORTHERN ARIZONA  
(Courtesy of Edward E. Clarke)



*a*



*b*



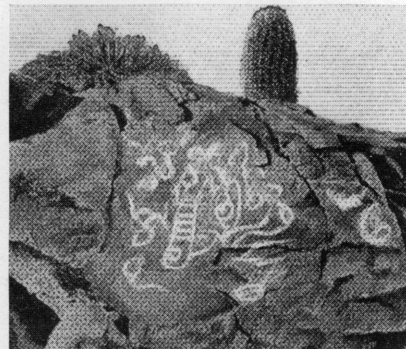
*c*



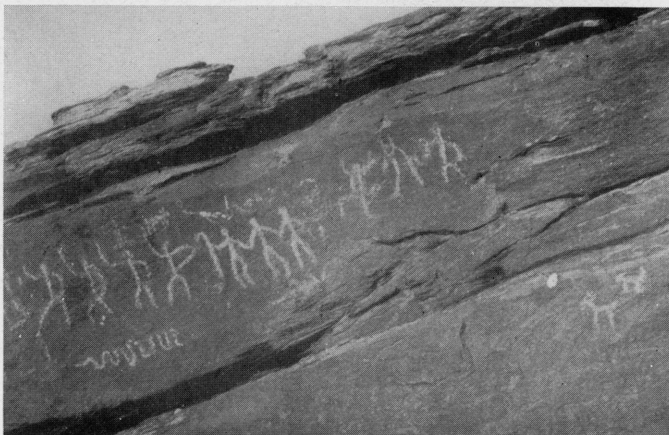
*d*



*a*



*b*



*c*



*d*

CENTRAL ARIZONA AND SOUTHERN UTAH

*a*, Montezuma Castle, site 263; *b*, Phoenix, site 273; *c*, Temple, site 269; *d*, Rio Virg'n, site 241



*a*



*b*

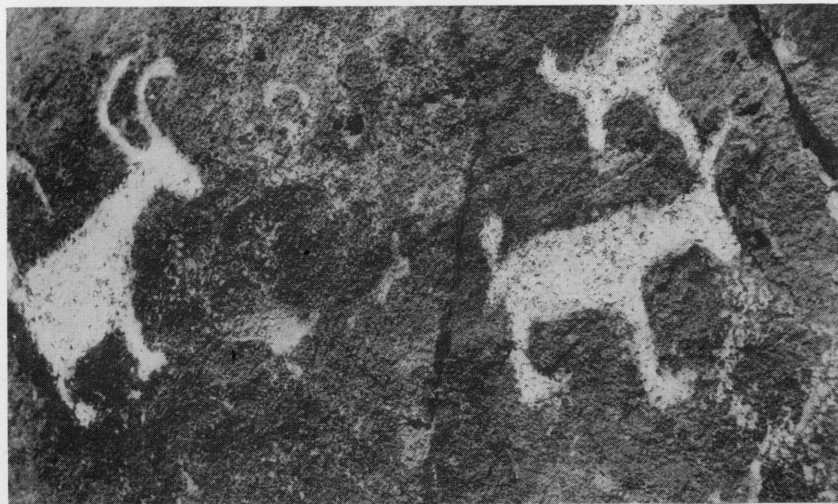


*c*



*d*

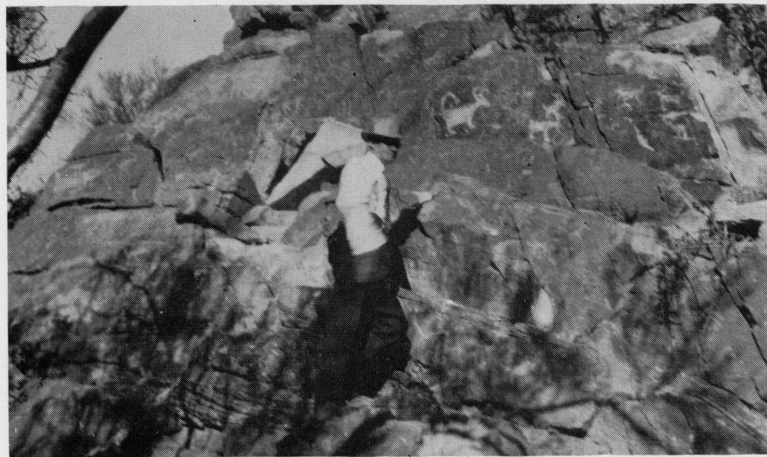




*a*



*b*



*c*



*d*

SOUTHERN ARIZONA, TUCSON, SITE 280



*a*



*b*



*c*

SOUTHERN ARIZONA. *a-b*, Tucson, site 280  
NEW MEXICO. *c*, near Zuñi, site 281



NEW MEXICO, FORT BAYARD, SITE 282 (Courtesy of Field Museum of Natural History)



