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Rock Art at the Kanaka-Briggs Creek Locality (10-GG-307), Gooding County, Idaho

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IN 1983 Butler and Murphey reported test excavations undertaken at Kanaka Rapids, near Buhl, Idaho (Fig. 1). Among the discoveries was a rectangular house floor, its associated cache or storage pits, and an array of artifacts (Butler and Murphey 1983:16-21, Figs. 5-7, 9-10; Butler 1986:132). Since then, there has been some debate over whether this discovery, the so-called Kanaka II homestead, is evidence of a localized northern Fremont lifeway (Butler 1983a:6) or merely evidence of a great number of variously assimilated Fremont traits (Plew, in Moffat 1983:B1). For some reason, the overall Kanaka-Briggs Creek settlement system has received little or no attention in this debate.

The Kanaka study area extends upstream from the foot of the rapids for about 2.5 km. In the regional literature there had been good indications that some of the five surface-collected sites and six test-excavated sites should yield significant information bearing on local protohistoric and historic Shoshonean occupation. However, this did not prove to be the case.

Two sites offered only a few pieces of early-to-middle Archaic material (Northern Side-notched and Pinto projectile points) in addition to late Archaic or Fremont artifacts, and it soon was learned that comparable material was found at three other disturbed sites by local relic hunters. The six other sites offered only the late Archaic or Fremont materials. In general, the absence

of historic Shoshoni cultural material did not support the theory that Kanaka Rapids had been the site of a major historic fishery, as proposed by a modern writer on the Oregon Trail (Anonymous 1974:14-23).¹ Early explorers and pioneers noted considerable salmon fishing in this vicinity (Butler and Murphey 1982a:5-12). If not at Kanaka, the largest rapids in the locale, or immediately upstream, where did this activity take place? The logical alternative was that it had occurred downstream.

After the Kanaka excavations, a site survey was undertaken on the lands located immediately downstream. This work soon produced a typical fishery complex in the vicinity of Briggs Creek, about 1.5 km. below Kanaka Rapids (Butler and Murphey 1983:35, Fig. 27). In addition to fish dams, fish weirs, and a wide variety of small and large open sites, there was an unusual aspect to this location: a large petroglyph site stretched across the crest of one of the nearby terraces. This segment of the Snake River was known to have very little rock art; in fact, rock art is uncommon for 150 km. or more up and downstream (Boreson 1975:39, Fig. 2).

Due to other pressing research commitments, this petroglyph site (10-GG-307) received only a cursory examination. Fisheries in the area have been discussed (Pavesic 1978; Plew 1980a, 1981, 1983; Meatte 1986), but such a large amount of rock art and its location, in an area where such art

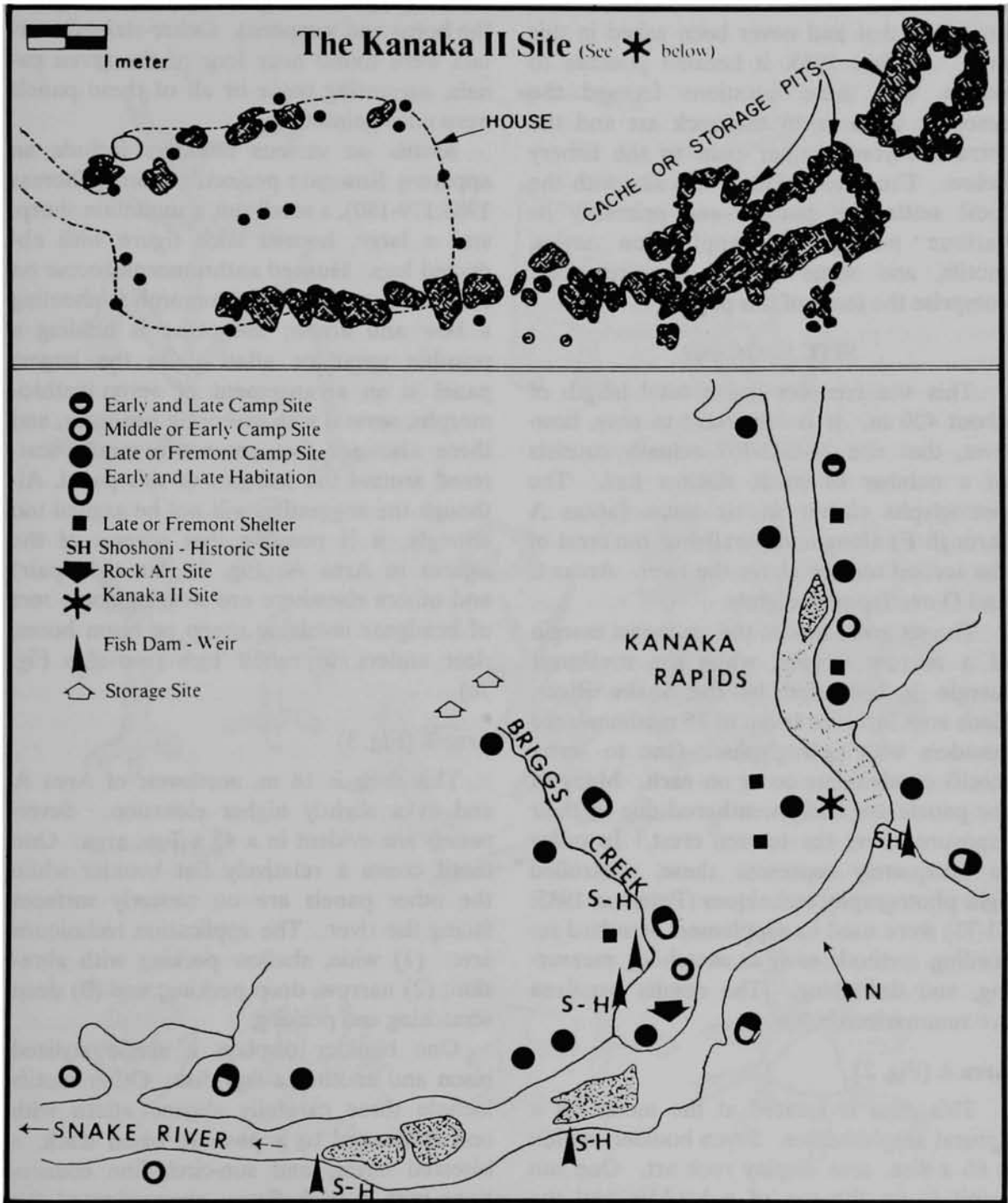


Fig. 1. The Kanaka-Briggs Creek settlement system, including an inset of the Kanaka II house. Site 10-GG-307 is marked by the arrow, right center.

has not been known or documented, raised questions that had never been asked in this area. In late 1985, it became possible to return, and these questions focused the research upwards to the rock art and the terrace beyond, rather than to the fishery below. The association of this site with the local settlement pattern and primarily its various petroglyphs, application styles, motifs, and some related interpretations, comprise the focus of this paper.²

SITE 10-GG-307

This site complex has a total length of about 420 m. It is important to note, however, that site 10-GG-307 actually consists of a number of small, distinct loci. The petroglyphs cluster in six areas (areas A through F) along and parallel to the crest of the second terrace above the river. Areas C and D overlap very slightly.

The six areas accent the southeast margin of a narrow terrace, while the southwest margin is bracketed by the Snake River. Each area includes seven to 15 medium-sized boulders with petroglyphs. One to seven motifs or elements occur on each. Many of the panels are badly weathered due to their exposure along the terrace crest. In order to adequately represent these, controlled light photography techniques (Peterson 1985: 71-73) were used to supplement standard recording methods such as sketching, measuring, and describing. The results per area are summarized below.

Area A (Fig. 2)

This area is located at the mouth of a natural amphitheater. Seven boulders within a 65 x 8-m. area display rock art. One sun motif is on the top of a boulder and the other panels face south-southwest (upriver). The application techniques are: (1) narrow, shallow pecking with considerable abrasion;

(2) scraping/abrading; and (3) scratching (on the horns and weapons). Ocher-stained mortars were found near four of the seven panels, suggesting some or all of these panels were once painted.

Motifs on various boulders include an apparent Rosegate projectile point (Thomas 1983:179-180), a small sun, a mountain sheep, and a large, horned stick figure with abducted legs. Horned anthropomorphs occur on two boulders. One anthropomorph is shooting a bow and arrow; the other is holding a possible spear or atlatl. On the largest panel is an arrangement of seven anthropomorphs, several with elaborate headgear, and there also are five geometric motifs scattered around the margins of this panel. Although the suggestion will not be argued too strongly, it is possible that several of the figures in Area A (Fig. 2c, far right pair) and others elsewhere are wearing some sort of headgear involving sheep or bison horns, deer antlers, or rabbit ears (see also Fig. 7c).

Area B (Fig. 3)

This area is 18 m. northwest of Area A and at a slightly higher elevation. Seven panels are evident in a 45 x 7-m. area. One motif crests a relatively flat boulder while the other panels are on westerly surfaces facing the river. The application techniques are: (1) wide, shallow pecking with abrasion; (2) narrow, deep pecking; and (3) deep scratching and pecking.

One boulder displays a single stylized bison and another a sun disc. Other motifs include three carefully aligned atlatls with one connected to a possible bison track, a bisected circle, and sun-circle-line connections with a stick figure abstraction at the upper end of two of these. Among the attributes used to designate the motif here and the one in Area E as bison are the follow-

