WYOMING
ARCHAEOLOGICAL
SOCIETY

THE WYOMING ARCHAEOLOGIST

DECEMBER 1971 VOL. XIV NO. 4

THE WYOMING ARCHAEOLOGIST is published quarterly by the Wyoming State Archaeological Society, Grant H. Willson, Editor. Address manuscripts and news items for publication to: The Editor, 1915 East 15th Street, Cheyenne, Wyoming 82001.

NOTE: Membership period is from January through December and includes all issues published during current year regardless of the month the subscription commences. All subscriptions expire with the Winter issue and renewals are due the first of January each year.

NOTE: If you move or have a change of address, please notify the Executive Secretary, P. O. Box 122, Cheyenne, Wyoming 82001. Your WYOMING ARCHAEOLOGIST will not be forwarded unless a payment of 50¢ is received for return and forwarding postage.

NOTE: Checks for Chapter subscriptions and renewals should be sent to the Chapter Secretary involved. All other checks, subscriptions and renewals should be addressed to: Milford Hanson, Route #1 - Box 171, Cody, Wyoming 82414. Correspondence and orders for back issues should be addressed to Lou Steege, P. O. Box 122, Cheyenne, Wyoming 82001.

. . . . . .

1972 MEMBERSHIP NOTICE
WYOMING ARCHAEOLOGICAL SOCIETY, INC.

_____ Individual Associate Membership @ $6.00 per year.

_____ Single Active Membership @ $5.00 per year. _____ Chapter Name.

_____ Family Active Membership @ $7.50 per year. _____ Chapter Name.

_____ Institutional Membership @ $7.50 per year.

_____ Other Membership, including: $10.00 Supporting, Yearly
(Circle One) $20.00 Contributing, Yearly

Please make your checks payable to WYOMING ARCHAEOLOGICAL SOCIETY, INC.

Name _____

Address _____

City _____ State _____ Zip Code _____

APPENDIX III

DECEMBER, 1971 ISSUE CONTENTS

EDITOR'S NOTES

Perhaps you have heard rumors of a process whereby pictographs and petroglyphs can be sprayed with a polyurethane resin. Test sprayings have been made at Castle Gardens and on Register Cliff, by Charlie R. Steen under a B.L.M. program. This clear spray promises to retard erosion for many years, and may make it possible to clean up after these have been vandalized by chalk, crayon, felt tip pens, plaster and latex moulds. So many instances of this type of vandalism are showing up in the current survey by Helen Schuster, that statewide effort is needed immediately to apply this clear protective coating and, secondly, to educate people to be properly protective of these fragile links to the prehistoric past.

Mrs. Schuster is preparing a series of slides detailing the vandalism existent. This will be organized in the form of a slide program with script, and will be available to each Chapter very soon.

It has been suggested and must be presented to the Board for approval, that a news letter be published, as needed, which will contain Chapter news and such information that cannot wait for the quarterly publication. Such a letter will be sent to the individual Chapters only and handed out at a regular meeting, thus saving postage. Would like to hear what everyone thinks of such a proposal.

WYOMING
ARCHAEOLOGICAL SOCIETY, INC.

Dear Fellow Members:

The Fall Workshop was a great success. However, some were bothered by the difficulty of getting reservations, which we now know are very difficult during Homecoming. In discussions with those who attended, it was agreed that we should elect a committee at the April State Meeting to help George and June Frison with this annual project and properly publicize the agenda.

Dr. Frison's summary of the summer work was a fascinating program. Charlie Love's report, "An Archaeological and Geological Survey of Jackson Hole", was a program each Chapter should schedule, and Dr. Esther Morris' report on Iran was superlative. Helen Schuster will be available after February with her outstanding report on "Wyoming's Rock Art", and this program must be seen by every Chapter.

As you see by the letter from Dr. Dubois, difficulties have plagued our archeomagnetic dating samples.

To continue the bad news, Lou Steege, for reasons compelled by a deteriorating hip condition, now requests that he be relieved from duties as Executive Secretary. Despite all urging to the contrary, this request must now be honored. Lou feels that he must divorce himself completely from archaeology, as it would be too frustrating not to be able to participate in excavations and in surveys as he had in the past. We shall all certainly miss him. The news from Cody is that Milford is slowly recuperating from a heart attack, so we wish him a complete recovery.

Wish I had some good news to end with, but all I can come up with is.....

Best Wishes for the New Year

Grant

REPORT ON 1971 FALL WORKSHOP AT UNIVERSITY OF WYOMING

October 23rd and 24th marked the second annual Workshop in Laramie. Registration the morning of the 23rd between 8:00 and 9:30 A.M. at the Classroom Building was followed by the morning speakers, Dr. George Frison and Charlie Love.

In his opening remarks, Dr. Frison stated that, because of the lack of qualified personnel and funds, Wyoming Archaeology has been forced into a position of a salvage program; an attempt to keep up with the sites in danger of being lost. He noted that the Wyoming Council of Arts had assisted Mrs. Helen Schuster with her Rock Art Project last summer with very good results.

Through the medium of slides Dr. Frison led us on a guided tour of the sites worked during the last summer, beginning with the Vore Buffalo Kill Site which is late Prehistoric side notch tradition. Working with a two year grant from the National Science Foundation, Dr. Frison and his crew were able to uncover a tremendous amount of bone, showing at least 19 levels. This round, crater like area should produce an abundance of data relating to the period. The Vore Site had to be closed so the crew could return to the Hyatville Site: (Ross Hillman gave his report on this site last year). This being a large area where people could camp, the Hyatville Site may well be one of the most important sites in Wyoming. A large amount of Post Altithermal material had been removed by the owner in leveling corrals. The summers excavation started at about 10 feet below datum and extended to a depth of 23 feet. Numerous cultural levels (beginning with McKean) were apparent including Eden, a Bi-Bevel level and a possible Jimmy Allen.

The Casper Site was a true salvage site, limited by both time and money. Control Data, in leveling for a parking lot had exposed bones which proved to be some form of Extinct Bison. 112 mandibles were recovered; it was a fall kill with calves 5 to 6 months old. Strangely enough, there were no yearlings. Points resembling Hell Gap were found.

Charlie Love, a graduate student who did a survey on the Jackson Hole area, took us on what he called a whirlwind tour. His fascinating geological history of the Jackson area led us from the floor of Jackson Hole to the Gros Ventre Range through high altitude camp sites, pictographs, stone circles and quarries. Some almost virgin areas could hold a whole new picture of Wyoming Archaeology.

After lunch there was a trip to the Lab. where Dr. Frison showed artifacts from various summer sites and answered many questions.

The evening banquet was held at the Whirl Inn with Dr. Elisabeth Ann Morris as speaker. The subject of her slide lecture was her trip into Iran. Although unlike Wyoming Archaeology, similarities in some of the landscape were noted. The remains of ancient ruins were interesting and beautiful.

Sunday morning we met again at the Department of Anthropology in the Liberal Arts Building where Helen Schuster gave a report on her summers work with Rock Art. This is, with a doubt, a subject of interest to every member. She is doing an amazing job here!

Chapters unfortunate enough to have missed these lectures should try to plan future Chapter programs to include one or more of these speakers. And, by all means, make next year's Workshop a MUST.

Recognition should be given George and June Frison for hosting the "mob" in their home after the banquet Saturday night. A delightful evening!

Sincerely,

Florence Coates

EARTH SCIENCES OBSERVATORY
OFFICE OF THE DIRECTOR
830 So. Van Vleet Oval, Rm. 107

THE UNIVERSITY OF OKLAHOMA

NORMAN, OKLAHOMA 73069

November 10, 1971

Dr. George C. Frison
Head, Department of Anthropology
The University of Wyoming
University Station, Box 3431
Laramie, Wyoming 82070

Dear George,

I am sorry that I have not written to you at an earlier date, George, concerning the results on the archeomagnetic samples that were collected from your area. I think the reason that I haven't written is that I kept hoping that we would have some additional laboratory facilities available here that I would like to have to perform some additional experiments on these samples. As you remember, most of them were quite sandy and this means to us that they contain a smaller amount of ferromagnetic material than that which we normally find associated with our baked clay samples. In essence they are magnetically weak and the results that we obtained from them have a high degree of dispersion. This makes dating the samples very difficult and in some cases impossible. The general data from all of the samples is somewhat consistent with that of the southwest data, and I think that eventually we will be able to get useful information from them but we will need to do a re-processing of the samples, using methods a little different than those which we are currently using in our laboratory at the present time. The big drawback to all of this is that I have no idea as to when we will be equipped to do these additional experiments. I had hoped that we would be able to complete them last year but due to a shortage of funds, we were unable to buy the additional equipment that we needed. At the present our situation is unclear as to what our funding will be for the near future, and so I can't begin to say when we might be able to do this work. The type of results that we did obtain, however, suggests to me that additional experiments are justified and that we might expect to get useful results in the end. So I think we will have to wait until we have these new capabilities before we can complete our studies of these samples.

With my best regards and hoping that we will be able to get you some final information some time in the near future concerning those Wyoming samples.

Sincerely yours,

Robert L. DuBois
Director

RLDB:km

CONCLUSION OF THESIS BY JOANNE MACK

TITLED

ARCHAEOLOGICAL INVESTIGATIONS IN THE BIGHORN BASIN

PAGES 55 to CONCLUSION

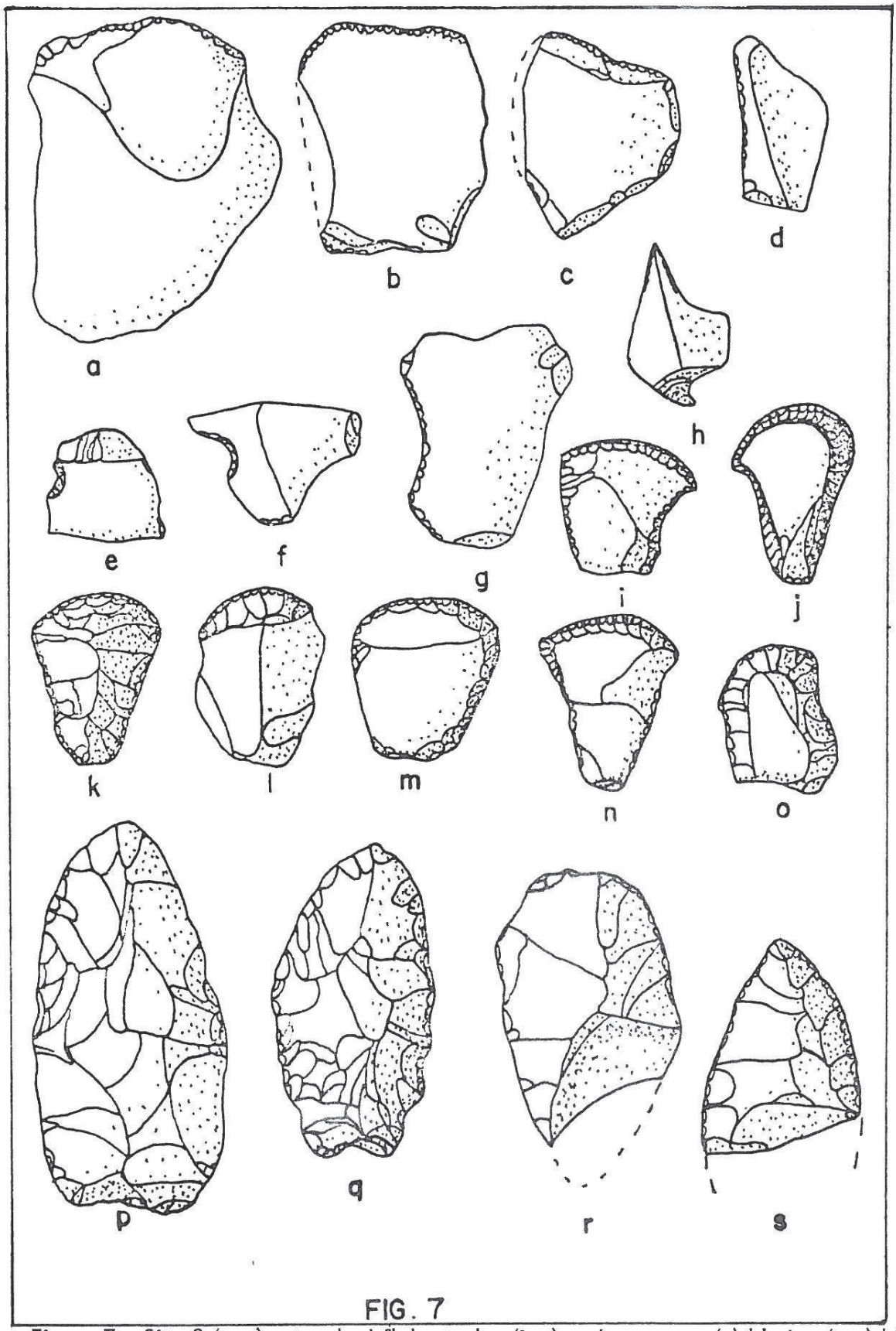

Figure 7. Site 2 (a-g) retouched flake tools, (i-o) end scrapers, (p) blade, (q-s) bifaces.

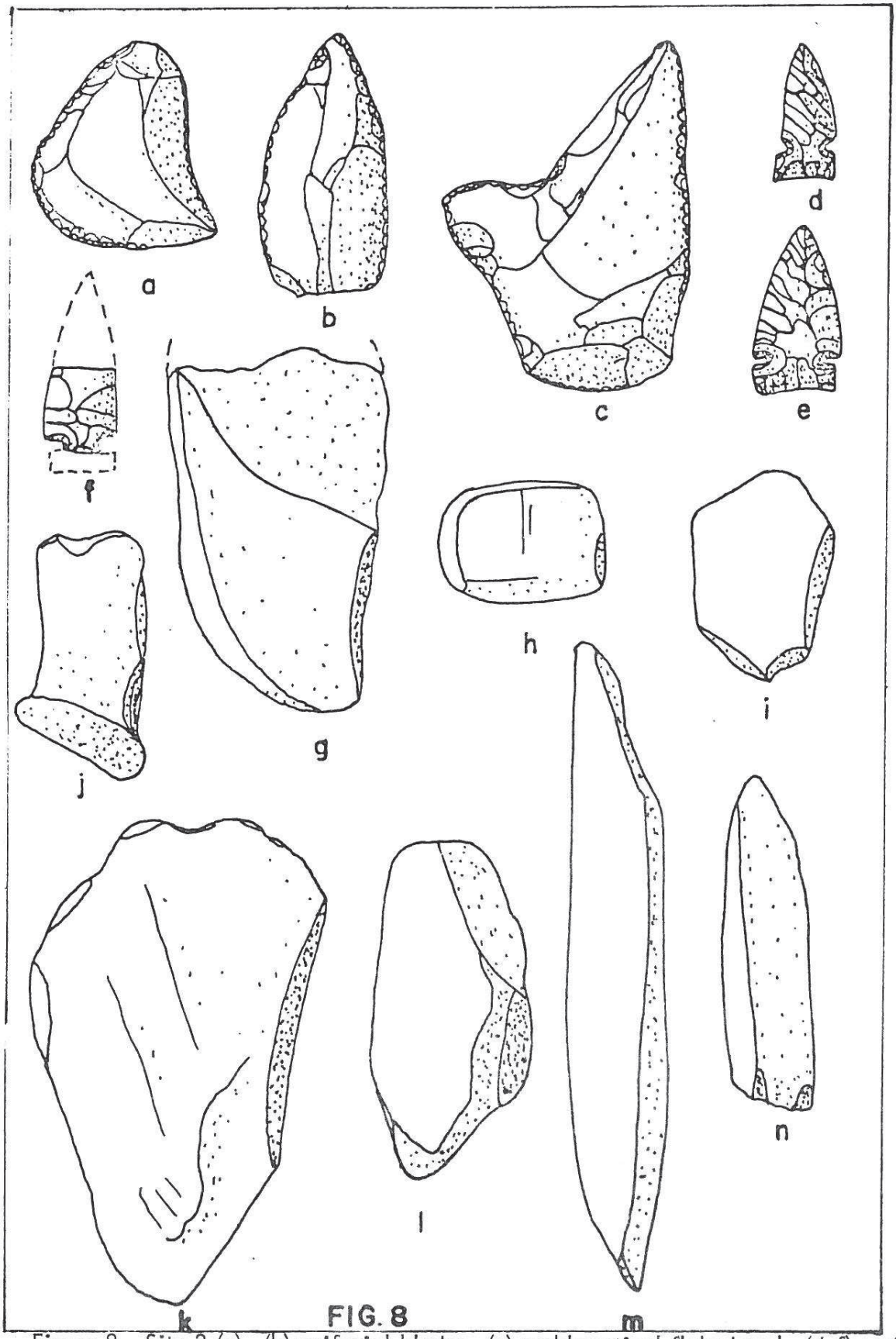

Figure 8. Site 2 (a), (b) unifacial blades, (c) problematical flaked tool, (d-f) projectile points, (g) abrading stone, (h) worked shell, (i-n) bone tools.

