

73. Petroglyphs of Sacramento and Adjoining Counties California

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Introduction

The lower foothills of the Sierra Nevada, approximately eighteen miles east of Sacramento, show evidence of having been heavily populated in pre-historic times. In this area there are numerous aboriginal occupation and bedrock mortar sites. The hill region, extending from the edge of the Sacramento Valley to an elevation of about 1,000 feet, was in many ways ideal for habitation. There was an abundance of oak trees which furnished a large supply of acorns for food. A variety of large and small mammals provided a ready source of meat for the people in this region. The climate of the foothill area is milder than that of the Great Valley; the winds are not so strong and there are fewer and less severe seasonal frosts there than on the valley floor. Furthermore, the foothill area generally is above the fog line and below the snow line. The hills offered a supply of raw materials for the manufacture of domestic implements, which were in demand by people in the valley to the west.

Little archaeological study has been carried on in this area and what has been done so far lists nothing of petroglyph occurrence along the valley's edge. The classic work of Steward (1929) states, "In California the Sierra Nevada mountain range has been an effective barrier to the western spread of petroglyphs. The great central valleys are totally devoid of any examples of petrography." One can understand why such a conclusion was arrived at: besides the fact that little work has been done in this area, heavy growths of lichen and moss make it difficult to recognize many petroglyph sites. The sites, for the most part, are not prominent as are those in drier climates where few if any lichens cover the rocks.

It has been found that the only feasible way to locate sites is to set up a systematic way of surveying an area where many rock exposures are present. It is necessary to find ways to get a complete idea or picture of the designs at a site after it is located. The following points were found useful in locating and recording petroglyph sites in an area where rocks are thickly covered with lichen and moss: 1) An area should not be surveyed on an overcast day; surveying should be done in brilliant sunlight only. With poor light, it is often very difficult to see faint markings. 2) Once a site is located it should be revisited at night with a gasoline

lantern. When the lantern is held off to one side and parallel to the rock face, the light will throw shadows in grooves or depressions on the surface of the rock. This makes the designs show up very plainly and, in fact, some designs can be seen at night that are not visible in daylight. The lantern should be moved from one side of the rock to the other to cast the light in at various angles so that no lines or designs are overlooked. It is advisable to check all rocks in and near the site with the night-lighting method.

3) If lichen or moss growth is very thick, it is often helpful to remove it with some bleaching chemical such as Clorox. Care should be taken to examine the rock face first to see if any pigment is present, as the chemical may remove it. 4) All rock exposures noted should be examined carefully. It has been observed in this region that no special or "reasonable" placement of a petroglyph site was made by the Indians. Petroglyphs were found on hilltops, along stream beds, and in occupation sites. Size, shape, surface smoothness, or plane of surface seems to have no bearing on whether a rock will have petroglyphs: all rocks must be examined carefully. In several places, recorded markings were found to be placed on comparatively poor rocks, while excellent rock surfaces only a few hundred feet away evidently were neglected.

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Description of Sites

Placer County

*Pla-2, Rocklin. Petroglyphs are located on the east sides of two granite boulders, one mile south of Rocklin in southern Placer County (Map 1). This site is associated with a sizable midden deposit on the edge of a small stream which flows into Secret Ravine. Other boulders at the site contain a number of bedrock mortars. One such boulder has step-like depressions on the side which appear to have been made as an aid in getting to the top of the rock, where several mortar holes are located.

Local inhabitants have dug into burials around the east bases of the petroglyph rocks and have recovered numerous glass trade beads. Mr. Val Jacobson,

*Site designations, appearing as county abbreviations plus numbers, are those of the University of California Archaeological Survey.

the owner of the site, provided a sample of the beads. The trade bead types from this site are listed in the Hood Bead Classification housed at the State Indian Museum in Sacramento. They are as follows: small white beads, types F52 and F53; red beads, type A2; small blue glass beads, type D10; green glass faceted, type C38.

The petroglyphs have been subjected to vandalism and some designs may have been altered. The design elements consist largely of cup-shaped depressions ranging in size from 1 to 3 inches in diameter and from 1/8 to 1 inch in depth. These depressions are numerous and, for the most part, are scattered at random with no apparent plan in grouping or placement. Thirteen of these dots or depressions are arranged in a straight line and seem to represent the only attempt at an organized design. Next to the dot series (see Fig. 1b) is a zig-zag groove element which is terminated at one end with a dot, thus possibly indicating a snake element. Less numerous than the dots are oblong depressions and short grooves. Some appear to have been made by connecting two dots.

Pla-37, Rocky Ridge. This site is two miles east of Roseville, on the north side of Miners Creek. The petroglyphs consist mainly of deeply grooved elements on the south, vertical, faces of ten large sandstone boulders which make up part of a rock outcrop. The outcrop is the first large group of foothill rocks to be found along the eastern edge of this part of the valley. Many bedrock mortars are found in the outcrop, but none in the boulders with petroglyphs on them. Associated with the petroglyph group are bedrock mortars numbering in the hundreds and a small occupation area. Just to the south of the site and on opposite sides of Miners Creek is an occupation site (Pla-38) which shows signs of having been disturbed by vandals. Artifacts from the surface of these sites appear to be of late origin, but no historic material was noted.

The design elements of Pla-37 petroglyphs are wavy lines, small nucleated circles, floral type designs, dots, simple circles, and figure eights (Fig. 2a-f). To the east of the main group of petroglyphs is a boulder which has a number of short, V-shaped grooves. These are about 4 to 6 inches in length and 3/4 inch in depth. Also, there are some straight grooves, ranging in length from 10 to 30 inches. The grooves appear to have been both pecked and rubbed in. The units are fairly large, with an average of about 14 inches in diameter. The depth of the incisions is from 1/16 inch to 1 3/4 inches, with an average of about 1 inch. The width ranges from 3/4 inch to 3 inches, and the average is 1/2 inch. It was noted that on several faces the petroglyphs extend below the soil surface and whole designs were found as much as 11 inches below the recent soil level. One sandstone boulder is split in two pieces and separated 10 inches (Fig. 2c). This must have happened after the petroglyphs were put on, as the design continues from one part to the other.

Even these large, deeply cut designs are hard to distinguish unless seen in bright daylight or with the night-lighting method. A shaped mortar, with incised zigzag lines around it, was found about 100 yards west of the petroglyphs. The mortar stands 10 inches high and is 9 inches in diameter. The style of the design is the same as that found on the rocks nearby (Fig. 8c-f).

Eldorado County

Eld-69, Carson Creek 1. This site is one of three found along Carson Creek, a tributary of Deer Creek, which flows from western Eldorado County into Sacramento County. The petroglyphs are found on an outcrop of hard metamorphic rocks about one-half mile east of the Carson Creek bridge on Payen Road near a large spring. There seems to be no sign of an occupation site in connection with the petroglyphs.

The petroglyphs are on the south sides of the vertical faces of some twelve rocks in the outcrop. The design elements consist of dots, wavy lines, circles, grid, bars, and a rake. Dots or pits are on most of the rocks. They range in size from 1/8 inch to 2 inches in diameter, and from 1/16 to 1/2 inch in depth. Wavy line designs are prominent, one being terminated with a dot at both ends (Fig. 3a). Circles occur on several faces; a rectangular grid is found on a horizontal face of one small boulder (Fig. 3g); lines or bars are found in series; and a rake design also occurs (Fig. 3i). The designs appear to have been made by pecking, in one instance to a depth of 3/4 inch. The depths of the grooves average 1/16 inch. Some surfaces show evidence of having been pecked as though in an attempt to smooth them down. Designs appear on both the horizontal and the vertical faces of the boulders at this site.

A careful search was made for artifacts in the vicinity of the site. Several crude quartz specimens, possibly fragments of some unidentifiable tool, and one fragment of a projectile point were found near the outcrop. A broken hammerstone of the same material as the local rock outcropping was found 150 feet west of the petroglyphs. The stone has a small groove around its short diameter, and its striking surface shows repeated battering. It is possible that the hammerstone may have been used in the making of petroglyphs and was discarded when it was broken.

Sacramento County

Sac-229, Carson Creek 2. Several of the most outstanding petroglyphs in the group discussed in this paper occur at this site, which is three and one-half miles downstream from Eld-69 on Carson Creek. When the south

bank of Sac-229 was first discovered a large target design was noted (Fig. 4a). Later, excavation exposed another outstanding petroglyph next to it. The second rock was covered by occupation site soil consisting of a mixture of red earth with a few cooking rocks and a little charcoal. The total depth of the deposit is about two and one-half feet.

The target type design on the rock first noted is rubbed in relief, and the buried rock has a chain design which also is rubbed in. Partly superimposed on this chain design is a large incised bisected concentric circle element 17 inches in diameter (Fig. 4b). These concentric circles are pecked and the element as a whole is lighter in color than the rubbed chain element, which shows considerable discoloration, as though it were much older. Both designs were cut through the reddish-colored exposed layer of the rock to a light gray under-surface, making a two-tone effect. Not until other rocks in the immediate vicinity were checked for markings with the night-light method was it discovered that all the rocks near the first find had markings on them. The designs were so faint that it was impossible to see them in the daytime. Some rocks have been broken since the design was placed on them (Fig. 4f). Design elements on these faintly marked rocks are concentric circles, wavy or tadpole-like figures, and circles enclosing crossed lines (see Fig. 4d). Sizes of the designs vary from 6 to 20 inches in diameter.

On the opposite side of the creek numbers of manos, metates, pestles, mortars, and several small "paint" mortars were found. One is a small slab of sandstone with three holes 1 1/2 inches in diameter and 3/4 inch in depth. These artifacts were uncovered years ago by gold mining along the edge of the creek.

Sac-213, Carson Creek 3. This site is located downstream from Sac-229. The petroglyphs here (Fig. 5) are on four rocks in a massive jumble of large boulders along the north bank of Carson Creek. The site is not extensive, and there are only ten glyphs present. Three of these are concentric circles and two are simple circles. In addition, one target design, one small tadpole-like figure, one large ovoid figure with cross-hatching, and a few scattered lines may be discerned. The cross-hatched figure measures 21 by 27 inches, while the concentric circles measure from 8 to 16 inches in diameter. The petroglyphs are pecked to a depth of 1/4 to 1/16 of an inch. They are on the south face of the rock mass. As at Sac-229, it appears that vandals have been using the circles as rifle targets. Several bedrock mortars were found along the edge of the creek but no other artifacts were noted at the site.