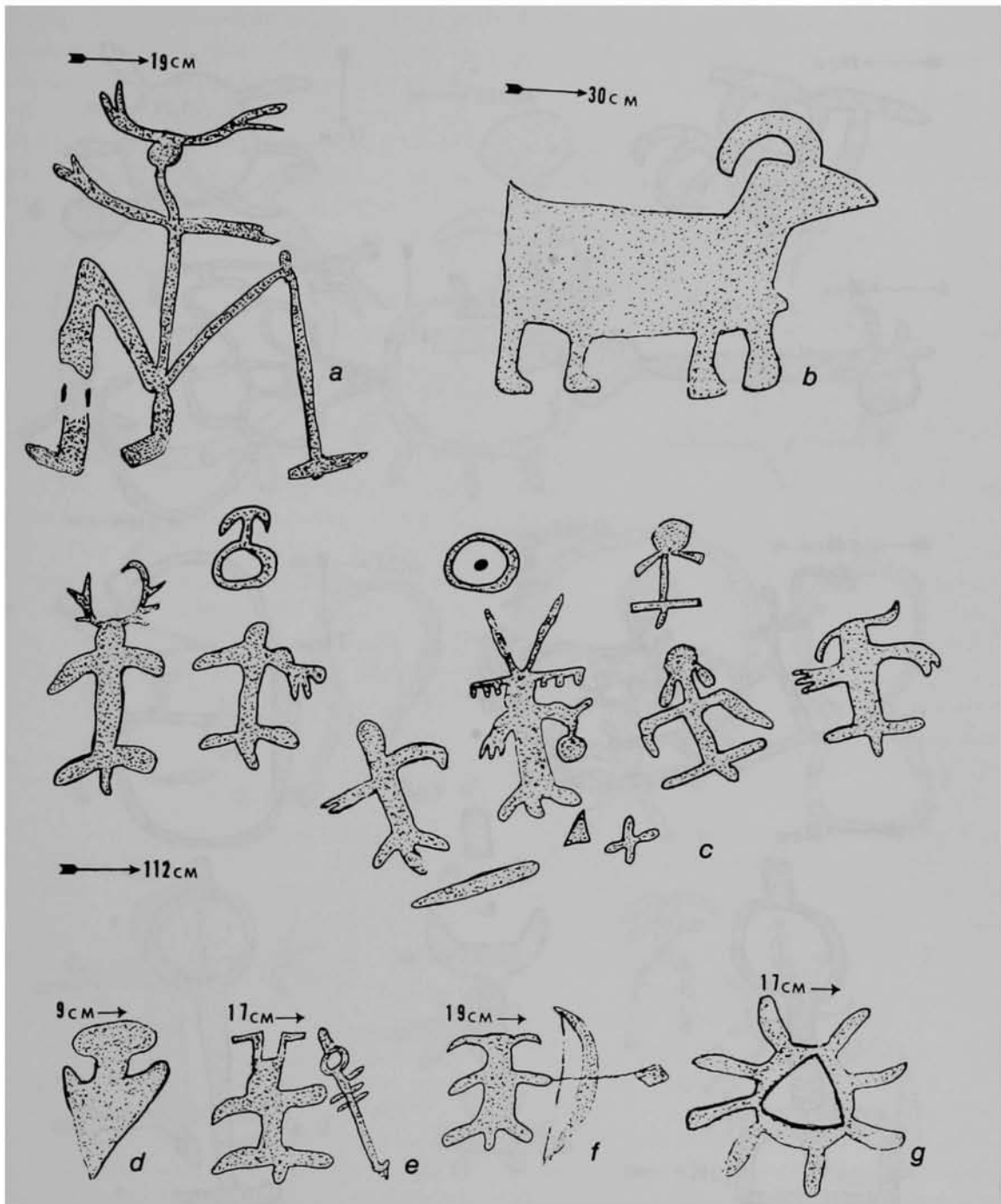


Fig. 2. The petroglyph panels recorded at Area A, 10-GG-307. Major motifs include horned figures, *a*, *c*, *e-f*; a mountain sheep, *b*; an arrow point, *d*; and, a hollow sun disc, *g*. One anthropomorph is holding a bag or rattle, *c*; and two are with weapons, *e*, *f*. Arrows indicate the maximum width of panels.

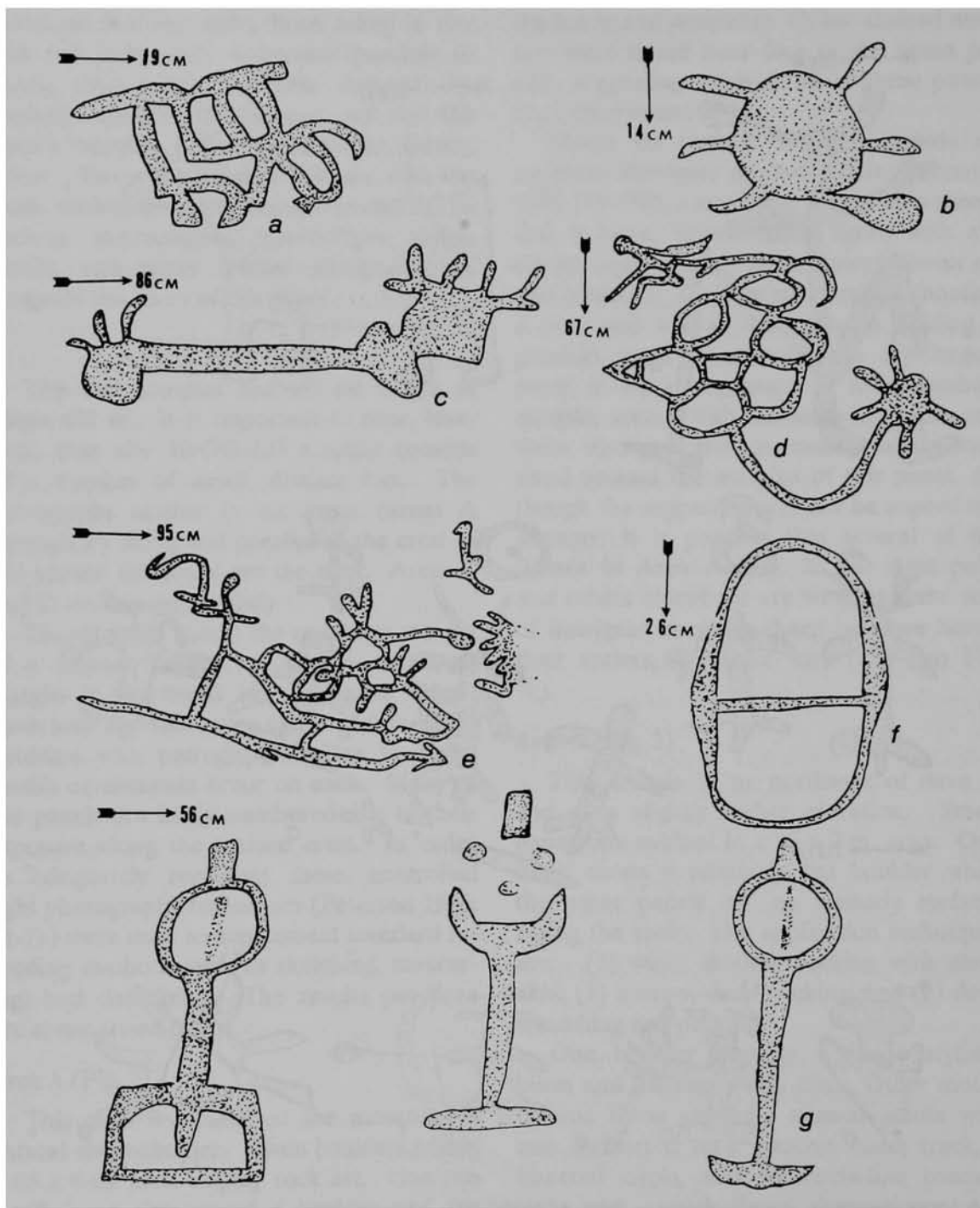


Fig. 3. The petroglyph panels recorded at Area B, 10-GG-307. Major motifs include a stylized bison, *a*; a solid sun disc, *b*; sun-line meanders, *c-e*; and possible atlatls, *g*. Arrows indicate the maximum width of panels.

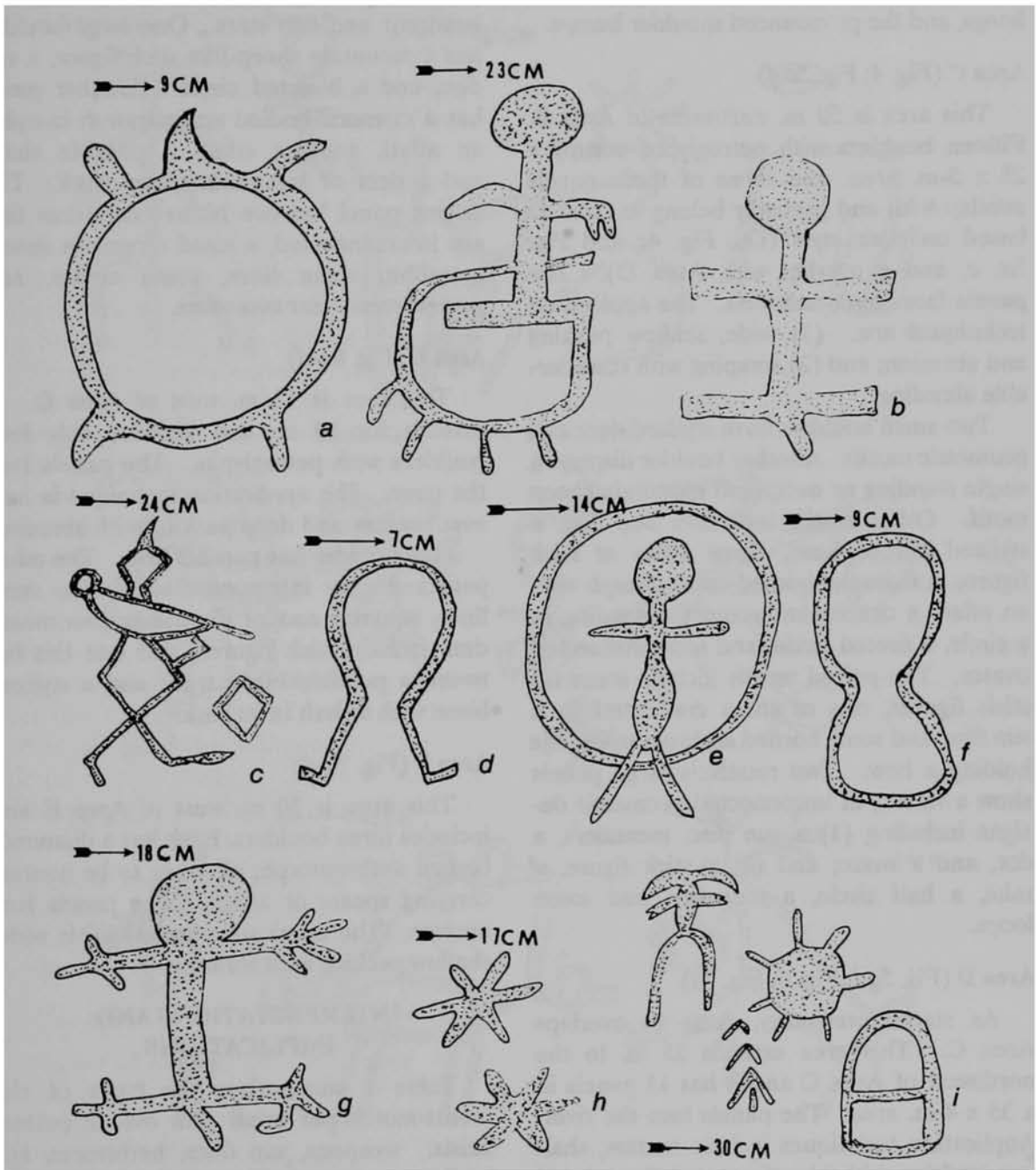


Fig. 4. Eight petroglyph panels recorded at Area C and one (c) from Area D, 10-GG-307. Major motifs include sun discs, *a*, *i*; stick figures, *b*, *e*, *g*, *i*; and simple geometric designs, *d*, *f*, *i*. Horned figures and unhorned, stick figures are represented. Other notable figures include a footed circle, *d*; stars, *h*; and a bisected circle, *i*.

ing: blocky bodies, broad heads, chin whiskers, long tails, horn shapes, neck hangs, and the pronounced shoulder humps.

Area C (Fig. 4; Fig. 5a-f)

This area is 50 m. northwest of Area B. Fifteen boulders with petroglyphs occupy a 25 x 5-m. area, and three of these panels overlap with and probably belong to Area D based on their style (i.e., Fig. 4c and Fig. 5d, e, and g overlap with Area D). The panels face south and west. The application techniques are: (1) wide, shallow pecking and abrasion; and (2) scraping with considerable abrading.