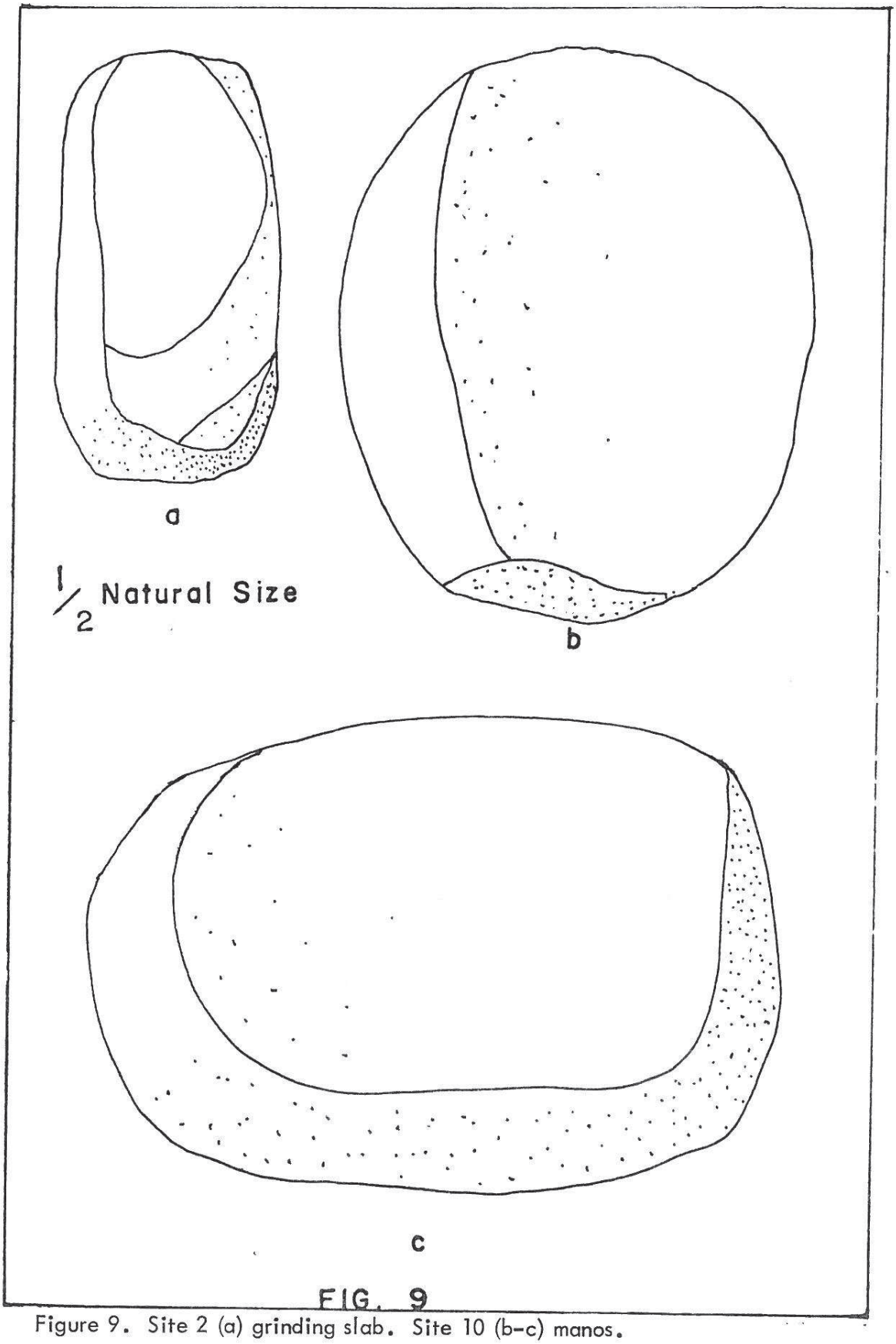

Figure 9. Site 2 (a) grinding slab. Site 10 (b-c) manos.

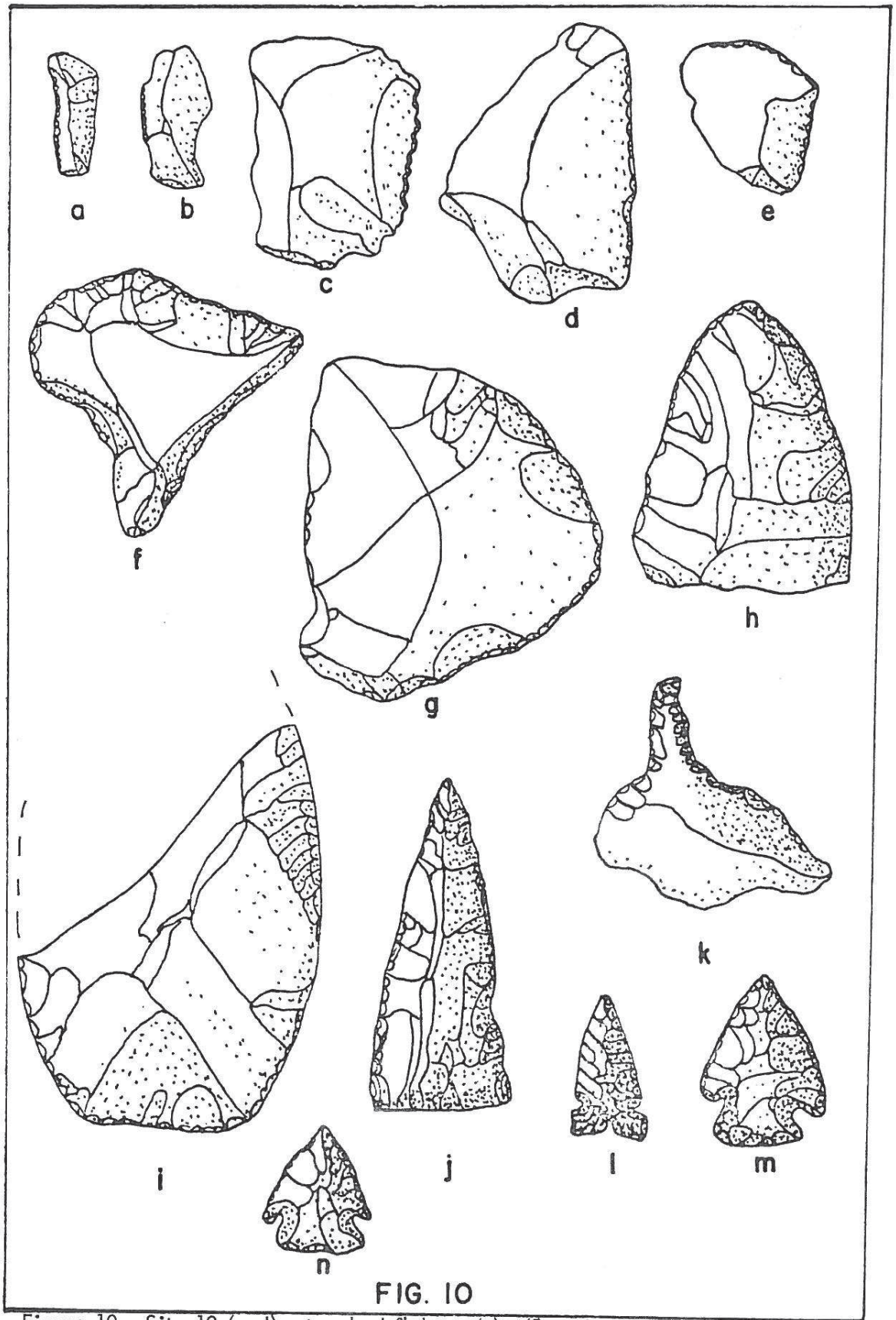

Figure 10. Site 10 (a-d) retouched flakes, (e), (f) end scrapers, (g) side scraper, (h), (i) blade tools, (j) cutting tool, (k) graver, (l-n) projectile points.

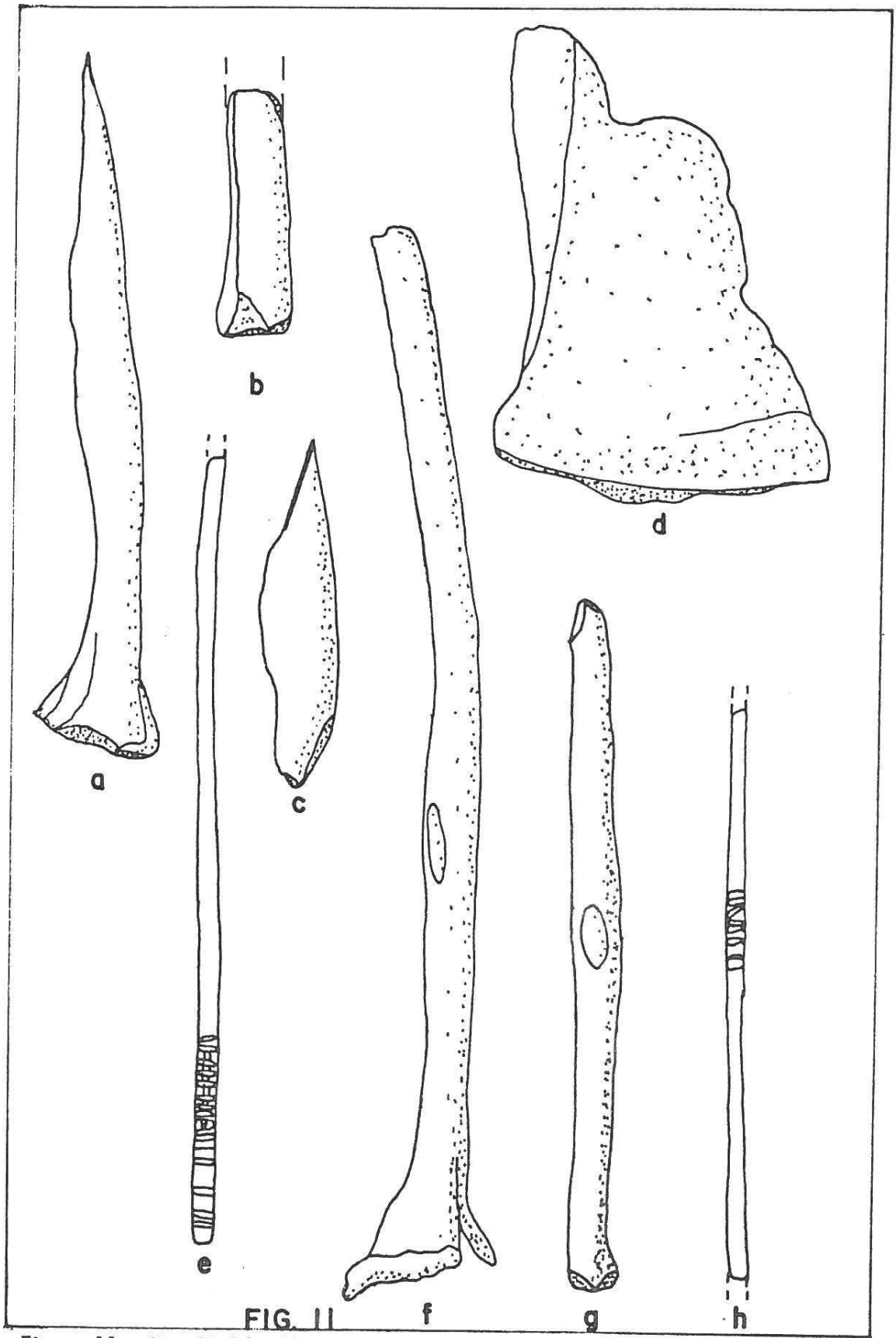

Figure 11. Site 10 (a), (b) bone awls, (c), (d) bone tools, (e), (h) broken shafts, (f), (g) cut willow (Salix sp.) stems.

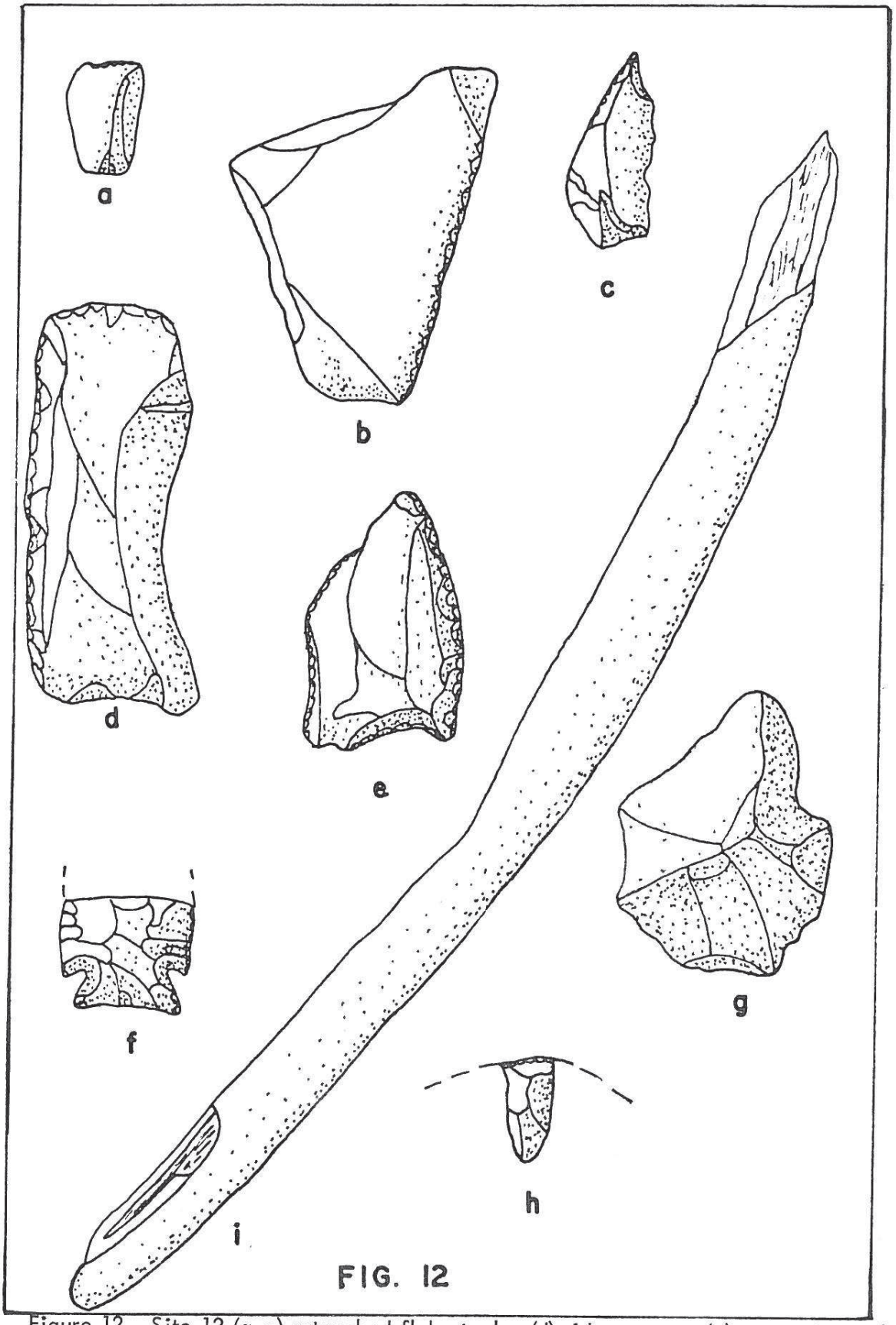

Figure 12. Site 12 (a-c) retouched flake tools, (d) side scraper, (e) composite tool, (f) projectile point, (g) core, (h) biface fragment, (i) bone tool.