Sac-216, Little Deer Creek. Between Carson Creek and Deer Creek in

eastern Sacramento County is a small stream called Little Deer Creek, a tributary of Deer Creek. Near the junction of a smaller, unnamed stream and Little Deer Creek are a number of petroglyphs on a vertical slate outcrop. Eleven rock faces, ten facing east and one facing west, have markings on them.

The petroglyphs are similar to those at Pla-2 in that they are composed of two distinct designs. One is of dots or pits which are conical in shape and range in size from 1/4 to 3 inches in diameter, and 1/8 to 3/4 inch in depth. Some dots are in series, but for the most part they occur at random or in clusters. The other type of marking common to Pla-2 and Sac-216 is a short groove in two forms: (a) those connecting two dots or pits at each end (Fig. 6a), and (b) straight V-shaped grooves from 3 to 6 inches long, 1 to 2 inches wide, and 3/4 to 2 inches deep. The scaly nature of the rock may explain why there are no complex designs present at the site. It was observed that one rock had fallen from its original position, thereby leaving the petroglyphs on its under side. When the markings were compared with others nearby, they showed much less weathering, thus indicating that the stone had fallen sufficiently long ago to emphasize the difference between ground weathering and that type due to open-air exposure.

The site is associated with five bedrock mortars which are found in the stream-bed nearby. Downstream from the petroglyph area is a small occupation site at the base of a cliff on the stream's edge. The only artifacts found here were several pestles.

About 400 feet to the south of the petroglyphs are two alignments or piles of rock which appear to be man-made. The larger of these is composed of a number of large stones in a circle 10 feet in diameter, with smaller stones in the center. Some of the stones in the ring must have required considerable effort to move into place. No artifacts were found at this site.

Sac-228, Deer Creek 1. This is the most extensive and outstanding site in the series. It is located on a high hill about one-half mile south of Deer Creek and one mile south of Sac-227 (see below). The hill rises some 200 feet from the surrounding country and is 590 feet above sea-level. It offers an excellent view of the valley and the area around it on all sides. Petroglyphs are found in two spots on the hilltop, the first being 400 feet north of the main group. This group is made up mostly of dots scattered over four rocks. On one smooth stone there are concentric circles and several simple circles. These designs cannot be seen with natural lighting and are faint even when examined with the use of artificial lighting at night.

Petroglyphs of the main group are found on the eastern faces of two rows of outcropping rock. There are more elements present at this site than at any of the other sites mentioned in this paper. The petroglyphs are quite large. One face, measuring 5 by 9 feet, has several complex floral designs 3 feet high (Fig. 7d). The concentric circles that make up part of the design are about 20 inches in diameter. Other designs are wavy lines, zigzag dots in series, random dots, circles, bisected circles, target designs, grid, spiral, figure eight, and a spider web design 21 inches in diameter. There are also many miscellaneous lines which may or may not be connected with the recognizable design elements. Design elements found at many of the other sites in the series are present at Sac-228, along with several elements not found at the other sites and which occur only once at this site.

Techniques used in producing the petroglyphs were pecking and rubbing. Most designs are pecked and only a few of the rubbed type are present. One of the latter appears to be superimposed on the pecked design. The depth of the lines varies from less than 1/16 to 1/4 inch, and the width averages about 1/2 inch.

Excavation around the bases of the rocks has produced several hundred basalt chips, some larger basalt blanks, broken quartz crystals, a leaf-shaped basalt point 6 cm. in length, several stream-worn rocks possibly used as hammerstones, and a fragment of red hematite. It is unlikely that the site was a permanent camp as there is no close water supply. It was more likely a ceremonial place or workshop.

Sac-227, Deer Creek 2. Petroglyphs were found on a flat boulder on a slope two-fifths of a mile north of Deer Creek and about one hundred yards from Payen Road on the Russel Ranch in eastern Sacramento County. The decorated rock is part of an outcrop of hard metamorphic rock. There are many exposures of this type of rock in the area, some of which have smoother faces than the one which is decorated.

When this site was first located, the carved face of the boulder was covered with smaller rocks as if an attempt had been made to hide the markings. The petroglyphs are very faint and only a few designs are visible by daylight. With the use of the night-light method, however, the whole surface shows many lines and dots. A spoked wheel design 16 inches in diameter is the most prominent symbol at the site. Other designs on the boulder are sun disks, one with a dot in the center, another with a cross (Fig. 8a); a bisected concentric circle; a bisected simple circle; dots; dots in series; and figure eights. Most of the elements are joined by lines to make up a large complex design. The petroglyphs are pecked to

an average depth of 1/16 of an inch. The lines are from 1/4 to 1/2 inch wide.

Sac-234, Deer Creek 3. About one-half mile to the southeast of Sac-227, on the south bank of Deer Creek, are a number of stone walls, including what evidently was a foundation wall of an old ranch house. A slab in one of the walls had petroglyphs on it. An attempt was made to find the spot where the rock was originally located. It was found that the stone was quarried along the creek where it enters a canyon nearby. Here the rock has a red stained surface with a light gray interior. The stone from the wall matches. In all probability there was a petroglyph site along the creek at this point. The nature of the wall stone is unlike that of any of the other petroglyph sites in the area, hence the possibility of its coming from one of the latter is unlikely.

The slab measures 7 by 28 inches and has a light red surface. The petroglyph is pecked through the red surface into the gray, underlying stone, giving a two-tone effect, as at Sac-229. The single design unit has an element similar to one found at Sac-229, i.e., a circle with lines cutting the enclosed part (cf. Figs. 4d, 8b). Around this element is a line which in turn joins a straight line running the length of the remaining part of the rock's surface. There are several groups of small dots present on the rock. The whole surface shows pecking as if an attempt had been made to smooth it.

Sac-231. "Baby-rock" (see p. 80) type petroglyphs occur in association with bedrock mortars in an outcrop of fossiliferous limestone on Carson Creek one-half mile west of the bridge on Scott Road. The site is located on the crest of a cliff on the south bank of the creek. The petroglyphs are in the form of a series of fourteen small pits or dots which range in size from 1 to 2 1/2 inches in diameter. Eight pits occur in one series.

There are also twenty bedrock mortar holes in this rock outcrop. The outcrop itself is located on a habitation site as evidenced by the midden deposit. Other occupation sites have been recorded in the vicinity of this site.

Distribution and Description of Design Types

Design elements are described in terms of type, size, and occurrence (summarized in Table 1 below).* The names given to the elements are des-

* In Table 1, data from Sac-234 is not included. The original location of the petroglyph boulder found at what is referred to as site Sac-234 is not known.

Site	Design element																		
	Random dots	Clustered dots	Series dots	Simple circle	Nucleated circles	Concentric circles	Nucleated concentric circle (target)	Bisected circle	Spoked wheel	Spider web	Sun disk	Cross hatch	Rake	Figure eight	Chain	Spirals	Wavy lines and tadpole	Floral designs	
Pla-2	40	10	4	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	
Pla-37	10	-	-	3	5	-	-	-	-	-	1	-	-	1	-	-	-	12	2
EId-69	30	5	-	9	1	-	-	-	-	-	-	1	1	1	1	-	-	4	1
Sac-213	-	-	-	2	-	3	1	-	-	-	1	1	-	-	-	-	-	1	-
Sac-216	50	10	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sac-227	10	6	6	3	-	1	-	2	1	-	2	-	1	3	-	-	-	-	-
Sac-228	20	6	3	13	1	9	6	2	-	1	2	1	1	1	1	1	1	6	4
Sac-229	1	-	-	1	-	10	1	1	2	-	-	-	-	-	1	-	-	2	-
Sac-231	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	164	37	21	31	7	23	8	5	3	1	6	3	3	6	1	1	26	7	

Table 1. Distribution of Petroglyph Elements at Various Sites
in the Sacramento Valley-Sierran Foothill Region.

criptive only and are not in any way intended to explain a possible meaning. Most design types discussed here are described in previous works on petrography (Steward, 1929; Cressman, 1937, p. 10).

Random dots. Dots or pits may be cup-shaped or conical depressions ranging in size from 1/8 to 3 inches in diameter and 1/16 to 1 inch in depth. Dots are placed without apparent attempt to make an organized design. Dots are found in varying numbers at all sites, with the exception of Sac-216. Pla-2 and Sac-231 are represented almost entirely by these dots. Dots seem to be the most common design in this series, and may vary from a dozen to several hundred at a site.

Clustered dots. Dots or pits formed in the same manner as above are usually found in groups of three. Clustered dots occur at Pla-2, Eld-69, Sac-216, 227, 228 and 231.

Series dots. Definite specialization of dots or pits occur at Pla-2, Sac-227, 228, and 231 as series in a straight line. At Sac-228 a group of dots forms a rectangular pattern, with three dots on each of the short sides and nine dots on each of the long sides.

Simple circles. Circles appear as a fairly common design at Pla-37, Eld-69, Sac-213, 227, and 228. These range in size from 3 to 20 inches in diameter.

Nucleated circles. Circles with a central dot are present at Pla-37, Eld-69, and Sac-228. The design occurs only once at Eld-69 and Sac-228. At Pla-37 the circles are found in connection with several complex designs and also separately. Nucleated circles are generally small, averaging about 4 inches in diameter at all three sites.

Concentric circles. These designs are formed by two or more circles with the same center. The number of circles may vary from two to six; total outside diameter ranges from 6 to 20 inches. The average symbol is about 10 inches in diameter and consists of three circles. Such designs occur at Sac-213, 227, 228, and 229.

Nucleated concentric circles or target design. These are the same as the concentric circles but with a central dot. This design type occurs more frequently than the concentric circles, and is often quite large, consisting of as many as seven circles. It is present at Sac-213, 227, 228, and 229. Sizes vary from 6 to 21 inches in diameter and may be associated with another, more complex, design; however, they are usually present as a single element.

Bisected circles. These are a circle or circles cut in half by a straight line. The best example of this symbol occurs at Sac-229 where a large concentric circle, 17 inches in diameter is bisected. A bisected concentric circle occurs at Eld-69, along with a small, single circle. Two small, simple circles are bisected by the same line at Sac-228.

Spoked wheel. This is a circle, with lines radiating from a central dot, which resembles the outline of a wheel. This type of design appears only once, at Sac-227.

Spider web. This design is similar in outline to a spider web, being a combination of concentric circles and the spoked wheel elements. It occurs only once, at Sac-228, and is 21 inches in diameter.