Two small boulders have stylized deer and geometric motifs. Another boulder displays a single standing or outspread mountain sheep motif. Other motifs include a sun disc, a stylized human head, three styles of stick figures, a diamond-bodied anthromorph with an atlatl, a chubby anthromorph standing in a circle, a footed circle, and some connected ovals. The paired motifs include some fat stick figures, one of them connected to a sun disc, and some horned anthromorphs, one holding a bow. Two relatively large panels show a variety of unconnected geometric designs including (1) a sun disc, meanders, a dot, and a maze; and (2) a stick figure, a rake, a half circle, a meander, and some loops.

Area D (Fig. 5g-i; Fig. 6; Fig. 7a)

As stated previously, Area D overlaps Area C. This area extends 35 m. to the northwest of Area C and it has 11 panels in a 35 x 4-m. area. The panels face the river. Application techniques include narrow, shallow pecking with abrading, and deep, wide pecking with slight scratching.

Single motifs include a chain of diamonds, two styles of mountain sheep, a stick figure, an adjoined anthromorph-mountain sheep,

connected circles with tails, and a shield warrior sporting mountain sheep or bison headgear and two stars. One large boulder has a mountain sheep-like stick figure, a sun disc, and a bisected circle. Another panel has a diamond-bodied anthromorph carrying an atlatl, another atlatl, a possible shaft, and a deer or mountain sheep track. The largest panel has two bizarre creatures that are interconnected, a small mountain sheep, a rabbit, some lines, some circles, and several rectilinear meanders.

Area E (Fig. 8a-d)

This area is 15 m. west of Area D. It extends for 30 m. and includes only four boulders with petroglyphs. The panels face the river. The application technique is narrow, shallow and deep pecking with abrasion.

One boulder has parallel lines. The other panels display interconnected circles, suns, lines, squares, and/or diamonds; two meanders include stick figures, and one lies between a possible bison track and a stylized bison with a shaft in its back.

Area F (Fig. 7b-d)

This area is 30 m. west of Area E and includes three boulders. Each has a diamond-bodied anthromorph; all seem to be hunters carrying spears or atlatls. The panels face upriver. The application technique is wide, shallow pecking with abrasion.

INTERPRETATIONS AND IMPLICATIONS

Table 1 summarizes the types of elements-motifs per area. An overall pattern exists: weapons, sun discs, herbivores, and anthromorphs occur in each area. However, in detail, there is considerable variety in these designs, their numbers and the combinations of geometric, representational, or bizarre occurrences per area. It is neces-

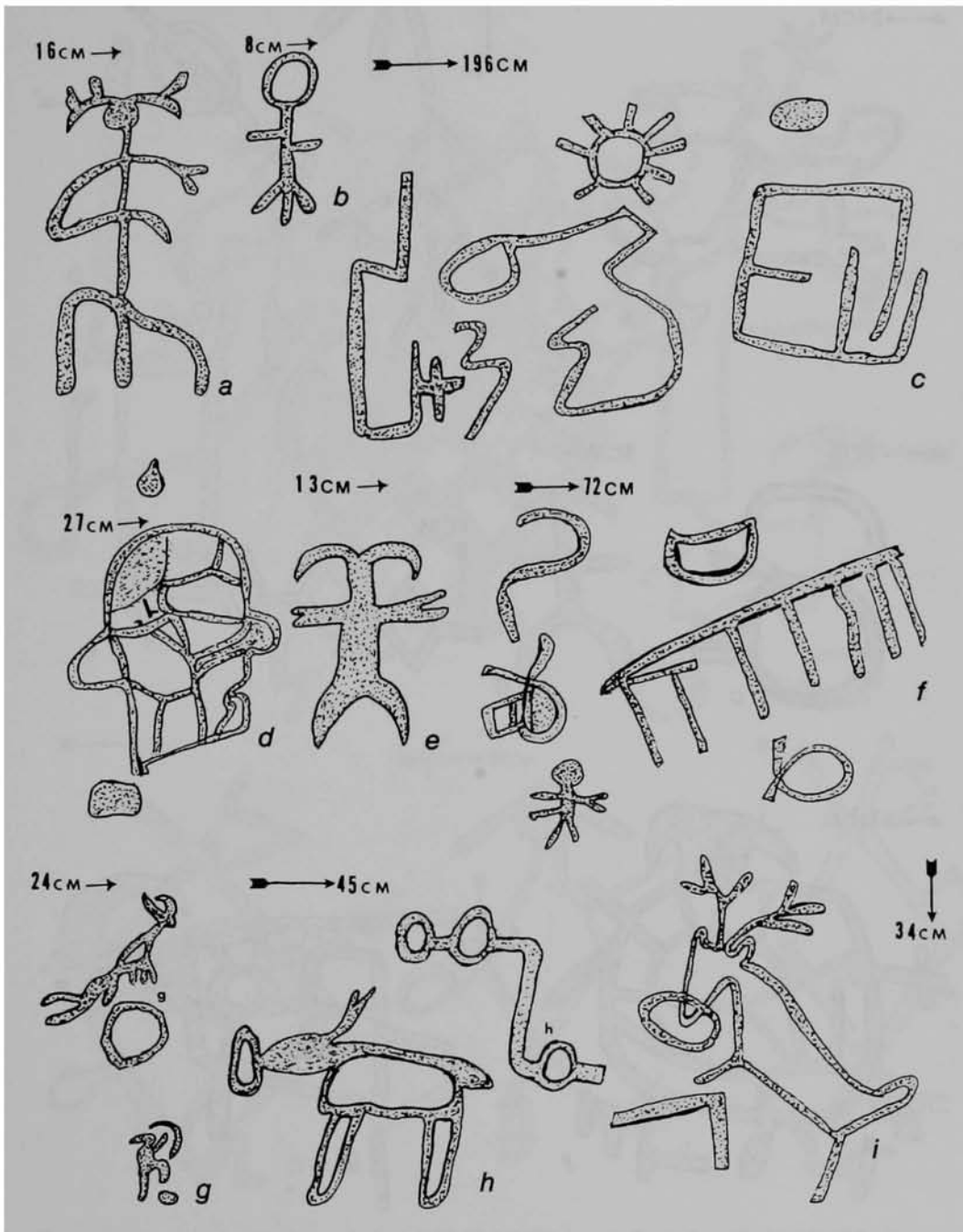


Fig. 5. The other six petroglyph panels recorded at Area C and three panels from Area D (*d, e, g*), 10-GG-307. A variety of geometric (*c, f*) and representational (*a, b, d, e, g, h, i*) motifs are represented. Notable motifs include some rectilinear meanders, *c*; a rake, *f*; and two deer, *h, i*. Arrows indicate the maximum width of panels.

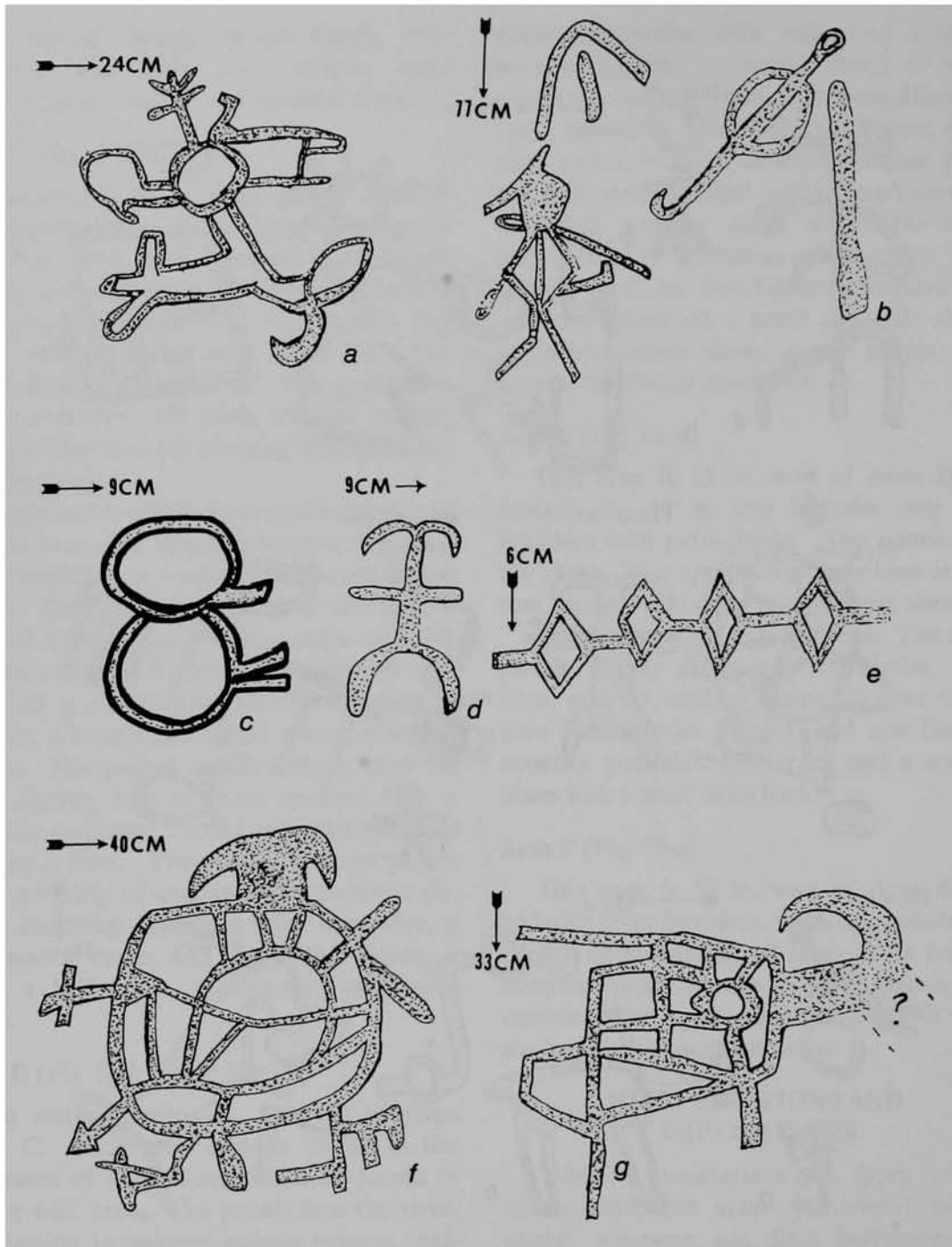


Fig. 6. Most of the other panels recorded at Area D, 10-GG-307. Major motifs include a shield warrior, *f*; an atlatl, *b*; a mountain sheep-shield warrior combination, *a*; some mountain sheep, *a*, *d*, *g*; and some geometric designs, *b*, *c*, *e*. Note that the interior of several motifs are filled with patterns, *f*, *g*. Arrows indicate the maximum size of panels.