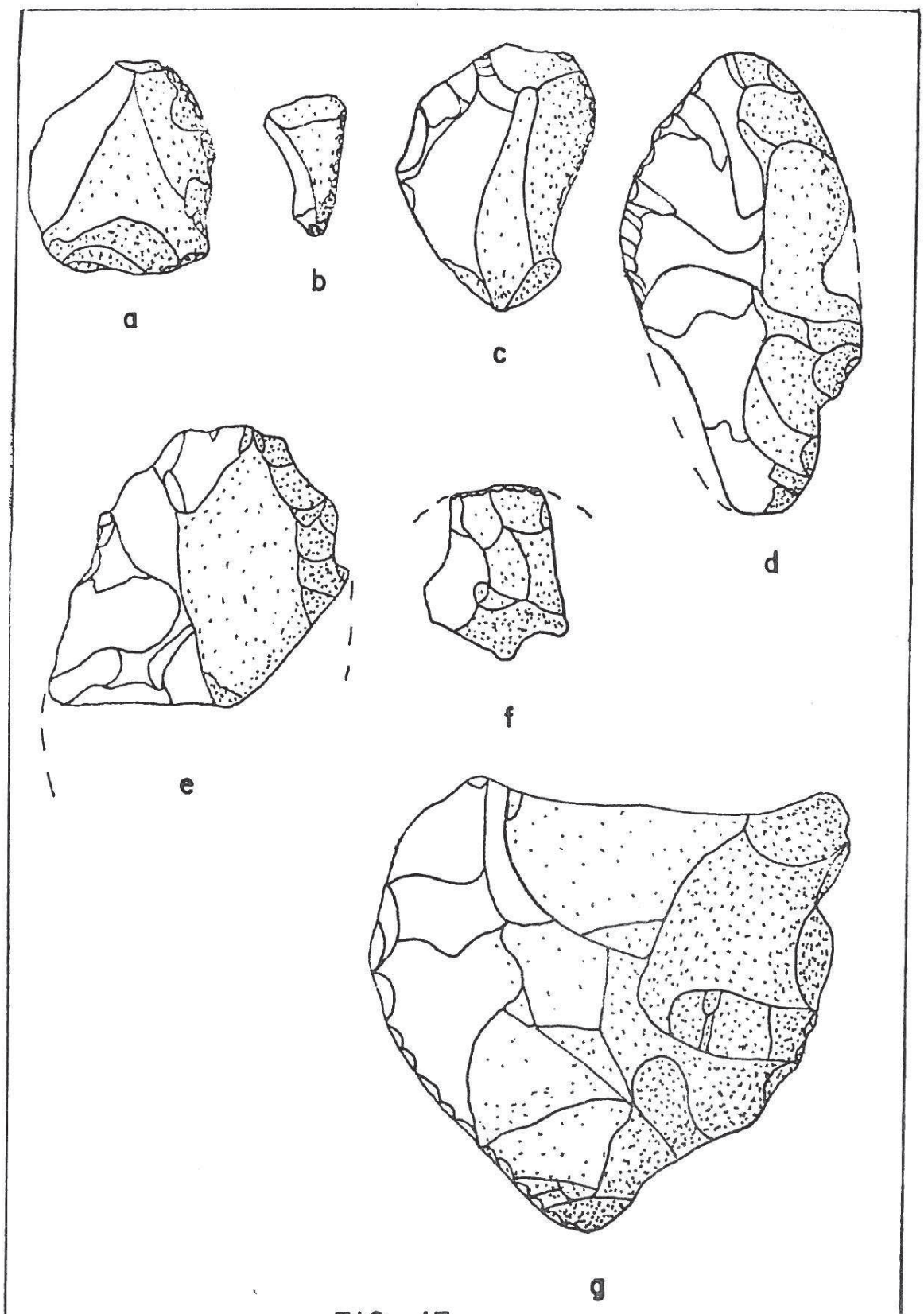

Figure 13. Site 54 (a-c) retouched flake tools, (d) blade (e), (f) biface fragments, (g) core.

CHAPTER V

SURVEYED SITES

Most of the sites surveyed in preparation for this thesis were not excavated, and material from them was from surface collecting. Each site was walked carefully; all tools were collected as well as samples of the lithic material as represented by flakes.

There are two basic types of sites: rockshelters and open sites. All of the rockshelters are cut into sandstone, most often Ten Sleep Sandstone. Most of the open sites are on interfluves overlooking canyons near springs. Many of the open sites, especially those overlooking canyons, have little or no soil depth. The artifacts are found on bedrock sandstone or in two or three inches of soil.

Two sites contained no artifact material, but were rockshelters with pictographs in them. These two, Site 5 and Site 111, will be discussed in detail in the next chapter.

SITE 109

Site 109 was surfaced collected by Dr. G. Frison several years ago. His material is that described here. The site is a shelter with material on the talus slope in front of it as well as in the shelter. The stone tools found are recorded on Table 5. Two stone pendants were also recovered. Both are rounded triangles with a hole located at the wide end. One is of sandstone with grooved edges (Fig. 14 a,b).

PERISHABLE MATERIAL

Bone

There were five bone tools recovered. Two are complete awls; one is made from a rib (Fig. 14c,d). One bone tool has a rounded tip and polished surfaces (Fig. 14 e). An extremely large rib fragment appears to have been used as a beaming tool (Fig. 14f). It has been charred, however, making use striations difficult to discern. One piece of polished charred bone has a rounded tip and polished surfaces. It appears to be broken at the end opposite the tip (Fig. 14g).

Wood

Two willow (Salix sp.) hafts were found. Both are carved with projections at one end, which seem to have notches (Fig. 14h). Another tool is a fire-hardened piece of pointed wood. The sharp point is broken off, but the tool appears to be an awl (Fig. 14i). Another pointed piece of slightly curved wood may also have been an awl; however, it lacks the hardened surface (Fig. 14j). Two rounded shafts were also recovered.

Table 5-Surveyed Sites' Artifacts

Site #	Site Type	Artifact Types														
		Biface	Blade-Knife	Chopper	Core	Del. Retouched Flake	Drill	End Scraper	Flaked Tool	Graver	Grinding Tool	Hammerstone	Projectile Point	Side Scraper	Spoke Shave	Use Notched Flake
1	0	3	4	2	-	2	-	3	3	-	-	1	3	3	-	12
3	0	-	1	-	1	-	-	1	-	-	-	-	-	1	-	1
4	0	3	-	-	1	1	-	2	-	-	-	-	-	1	-	2
6	0	1	1	-	-	1	-	-	-	-	-	-	-	-	-	1
7	0	1	1	-	-	-	-	1	-	-	-	-	1	1	-	1
8	0	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
9	0	-	1	-	-	3	-	-	1	-	-	-	-	-	-	3
15	0	3	-	1	2	4	1	1	2	-	-	-	2	1	1	11
16	0	1	-	-	-	3	1	-	-	-	-	-	-	-	-	1
17	0	2	1	-	-	8	-	-	1	1	-	-	2	-	1	10
18	R	2	-	-	-	1	-	-	-	-	-	-	-	1	-	1
19	R	1	1	-	-	-	-	-	-	-	-	-	-	1	-	1
20	0	1	3	-	5	4	-	1	-	-	1	-	-	-	-	7
21	0	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-
22	0	5	1	-	-	2	-	3	-	-	-	-	-	2	-	6
23	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
26	0	2	1	-	-	3	-	-	-	-	-	-	-	-	-	5
27	0	2	-	1	-	2	-	2	-	-	-	-	-	1	-	4
28	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Table 5-Surveyed Sites' Artifacts

Site #	Site Type	Artifact Types														
		Biface	Blade-Knife	Chopper	Core	Bel. Retouched Flake	Drill	End Scraper	Flaked Tool	Graver	Grinding Tool	Hammerstone	Projectile Point	Side Scraper	Spoke Shave	Use Retouched Flake
29	0	-	-	-	-	1	-	1	-	-	1	-	-	-	-	2
30	0	1	-	1	-	1	-	7	-	-	-	-	-	1	-	2
31	0	7	-	1	-	2	-	5	-	1	-	-	2	1	-	2
32	0	-	2	1	-	-	-	-	-	-	-	2	1	-	-	1
33	0	2	-	-	-	3	-	1	-	-	-	-	3	1	-	-
34	0	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
35	R	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
36	R	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
37	0	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
39	R	-	1	-	-	1	-	-	-	-	-	1	1	-	-	-
40	0	-	-	-	-	1	-	-	1	-	-	-	-	-	-	1
41	0	-	1	-	-	2	-	-	-	-	-	-	-	1	-	-
46	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	0	-	-	1	-	2	-	-	-	1	-	1	-	-	-	-
48	0	2	-	-	2	4	-	-	-	-	-	-	-	2	-	4
49	0	1	-	1	-	3	-	-	1	-	-	-	1	-	-	4
50	0	1	-	-	-	1	-	-	-	-	-	-	1	-	-	1
51	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
52	0	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-

Table 5-Surveyed Sites' Artifacts

Site	Site Type	Artifact Types														
		Biface	Blade-Knife	Chopper	Core	Del. Retouched Flake	Drill	End Scraper	Flaked Tool	Graver	Grinding Tool	Pumicestone	Projectile Point	Side Scraper	Spoke Shave	Use Retouched Flake
53	0	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
55	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
56	0	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1
57	0	-	2	-	-	4	-	-	-	-	-	-	1	1	-	6
58	R	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
59	0	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-
60	0	6	-	-	4	11	-	-	-	-	-	-	-	1	-	34
61	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
63	0	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
64	0	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2
66	0	4	3	1	-	4	-	2	-	-	-	-	4	-	1	7
67	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
68	0	1	2	1	2	1	-	-	-	-	-	-	-	1	-	5
69	0	8	-	2	-	6	-	-	-	-	-	-	2	-	1	5
70	0	1	-	-	-	2	-	-	-	-	-	-	1	-	-	1
71	0	1	1	-	-	1	-	-	-	-	-	-	-	-	-	2
72	0	1	-	1	-	1	-	-	-	-	-	-	-	-	1	-
73	0	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-

Table 5-Surveyed Sites' Artifacts

Site #	Site Type	Artifact Types														
		Biface	Blade-Knife	Chopper	Core	Del. Retouched Flake	Drill	End Scraper	Flaked Tool	Graver	Grinding Tool	Hammerstone	Projectile Point	Side Scraper	Spoke Shave	Use Retouched Flake
74	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	0	4	2	-	-	2	-	-	-	-	-	-	-	-	-	6
78	0	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
79	0	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-
80	0	2	-	-	-	1	-	-	-	-	-	-	1	-	-	-
84	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
85	0	2	2	-	1	1	-	-	-	-	-	-	-	-	-	-
86	0	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-
87	0	1	1	1	-	1	-	-	-	-	-	-	-	-	-	1
88	0	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2
89	0	-	-	1	2	10	-	-	1	-	-	-	-	-	1	20
90	0	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
91	0	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1
92	0	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-
93	0	-	-	-	-	1	-	-	1	-	-	-	1	-	-	1
95	0	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
96	0	2	-	-	-	1	-	-	-	-	-	-	-	-	-	4
97	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5-Surveyed Sites' Artifacts

Site #	Site Type	Artifact Types														
		Biface	Blade-Knife	Chopper	Core	Bel. Retouched Flake	Drill	End Scraper	Flaked Tool	Graver	Grinding Tool	Hammerstone	Projectile Point	Side Scraper	Spoke Shave	Use Retouched Flake
98	O	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-
99	O	2	-	2	-	3	-	1	-	-	-	-	-	1	-	2
100	O	-	-	-	1	2	-	-	-	-	-	-	-	-	-	1
101	O	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
102	R	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	R	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
104	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
105	O	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
106	O	-	3	-	-	-	1	-	-	-	-	-	-	-	-	4
107	R	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
109	R	-	2	-	-	1	2	1	-	-	-	-	9	1	-	2
110	C	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2

In Table 5 "O" represents open sites and "R" represents rockshelters.

Table 6-Flakes from Surveyed Sites

Site #	Chert	Quartzite	Obsidian	Slate	Scoria	Total		Site #	Chert	Quartzite	Obsidian	Slate	Scoria	Total
1	56	-	-	-	1	57		33	55	-	-	-	-	55
3	6	-	-	-	-	6		34	7	2	-	-	-	9
4	17	-	-	-	-	17		35	14	-	-	-	-	14
6	7	-	-	-	-	7		36	8	-	-	-	-	8
7	7	2	-	-	-	9		37	7	-	-	-	-	7
9	1	1	-	-	-	2		38	5	1	-	-	-	6
15	13	-	2	-	-	15		39	43	-	-	-	-	43
16	20	-	-	-	-	20		40	39	22	-	-	-	61
17	48	2	1	-	-	51		41	14	2	-	-	-	16
18	1	-	-	-	-	1		42	9	-	-	-	-	9
20	63	2	-	-	-	65		43	1	1	-	-	-	2
21	34	1	-	-	-	35		44	2	-	-	-	-	2
22	27	1	-	-	-	28		45	3	-	-	-	-	3
24	8	-	-	-	-	8		46	52	2	-	-	-	54
25	1	-	-	-	-	1		47	19	-	-	-	-	19
26	14	1	-	-	-	15		48	51	1	-	-	-	52
27	18	-	1	-	-	17		49	44	2	-	-	-	46
28	9	-	-	-	-	9		50	14	3	-	-	-	17
29	9	-	-	-	-	9		51	7	-	-	-	-	7
30	4	5	1	-	-	10		52	8	-	-	-	-	8
31	14	1	-	-	-	15		53	1	-	-	-	-	1
32	2	-	-	-	-	2		56	9	-	-	-	-	9

Table 6-Flakes from Surveyed Sites

Site #	Chert	Quartzite	Obsidian	Slate	Scoria	Total		Site #	Chert	Quartzite	Obsidian	Slate	Scoria	Total
57	67	-	-	-	-	67		81	3	-	-	-	-	3
59	42	1	-	-	-	43		82	8	-	-	-	-	8
60	283	11	-	-	-	294		83	2	-	-	-	-	2
61	1	-	-	-	-	1		84	8	-	-	-	-	8
62	1	-	-	-	-	1		85	7	2	-	-	1	10
63	10	-	-	-	-	10		86	3	-	-	-	-	3
64	51	-	-	-	-	51		87	43	3	-	-	1	47
65	8	-	-	-	-	8		88	50	10	-	-	1	61
66	105	12	-	1	-	118		89	105	49	1	-	-	155
67	11	-	-	-	-	11		90	1	-	-	-	-	1
68	11	2	-	-	-	13		91	6	11	-	-	-	17
69	35	8	-	-	-	43		92	5	-	-	-	-	5
70	7	2	-	-	-	9		93	19	3	-	-	-	22
71	11	-	-	-	-	11		94	5	1	-	-	-	6
72	10	1	-	-	-	11		95	5	-	-	-	-	5
75	3	-	-	-	-	3		96	41	1	-	-	-	42
76	3	-	-	-	-	3		97	5	-	-	-	-	5
77	27	-	-	-	-	27		98	19	-	-	-	-	19
78	8	-	-	-	-	8		99	22	-	-	-	-	22
79	17	-	-	-	-	17		100	6	-	-	-	-	6
80	5	-	-	-	-	5		102	3	-	-	-	-	3
								103	2	-	-	-	-	2

Table 6-Flakes from Surveyed Sites							
Site #	Chert	Quartzite	Obsidian	Slate	Scoria	Total	
104	4	-	-	-	-	4	
106	19	-	-	-	-	19	
108	3	-	-	-	-	3	
110	23	-	-	-	-	23	

Chert includes in this table flint, agate, chert, jasper and chalcedony.

One is broken at one end and has been split 3/4 of the way up the shaft; it has a pointed tip. It is difficult to say whether the split was purposeful or accidental. The other is complete, its point being flattened as if through use (Fig. 14m).

Hide, Sinew, Hair and Feather

One irregularly shaped piece of rawhide, probably Bison, was recovered. It has been cut from a larger piece. The other rawhide object is a knot which has been dyed red (Fig. 14k). One strand of sinew, 2 feet, 3 inches long, was recovered (Fig. 14l). A small amount of bison hair was found also. Two feathers were found. One is complete; the other has been cut down the center.

SITE 18 and 102

Bone

Bone tools were found at two other sites. Site 18 had a rib tool, medial section, with a scalloped work edge on the proximal and ventral edges (Fig. 15m). Site 102 had a piece of bone that had been cut at one end causing a circular opening at one end. The other end was irregularly broken (Fig. 15a).

Tables 5 and 6 show the type of sites, the artifacts and the lithic material found at each.

CONCLUSIONS

Only a quarter of the sites surface collected provided diagnostic tools by which a rough dating and comparisons with other sites could be done. The projectile point is the most useful diagnostic tool for dating in this area. The only other diagnostic tool recovered was a tanged knife with a bevelled cutting edge from Site 68. This type of knife is associated with the Middle Prehistoric Period (Fig. 15d).

Two Early Prehistoric Period or Plano point fragments were recovered. A fragment of an Eden point is from Site 1 and the base of a Scottsbluff point from Site 55 (Fig. 15b,c).

The Early Middle Prehistoric Period (Mulloy 1958) is represented at several sites. Two corner and basally notched projectile points came from Site 1 (Fig. 15e,f). At Site 50 a broad, corner notched, convex base point was found (Fig. 15g). It compares to some Early Middle Prehistoric Period points from the Sorenson Site (Husted 1969). A complete Hanna point was found at Site 53 (Fig. 15h). Another corner and basally notched point was recovered from Site 66 (Fig. 15i). Site 105 had one broken basal portion of a Duncan point. The stem edges had been ground. Above the ground edge the point had been reworked, probably while still hafted (Fig. 15j).