Sun disk. This is a circle with projecting lines or rays, which occurs only at Sac-227. Two designs are present: one has a central dot and the other a cross.

Oval with cross-hatch. At Sac-213 is a large oval measuring 21 by 27 inches. This is crossed with horizontal and vertical lines, making a cross-hatch. A similar design is found at Eld-69.

Rake. This design is composed of a main straight line with an evenly spaced series of short parallel lines extending at right angles from it. The element forms an outline similar to that of a garden rake. It occurs at Eld-69, Sac-227, and 228.

Figure eight. Two ovals join to form a symbol like a figure eight or a "moccasin track." These are present at Pla-37, Sac-227, and 228.

Chain. This design, which is a group of ovals connected in series to form a chain, is found only at Sac-229.

Spiral. This design occurs only at Sac-228. It is a simple open coil.

Wavy lines. These lines are often terminated with a dot or circle. They are found at Pla-37 as the main design element. The element is also prominent at Eld-69 and Sac-228. Several small wavy lines terminated by a dot or circle are present at Pla-2, Sac-213, and 229. The larger wavy lines may vary from 1 to 7 feet in length.

Floral designs. This is a complex design often resembling a flower or tree. At Pla-37 and Sac-228 the element looks like the representation of a tree (Figs.2b, 7d). Other floral designs, some of them covering a rock area

of 2 or 3 square feet, resemble flowers with stems and leaves. In the latter, the flower part proper would be a large concentric circle 20 inches in diameter, the stem a line running down from the circle to the base of the rock face, and the leaves lines running laterally at a forty-five degree angle from the stem. On two design units (Figs. 2d, 7d) there is a line cutting across the stem. At Pla-37, for example, the design is formed by a line (stem) extending downward from a round depression in the rock, and cut by a wavy line through its lower portion.

Location of Sites

Petroglyphs were found associated with occupation areas at five of the ten sites discussed in this report. Of the ten sites, three are predominantly of the "baby-rock" class (Pla-2, Sac-216, 231) in that they display almost exclusively dots or pits (see Table 1). At all of the remaining sites except Sac-213, however, these dots or pits are present along with other elements.

Complex curvilinear petroglyphs occur in connection with sites Pla-37 and Sac-229. At both of these sites midden deposit has buried parts of the decorated areas of the boulders. At Pla-37 markings were found as much as a foot under the surface of the soil at the time of examination (see Fig. 2a, c, d). Six inches of deposit covered one outstanding petroglyph at Sac-229 (Fig. 4b). There is a possibility that more such marked rocks are buried at this site, as occupation deposit still covers parts of some large boulders.

Four curvilinear-type petroglyph sites were found in isolated places, not associated with occupation deposits. For example, Sac-227 and Eld-69 are located on high ground some distance from stream courses. Sac-213 is located in a boulder-strewn area along Carson Creek, but is nevertheless not near any occupation sites in the area. Sac-228 is located on the top of a steep hill where living conditions must have been unfavorable; on the other hand the hill offers a good view of the surrounding area, and the site may have been selected because of this factor. Larger and more suitable rock exposures with no evidence of modification on them are found at the base of this hill.

Summary

Petroglyphs are usually found on the east or south faces of rock outcrops (see Table 2, following). Such placement seems to have been a result of conscious selection, as west and north faces are rarely touched at any of the sites. At several sites designs are found on horizontal surfaces, but vertical faces seem to have been more popular when both were available.

Site	Rock Facing				
	North	South	East	West	Horizontal
Pla-2	-	-	2	-	-
Pla-37	-	10	-	-	-
Eld-69	-	10	-	-	1
Sac-213	-	4	-	-	-
Sac-216	-	-	7	1	-
Sac-227	-	-	-	-	2
Sac-228	-	-	15	1	1
Sac-229	-	-	5	-	6
Sac-231	-	-	-	-	1
Totals	0	24	29	2	11

Table 2. Facing Direction of Petroglyphs in Various Sacramento Valley-Sierran Foothill Sites.

Marking technique. Most of the petroglyphs appear to have been executed by pecking at the working surface with a small stone, although a few have obviously been rubbed rather than pecked. At several sites both techniques were used. At Sac-229 a pecked design is superimposed on a rubbed element. This single example suggests that the pecked type of petroglyph has a later origin than the rubbed type. It seems likely that certain elements were pecked out and then smoothed, as the rock at most of the sites is not of such nature as to make initial rubbing easy. At Pla-2, 37, and Sac-216 the petroglyphs were most likely made by both the rubbing and pecking techniques. Petroglyphs may be cut to depths ranging from less than 1/16 inch to 1 inch. The designs vary from several square inches to several square feet in area. The average size of an element is about 10 inches in diameter.

Use of pigment. During the excavation of the area around the bases of the decorated rocks at Sac-228, a small fragment of red hematite was found. The fragment has two ground faces, evidently the result of being rubbed on a rough surface. In all probability it was used in elaborating the carved designs by coloring. At Sac-229 several small portable mortars were found, and a small mortar pit is in the top of one of the decorated rocks. Lumps of hematite suitable for paint, but without ground faces, also have been found. The size of the mortars may indicate that they were used to grind pigment, as they are too small to be used for food preparation. One of these mortar slabs has three small holes in it, possibly intended to receive several colors. The holes are 1 1/2 inches in diameter and 1/2 inch in depth. If paint were used in this region for petroglyphs, an explanation may be had as to why many excellent faces at this and other sites seemingly were not used. They may have had pictographs on them which have since weathered away, while the pecked designs remained until recently discovered.

Tools. The presence of hammerstones and flaked tools at three sites may have some connection with the manufacture of the carvings. Hammers or stone mauls would have been useful, and it is likely that they were employed in some way in pecking out the petroglyphs in the comparatively hard stone which characterizes the area. Along with several hammerstones at Sac-228, flaked and core specimens, probably choppers, were found.

Age. With the information available at the present time, little can be said as to the age or the period at which these petroglyphs were made. Pla-2 markings are associated with what appears to be a late prehistoric-early historic period site, judging from artifact material found in the occupation deposit. Pla-37 was probably occupied in the late prehistoric period, while Sac-216 and 229, containing manos and metates in their occu-

pation deposits, may represent an older culture in the Sacramento Valley. Perhaps at some future date excavation of the sites may be of help in dating the stone carvings. The petroglyphs themselves show a great deal of discoloration and weathering. It is not positively known if this can be taken as an indication of great antiquity. Other possible evidence of reasonably great age may be seen at Pla-37, where a sizable stone, decorated with a group of wavy lines extending horizontally across the rock, has split into two sections. These have separated, presumably from natural causes, some 9 inches from each other (see Fig. 2c). Several examples of the same action, though not so spectacular, are found at Sac-229 (Fig. 4f).

Style area. The series of ten petroglyph sites discussed in this paper show two different stylistic types: (1) conical or cup-shaped pits and V-shaped grooves; and (2) those with curvilinear designs. The pit and groove type is usually seen as a random scatter over large rocks. Occasionally, pits are placed in series or in groups of three or more. This form of petroglyph is similar in form to the "baby-rocks" or "rain-rocks" of the northwestern section of California (Heizer, 1953). "Baby-rocks" were used by the Pomo for their supposed supernatural power that would give women the ability to bear children (Barrett, 1952). The so-called "rain-rocks" are described as having been used in rituals for controlling weather by the Hupa, Tolowa, Karok, and Shasta tribes (Heizer, op. cit.). Sacramento-San Joaquin Valley and foothill petroglyphs in the "baby" and "rain rock" category are found at and near Richardson Springs, Butte County (ibid.), and in Garner Cave on Rock Creek (But-71) (site records, U. C. Archaeological Survey, and in records of the State Indian Museum, Sacramento, California); in various locations in Sutter County; and in Stanislaus County, twenty miles east of Farmington (Heizer, op. cit.). This form of petroglyph has also been noticed in the Truckee Basin on the east slope of the Sierra. Some of these Truckee Basin sites are found, for example, in Martis and Sardine Valleys. Since this form of petroglyph is so widely distributed, it is not surprising to find it present in Sacramento County (Sac-216) and Placer County (Pla-2).

The second type of petroglyph design found in the Sacramento County area is composed predominantly of curvilinear elements, among which the circle is found most frequently, often elaborated into various complex line forms. Wavy lines were used freely at some sites and various linear designs, other than circle forms or wavy lines, are present, although not in such number as the latter elements. Dots or pits in series, differing from the characteristic "baby rock" forms in diameter and depth, are present. Human and animal forms are absent, with the exception of several serpent-like designs.

The curvilinear type petroglyphs show some relation to those designated curvilinear in the Great Basin (Baumhoff, Heizer and Elsasser, 1958). The most notable differences in petroglyphs of the Sacramento Valley-Sierran

foothill region and the Great Basin are: (1) the Great Basin area shows a great variety of elements which are not represented in the Valley-Sierran region, such as zigzags, diamond series, human forms, animal forms, and so-called rain symbols; (2) probably the combination pecking and rubbing is present with greater frequency in the Valley-Sierran area than in the Great Basin; (3) there is possibly a difference in average size of elements between the two areas, with Valley Sierran elements generally large (more than 20 inches in diameter). However, in the Great Basin there are sites which display many elements much larger than this; hence this comparison may not be entirely valid. The community bedrock mortar site near Volcano, Amador County (Ama-14), bears some interesting petroglyphs, in form like those in eastern Sacramento County. As one goes south, however, to the Stanislaus River Canyon near Columbia, petroglyphs are found showing closer relation to the Great Basin style area in size, manufacture, and type of designs. To the east, in the higher ranges of the Sierra Nevada, the typical Great Basin style is found represented at Donner Summit, at Meadow Lake, and at other sites in the area.

It is possible that the curvilinear petroglyphs in Sacramento County and surrounding area (Pla-37; Sac-227, 228, 229, 230; Eld-69; Ama-14) are of a separate California stylistic area, probably with relationship to the Great Basin petroglyphs. Further study and survey must be made before this can be positively determined.

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Explanation of Illustrations

Map 1: Petroglyphs in the Sacramento Valley--Sierra Nevada Foothill Region.

Figure 1: Petroglyphs at Pla-2.

Figure 2: Petroglyphs at Pla-37.

Figure 3: Petroglyphs at Eld-69

Figure 4: Petroglyphs at Sac-229.

Figure 5: Petroglyphs at Sac-213.