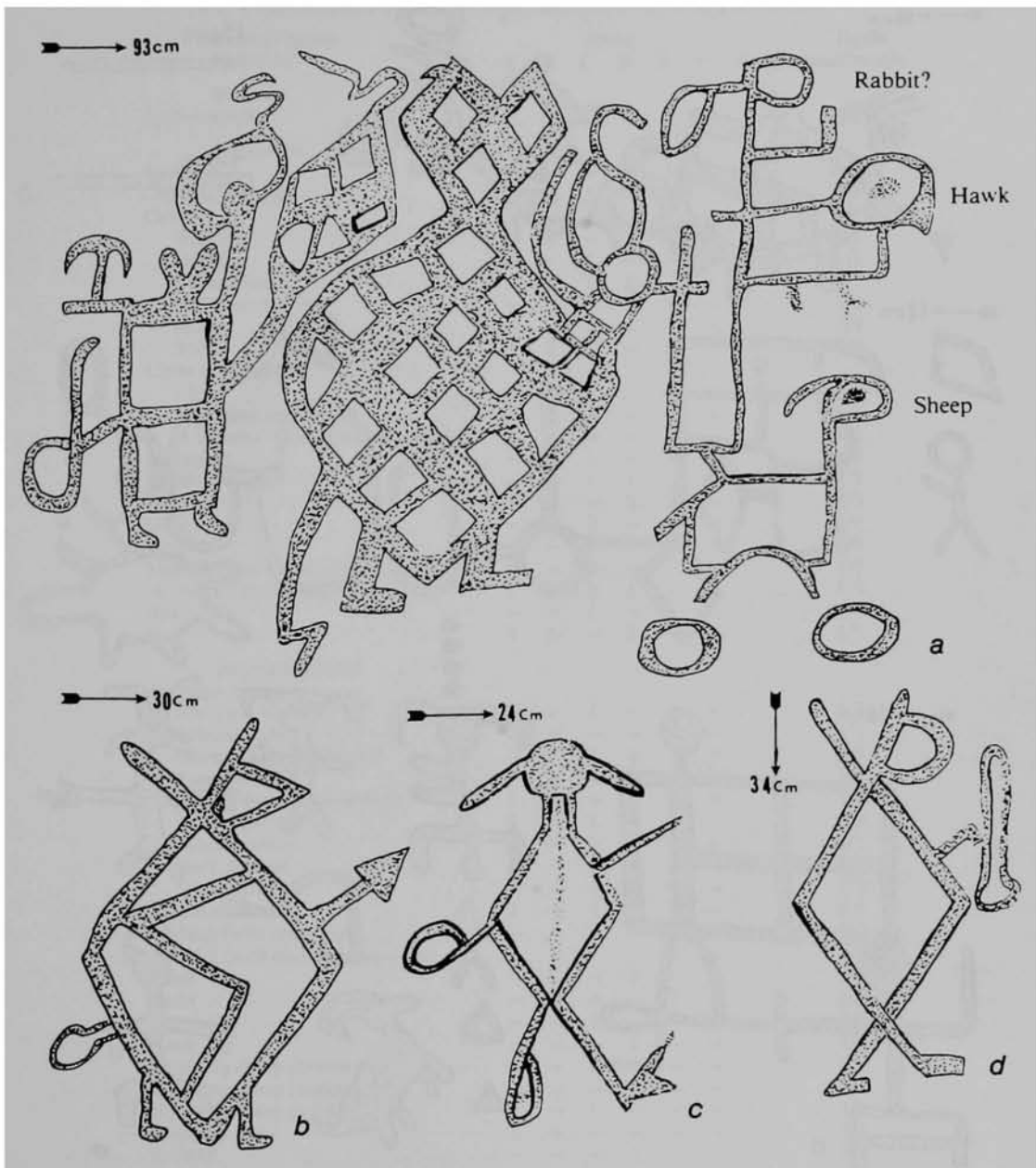


Fig. 7. The large petroglyph panel recorded at Area D and the panels from Area F, 10-GG-307. Bizarre creatures (a) and diamond-bodied anthromorphs are represented (b-d). The two bizarre creatures are holding items of unknown function and are flanked by a possible rabbit, a hawk and an ewe, whereas the diamond-bodied anthromorphs seem to be carrying or holding weapons or something else. Arrows indicate maximum size of the panels.

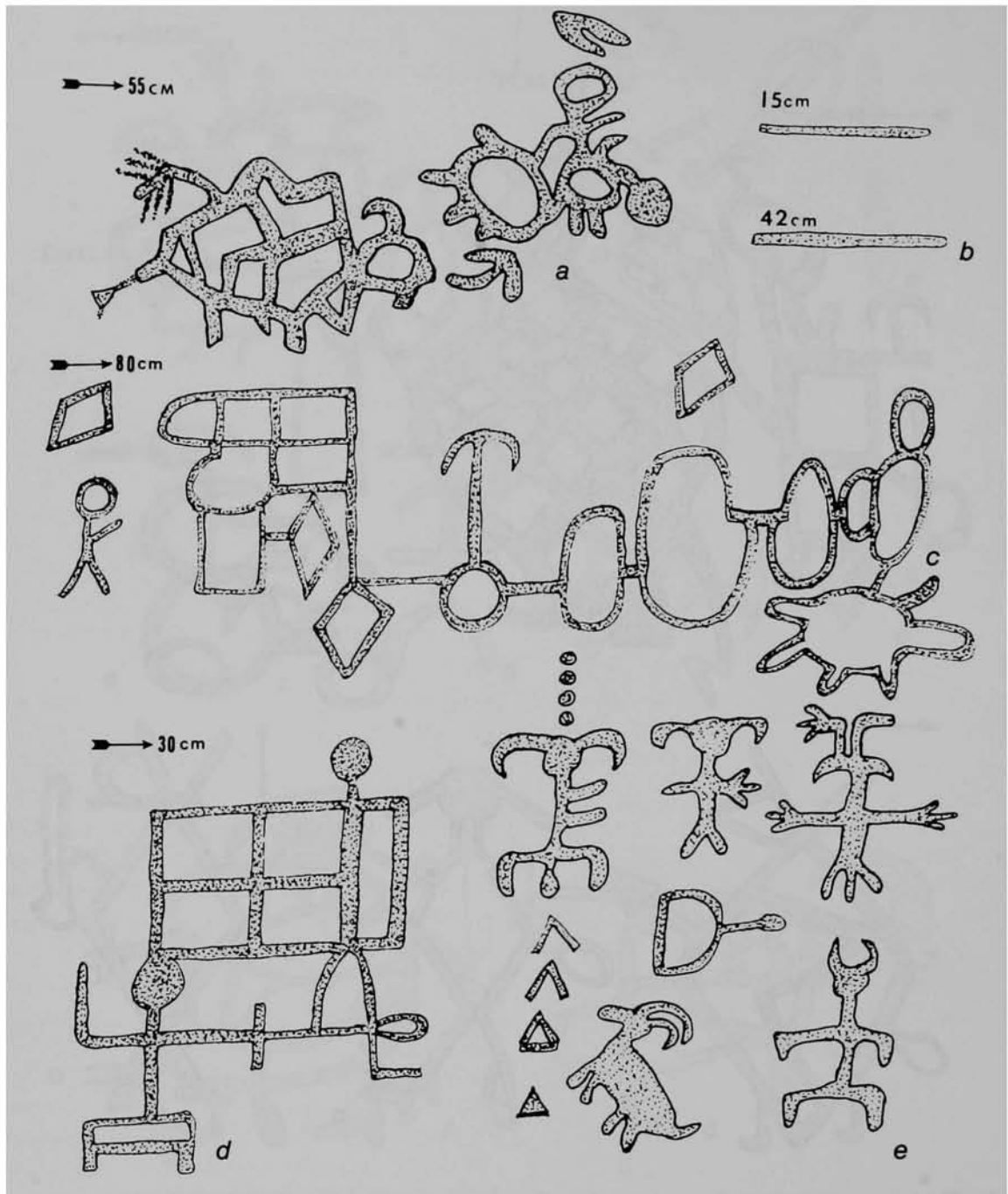


Fig. 8. The petroglyph panels recorded at Area E, 10-GG-307 (*a-d*), and the motifs on Slide Rock, 10-GG-303(*e*). The 10-GG-303 portrayal is a composite of scattered motifs. Notable motifs include a bison with a spear or arrow in its back, *a*; and some horned anthropomorphs, *e*. The lower figure seen in *d* seems to be holding an atlatl. Arrows indicate maximum width of panels.

Table 1
THE DISTRIBUTION OF ELEMENTS/FIGURES PER AREA

Elements/Figures 10-GG-307	Areas						Totals Occurrences/Panels
	A	B	C	D	E	F	
Bizarre							
Anthromorphs	--	--	--	2	--	--	2/1
Geometric							
Anchor	1	--	--	1	1	--	3/3
Chevron/triangle	1	--	1	--	--	--	2/2
Circle							
With dot	1	--	--	--	--	--	1/1
Double	--	--	1	--	--	--	1/1
Footed/tailed	--	--	1	1	--	--	2/2
Half/bisected	--	1	1	1	--	--	3/3
Hollow	--	--	3	4	--	--	7/4
Solid	--	3	3	--	--	--	6/3
Circle composite							
Chain	--	--	1	--	--	--	1/1
With suns and figures	--	2	--	--	1	--	3/3
With suns, squares, and diamonds	--	--	--	--	1	--	1/1
Diamonds	--	--	--	--	2	--	2/1
Diamond chain	--	--	--	1	--	--	1/1
Line/bar	1	--	--	1	2	--	4/3
Loop	--	--	2	--	--	--	2/1
Maze	--	--	1	--	--	--	1/1
Meander (curved, short)	--	--	2	--	--	--	2/1
Meander (rectilinear)	1	--	2	1	--	--	4/3
Rake	--	--	1	--	--	--	1/1
Star	1	--	--	2	--	--	3/2
Representational							
Anthromorphs							
Abstract: horned	3	--	1	--	--	--	4/2
Abstract: plain	3	--	--	--	--	--	3/1
Diamond-shaped hunter	--	--	1	1	--	3	5/5
Face (human)	--	--	1	--	--	--	1/1
Hunter (with atlatl/spear)	1	1	--	1	1	--	4/4
Hunter (with bow)	1	--	1	--	--	--	2/2
Shield warrior	--	--	--	2	--	--	2/2
Stick: horned	1	--	1	--	--	--	2/2
Stick: sheep	--	--	--	2	--	--	2/2
Stick: plain	1	--	2	1	1	--	5/5
Stick (with circle/sun)	--	--	2	--	--	--	2/2
Stick (with diamonds/squares)	--	--	--	--	1	--	1/1
Atlatl	--	3	--	1	--	--	4/2
Bison	--	1	--	--	1	--	2/2
Deer	--	--	2	--	--	--	2/2
Hawk	--	--	--	1	--	--	1/1
Mountain sheep (decorated)	--	--	--	1	--	--	1/1
Mountain sheep (hollow)	--	--	--	2	--	--	2/2
Mountain sheep (solid)	1	--	--	--	--	--	1/1
Projectile point	1	--	--	--	--	--	1/1
Rabbit?	--	--	--	1	--	--	1/1
Suns (bar connected)	--	1	--	--	--	--	1/1
Sun (hollow)	1	--	2	--	--	--	3/3
Sun (solid)	--	1	--	1	--	--	2/2
Track (animal)	--	1	4	1	1	--	7/4
Grand Total	19	14	36	29	12	3	113/89

sary to examine a number of functional, temporal, and even cultural considerations in order to explain the overall pattern and yet also to account for a considerable range of stylistic variability.