The Late Middle Prehistoric Period points were found most frequently. Site 15 had two points; one is corner notched (Fig. 15k). The other is irregularly made: one notch is a broad side notch, the other a corner notch (Fig. 15l). Site 17 had one projectile point fragment that is concave based with thick, long tangs (Fig. 15n). At Site 31 three corner notched projectile points were found (Fig. 15o,p). One is small and has been reworked into a graver (Fig. 15q). Site 32 produced a point with broad side notches and a concave base (Fig. 16a). Site 33 had two corner notched points, one quite large, 5.1 mm long, 2.4 mm wide, the other fairly small, 3.3 mm long, 2.2 mm wide (Fig. 16b,c). Site 37 had one corner notched point with sharp, thin tangs (Fig. 16d). Site 66 produced a corner notched concave base point (Fig. 16f). Site 73 produced a large, corner notched concave base point (Fig. 16e). Site 57, 69, 80, 92 93 and 101 all had fragments of corner notched points (Fig. 16g,h,i,j,k,l, and m).

The Late Prehistoric and Historic Period points were also widely distributed. Site 7 had one side notched, concave based point (Fig. 16n). It could be either Late Middle or Late Prehistoric Period. Site 17 also had a Late Prehistoric Projectile point. It is a small, thin fragment with a flute running up the center of one side; it is too thin to be a Folsom point (Fig. 16o). Site 39 had one small, thin projectile point tip; because of its size it is probably Late Prehistoric Period (Fig. 16p). At Site 49 one side notched concave base point is also Late Prehistoric Period (Fig. 16q). Site 64 has a thin, small projectile point fragment (Fig. 16r). Site 70's and 79's projectile points also belong to this general period (Fig. 16s,t). The points from Site 109 seem all to be side notched (Fig. 16u,v). Two are broken across the base leaving the tip and shaft. One unusual side notched point is notched on both edges all the way up the point. It is made of black scoria (Fig. 16w).

The range in point types at these sites indicates that this area has been in continuous use from the Plano to the Historic Period. The historic iron projectile point has also been found in this area as evidenced by private collections.

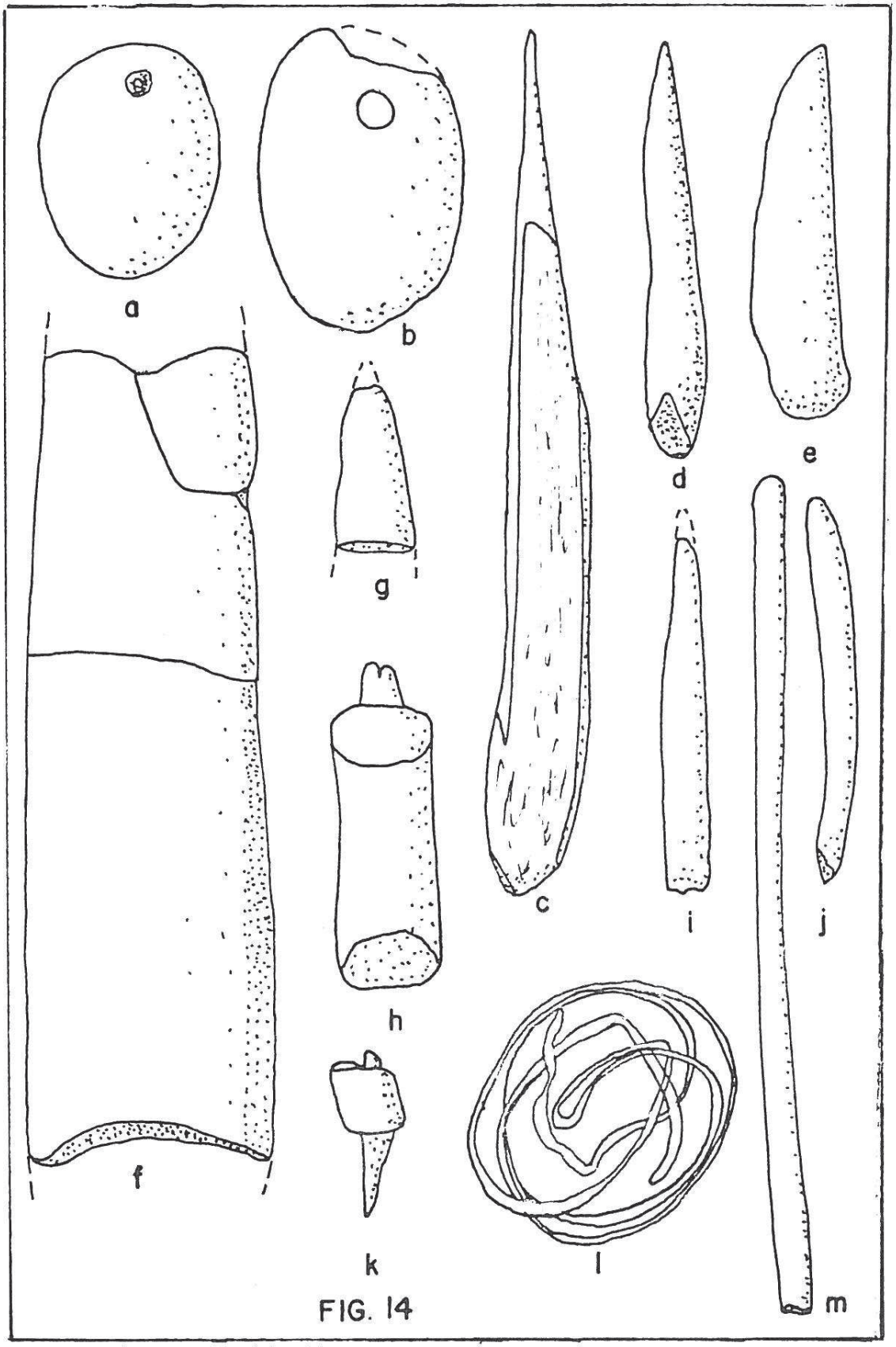

Figure 14. Site 109 (a), (b) stone pendants, (c), (d) bone awls, (e-g) bone tools, (h) wooden haft, (i), (j) wooden tools, (k) rawhide knot, (l) sinew, (m) wooden shaft.

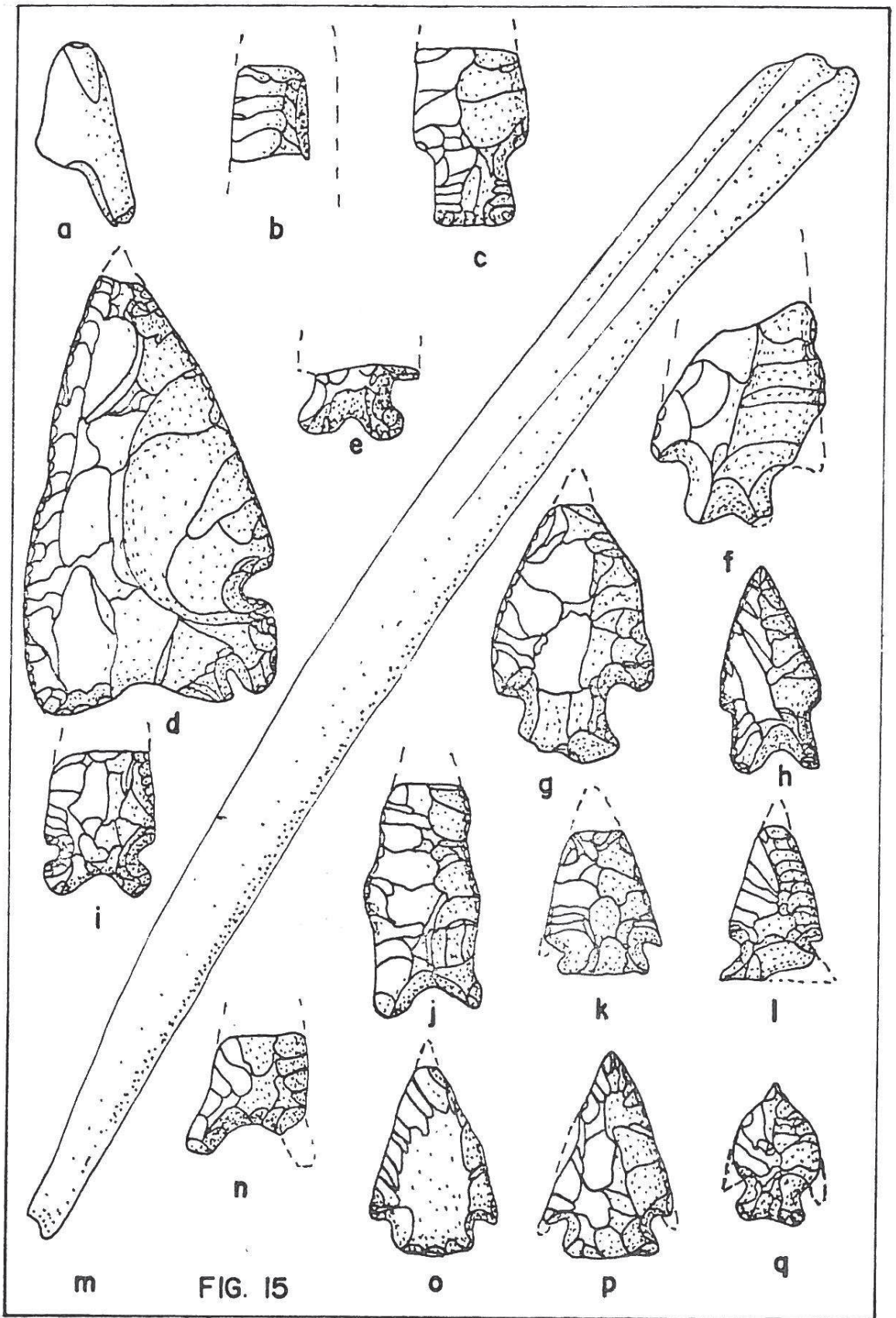

Figure 15. Site 102 (a) bone tool. Site 1 (b) Eden Point fragment. Site 55 (c) Scottsbluff Point, broken. Site 68 (d) tanged knife. Site 1 (e), (f) projectile points. Site 50 (g) projectile point. Site 53 (h) Hanna Point. Site 66 (i) projectile point. Site 105 (j) Duncan Point. Site 15 (k), (l) projectile points. Site 18 (m) bone tool. Site 17 (n) projectile point fragment. Site 31 (o), (p) projectile point, (q) bone tool.

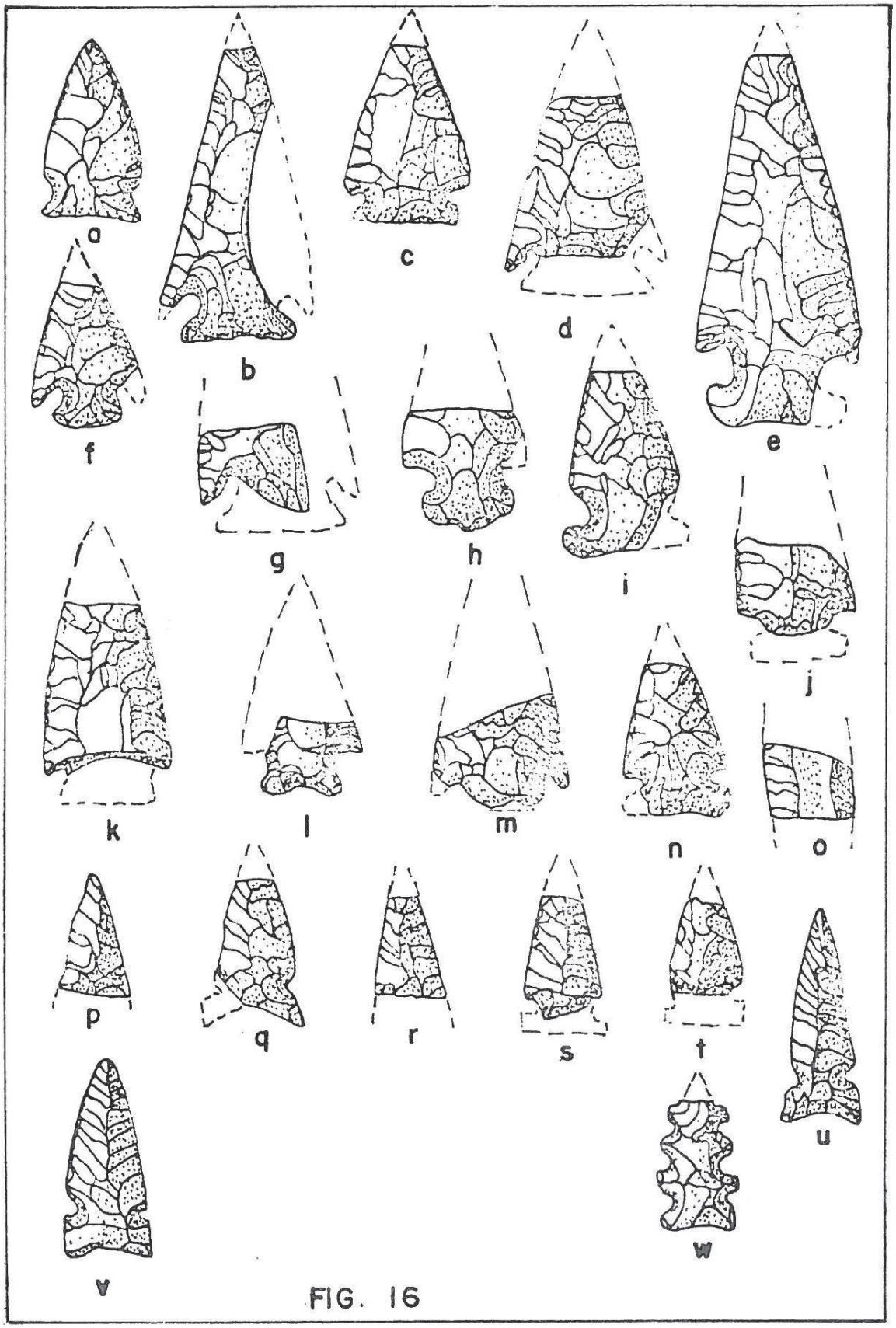

FIG. 16

Figure 16. Site 32 (a) projectile point. Site 33 (b), (c) projectile points. Site 37 (d) projectile point. Site 73 (e) projectile point. Site 66 (f) projectile point. Site 57 (g) projectile point fragment. Site 69 (h), (i) projectile points. Site 80 (j) projectile point. Site 92 (k) projectile point. Site 93 (l) projectile point. Site 101 (m) projectile point. Site 7 (n) projectile point. Site 17 (o) projectile point. Site 39 (p) projectile point fragment. Site 49 (q) projectile point. Site 64 (r) projectile point fragment. Site 70 (s) projectile point fragment. Site 79 (t) projectile point fragment. Site 109 (u-w) projectile points.

CHAPTER VI

PICTOGRAPHS

Cut into the Ten Sleep Sandstone and a Chugwater Sandstone unit in the survey area are rockshelters. On the walls and ceilings of many of these shelters were found pictographs. Four of these, Sites 2, 12, 61 and 111, had many well-preserved examples. These pictographs are those discussed here. The pictographs in other shelters, Sites 5, 11, 18, 24, 25 and 107 were too fragmentary to work with effectively; therefore, they are not part of this discussion.

I am using the term pictograph to describe any design or figure painted or drawn on rather than carved, cut, pecked or incised into rock. The latter are called petroglyphs (Renaud 1938). There are five terms used to describe pictograph forms which apply to these figures: anthropomorphic refers to figures of general human form. Zoomorphic refers to figures of animal form, asphytomorphic refers to plant-like forms. Skeuomorphic refers to figures in the form of man-made objects. Geometric takes in the remaining forms.

Apparently, two pigments were used, a red and a black. The black was possibly charcoal mixed with some kind of animal grease. The red may be hemitite or some other red lithic material mixed with grease. A very small amount of hemitite was found in the process of excavating Site 2. In each of the four shelters investigated, both red and black were used.

There are over a hundred different figures and designs found in the four shelters. An attempt has been made to compare these pictographs with pictographs and petroglyphs from several sites in several states. At this time only one figure was found in the exact form as one at another site (Fig. 17c). This figure is found in the panel at Castle Gardens, Wyoming (Renaud 1936). It seems to be a male phallic symbol. The interior symbol is found on several of the figures at Castle Gardens projecting from their crotches. A figure from Golden Valley, Montana also has this symbol projecting from its crotch (Conner 1962).