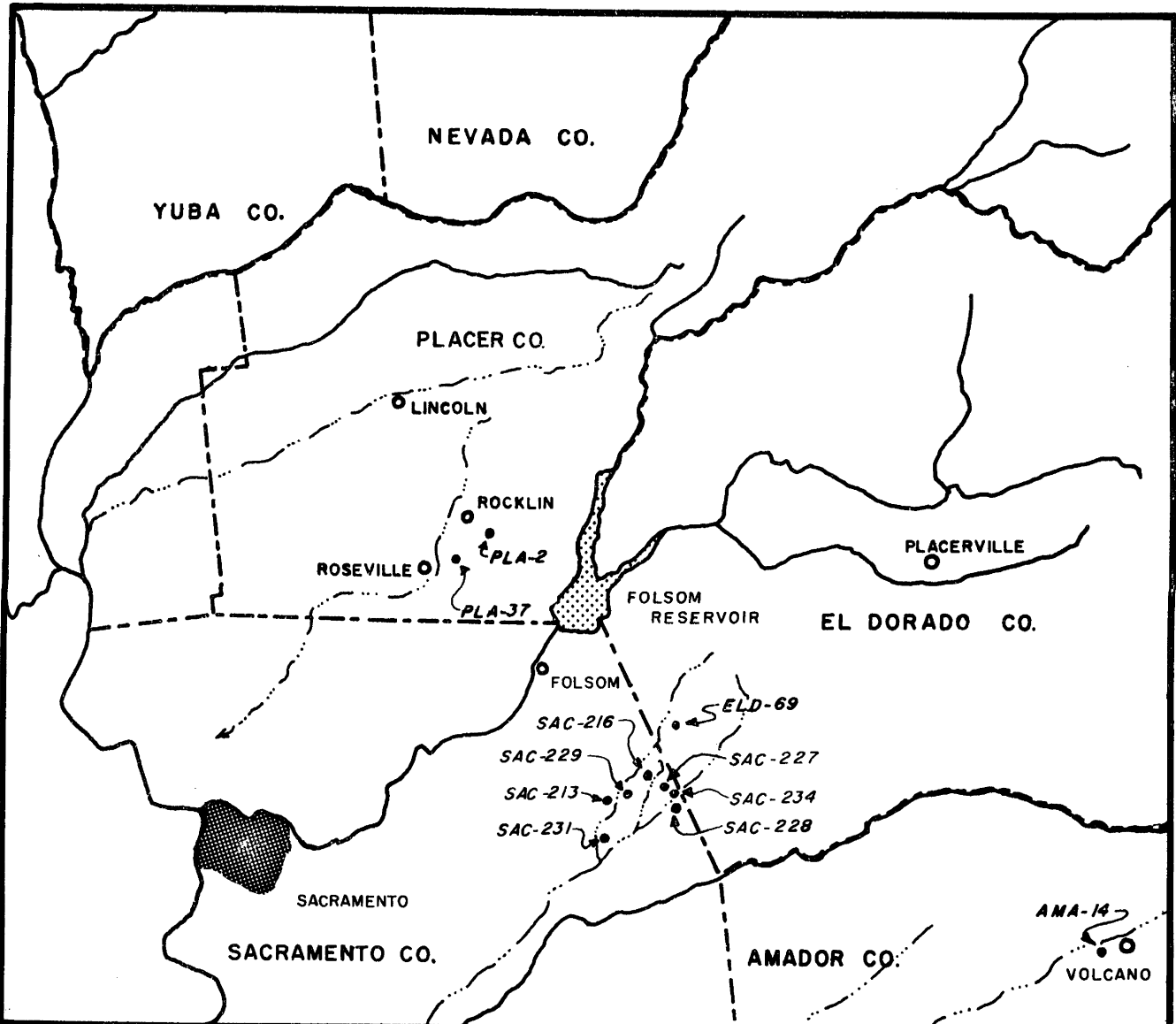
Figure 6: Petroglyphs at Sac-216.

Figure 7: Petroglyphs at Sac-228.

Figure 8: a. Petroglyphs at Sac-227.

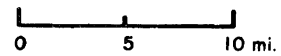
b. Petroglyphs at Sac-234.

c-f. Views of decorated mortar from near Pla-37.



MAP I
PETROGLYPHS IN THE SACRAMENTO VALLEY- SIERRA NEVADA FOOTHILL REGION

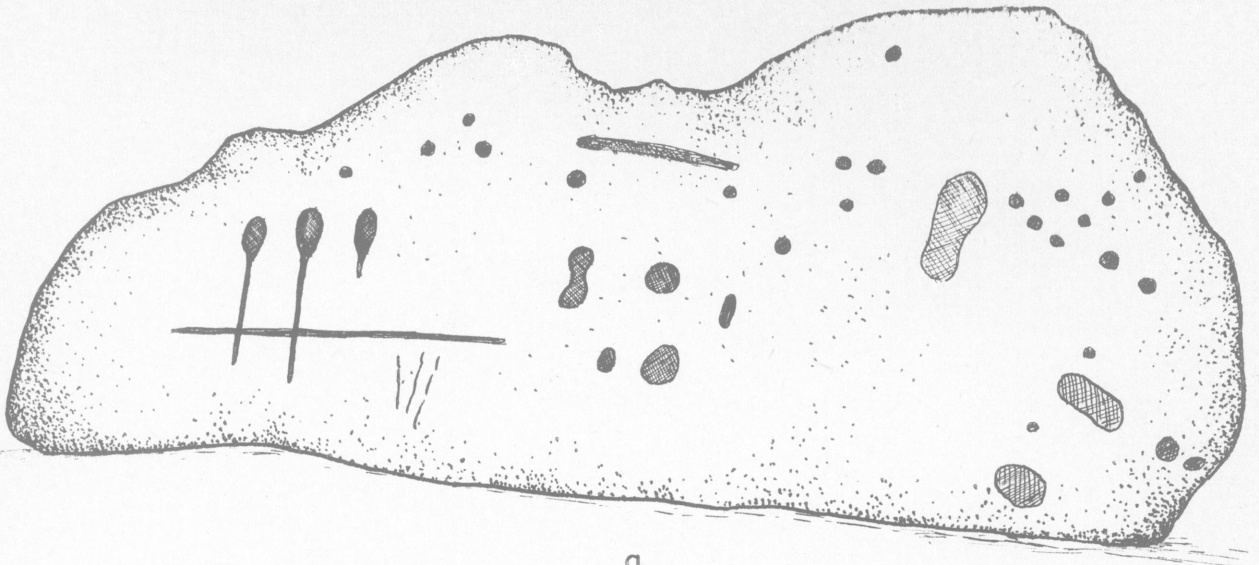
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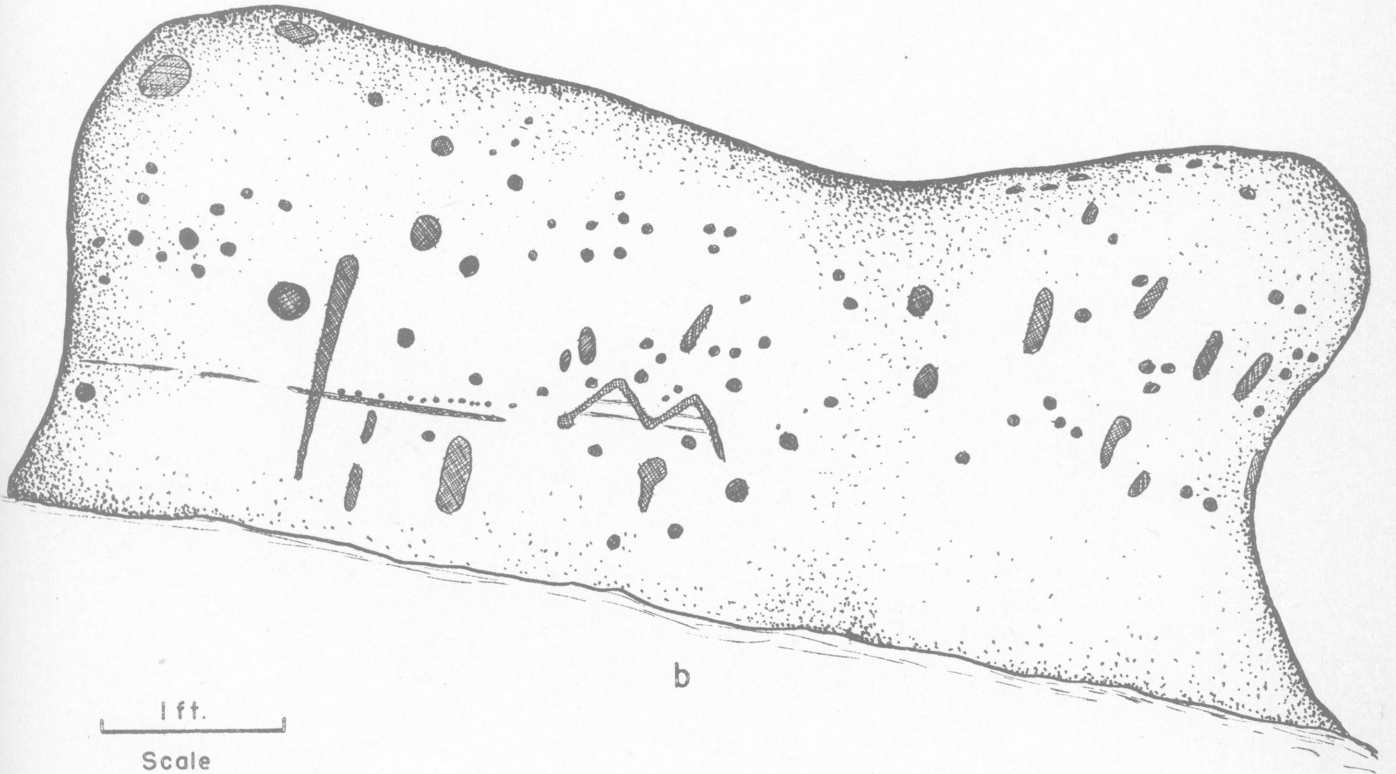
● TOWNS