Function

Many Great Basin rock art sites have been interpreted with respect to big-game hunting activities (Thomas 1976:65-74). The site interpretations range from shamanistic attempts at hunting magic (Heizer and Baumhoff 1962) to "clusters" actually marking the attack stations of large cooperative kills (Thomas 1976:68; Thomas 1983:349-351). Other related interpretations view isolated glyphs as magic symbols intended to lure game into *cul-de-sacs* where hunters could ambush them, and yet others note the occurrence of glyphs near major migration trails, water holes, winter feeding grounds, and, in general, at very good ambush spots (Schaafsma 1986:220-221). Site 10-GG-307 seems to support the interpretation that some amount of southern Idaho's rock art can also be related to one or more aspects of big-game hunting.

A hunting context is best supported by the content of the rock art itself. Area A has two hunters, an apparent Rosegate projectile point, a small mountain sheep, and an arrangement of anthropomorphs that may represent drivers wearing horned and perhaps eared headdresses. Area B includes three atlatls, a bison, a bison track, and one hunter who is perhaps in the act of throwing an atlatl dart. Area C includes a hunter aiming a bow, another hunter carrying an atlatl, two deer, a mountain sheep, and two horned stick figures. Area D has a number of mountain sheep, one small sheep or deer track, and two hunters with spears or atlatls. Area E shows a possible hunter with atlatl, a speared bison, and a track, while

Area F has three hunters. In addition, each area has circular and horseshoe-shaped (i.e., footed) motifs that have been related to communal big-game hunting methods elsewhere in the Great Basin (Thomas 1976:72; Thomas 1983:310-312). These horseshoe-shaped motifs and some of what I call tracks have been interpreted as vulvas in the central Great Basin, where they supposedly signified plenty and were part of the shaman's role in promoting big-game replenishment (Thomas 1976).

Studies conducted elsewhere imply that some degree of ritualistic activity might be associated with rock art. Perhaps even the representations of shamans might have been involved, since among the motifs commonly listed as having some sort of a supernatural or hunting cult connotation are birds, medicine bags or ceremonial rattles (Fig. 2c; Fig. 7a), elaborate hand items or weapons, headdresses, and sun discs (Grant et al. 1968). However, when considering the evidence of this site, it does not seem logical to limit its interpretation to being a place of symbolic and/or ideological practice, i.e., to the broad magico-religious aspects of group ideology, ritual, and myth (Lewis-Williams 1982:198; Hedges 1983). Apparent indications of hunting simply are too obvious not to be included in the interpretation. Besides, there are numerous ethnographic accounts of shaman-directed hunts in the Great Basin, of shamans giving detailed instructions on where to build corrals, and of their telling the people how to act (Steward 1938:34, 105, 120, 128, 163; Nissen 1982:175). The situational evidence and the imagery itself in relation to the other archaeological indications (Fig. 9) very strongly suggest that this site area resembles a big-game hunting enclosure (cf. Frison 1978:252-270). The petroglyphs seem to have been applied to assist in this hunting, apparently in a func-

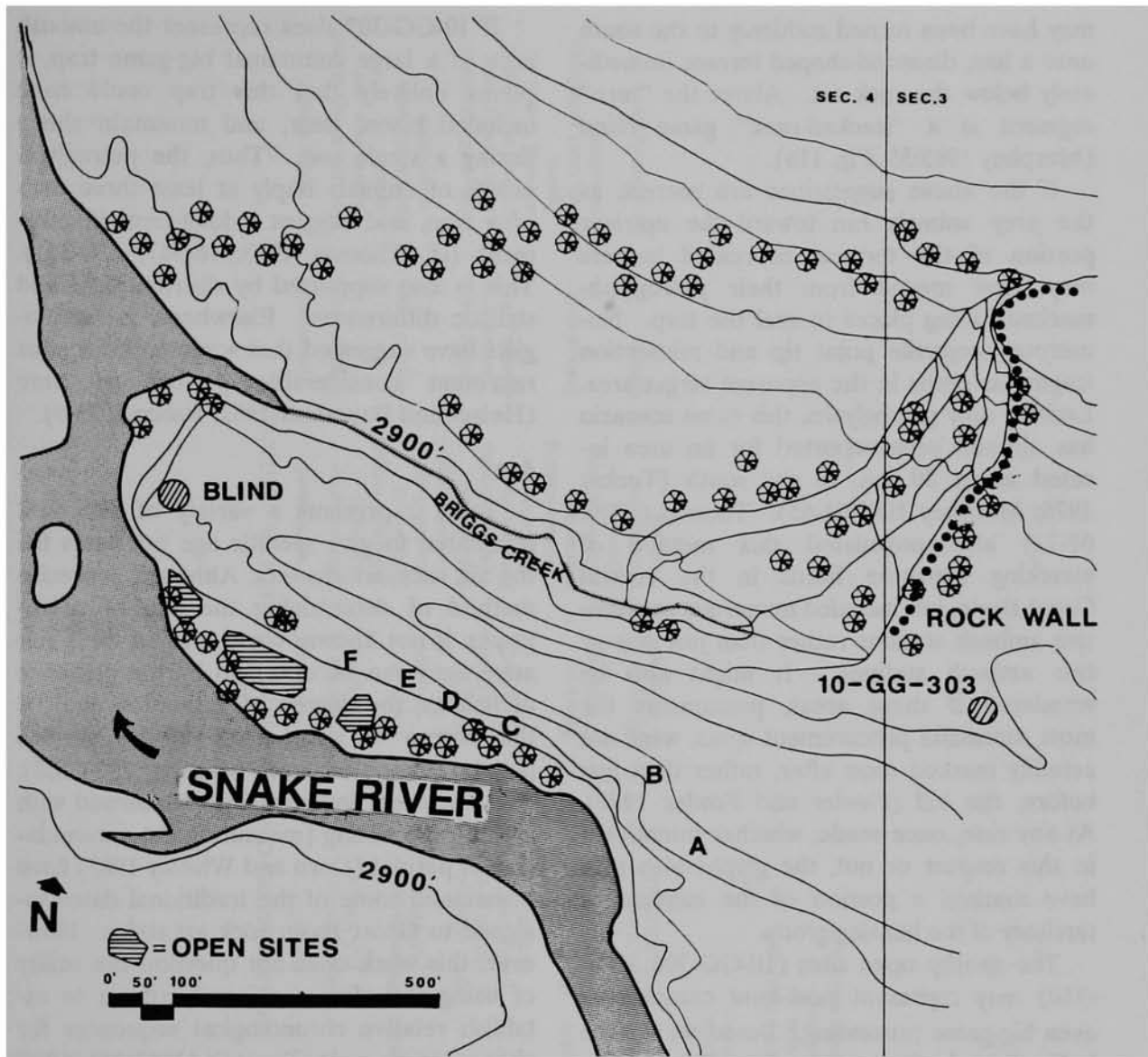


Fig. 9. The location and various aspects of the inferred Kanaka-Briggs Creek big-game trap. Areas A-F are designated. Also shown are the location of the rock wall, 10-GG-303, and the game blind.

tional sense, but perhaps also in a magico-religious sense.

A long rock wall curves into the site. It is, however, unknown whether the wall is entirely of native American origin or if it was constructed in part by early ranchers so that perhaps it "now reflects a composite along the upper Briggs Creek section"

(Briggs 1982). I suggest that big-game animals were somehow driven along this wall and onto the south bank of lower Briggs Creek. Another Area A- or Area C-type of petroglyph panel marks the entrance point (Fig. 8e). From here the prey animals may have run along the bank until they were near the Snake River. At this point, they

may have been turned suddenly to the south onto a low, diamond-shaped terrace immediately below the rock art. Above the "turn" segment is a "stacked-rock" game blind (Murphey 1985:55, Fig. 11b).

If the above suggestions are correct, as the prey animals ran toward the up-river portion of the terrace, concealed hunters may have moved from their petroglyph-marked hiding places to seal the trap. Numerous projectile point tip and midsection fragments occur in the apparent target area. Lacking only petroglyphs, this same scenario has already been reported for an area located about 50 km. to the south (Tucker 1976; Murphey 1985:64-65). Thomas (1976: 68-71) also postulated this method of attacking big-game herds in the central Great Basin, but included numerous consecutive ambush stations rather than just one or two ambush stations. It might also be wondered if these areas, presumably the most successful procurement spots, were not actually marked soon after, rather than just before, the kill (Fowler and Fowler 1970). At any rate, once made, whether intentional in this respect or not, the glyphs also may have marked a portion of the subsistence territory of the hunting group.

The nearby open sites (10-GG-308, -309, -310) may represent post-hunt camping or even big-game processing. Based on surface indications (basin mortars, ceramics, chipping detritus, and considerable mussel shell), these interpretations seem, however, doubtful. There appear to be far too few bone scraps for something related to a big-game kill. On the other hand, disturbed areas of some large stratified sites along Briggs Creek contain essentially the same faunal types represented by the 10-GG-307 petroglyphs: deer, mountain sheep, and bison. These sites are also within a few minutes' walking distance of the suggested kill site.

If 10-GG-307 does represent the ambush area of a large communal big-game trap, it seems unlikely that this trap could have included bison, deer, and mountain sheep during a single use. Thus, the petroglyph motifs of animals imply at least three uses of a trap, and suggest a long-term involvement (cf. Thomas 1983:346-347, 350-351). This is also supported by distributional and stylistic differences. Elsewhere, archaeologists have suggested that some rock art sites represent considerable periods of time (Heizer and Baumhoff 1962; Rusco 1973:9).

Age

Table 2 presents a variety of site data correlated to give specific age estimates for the six rock art clusters. Although a precise method of determining the age of petroglyphs is not known, some idea of their relative ages can be obtained by the presence of lichens, the degree of patination, and/or the degree of weathering on the various panels (Castleton and Madsen 1981:163). Certain recent investigations concerned with cation-ratio dating (measuring the accumulation of patina) (Dorn and Whitley 1983) have questioned some of the traditional dates assigned to Great Basin rock art styles. However, this work does not question the utility of using the aforementioned criteria to establish relative chronological sequences for sites. For example, Turner's (1963:14) initial premise that it took from 900 to 1,200 years to form a blue-black patina on glyphs and that a purple-blue-green patina took even longer still seems to have maintained its utility for the relative dating of petroglyph sites in the Glen Canyon region. Thus, patina color, relative difference in weathering, and the presence or absence of lichens were used to arrange the six areas chronologically. More specific ages were then estimated on the basis of various Great Basin rock art

Table 2
AGE ESTIMATES CORRELATED WITH PANEL CIRCUMSTANCES

Age ^a	Area ^b	Panels ^c	Lichen ^d	Patina ^e	Weathering ^f	Application ^g	Orientation ^h	Major Motifs ⁱ
A.D. 1000	A	7	No	Strong brown (7.5 YR 5/6)	Moderate to little	Narrow shallow (Scratch)	Slightly upriver	Mountain sheep, horned figures, bow, and spear
A.D. 700 or earlier	B	7	Considerable	Brownish-purple (7.5 YR 3/2)	Heavy to moderate	Narrow-deep narrow-shallow (abrade-scratch)	Toward river	Bison, atlatl, circle, connections
A.D. 1150	C	15	No	Dark yellowish-brown (10 YR 4/4)	Heavy to moderate	Wide-shallow (scrape-abrade)	Upriver and toward river	Deer, rectilinear mean- ders, stick figures
A.D. 800 or earlier	D	11	Slight	Dark brown (7.5 YR 4/4)	Moderate	Narrow-deep deep-wide (abrade-scratch)	Toward river	Mountain sheep, shield warriors, horned figures
A.D. 700 or earlier	E	4	Considerable	Brownish-purple (7.5 YR 3/2)	Heavy to moderate	Narrow-deep narrow-shallow (abrade)	Toward river	Bison, atlatl, curvilinear meanders
A.D. 800 or earlier	F	3	Slight	Dark brown (7.5 YR 4/4)	Heavy to moderate	Wide-shallow (abrade)	Upriver	Diamond-figures

^a Age estimates are based on Utah rock art studies.