There are other figures which are similar in some respects to those in various sites in Wyoming and elsewhere, but none are exactly the same in form. The herd of ungulates from Site 12 (Fig. 19a) is very similar to some petroglyphs at the Twin Creek Sites in the Shoshoni Basin of Wyoming (Sowers 1940). The main difference is the attempt here to give perspective to the herd by grading size and putting the figures in a horizontal line. Those at Twin Creek are apparently randomly placed in a circular group.

Another motif found at Site 12 is the projectile point with the feather and shaft projecting into a figure (Fig. 18a). Unfortunately, it is not possible to discern the figure represented. This motif is a very common one; it is found at several different sites in Montana, Wyoming, South Dakota, Colorado and Utah. This particular projectile point design is very similar to those found at Pictograph Cave, Montana (Mulloy 1958) and Castle Gardens, Wyoming (Renaud 1936).

The painted hand is another motif found in many areas. This hand is an imprint of a left hand (Fig. 18e). The imprint of human hands is a frequent design in south-central Montana (Conner 1962). In other areas hands are drawn or painted to represent an outstretched hand. It is difficult to tell in many of the reports whether the hands shown are imprinted or drawn. Without knowing this it is impossible to know if there is a significance to imprinting versus drawing.

Shield figures are found in two of the shelters, Sites 12 and 111. These shield figures have been compared to those from many sites. At this point the circular element with some type of figure represented behind it is all that is similar. Site 111 had four different shield figures. Aside from the circular shield the other elements they had in common were two parallel lines running from top to bottom. Aside from the parallel lines only one figure had a decorative element on the shield (Fig. 22a). This same figure is the most elaborate in that there is a club-like projection on its right side and the figure's head had antler-like projections. Two others have lines projecting from the head in a radiating pattern (Fig. 23b,c). These four shield figures represent the use of three types of leg and foot designs (Fig. 22a, Fig. 23 c,d), three types of head designs (Fig. 23b,c,d) and three types of designs on the figure's faces (Fig. 22a, Fig. 23c,d). This variation at one site in the design elements leaves doubt to the validity of the idea that all elements in a shield figure should be treated with equal importance when classifying them. Even the circular shield is not consistent for shield figures. Site 12 had one shield figure in which the shape of the shield is a bison head (Fig. 18d). The leg and foot element is the same as two of those at Site 111. This particular shield-type seems to be unusual and has not been recorded in other areas.

The circular shield figures show some similarities with those in other areas. Some of the shield figures from Pictograph Cave have the two parallel lines down the center of the shield. Six of them had club-like projections from the right upper area of the circle as one of those in Site 111. A shield figure from Stanley County, South Dakota has a spear-like projection on the left side, and the leg and foot element are the same as those in Site 12 and 111 (Over 1941). Two figures from the Uncompahgre Plateau of Colorado are similar to a figure at Site 111 (Fig. 22a) (Huscher 1939).

It has been postulated that the shield figure developed in the Southwest moving north and east onto the Plains. The opposite has also been considered a possibility (Gebhard 1966). It certainly seems that many of the shield figures in the Southwest, especially those associated with the Fremont Culture are pre-horse. They are never found in association with horse-like animals (Morss 1931; Taylor 1957). On the Plains the shield figure often is found in the same shelter as historic or horse period work. However, it is not always possible to be sure that this association represents the same time period. There are shield figures in Wyoming and Montana that have no association with horse figures. (Gebhard (1966) feels the shield figure was probably developed in Central Mexico moving into the Pecos area of Texas and then into the Southwest and finally into the Plains. The style, he postulates, follows the spread of shield use. Proof for this hypothesis is lacking. It is possible that since the highest concentration of shield figures is in southern Montana

and northern Wyoming that the center is here. It is interesting to note that shield figures have been found as far west as California and as far east as Maine. An alternate hypothesis is that the shield figure is similar everywhere because there are only so many ways to show a man holding a shield.

The V-shoulder motif is another common one. Two figures with the V-shoulder are found in Site 111 (Fig. 28d, 30b). This motif is found in Pictograph Cave, Castle Gardens, the Kobold Site, Montana (Frison 1970) and Golden Valley, Montana to name a few.

Other anthropomorphic figures are found in this area. Two realistic human figures from Site 12 may be dancing (Fig. 17a, b). They are similar to figures at Clay Creek, Colorado (Renaud 1936) and less similar to one at Dinwoody (Sowers 1939). A possible costumed figure also comes from Site 12. The figure seems to have a bison headdress and some type of a staff (Fig. 19b). Both Site 2 and 61 have very stylized anthropomorphic figures (Fig. 41e, 20a). A similar oblong figure is found among the Castle Gardens petroglyphs. Another possible anthropomorphic figure at Site 111 has a head similar to one at Pictograph Cave (Fig. 28a).

The continuum from realistic to stylized is also found in zoomorphic figures. This is particularly well demonstrated with horned or antlered figures. Some figures in Sites 2 and 12 are quite realistic (Fig. 31c, 18b). Others from Sites 2 and 12 are more stylized. Note the two herds of probable Bighorn sheep from Site 12. One is the most realistically executed, the other quite stylized (Fig. 19a, e). The possible elk in Site 2 is probably the most stylized animal (Fig. 33a).

The bear is portrayed in profile in Site 2 (Fig. 33b) and in motion in Site 12 (Fig. 18h). Other mammal forms are generalized making it difficult to determine exactly what they represent. A possible porcupine is found in Site 2 (Fig. 32b). Two figures also from Site 2 may be rabbits (Fig. 35a).

The one possible horse is from Site 111. An anthropomorphic figure appears to be standing on its back. What appears to be reins are also represented. This may be a crude attempt at drawing a horse and rider (Fig. 28e). It is also possible that this is an attempt to represent a figure standing behind an animal.

Two turtles are possibly represented in the area. The figure from Site 111 seems incomplete or partially destroyed (Fig. 27g), while the one from Site 2 is generalized but complete (Fig. 41g). A turtle figure was prominent at Castle Gardens though it was much more elaborate than any of these. The only other reptile found is a snake from Site 2. The snake is common in the Southwest and Colorado; however, they do not take this particular form, being usually headless (Fig. 37).

The possible insect from Site 111 is fairly unusual (Fig. 26g). Only one other insect was noticed as a pictograph at Newcastle, Wyoming though the two are quite

different in form (Renaud 1936).

There are many pictographs that must be included under the term geometric. What they represent is impossible to say with any reliability. There is a bison head with a series of design elements above it (Fig. 40); one, the elongated rectangle, is seen again above a possible bison figure (Fig. 38). This figure also has repeated geometric designs associated with it. The figures in the upper right of that group are found singlely elsewhere on the shelter wall (Fig. 25j).

One figure is made of several components (Fig. 36a). The second concentric line is repeated in the elk figure in the same shelter (Fig. 33a). What the total design is meant to represent is uncertain. Considering the same design element is surrounding the elk, it may represent an animal trap.

A circular design with lines radiating out from its base is found four times along the wall of Site 2, spaced approximately 24 feet apart (Fig. 34a). They may represent the sun and its rays, a cloud and rain or a fringed shield. Of all the pictographs the almost equal spacing suggests ceremonial significance. Similar designs are found at Black Mesa, New Mexico, Raton, New Mexico and Kroening Ranch, New Mexico (Renaud 1936). Another design (Fig. 35c) also appears several times along the wall, but not equally spaced.

Some geometric pictographs, after comparing them to pictographs and petroglyphs from Utah, Montana, South Dakota, New Mexico, Colorado and areas in Wyoming, show some similarities. One figure is similar to a petroglyph at Twin Creek, Wyoming differing in the number of lines and being closed off at the top (Fig. 39f). One may also be similar to spirals at Twin Creek and those in the Los Animas district of Colorado (Fig. 25g) (Renaud 1936).

Figure 25i is similar to several pictographs in Colorado and New Mexico. They include petroglyphs at Dykus Canon, Colorado, the Apishapa District, Colorado and the Los Animas district (Renaud 1936). The cross is a common design element (Fig. 31e). This may be related to one at Dinwoody but again may have no connection. The large V (Fig. 39g) is similar to a petroglyph at Little Dry Creek, Wyoming (Sowers 1940). The circle (Fig. 25h) from Site 2 is also similar to one in white at Pictograph Cave and a petroglyph from the Newkirk District, New Mexico (Renaud 1936).

Figure 26b is similar to some at Turkey Creek, Colorado (Renaud 1936), especially in the circular element below horizontal and vertical lines. Figure 24c is similar to a petroglyph at Dinwoody and Pictograph Cave.

Figure 27d is similar to one in the Edgemont District of South Dakota (Renaud 1936). The general irregular lines from the ceiling of Site 61 are similar to some in Dykus Canon and Pictograph Cave (Fig. 21a). Figure 18f is similar to one at Little Dry Creek, Wyoming except it has a center dot and more lines radiating from it.

These pictographs as a whole give an indication of the variation possible in prehistoric art in the high plains and basins of Wyoming. They show some artistic ties to other area, particularly central Wyoming and southern Montana.

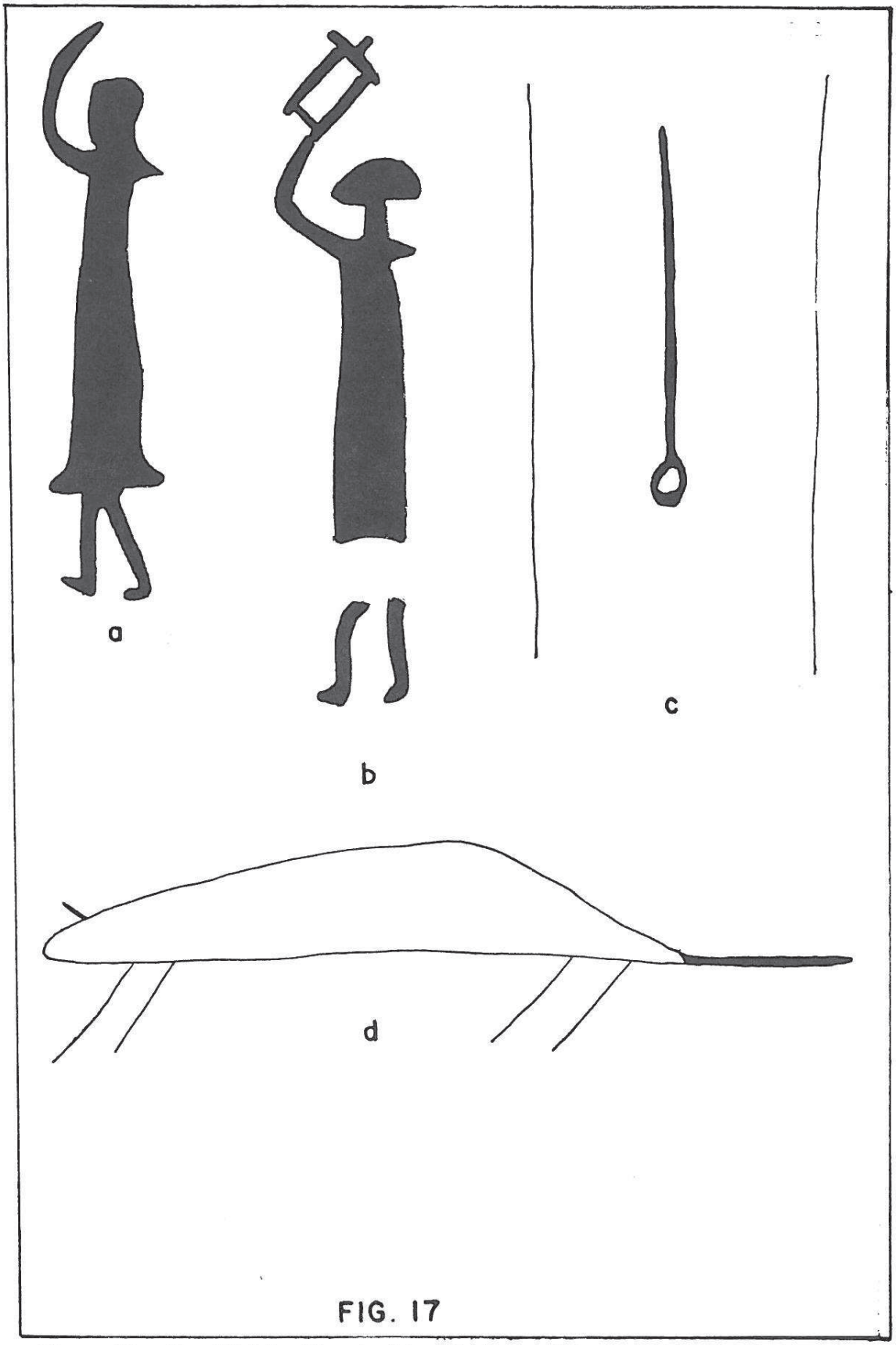

FIG. 17

Figure 17. Site 12 (a), (b) red, (c), (d) black. All one-half natural size.

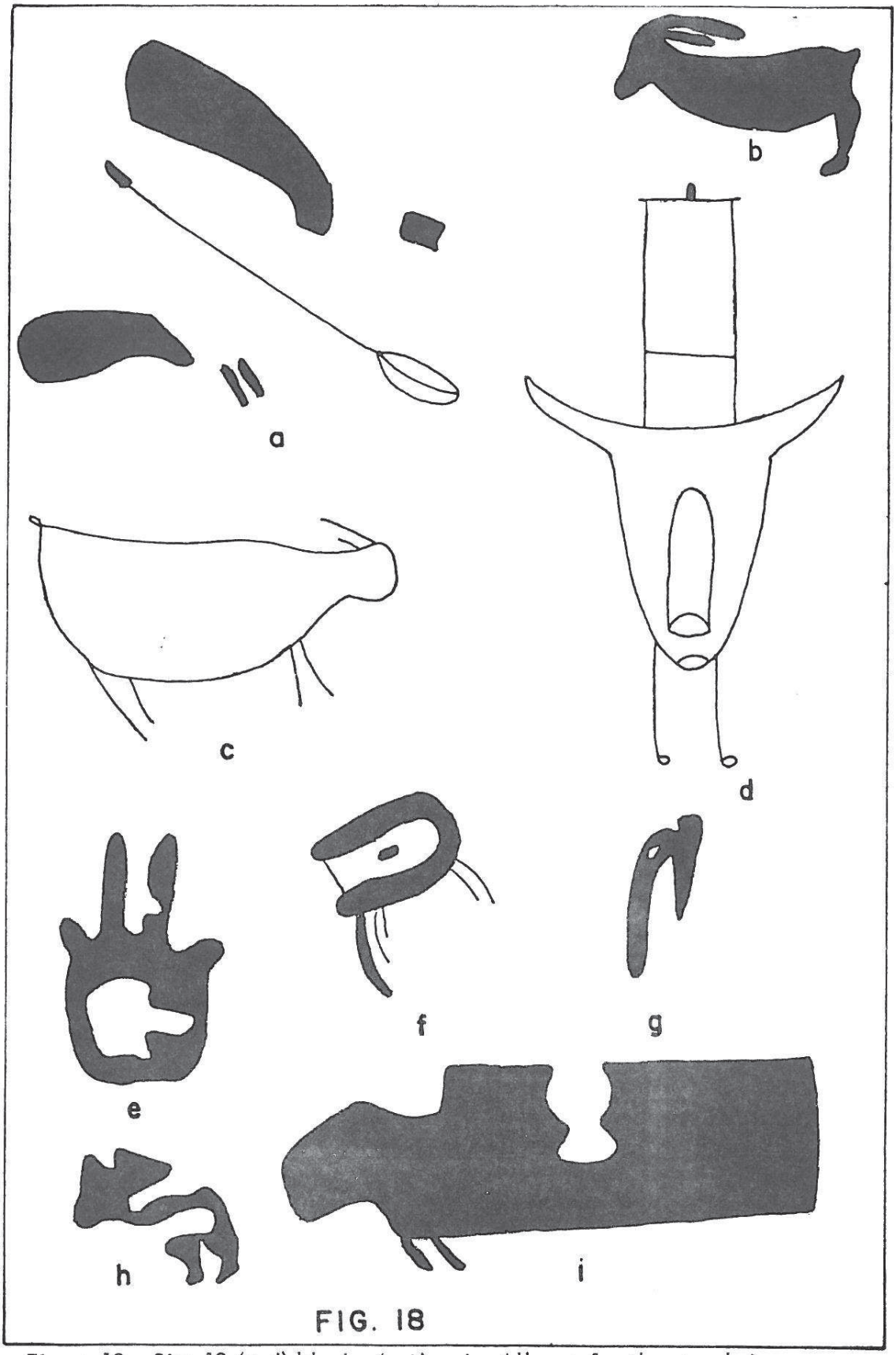

Figure 18. Site 12 (a-d) black, (e-i) red. All one-fourth natural size.