• PETROGLYPH SITES

--- COUNTY BOUNDARIES



a



b

1 ft.
Scale

Fig. 1

1 ft.
Scale

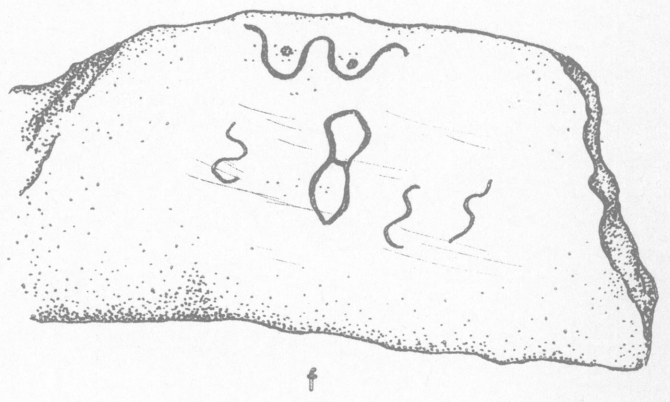
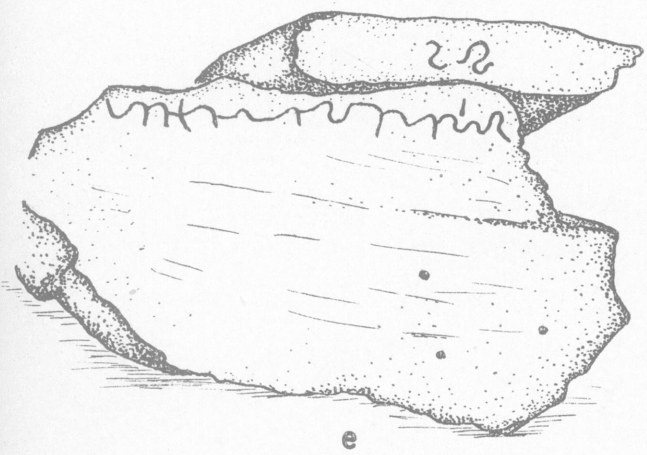
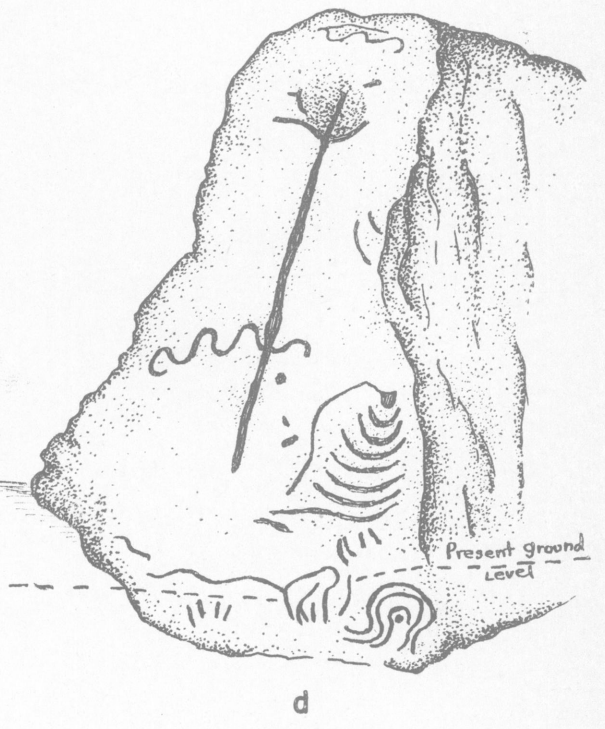
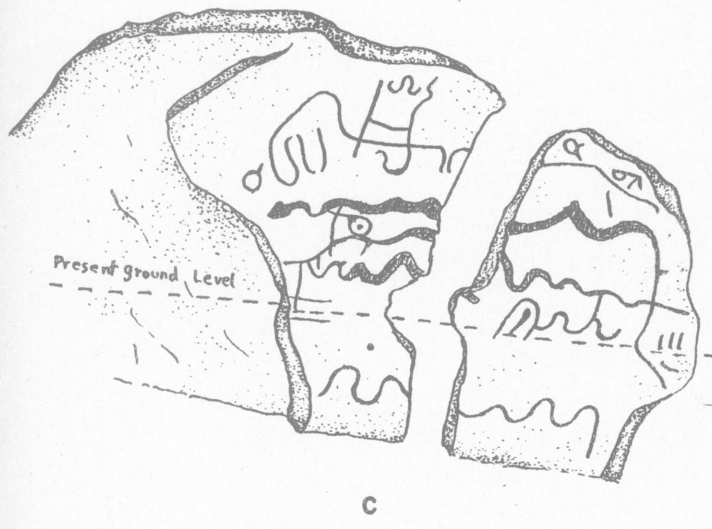
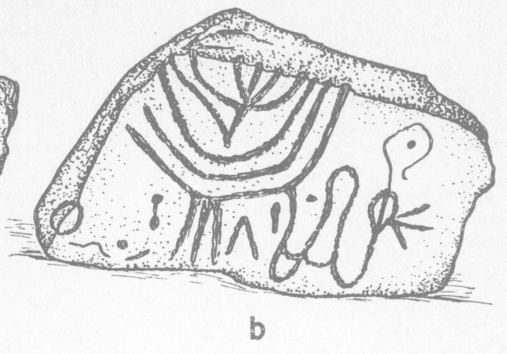
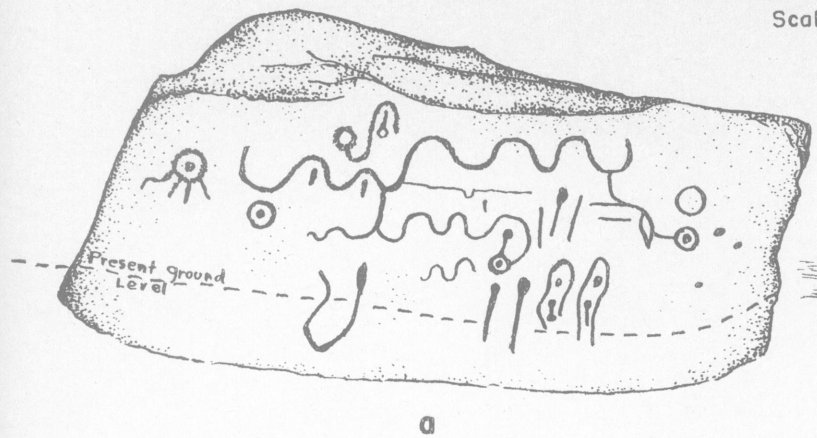
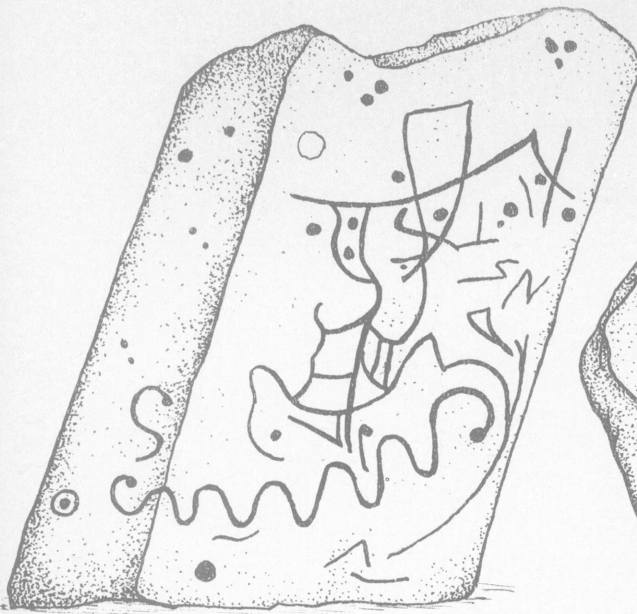
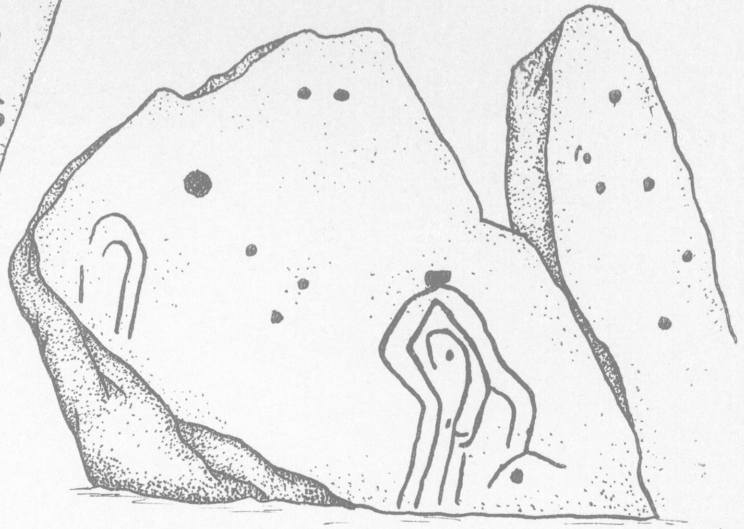


Fig. 2

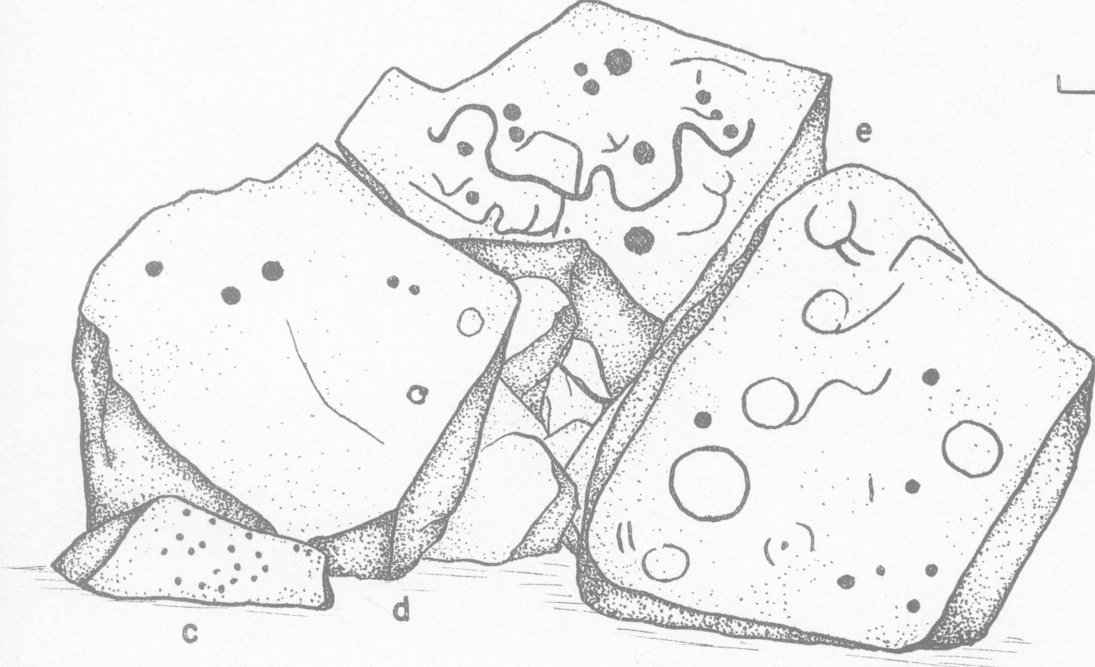


a



b

1 ft.
Scale

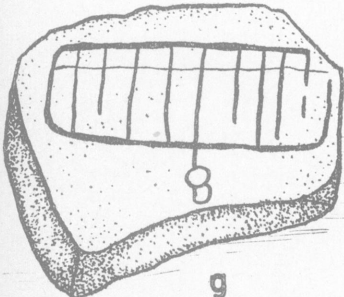


c

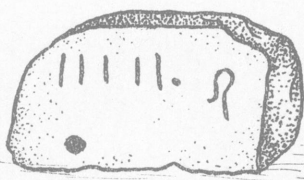
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e