^b The letter designation given to each panel cluster.

^c The number of panels per area.

^d Whether or not lichen was present on the glyphs (and extent).

^e The color of glaze on the glyphs (desert varnish).

^f The magnitude of glyph weathering (comparatively).

^g The technique used to create the glyph: pecking (and others).

^h The direction panels face.

ⁱ Major motifs found in each area.

studies (Heizer and Baumhoff 1962; Thomas and Thomas 1972; Thomas 1983) particularly with studies done in Utah (Turner 1963; Schaafsma 1971, 1986; Castleton 1979, 1984; Castleton and Madsen 1981). Some studies in Oregon and Washington show that many of the abstract and a few of the less abstract motifs occur in those regions, while some of the more classic motifs and motif combinations are absent there but occur in southern Idaho and further south and east (Cressman 1937; Nesbitt 1968; Wellmann 1979). A cultural chronology that includes a rock art classification scheme has not yet been developed for the western Snake River region.

Areas B and E are believed to be of approximately similar ages. These panels appear to represent a merging of the Great Basin Curvilinear style (including stick figures, circle chains, curvilinear meanders, and sun discs) with a style more concerned with portraying bison and possible atlatls, and with linear meanders that contain rectilinear, blocky, diamond, and a few triangular designs (Hedges 1982:207-209). The Great Basin Curvilinear style was assigned a beginning date of ca. 1000 B.C. in the Great Basin by Heizer and Baumhoff (1962:231-233), who also assigned a date of A.D. 1 to the start of the Rectilinear Abstract and Representational styles. More recently, studies from the central Great Basin indicate the Rectilinear and Scratched styles were in use on portable rock art between 3300 and 1300 B.C. (Thomas 1983). These dates seem to fit with Turner's (1963) assignment of a pre-A.D. 1050 date to early rectilinear forms in the area of Glen and San Juan canyons. Nevertheless, a date of A.D. 700, or slightly earlier, is preferred for areas B and E since the bison motifs and the atlatl styles are well developed and because the scratched application style (uncommon in these parts

of the site) is believed to have been widely popular by A.D. 1000 (Heizer and Baumhoff 1962; cf. Thomas 1983:346-347, 352).³ Except for these two areas, where scratching was used to give relief to the meanders, scratching was used mostly to add fine details, such as antlers, horns, headgear, and weapons. It was not used to deface panels (cf. Bettinger and Baumhoff 1982:494).

The petroglyphs in areas D and F may be of similar ages. A few rectilinear and curvilinear elements support numerous representations, including deer and sheep, weapons, bizarre creatures, anthromorphs, a bird, and a possible rabbit. Turner (1963:6) placed such designs late in his pre-A.D. 1050 style to very early in his A.D. 1050-1250 style. Some obvious affinities with the earlier style include a few rectangular-bodied representations (several with disproportionately small extremities and/or heads) and the filling of the body areas on one of these and of two other representations with patterns (not just parallel and vertical cross hatching as in Anasazi art) (Fig. 6f-g). Similarities with the latter style include diamond and triangular anthromorphs and a few anthromorphs with enlarged appendages and genitals. There are also loose similarities between the one Area D panel (Fig. 7a) and (1) the Barrier Canyon anthromorphs who often hold objects of unknown function, and (2) the Classic Vernal anthromorphs of which a final date of A.D. 950 has been proposed (Schaafsma 1986:225). Based on these criteria, the well-executed pecking technique found on one panel, and the co-occurrence of atlatls and bows, a date of A.D. 800 or slightly earlier is preferred (Castleton 1979:6).

Area A fits best with Turner's (1963:6) A.D. 1050-1250 style. Similarities include elaborate headdresses, the bow and arrow co-occurring with a spear or an atlatl, abducted thighs on a stick figure, and enlarged

appendages and genitals.⁴ A date of A.D. 1050 or slightly earlier is preferred, which falls within the dating range of the apparent Rosegate projectile point represented at the site (Thomas 1981:19-20; Holmer 1986:106-107; cf. Thomas and Thomas 1972).

Area C includes the most recent rock art. Because of the degree of stylistic similarity to Area A and areas D through F, a date of A.D. 1150, or slightly later, is preferred. As in the case with Area A, the bow and arrow is represented and there are enlarged genitals, outspread and abducted legs, and/or horns on some stick figures. The Area C abstract elements are reminiscent of the Great Basin Curvilinear style, except that the design elements are displayed in an unconnected manner and the meanders have a more rectilinear than curvilinear form.

In summary, the rock art in areas A through F includes four styles: Curvilinear, Representational, Rectilinear, and Scratched. Throughout the Great Basin, all four styles apparently were abandoned by A.D. 1500.

My interpretation suggests that four to six phases of communal hunting occurred at this site between approximately A.D. 700 and 1150. An evolutionary development from the ambush of bison to deer is suspected, although the hunting method is believed to be the drive-to-ambush one discussed previously. I believe that at first simple ambushes were sufficient; then, during the time the Area A and/or Area C glyphs were made, the fence may have been constructed to better funnel the prey. If one doubts such an evolutionary modification of the trap, or sees too much stylistic similarity amid the areas, or prefers Thomas' (1976) interpretation of numerous clusters being used simultaneously, then one period of use from A.D. 700 to 800 and another from A.D. 1050 to 1150 might accommodate most of the motifs.

Many motifs are typologically similar to

those attributed to one or more of Utah's Fremont cultures (Castleton 1979:6-7; Castleton and Madsen 1981). Schaafsma (1971) defined three styles of Fremont rock art in eastern Utah and two others in western Utah, one of the latter being mostly red pictographs. Unfortunately, the state of Fremont archaeology limits comparative statements to 300- to 900-year spans of time, but most of the relevant radiocarbon dates fall within the range suggested for 10-GG-307. The Anasazi and Fremont cultures are known to have co-existed in Utah from approximately A.D. 400 or shortly thereafter to around A.D. 1300 or shortly earlier. Considerable similarity is evident in the rock art of these cultures. The Anasazi people lived in the southern and southeastern parts of the state, and the Fremont lived at various times in the north and midwest parts of Utah (Castleton and Madsen 1981; Lindsay 1986). Classic Fremont rock art previously has been recorded to within 125 km. east of 10-GG-307 (Castleton 1979:17), and there are also Virgin-Kayenta Anasazi styles or Fremont styles 300 km. to the south in Nevada (Tuohy 1979:17-25). The range assigned to the latter art is A.D. 750 to 1300 (Schaafsma 1986:218), with a dating range of A.D. 1050 to 1300 assigned to the Nevada sites (Tuohy 1979:25). Studies are lacking in the intervening areas.

Cultures

Stick figures, and particularly stick figures with abducted arms and thighs, are common in the Anasazi portion of southern Utah (Castleton 1979:137, Fig. 5.72; Castleton and Madsen 1981:170, Fig. 3). These figures sometimes have cross-ended and/or forked hands, not unlike the figures recorded at areas A, C, and D. Occasionally, the Anasazi stick figures are associated with Fremont/Anasazi anthromorphs who have an-

tennae, with bison or mountain sheep, or with elk or deer headgear like those recorded at areas A, C, and D (Castleton 1979:Figs. 2.13, 5.72, 7.20, 7.121, 1984:Figs. 2.34, 2.98, 2.105, 4.22, 5.112, 6.6, 5.56; Rusco 1973:6-8).

While the elaborate shield warriors of Area D might be considered indicative of the Northern San Rafael or Great Salt Lake Fremont cultures, they embrace a very basic Anasazi/Fremont design (Castleton and Madsen 1981:173; see also Butler 1983a:7-9). A rectangular figure common in western Utah is loosely comparable to the one recorded in Area D (Fig 7a), especially since it displays nearly identical tail and anchor elements. Its large companion expresses a diamond/square body design that might be considered an Archaic/Fremont or even a Sevier/Fremont trait in the area of west-central Utah (Castleton 1979:Figs. 2.30, 3.50, 3.52, 4.28, 1984:115, Figs. 3.7, 3.24).

Small solidly pecked, horned anthromorphs, such as those occurring in areas A and C, are comparable to Northern San Rafael, Sevier A, and Great Salt Lake Fremont (Castleton 1979:6-7, 1984; Rusco 1973:13, Fig. 2). Horned warriors, especially those with big hands, are only slightly less common at Fremont sites in western and central Utah (e.g., Castleton 1979:Figs. 2.2, 2.33, 2.37, 3.3, 3.53, 3.57, 4.27, 4.40; Rusco 1973:13, Fig. 2). The association of horned anthromorphs with hunting scenes in the San Rafael and Sevier regions suggests that as in the central and western Great Basin areas, petroglyphs are involved with big-game hunting. In general, however, Fremont rock art seems to have been more directly connected with ritual since there is no indication that rock art sites occur at the actual scene of the hunt (Schaafsma 1986:226).

Archaeological remains show that big-

game hunting was an important aspect of the economy of all the Fremont culture variants (Jennings 1978:98, 223). However, it is noteworthy that bison hunting was only important in the Great Salt Lake area, in the Fremont variant geographically nearest to the Kanaka-Briggs Creek locality (Butler 1981:250). The procurement of bison in the general region of the Kanaka-Briggs Creek locality has been noted as one of the many similarities between it and sites in the Great Salt Lake region. This similarity also includes certain house styles, many elements of the material culture, and a diverse subsistence economy that includes many plant and animal resources (Butler 1981:250-252; Murphey and Crutchfield 1985:79-80; Murphey 1985:118-123). Thus, one might expect strong similarities between the rock art. Other than that, the Great Salt Lake rock art also commonly occurs on boulders, and except for the fact that classic Fremont attributes such as the shield warriors and the horned and tailed figures obviously are shared, there is still too little known about either area to make an overall correlation, or to deny its possible existence (see Castleton 1979:16-39).

It is interesting that scholars also have pointed out affinities between the material culture of the region about Kanaka Rapids and other Fremont variants, most frequently with the Sevier variant (Plew 1980b:31; Murphey 1985:122). There obviously are many comparisons to be made with the Northern San Rafael, Uinta, and notably the Sevier A rock art traits. However, no single style seems to correlate exactly. The artistic detail of most Fremont rock art does not fit well with the shallow and casual quality of many of the 10-GG-307 motifs. On the other hand, if some or all of these glyphs once were painted, then one might expect a stronger correlation with the Great Salt

Lake style (Schaafsma 1971). Even this correlation would not be a clear-cut one, however, since Heizer and Baumhoff (1962:Fig. 31b) also reported a painted style with widespread distribution in the central Great Basin area.