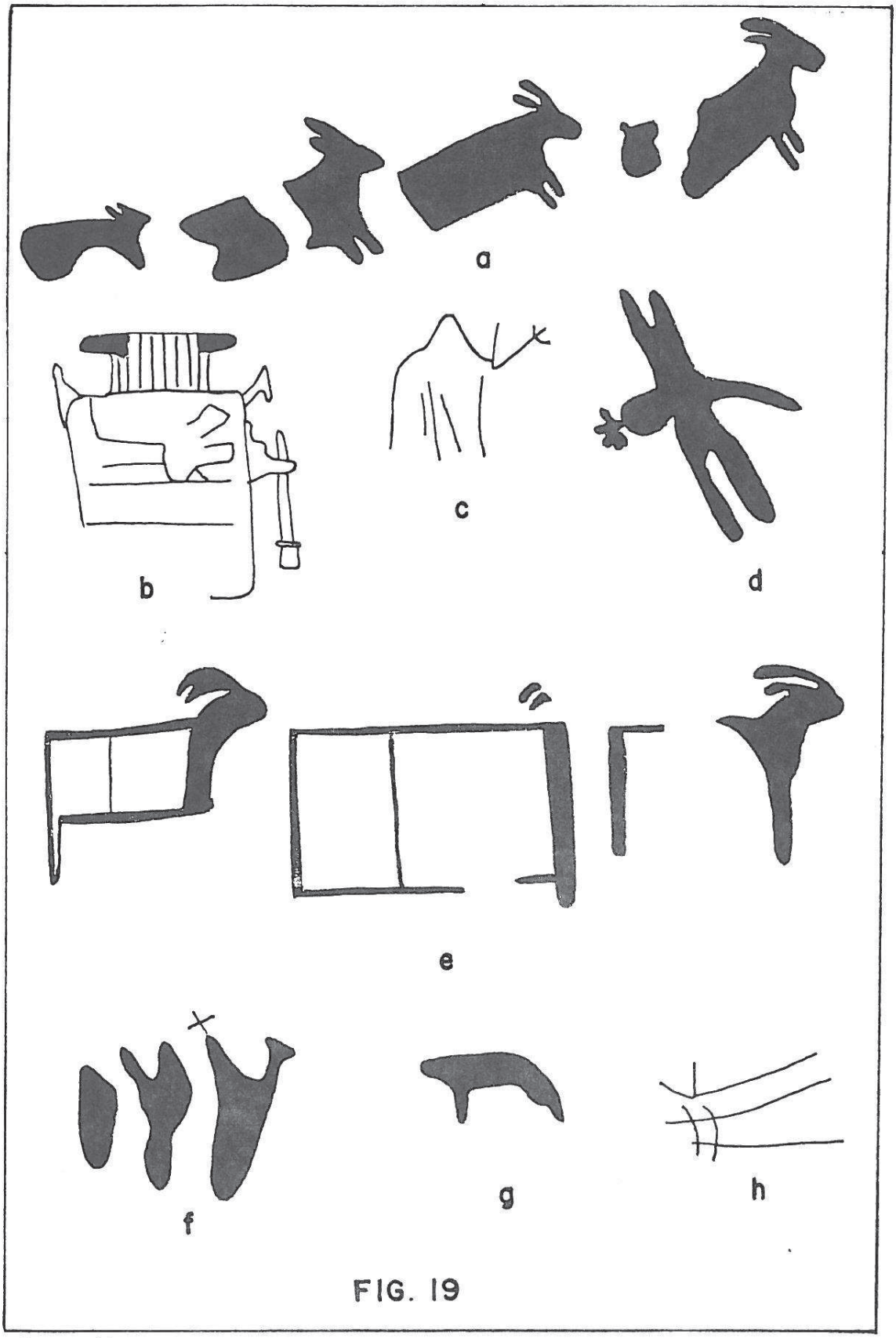

Figure 19. Site 12 (a-c) and (e) red. Site 61 (d), (g), (h) black, (f) red. All one-fourth natural size.

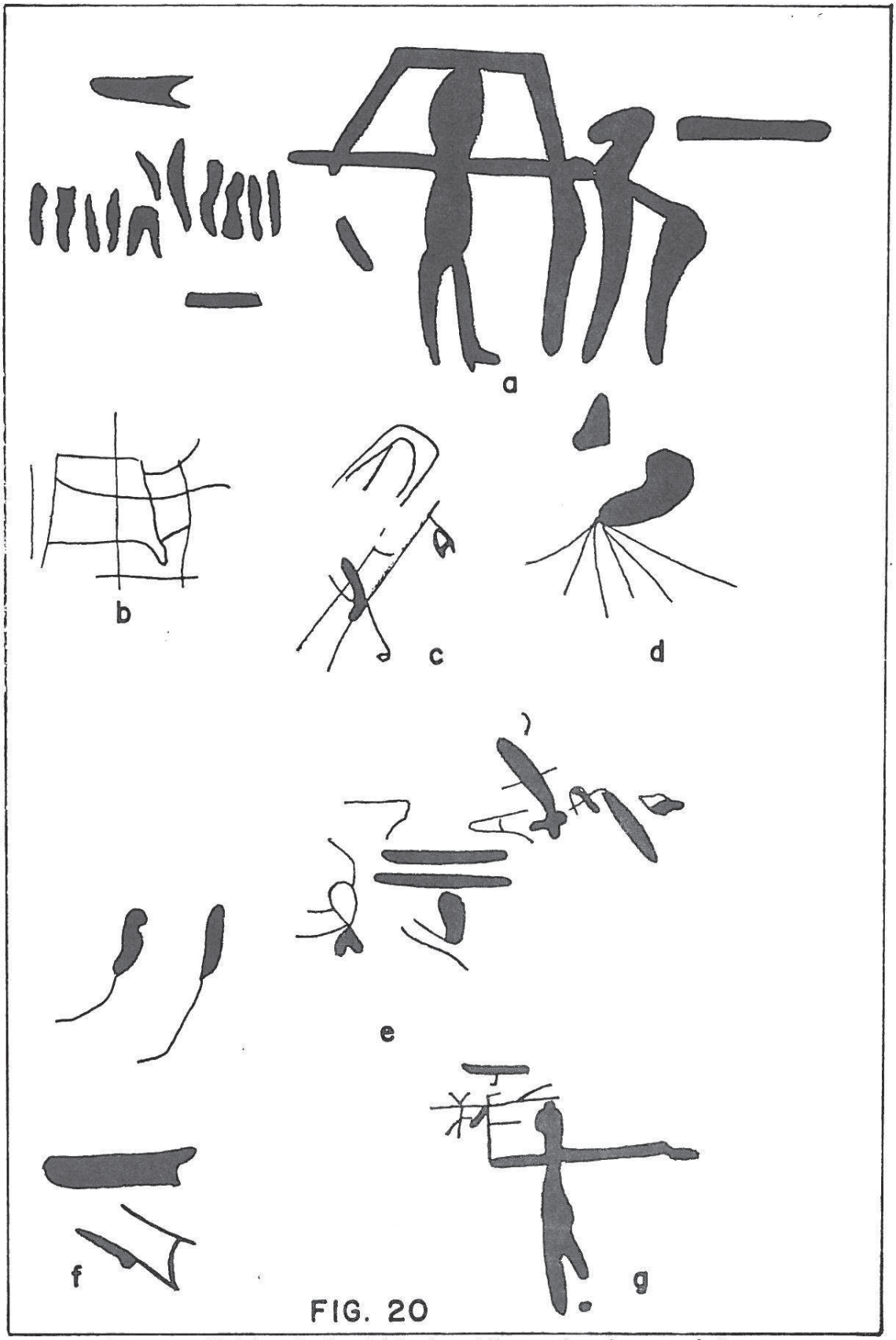

Figure 20. Site 61 (a) red, (b-g) black. All one-fourth natural size.

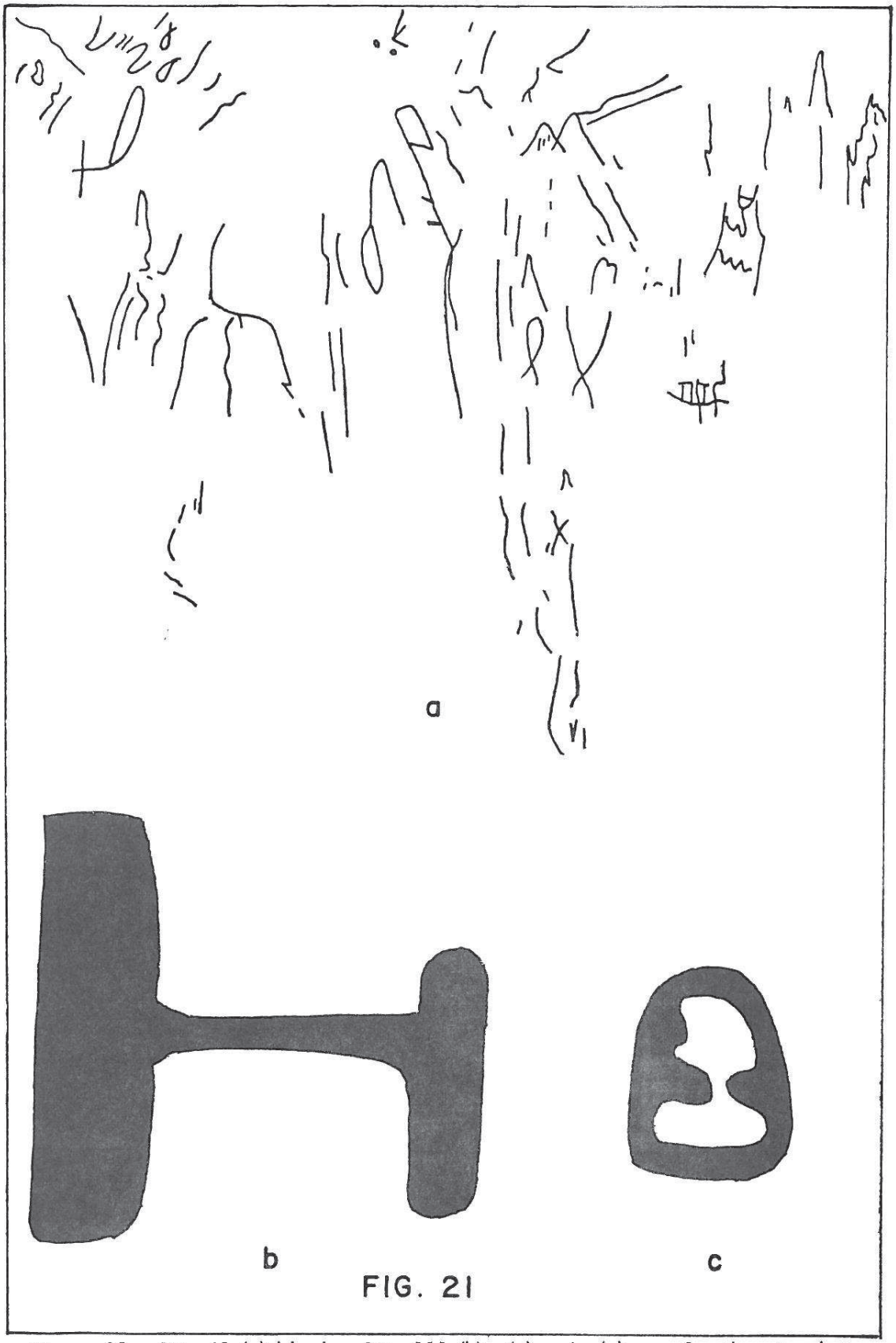

Figure 21. Site 61 (a) black. Site 111 (b), (c) red. (a) one-fourth natural size, (b), (c) one-half natural size.

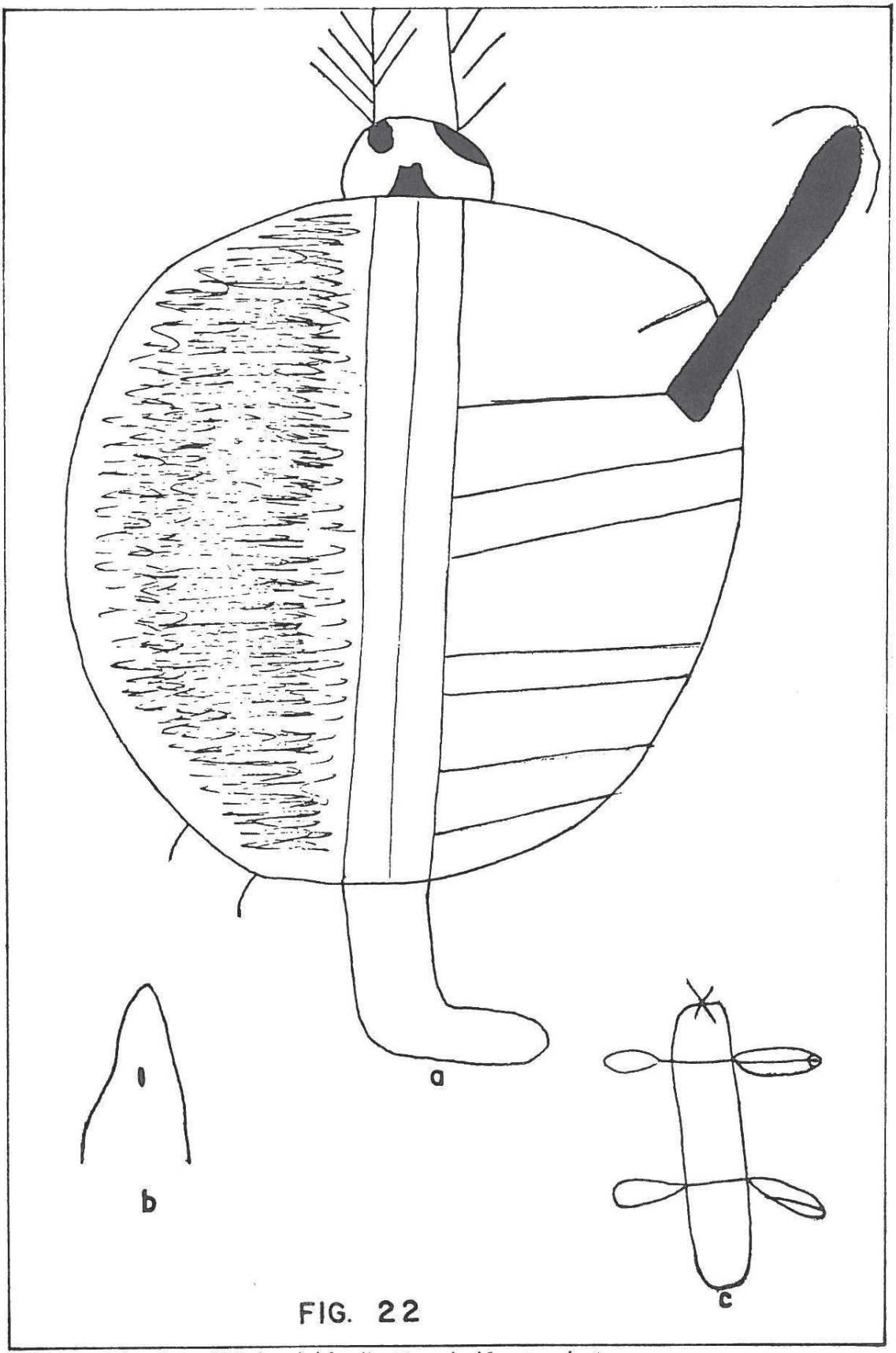

Figure 22. Site 111 (a-c) black. One-half natural size.