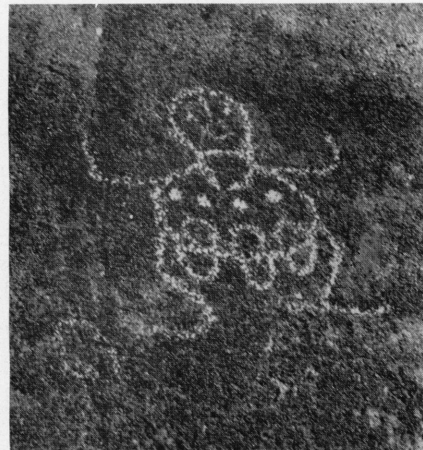
NEW MEXICO, FORT BAYARD, SITE 282 (Courtesy of Field Museum of Natural History)



*a*



*b*



*d*



*c*

BAJA CALIFORNIA

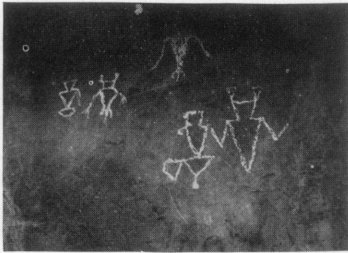
*a*, San Fernando, site 288; *b*, *c*, Cajon, site 284; *d*, San José, site 287



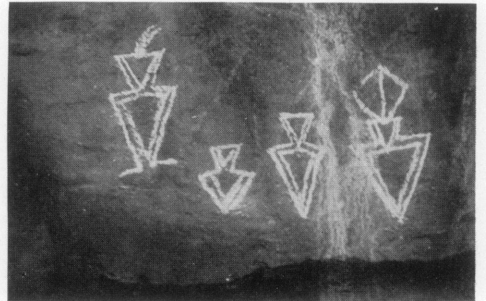
*a*



*b*



*c*



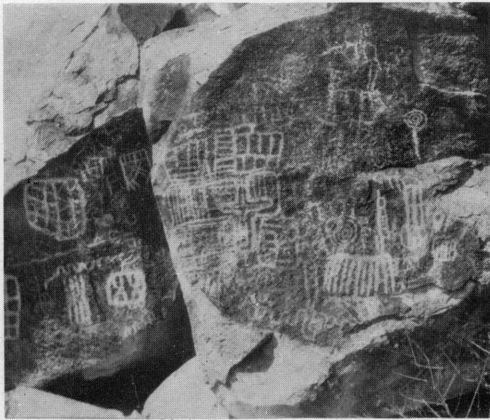
*d*



*e*

SOUTHERN NEVADA

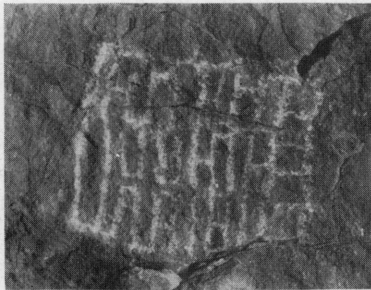
*a-d*, Virgin river, site 291; *e*, Baker canyon  
(Courtesy of Edward E. Clarke)



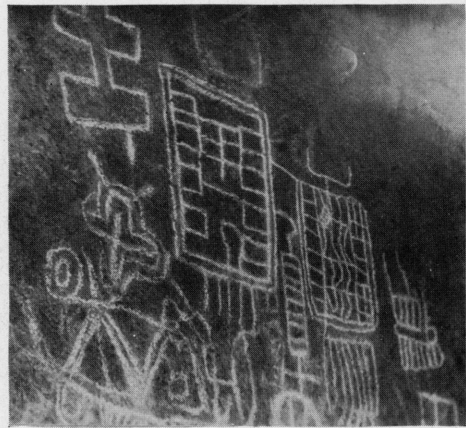
*a*



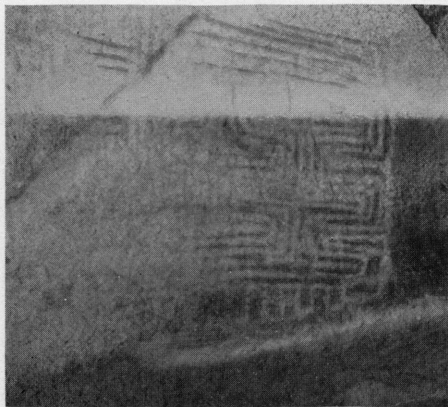
*b*



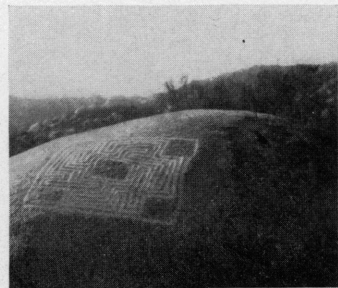
*c*



*d*



*e*



*f*

MAZE DESIGNS

SOUTHERN NEVADA. *a-d*, Grapevine canyon, site 227

SOUTHERN CALIFORNIA. *e*, Trabuco, site 70; *f*, Rheinhardt canyon, site 73





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