The atlatl is a common motif in eastern Utah, but it is also found elsewhere in the Great Basin (Heizer and Baumhoff 1962; Castleton and Madsen 1981:172). Likewise, square-bodied mountain sheep, game tracks, deer/elk, hunters with bows and arrows, and simple shield warriors (or figures in circles) are common throughout the Plateau portion of the Anasazi-Fremont area (Castleton and Madsen 1981:173, Table 2D) but these designs also are found elsewhere in the Desert West (Cressman 1937:49, 61, 63; Butler 1983a: Fig. 1-3; Keyser and Sundstrom 1984: *passim*). When these motifs occur together with the more diagnostic anthropomorphs, they are considered diagnostic of Fremont culture (Castleton 1984:6-7; Rusco 1973). The rectilinear meander, stars, and tailed or barbed (anchored) circles are typically found at Fremont sites (e.g., Castleton 1979:Figs. 3.3, 8.37, 8.60, 1984:Figs. 2.26, 2.66, 2.120, 2.148).

Many examples from Fremont sites have sun discs, circles, rakes, and even meander snakes; this may simply indicate the mutual influence of the Great Basin Curvilinear and Rectilinear styles (Schaafsma 1971; e.g., Castleton 1979: Figs. 3.1, 4.33, 4.44, 5.18, 5.21, 5.22; Hedges 1982). These basic geometric designs, very simple stick figures and simple zoomorphs, are very common along the western Snake River near Swan Falls and also occur in great numbers within the neighboring south-central Owyhee Uplands and in the Bennett Hills. These areas are considerable distances to the west, southwest, and north-northwest, and they all seem to lack classic Fremont anthropomorphs (Plew 1976, 1980b; Cindar 1976; Tobias 1981). On

the other hand, current research at two rock art sites in the area to the south seems to reveal even stronger Fremont-like affinities than those recorded for 10-GG-307. The attributes include large masks painted in two to four colors (red, black, white, and some yellow), wading birds, hawks, plants, shield warriors, and big game. It will be interesting to see how these patterns develop or become qualified by future field work, especially in light of the fact that Bettinger and Baumhoff (1982) suggested that pre-Numic (i.e., pre-Shoshoni) people were largely responsible for the elaborate rock art so widespread in the Great Basin.

Problems

As noted earlier, the hunting method described here is not reported in Fremont core areas. While this may simply reflect to a degree something which field research has not yet addressed, the current impression is that this hunting technique occurred mostly along the western and southwestern peripheries of the Fremont area and extended well into the western Great Basin (Schaafsma 1986:220).

As in the case with the site and region under consideration here, a Fremont/Anasazi presence, influence, or aspect is often suspected by those working in this periphery, specifically via the rock art, but also in the material culture inventories of a few hunting and many habitation sites (Schaafsma 1971: 104-108; Rusco 1973:7-9; Tuohy 1979:17-25; Thomas 1983:314-317). Unfortunately, the significance of this evidence is always hard to address: (1) does the evidence indicate Fremont/Anasazi people, perhaps a semi-independent local Fremont/Anasazi variant; (2) does it represent another people who had assimilated various Fremont/Anasazi traits through trade or through various cooperative endeavors undertaken with Fremont/Anasazi,

including perhaps spouse exchanges; and/or (3) does it represent the remnants of Fremont/Anasazi territorial expansion or relocation at specific points in time?

Most often, rock art is considered a product of cultures native to the region in which it is found (Castleton 1979:1-8). It is tempting, therefore, to view site 10-GG-307 in terms of a strong Fremont/Anasazi influence or in terms of a localized Fremont lifeway. A few Anasazi ceramic items have been recovered from the western Snake River region, including a pendant made from a Virgin Black-on-White sherd with an associated radiocarbon date of 910 ± 80 B.P. (Swanson et al. 1964:9, Fig. 16g; Butler 1982:79-80; Murphey 1985:111, Figs. 25, 26). Perhaps these items are the result of an extensive trade network, or are the result of Anasazi contact with some neighboring Fremont people who were trading and visiting, bringing new ideas into this region. Unfortunately, this explanation is weakened in that little is known about the nature of Fremont-Anasazi interaction. Likewise, with reference to the rock art, there is still too much discussion about when the various Fremont traits existed to allow much explanation of why they were there in the first place.

As rock art studies progress, it should become possible to lessen our comparisons with other regions and to define the western Snake River region more on its own terms. The various physiographic locations, motif styles, and motif distributions are so poorly understood and documented at this time that any number of temporal-functional interpretations seem plausible in specific instances, including some probable variations to and some definite exceptions to the hunting hypothesis suggested here. There is, for example, good evidence of rock art occurring at what are thought to be sophisticated big-

game corrals and also near isolated game blinds in both the Owyhee Uplands and the Bennett Hills (Cindar 1976:25-27; Agenbroad 1976:21-22). Moreover, there was ochre staining, possibly a faded red pictograph motif, on the rock face above the Rattlesnake Canyon Cremation site further downstream along the Snake River (Bonnichsen 1964). There also are reports of rock art adjacent to camps (Plew 1980b:135; Butler and Murphey 1982b:Fig. 7g).

In the present setting, one cannot help but wonder how, either temporally or culturally, the 10-GG-307 rock art might fit with the fishery complex just below. The impression has been that this fishery should date substantially younger than anything recovered during the Kanaka project (presumably it was used by the historic Shoshoni Indians seen by early pioneers) and that it should also date more recently than the youngest age assigned to 10-GG-307. However, since these impressions are based on relic hunters' diggings of historic materials from along the west side of the fishing site and upon the comparative dates assigned to the Kanaka excavations and 10-GG-307, this actually makes a pretty weak argument. That the site represents a big-game trap in which the rock art functioned seems defensible. However, one could argue that finding rock art at major fishing sites along the Columbia River is commonplace (Chance and Chance 1982:36-42), so why should not this be the case here? It can be noted that there was a Plateau-level fish procurement technology by at least the Late Prehistoric Period, and that various Plateau groups came here to trade and visit during the Protohistoric and early Historic Periods (Steward 1938:45, 127, 162, 172; Pavesic 1978). It should be noted, however, that the fishing sites located just downstream, including the renowned Upper and Lower Salmon Falls fishing sites, have

only *one* small rock art panel between them. Thus, the hunting interpretation stands.

Implications

Since a good chronological framework is lacking, there are still many questions about the late prehistory of the study area. For example, the termination date suggested for 10-GG-307 is intriguing. An A.D. 1150 date might approximate or slightly predate the latest Rosegate occupations found at Kanaka Rapids and others found just upstream (Butler and Murphey 1983; Carley and Sappington 1982). At the Crutchfield site, downstream in Hagerman Valley, cultural activity ends by approximately A.D. 1300 (620±80 B.P.) with growing affinities to the ethnographic Shoshoni trait list (Murphey and Crutchfield 1985:67, 72-76, 81). Similarly, dating to just after A.D. 1300, with light settlement following a period with numerous Fremont traits and much heavier settlement, Murphey (1985:137-143) found the strongest correlations to the ethnographic Shoshoni lifeway in a drainage located about 40-60 km. southwest of Kanaka Rapids. Although this less intensive settlement is interpreted as evidence of a simple northward shift in the regional settlement pattern, it is less certain how the purported Shoshonean migrations around A.D. 1300 (Lamb 1958; Aikens 1978: 156; Bettinger and Baumhoff 1982) might fit into this scheme, if they do at all (Aikens and Witherspoon 1986). By the same token, it is hard to know just how 10-GG-307 might support a model of regional culture history, including the aspects dealing with the presence or absence of Fremont culture.

The Fremont culture elements now attributed to the western Snake River region are numerous and diverse (Plew 1981:160-163; Butler 1983a, 1983b; Butler and Murphey 1983:33-35; Murphey and Crutchfield 1985:

72-74, 79-80; Murphey 1985:107-123). Given the reports of Fremont and Fremont/Anasazi rock art to the east and south, it seems too much a coincidence that so many Fremont-like petroglyphs are located almost adjacent to the Kanaka II house, a Fremont-type structure containing Great Salt Lake Gray pottery sherds and other Fremont traits such as stone balls and Fremont-like projectile points. It is difficult, however, to discount the possibility that such traits could not have developed via contact with Fremont cultures existing to the east. Hence, the Kanaka II site and 10-GG-307 merely add dimensions to a growing body of data that can eventually be brought to bear on the Fremont aspect of southern Idaho's prehistory (Aikens and Witherspoon 1986:14).

NOTES

1. Fish remains were recovered from only two sites in the Kanaka study unit. Trout (*Salmo* sp.) and minnow or chub (Cyprinidae) were associated with a great number of rabbit bones in a feature including Rose Spring (?) points at 10-GG-278. A few sucker (*Catostomus* sp.) bones were recovered from a hearth directly in front of the Kanaka II homestead (10-GG-273). No salmon bones (*Oncorhynchus* sp.) were recovered.

2. Recently reported results of the Baker Cave excavations (Plew et al. 1987) appeared too late to be included in this paper. This site apparently was occupied on at least two occasions during the past 1,500 years: one temporary use at A.D. 600 to 700, and a primary use at about A.D. 1100. Located about 100 km. northeast of Kanaka Rapids, this site has offered some dry-wall masonry, the remains of 17 bison, several recreational and ceremonial artifacts, Fremont-like projectile points, and various other materials, including a few scraps of what appears to be Shoshoni pottery. This possible association made of Fremont and Shoshoni traits is exciting in terms of the questions raised by the present paper.

3. An earlier date is possible given Holmer's

(1986:106) suggestion of the bow and arrow replacing the atlatl and dart about A.D. 300-600. On the other hand, a radiocarbon determination (made on a dart foreshaft) of A.D. 1048 can easily make one wonder if the atlatl and dart perhaps remained in use longer than is presently thought (Murphey 1985:111, 231-232). Thomas (1981:30-31) suggested a date of A.D. 600-700 for the introduction of the bow and arrow in the Great Basin.

4. Some visitors to the site have doubted that this "spear or atlatl" is either. They believe it to be an item of a religious or symbolic function. This, of course, would make the area fit a little better in terms of when most believe the atlatl and dart had been replaced by the bow and arrow.