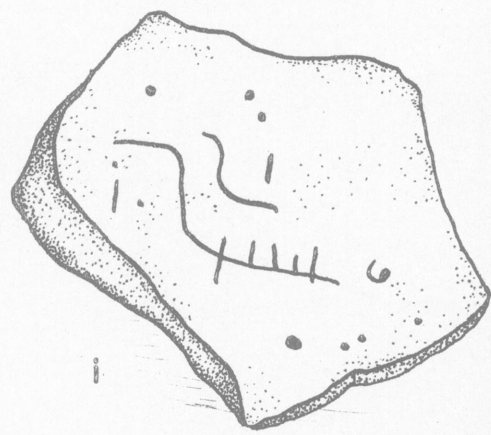
f



g



h



i

Fig.3

1ft.
Scale

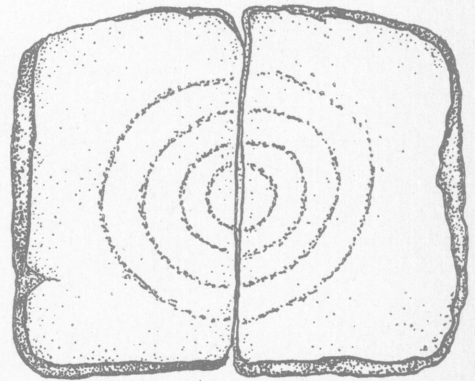
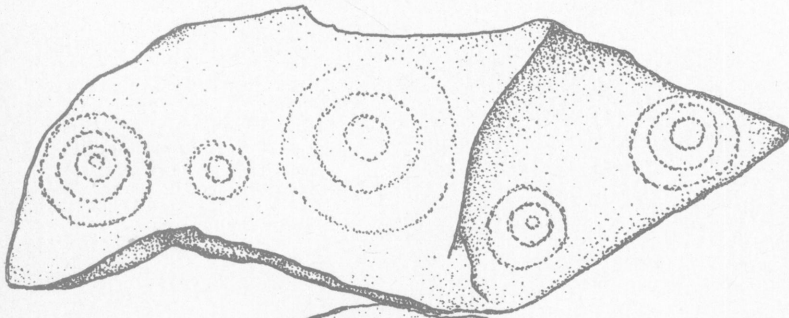
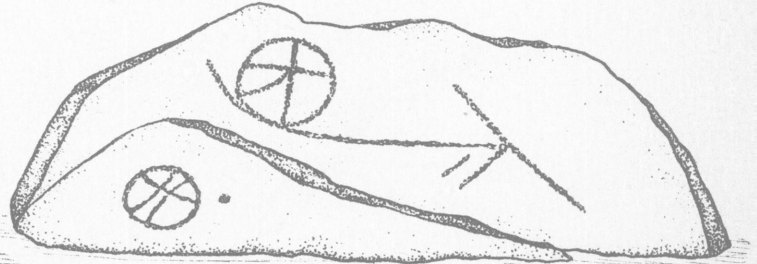
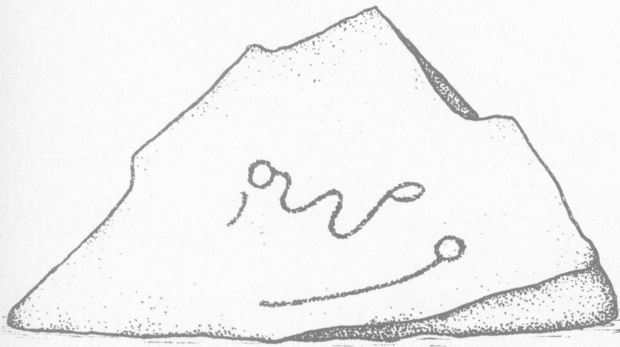
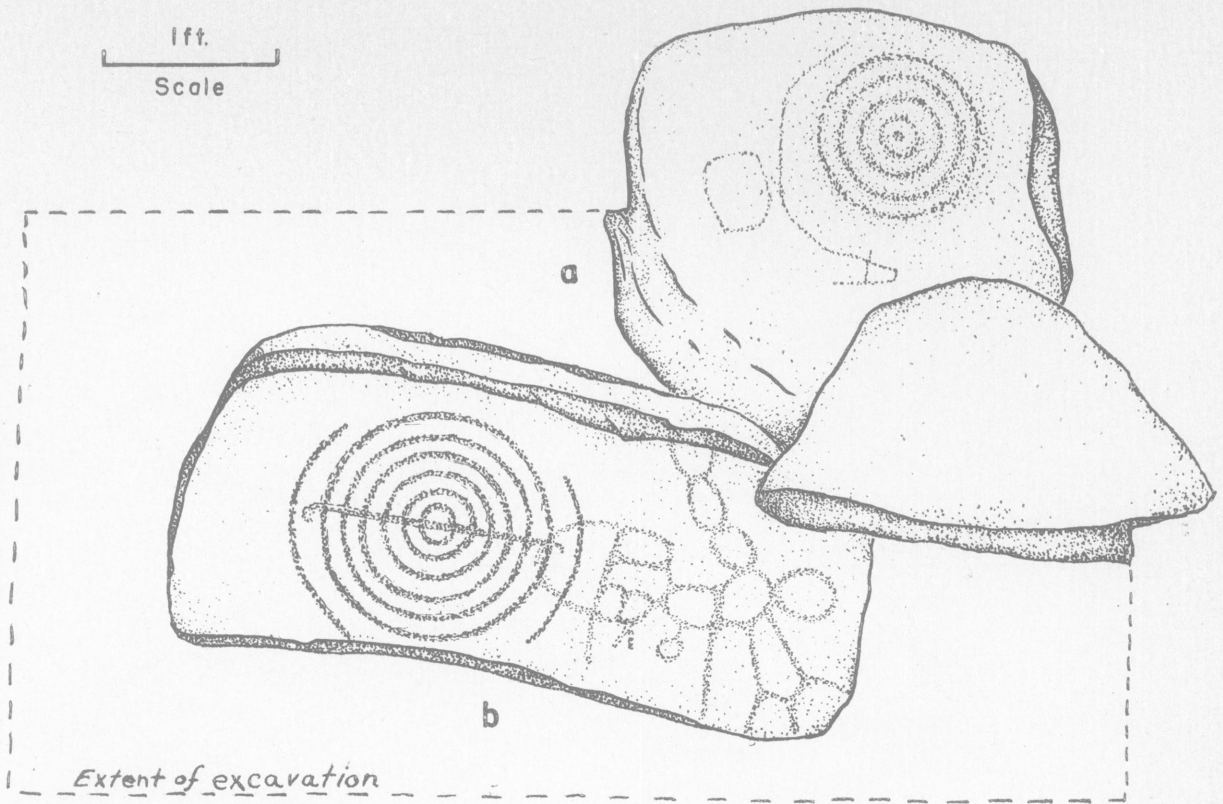
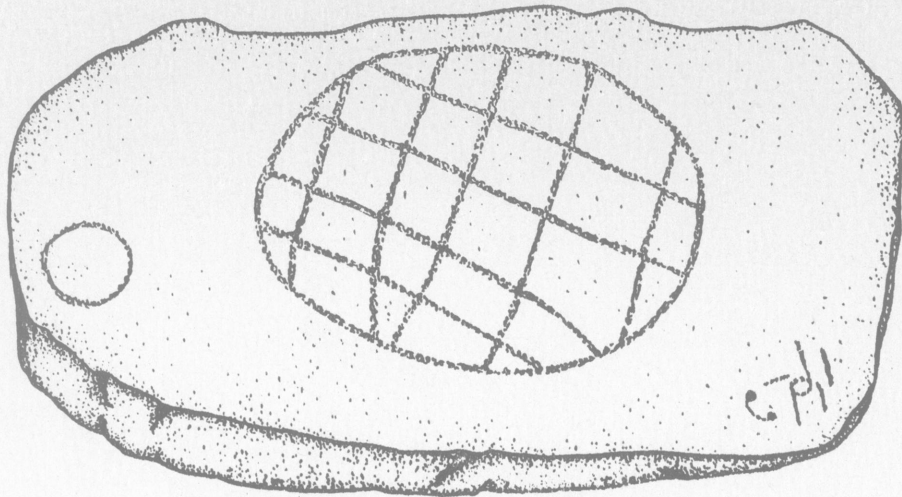
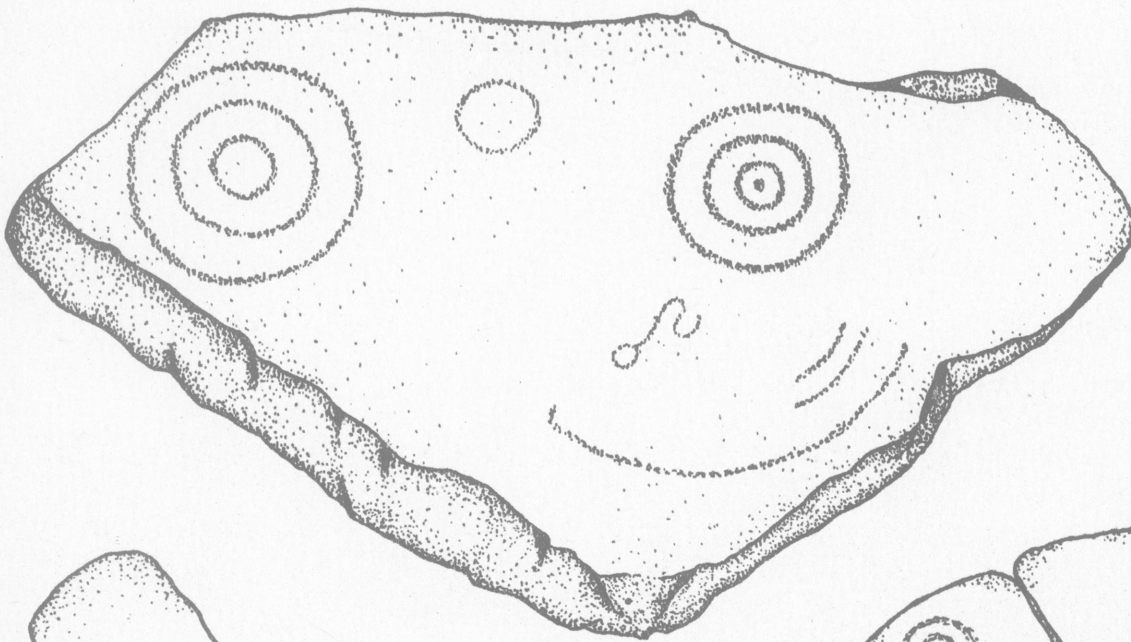