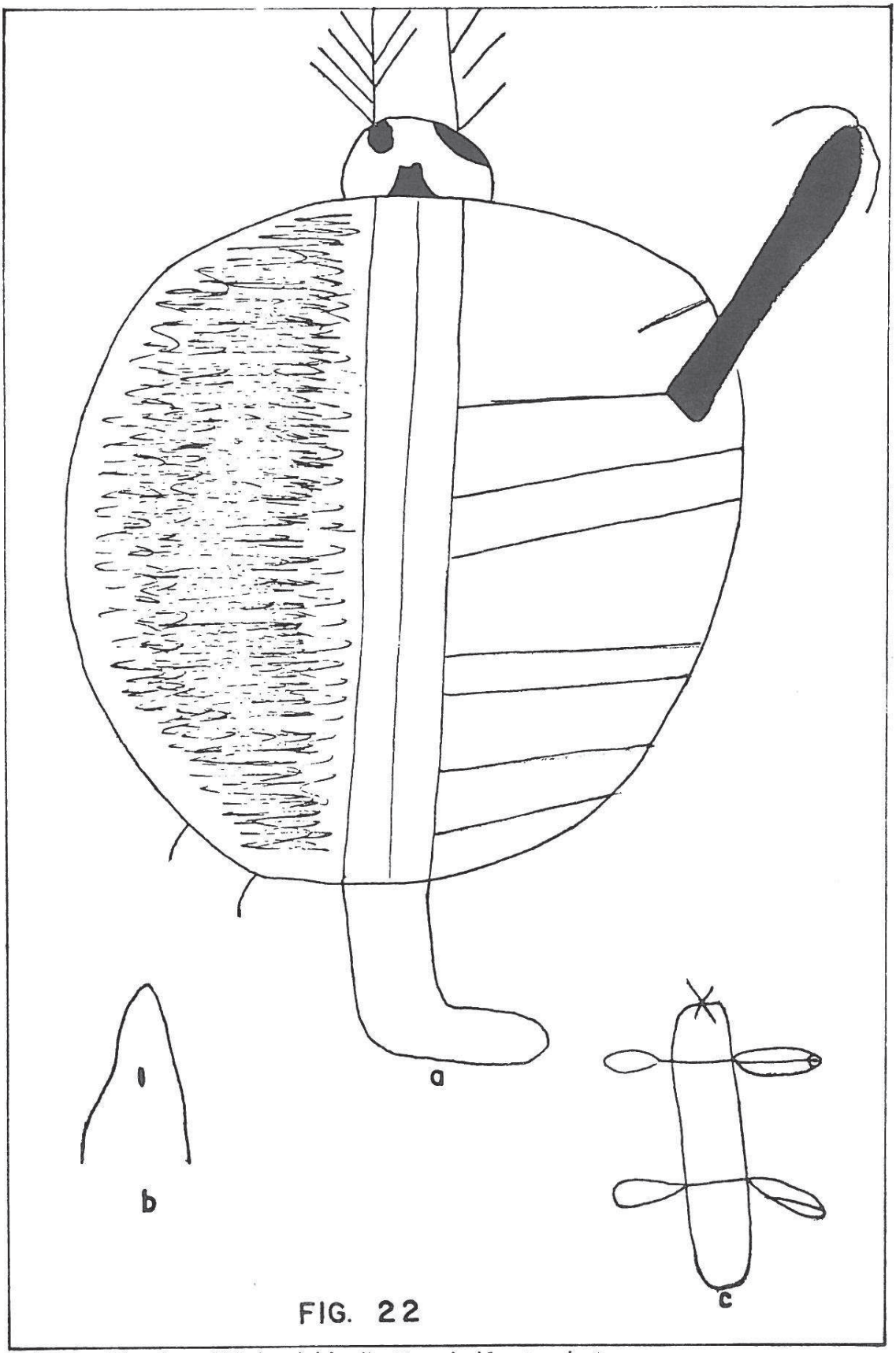

Figure 22. Site 111 (a-c) black. One-half natural size.

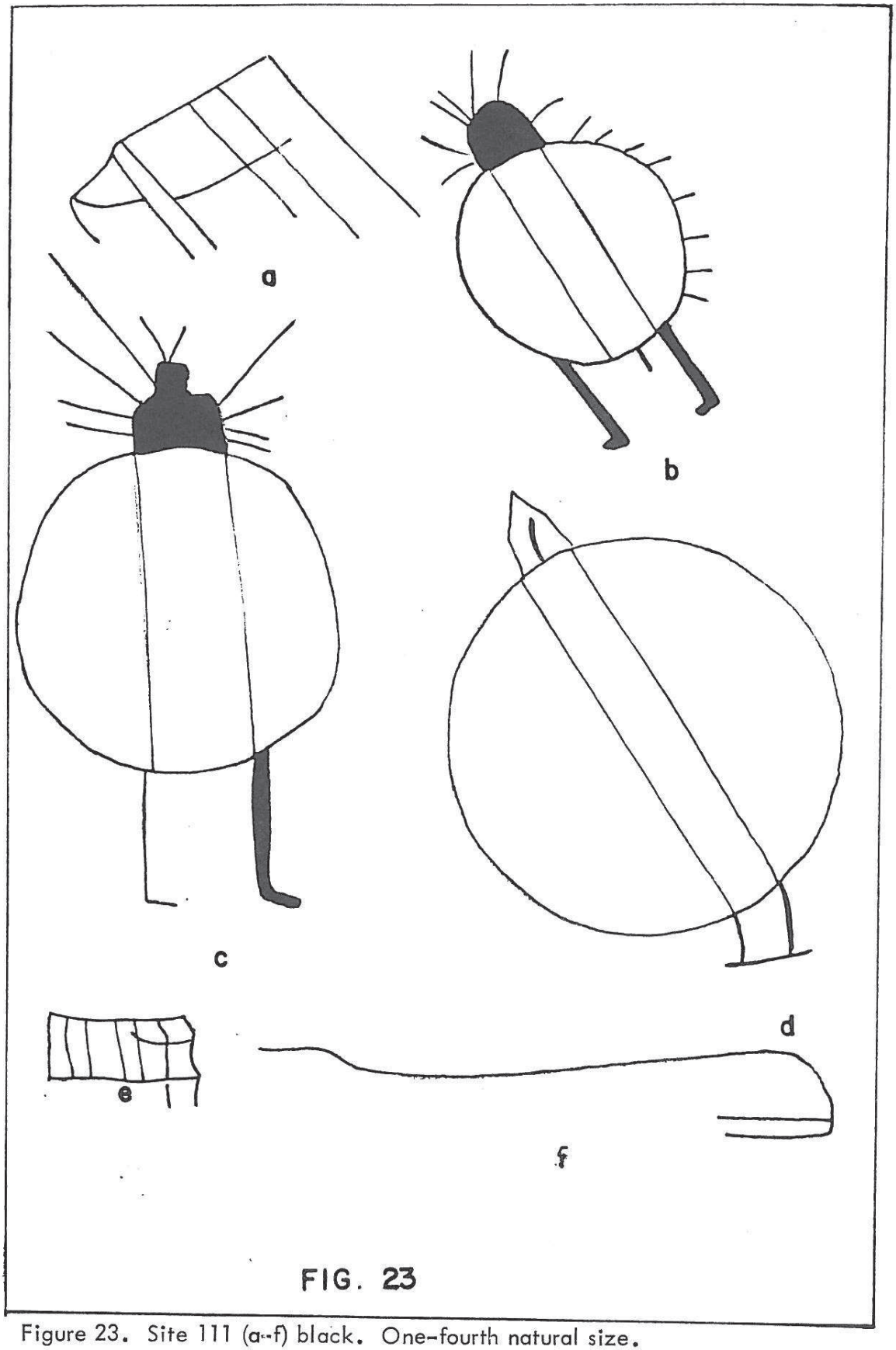

Figure 23. Site 111 (a--f) black. One-fourth natural size.

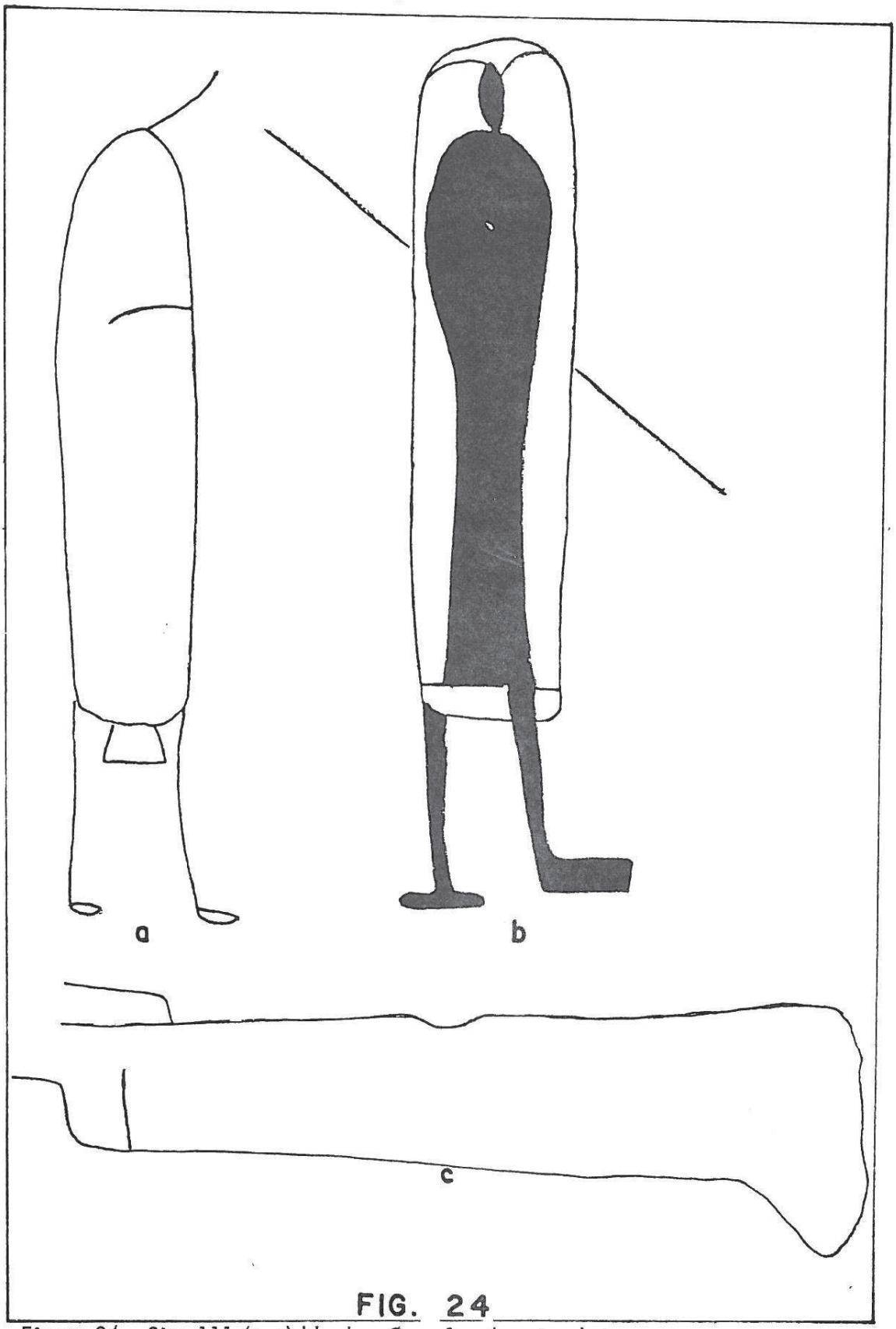

FIG. 24

Figure 24. Site 111 (a-c) black. One-fourth natural size.

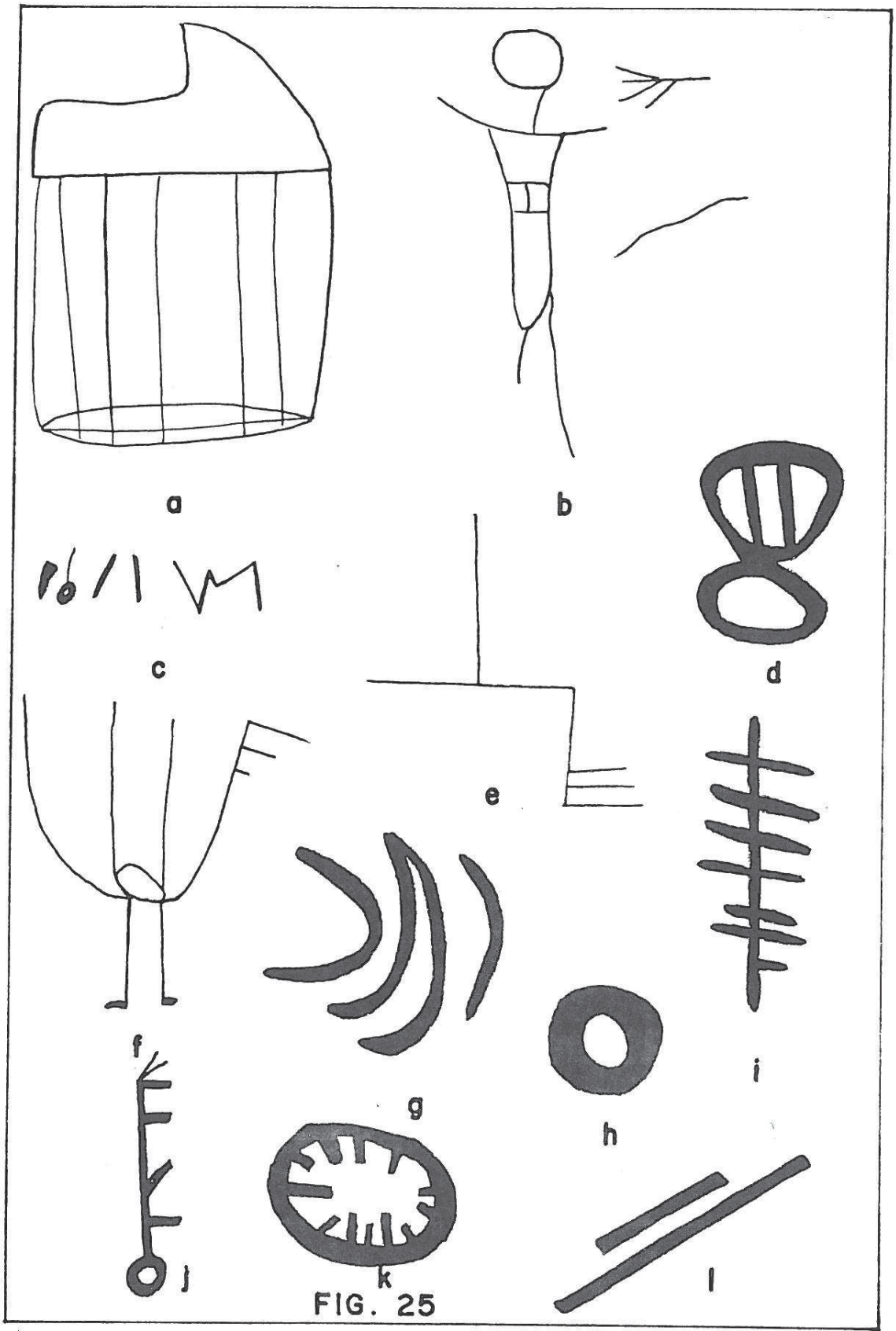

Figure 25. Site 111 (a-c), (e), (f) black. Site 2 (d), (g-l) red. All one-fourth natural size.

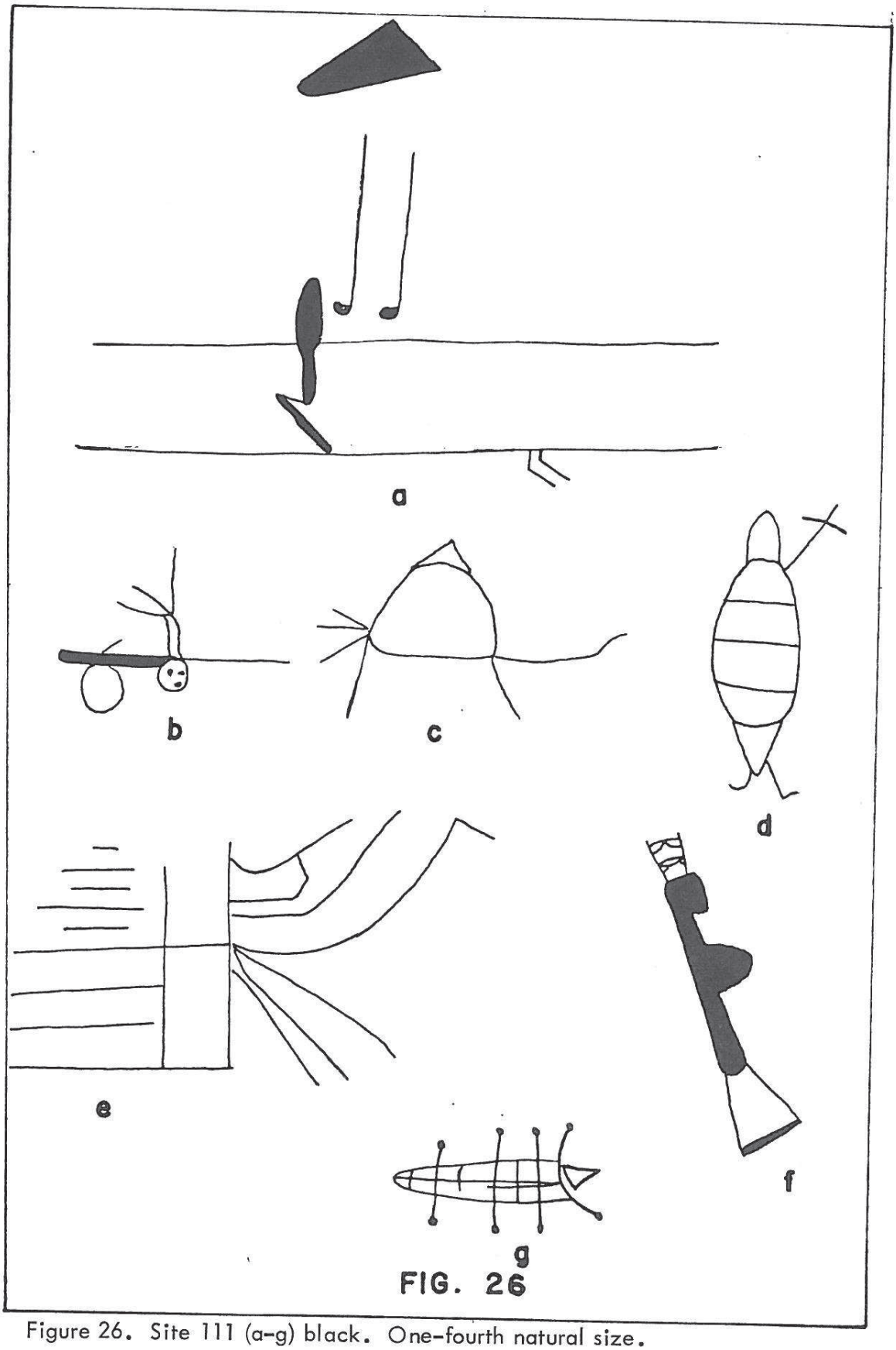

Figure 26. Site 111 (a-g) black. One-fourth natural size.