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REFERENCES

- Agenbroad, Larry D.
1976 Buffalo Jump Complexes in Owyhee County, Idaho. *Tebiwa: Miscellaneous Papers of the Idaho State University Museum of Natural History* No. 1.
- Aikens, C. Melvin
1978 The Far West. In: *Ancient Native Americans*, Jesse D. Jennings, ed., pp. 131-182. San Francisco: W. H. Freeman.
- Aikens, C. Melvin, and Younger T. Witherspoon
1986 Great Basin Numic Prehistory: Linguistics, Archaeology and Environment. In: *Anthropology of the Desert West: Essays in Honor of Jesse D. Jennings*, Carol J. Condie and Don D. Fowler, eds, pp. 9-20. University of Utah Anthropological Papers No. 110.
- Anonymous
1974 Thousand Springs and Salmon Falls. *Idaho Yesterdays* 18(3):14-23.
- Bettinger, Robert L., and Martin A. Baumhoff
1982 The Numic Spread: Great Basin Cultures in Competition. *American Antiquity* 47:485-503.
- Bonnichsen, Robson
1964 The Rattlesnake Canyon Cremation Site, Southwest Idaho. *Tebiwa* 7(1):28-38.
- Boreson, Keo E.
1975 Rock Art of the Pacific Northwest. Master's thesis, University of Idaho.
- Briggs, Claude
1982 Taped Interview: The History of Briggs Creek-Kanaka Rapids. Cassette in the possession of the Hagerman Valley Historical Society.
- Butler, B. Robert
1981 Late Period Cultural Sequences in the Northeastern Great Basin Subarea and their Implications for the Upper Snake and Salmon River Country. *Journal of California and Great Basin Anthropology* 3(2):245-256.
1982 Moapa Black-on-Gray Pottery from South-Central Idaho. *Tebiwa* 19(1):79-80.
1983a Shield Bearing Warriors, Horned Figures and Great Salt Lake Gray Ware: Whether the Fremont After A.D. 1300? Paper presented at the Annual Conference of the Idaho Archaeological Society, Boise.
1983b The Quest for the Historic Fremont and a Guide to the Prehistoric Pottery of Southern Idaho. *Occasional Papers of the Idaho Museum of Natural History* No. 33.
1986 Prehistory of the Snake and Salmon River Area. In: *Handbook of North American Indians*, Vol. 11, Great Basin, Warren L. d'Azevedo, ed., pp. 127-134. Washington: Smithsonian Institution.
- Butler, B. Robert, and Kelly A. Murphey
1982a Cultural Resource Inventory of the Kanaka Rapids Hydroelectric Project, South-Central Idaho, 1982, with Recom-

- mendations for Further Evaluation of Certain of the Resources Found. Pocatello: B. R. Butler Associates Report 82-1. MS on file at the Office of the State Archaeologist, Boise.
- 1982b A Further Delineation of Cultural Resource Loci Within the Proposed Dike Hydroelectric Project Impact Area. Pocatello: B. R. Butler Associates Report 82-2. MS on file at the Office of the State Archaeologist, Boise.
- 1983 Kanaka Rapids Hydroelectric Project, Phase II Cultural Resource Evaluation. Pocatello: B. R. Butler Associates Report 83-2. MS on file at the Office of the State Archaeologist, Boise.
- Carley, Caroline D., and R. L. Sappington
1982 Archaeological Survey of the Clear Lakes Project on the Snake River, South-Central Idaho, 1981. University of Idaho Anthropological Research Manuscripts Series No. 81.
- Castleton, Kenneth B.
1979 Petroglyphs and Pictographs of Utah. Vol. 2: The South, Central, West, and Northwest. Salt Lake City: Utah Museum of Natural History.
1984 Petroglyphs and Pictographs of Utah. Vol. 1: The East and The Northeast (2nd edition). Salt Lake City: Utah Museum of Natural History.
- Castleton, Kenneth B., and David B. Madsen
1981 The Distribution of Rock Art Elements and Styles in Utah. *Journal of California and Great Basin Anthropology* 3: 163-175.
- Chance, David H., and Jennifer V. Chance
1982 Kettle Falls: 1971 and 1974. *Salvage Archaeology in Lake Roosevelt*. University of Idaho Anthropological Research Manuscripts Series No. 69.
- Cindar, Thomas J.
1976 Mount Bennett Hills Planning Unit: Analysis of Archaeological Resources. Idaho State Museum of Natural History Archaeological Reports No. 6.
- Cressman, Luther S.
1937 *Petroglyphs of Oregon*. University of Oregon Monographs, Studies in Anthropology No. 2.
- Dorn, Ronald I., and David S. Whitley
1983 Cation-ratio Dating of Petroglyphs from the Western Great Basin, North America. *Nature* 302(5911):816-818.
- Frison, George C.
1978 *Prehistoric Hunters of the High Plains*. New York: Academic Press.
- Fowler, Don D., and Catherine S. Fowler, eds.
1970 Stephen Powers' "Life and Culture of the Washo and Paiutes." *Ethnohistory* 17(3-4):117-49.
- Grant, Cambell J., James W. Baird, and J. Kenneth Pringle
1968 *Rock Drawings of the Coso Range, Inyo County, California*. China Lake: Maturango Museum Publication No. 4.
- Hedges, Ken
1982 *Great Basin Rock Art Styles: A Revisionist View*. *American Indian Rock Art* 7-8:205-211.
1983 *Shamanic Origins of Rock Art*. In: *Ancient Images on Stone: Rock Art of the Californias*, Jo Anne Van Tilburg, ed., pp. 46-59. Los Angeles: University of California Institute of Archaeology.
- Heizer, Robert F., and Martin A. Baumhoff
1962 *Prehistoric Rock Art of Nevada and Eastern California*. Berkeley: University of California Press.
- Holmer, Richard N.
1986 *Common Projectile Points of the Intermountain West*. In: *Anthropology of the Desert West: Essays in Honor of Jesse D. Jennings, Carol T. Condie and Don D. Fowler*, eds., pp. 91-115. University of Utah Anthropological Papers No. 110.
- Jennings, Jesse D.
1978 *Prehistory of Utah and the Eastern Great Basin*. University of Utah Anthropological Papers No. 98.

- Keyser, James D., and Linea Sundstrom
 1984 Rock Art of Western South Dakota: The North Cave Hills and the Southern Black Hills. Sioux Falls: South Dakota Archaeological Society Special Publication No. 9.
- Lamb, Sydney M.
 1958 Linguistic Prehistory in the Great Basin. *International Journal of American Linguistics* 24(2):95-100.
- Lewis-Williams, David J.
 1982 The Economic and Social Context of Southern San Rock Art. *Current Anthropology* 23:429-449.
- Lindsay, LaMar W.
 1986 Fremont Fragmentation. In: *Anthropology of the Desert West: Essays in Honor of Jesse D. Jennings*, Carol J. Condie and Don D. Fowler, eds., pp. 231-251. University of Utah Anthropological Papers No. 110.
- Meatte, Daniel S.
 1986 Two Aboriginal Fish Traps From the Snake River Canyon Near Twin Falls, Idaho. *Idaho Archaeologist* 9(1):15-19.
- Moffat, David
 1983 At Snake River Site. Archaeologist Disputes "Strength" of Findings. *Twin Falls Times News* (August 7):B1.
- Murphey, Kelly A.
 1985 Native American Settlement and Subsistence in Devil's Creek: Twin Falls and Owyhee Counties. Master's thesis, University of Idaho.
- Murphey, Kelly A., and M. J. Crutchfield
 1985 Archaeological Test Excavations at the Crutchfield Site: Hagerman Valley, Idaho. Moscow: University of Idaho Anthropological Reports No. 86.
- Nesbitt, Paul E.
 1968 Stylistic Locales and Ethnographic Groups: Petroglyphs of the Lower Snake River. *Occasional Papers of the Idaho State University Museum* No. 23.
- Nissen, Karen M.
 1982 Images from the Past: An Analysis of Six Western Great Basin Petroglyph Sites. Ph.D. dissertation, University of California, Berkeley.
- Pavesic, Max G.
 1978 Ethnohistory and Cultural Ecology: A Study of Shoshonean Salmon Fishing. Paper presented at the 31st annual meeting of the Northwest Anthropological Conference, Pullman.
- Peterson, Warren R.
 1985 Controlled Light Photography: A Method of Recording Petroglyphs. In: *The Petroglyphs At Lake Pend Oreille, Bonner County, Northern Idaho*, by Keo Boreson and Warren R. Peterson, Appendix B. Cheney: Eastern Washington University Reports in Archaeology and History 100-49.
- Plew, Mark G.
 1976 The Rock Art of Upper Pole Creek, Owyhee County, Idaho. *Idaho Archaeologist* 1(3):9-12.
- 1980a Fish Remains From Nahas Cave: Archaeological Evidence of Anadromous Fishes in Southwestern Idaho. *Journal of California and Great Basin Anthropology* 2(1):129-132.
- 1980b Archaeological Investigations in the Southcentral Owyhee Uplands, Idaho. Boise State University Archaeological Reports No. 7.
- 1981 Archaeological Test Excavation at Four Prehistoric Sites in the Western Snake River Canyon Near Bliss, Idaho. Boise: Idaho Archaeological Consultants Project Reports No. 5. MS on file at the Office of the State Archaeologist, Boise.
- 1983 Implications of Nutritional Potential of Anadromous Fish Resources of the Western Snake River Plan. *Journal of California and Great Basin Anthropology* 5(1&2):58-65.

- Plew, Mark G., Max G. Pavesic, and Mary Anne Davis
 1987 Archaeological Investigations at Baker Caves I and III: A Late Archaic Component on the Eastern Snake River Plain. Boise State University Archaeological Reports No. 15.
- Rusco, Mary K.
 1973 Types of Anthropomorphic Figures in Great Basin Art. Nevada Archaeological Survey Reporter 7(2):4-17.
- Schaafsma, Polly
 1971 The Rock Art of Utah. Harvard University Peabody Museum of Archaeology and Ethnology Papers No. 65.
 1986 Rock Art. In: Handbook of North American Indians, Vol. 11: Great Basin, Warren L. d'Azevedo, ed., pp. 215-226. Washington: Smithsonian Institution.
- Steward, Julian H.
 1938 Basin-Plateau Aboriginal Sociopolitical Groups. Bureau of American Ethnology Bulletin No. 120.
- Swanson, Earl H., Jr., Roger Powers, and Alan Lyle Bryan
 1964 The Material Culture of the 1959 Southwestern Idaho Survey. Tebiwa 7(2):1-27.
- Thomas, David Hurst
 1981 How to Classify the Projectile Points From Monitor Valley, Nevada. Journal of California and Great Basin Anthropology 3(1):7-43.
 1983 The Archaeology of Monitor Valley, 2: Gatecliff Shelter. Anthropological Papers of the American Museum of Natural History 59(1).
- Thomas, David Hurst, and Trudy Thomas
 1972 New Data on Rock Art Chronology in the Central Great Basin. Tebiwa 15(1): 64-71.
- Thomas, Trudy
 1976 Petroglyph Distribution and the Hunting Hypothesis in the Central Great Basin. Tebiwa 18(2):65-74.
- Tobias, Nelle
 1981 The Wees Bar Petroglyph Field, Southwestern Idaho. Boise State University, Department of Anthropology.
- Tucker, Gordon C., Jr.
 1976 The Archaeology of Salmon Falls Creek: A Study in Methodology. Idaho Museum of Natural History Archaeological Reports No. 4.
- Tuohy, Donald R.
 1979 Katchina Cave. In: The Archaeology of Smith Creek Canyon, Eastern Nevada, Donald R. Tuohy and Doris L. Rendall, eds. pp. 14-25. Nevada State Museum Anthropological Papers No. 17.
- Turner, Christy G., II
 1963 Petrographs of the Glen Canyon Region. Museum of Northern Arizona Bulletin 38. (Glen Canyon Series No. 4).
- Wellmann, Klaus F.
 1979 A Survey of North American Indian Rock Art. Graz, Austria: Adademische Druck-und Verlagsanstalt.