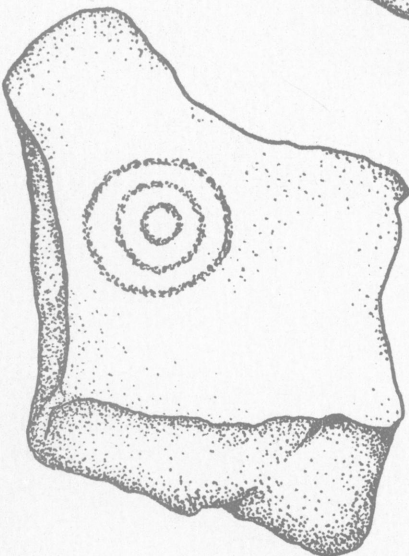
Fig. 4



a

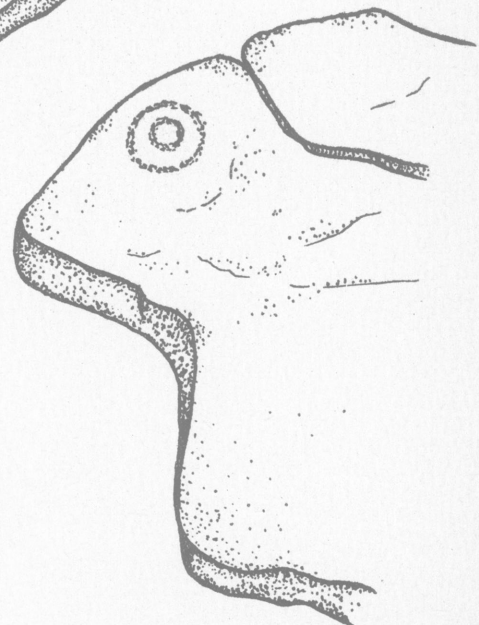


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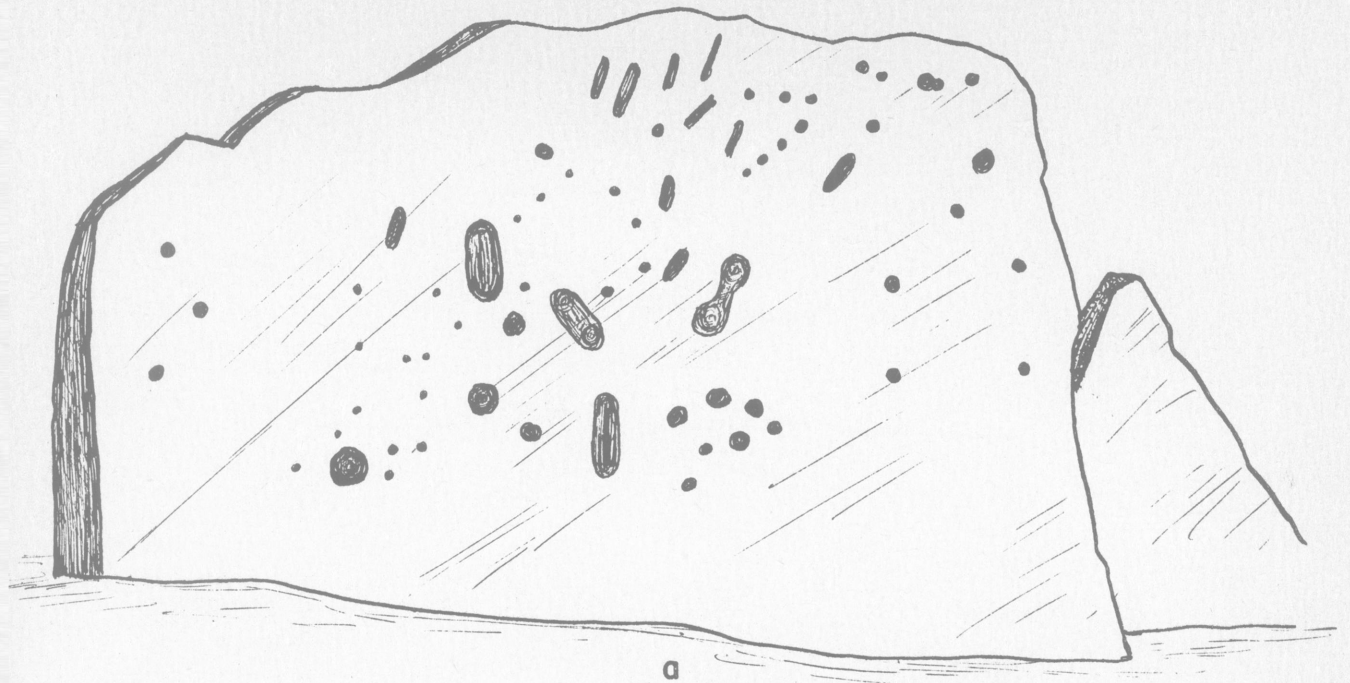
c

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Scale

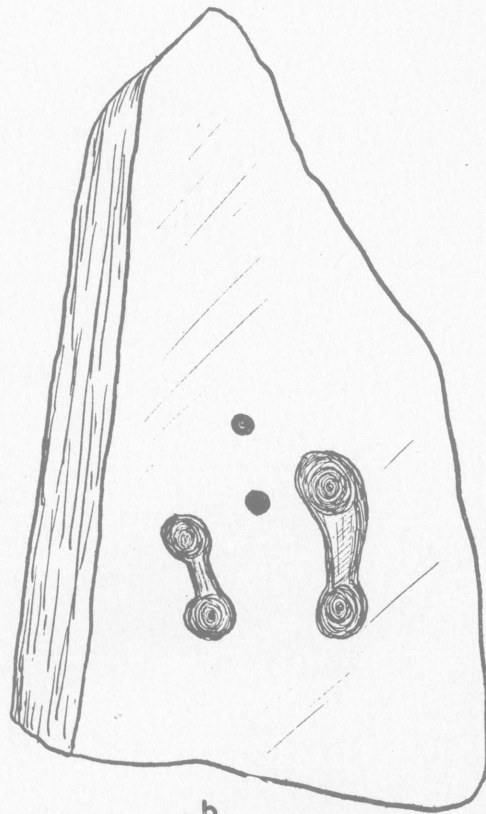


d

Fig. 5



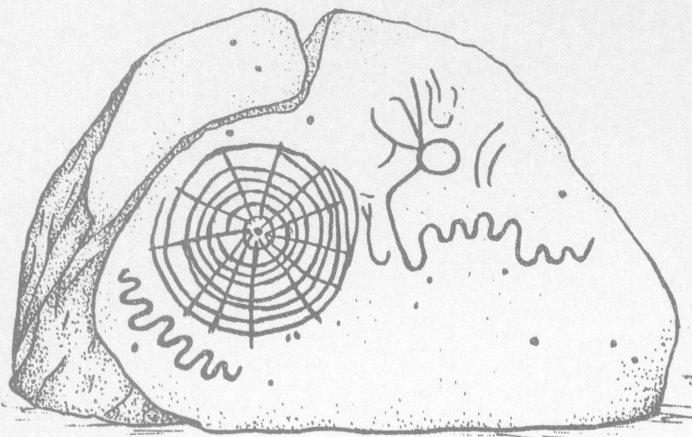
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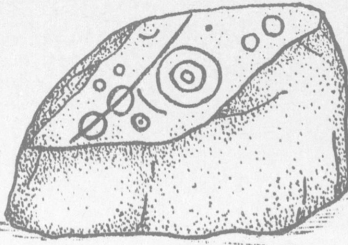
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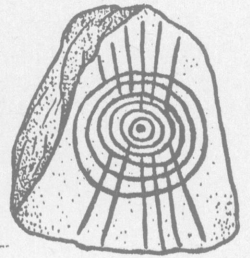
Fig. 6



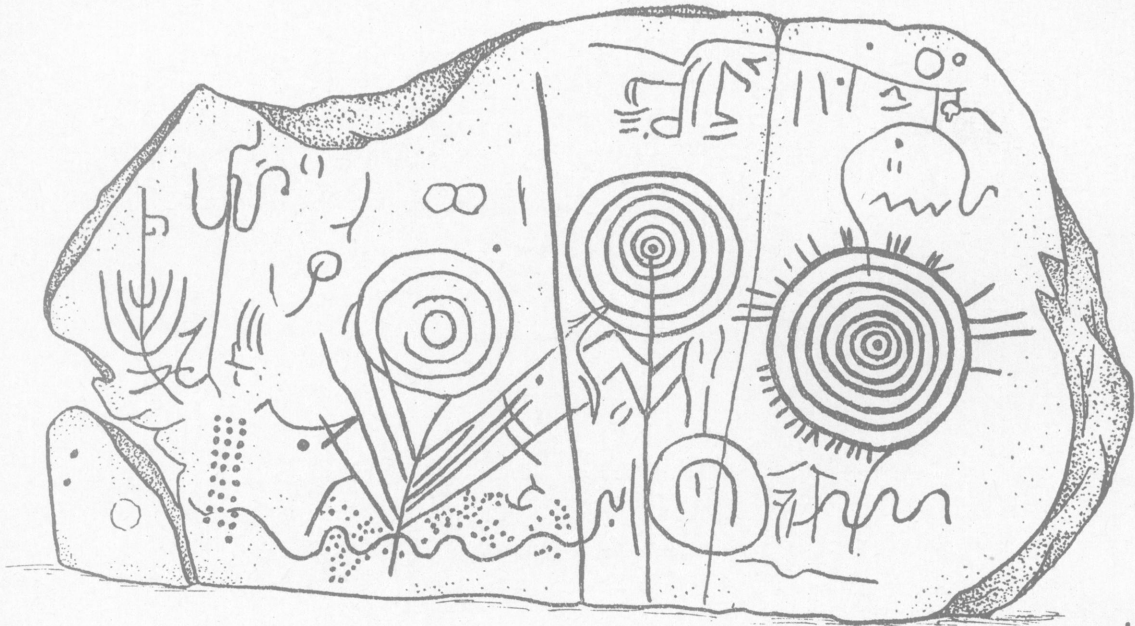
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b

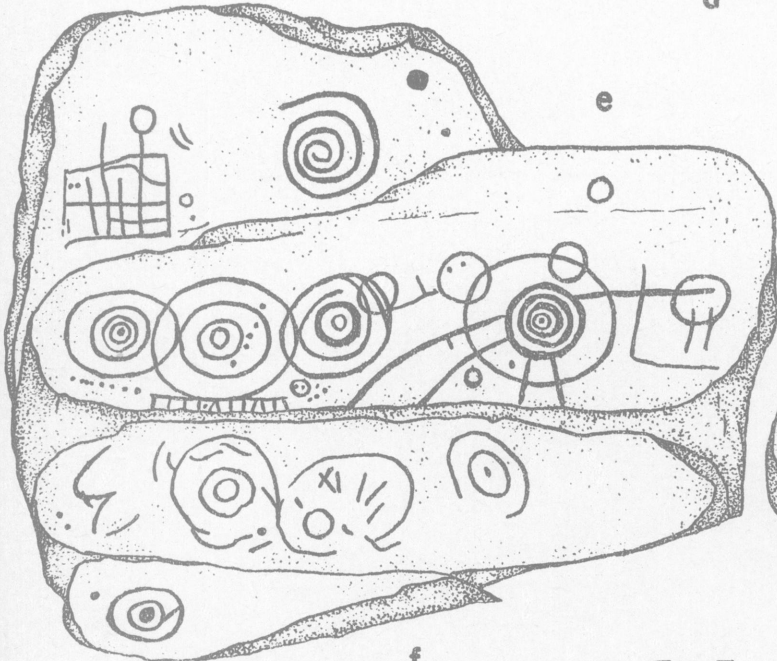


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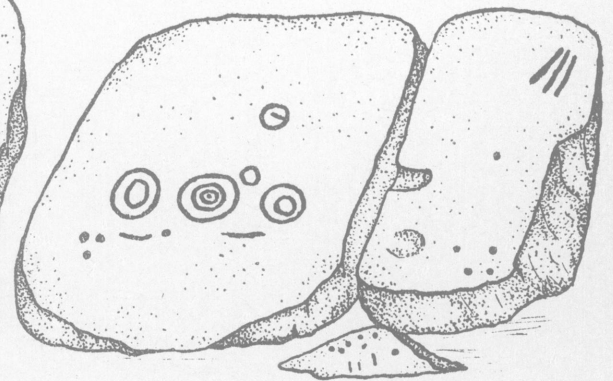


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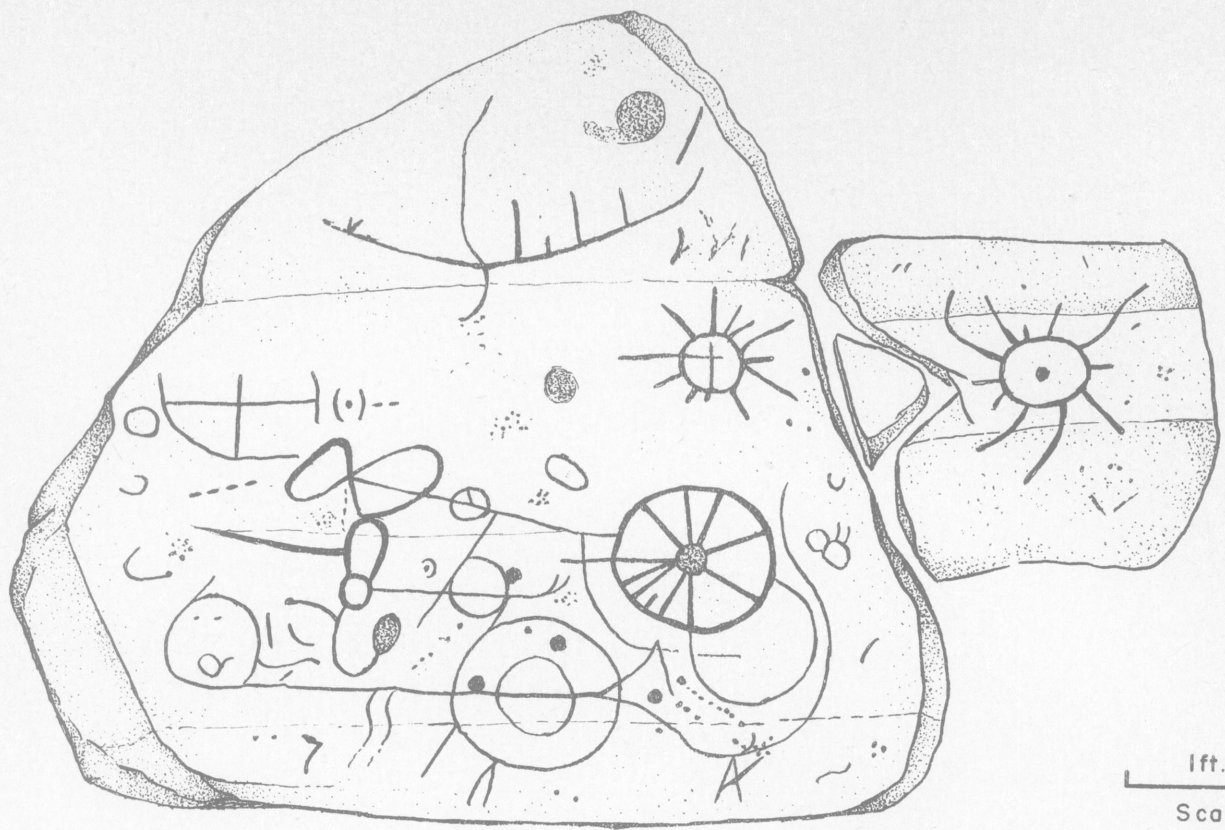


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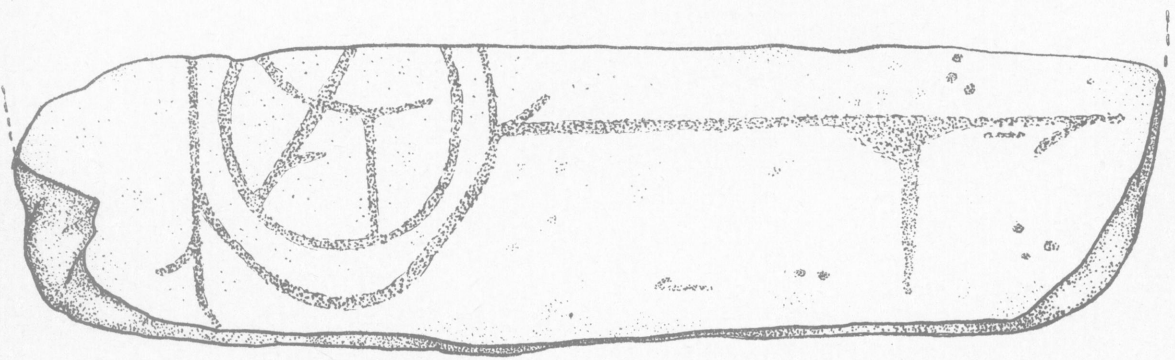


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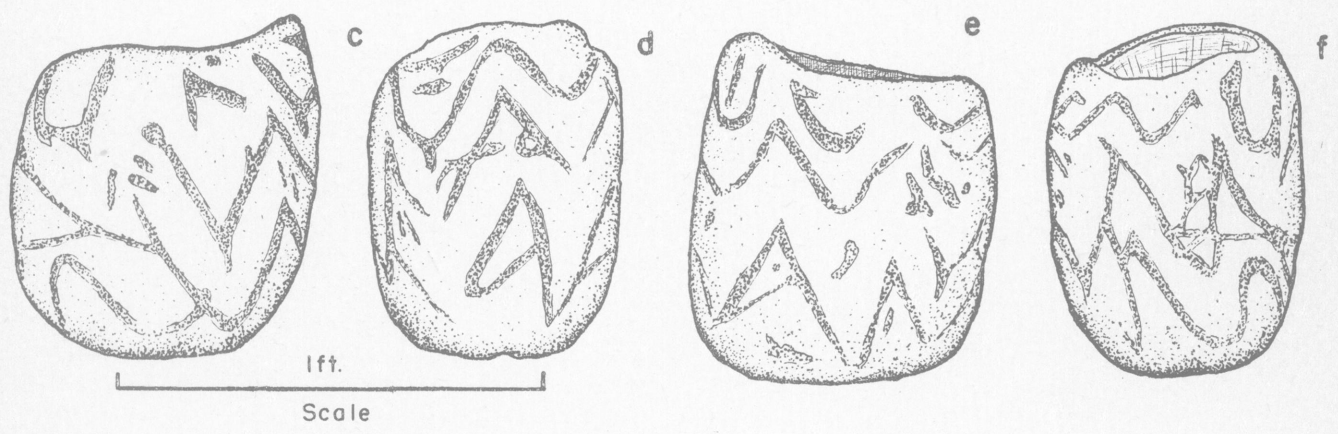
Fig.7



a



b



1ft.
Scale

Fig. 8