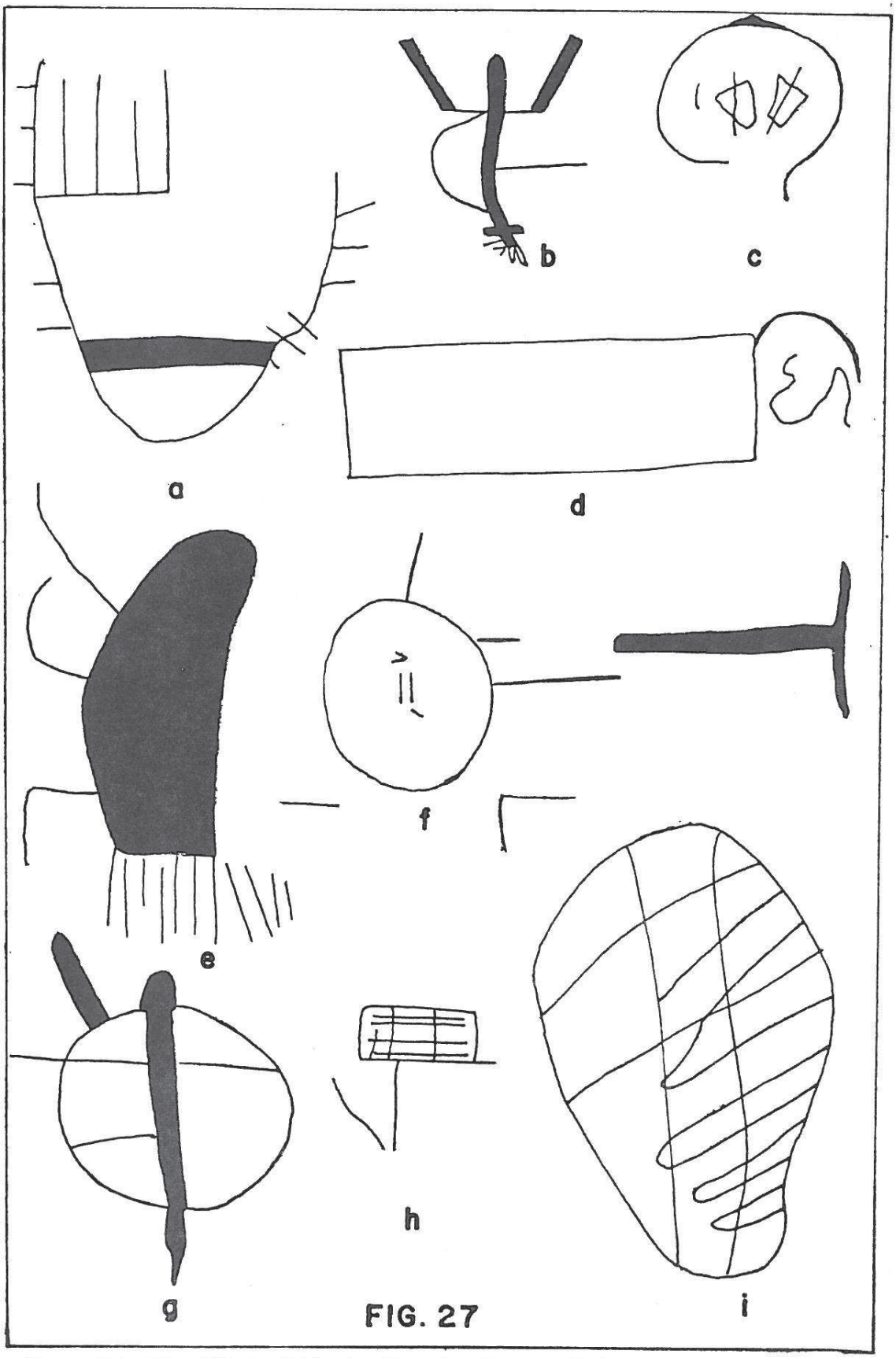

Figure 27. Site 111 (a-i) black. One-fourth natural size.

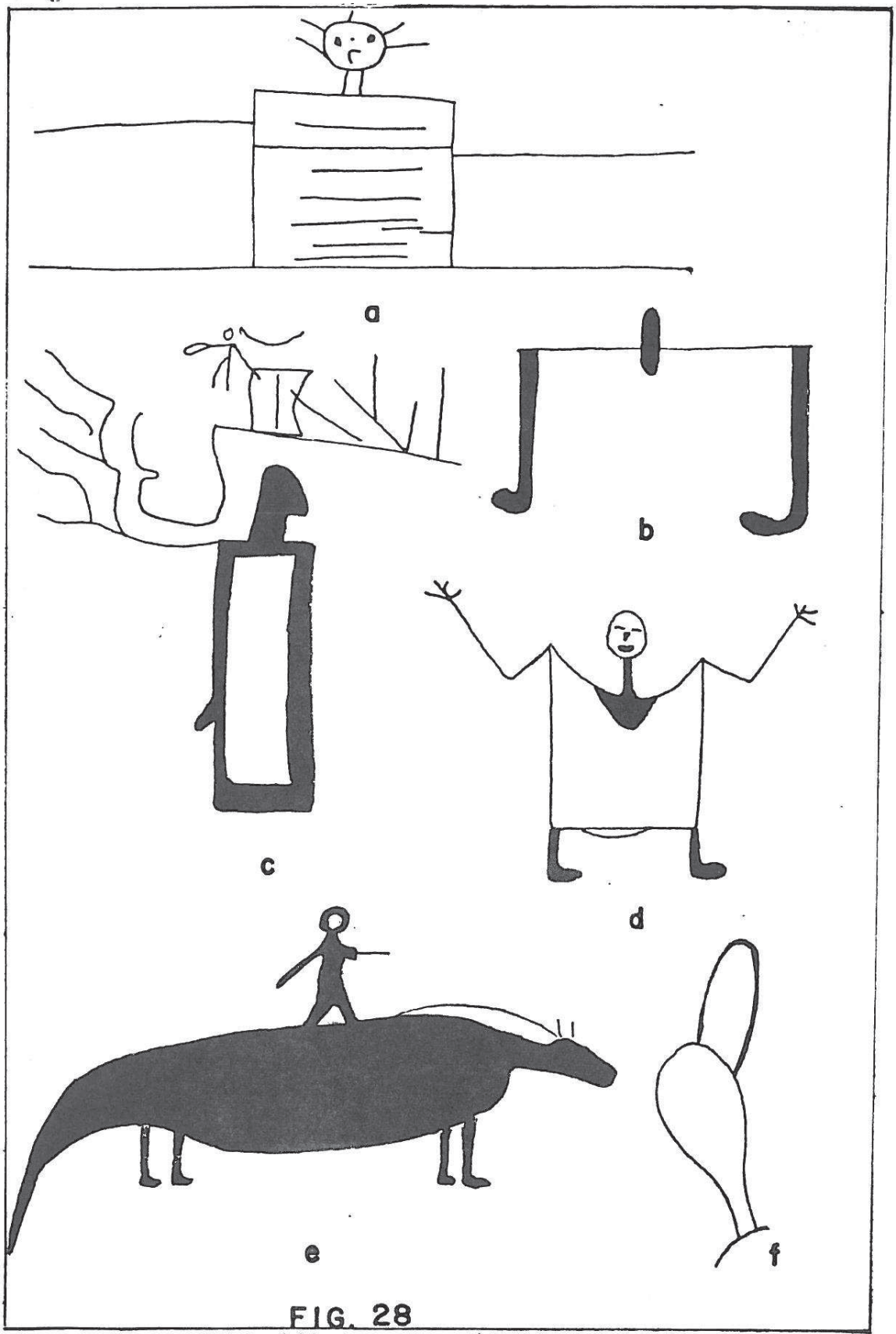

Figure 28. Site 111 (a-f) black. One-fourth natural size.

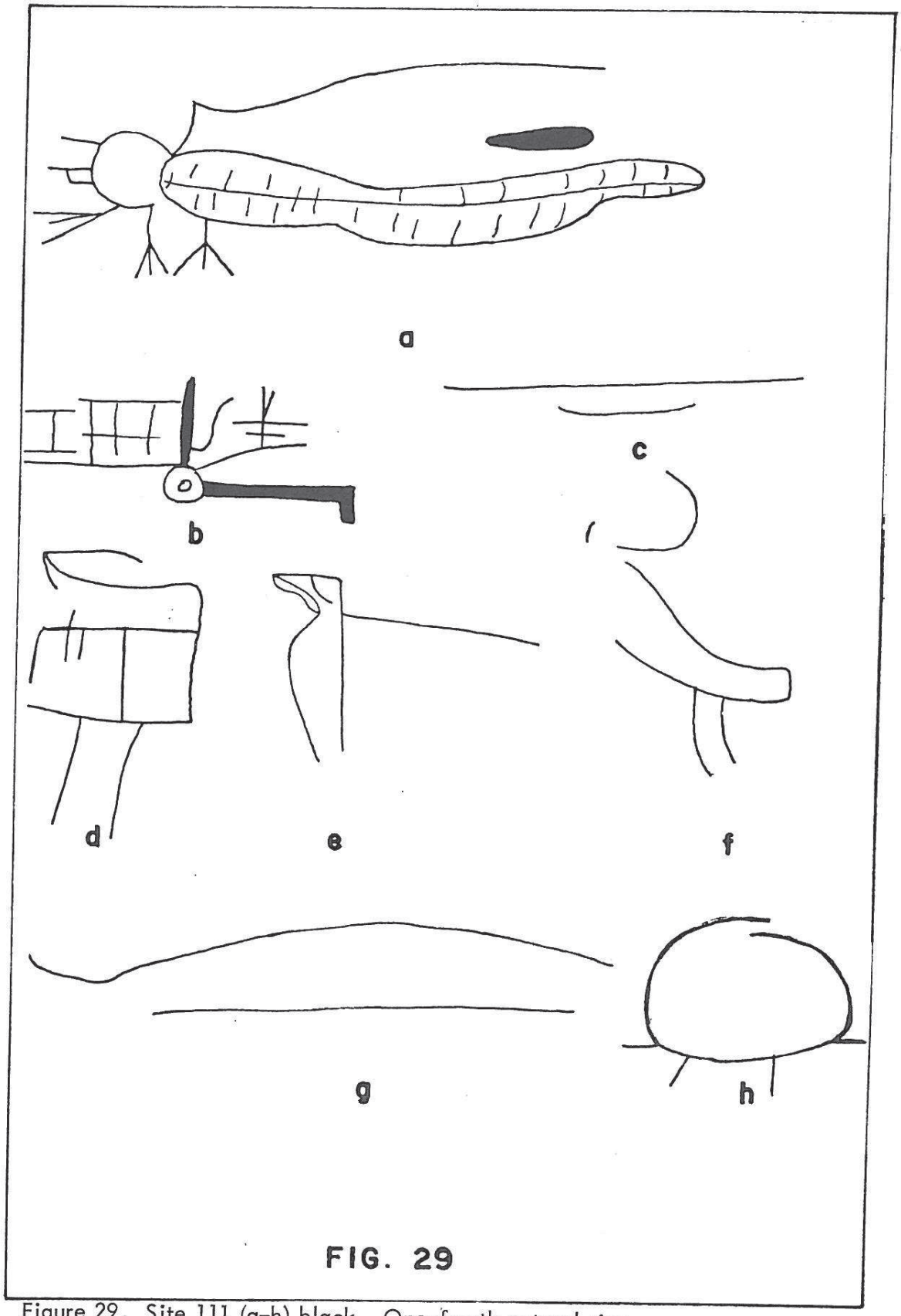

FIG. 29

Figure 29. Site 111 (a-h) black. One-fourth natural size.

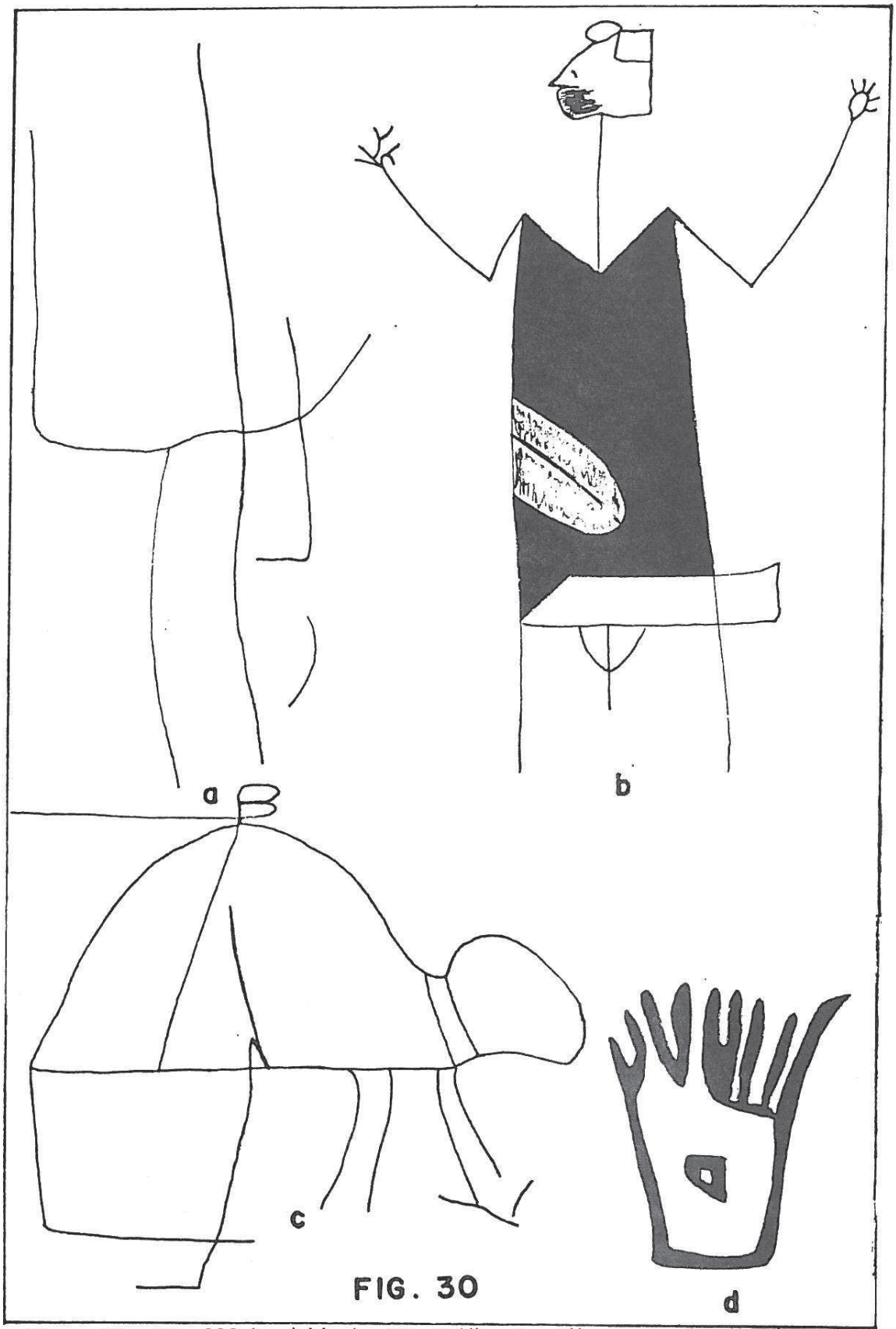

Figure 30. Site 111 (a-c) black. Site 2 (d) red. All one-fourth natural size.

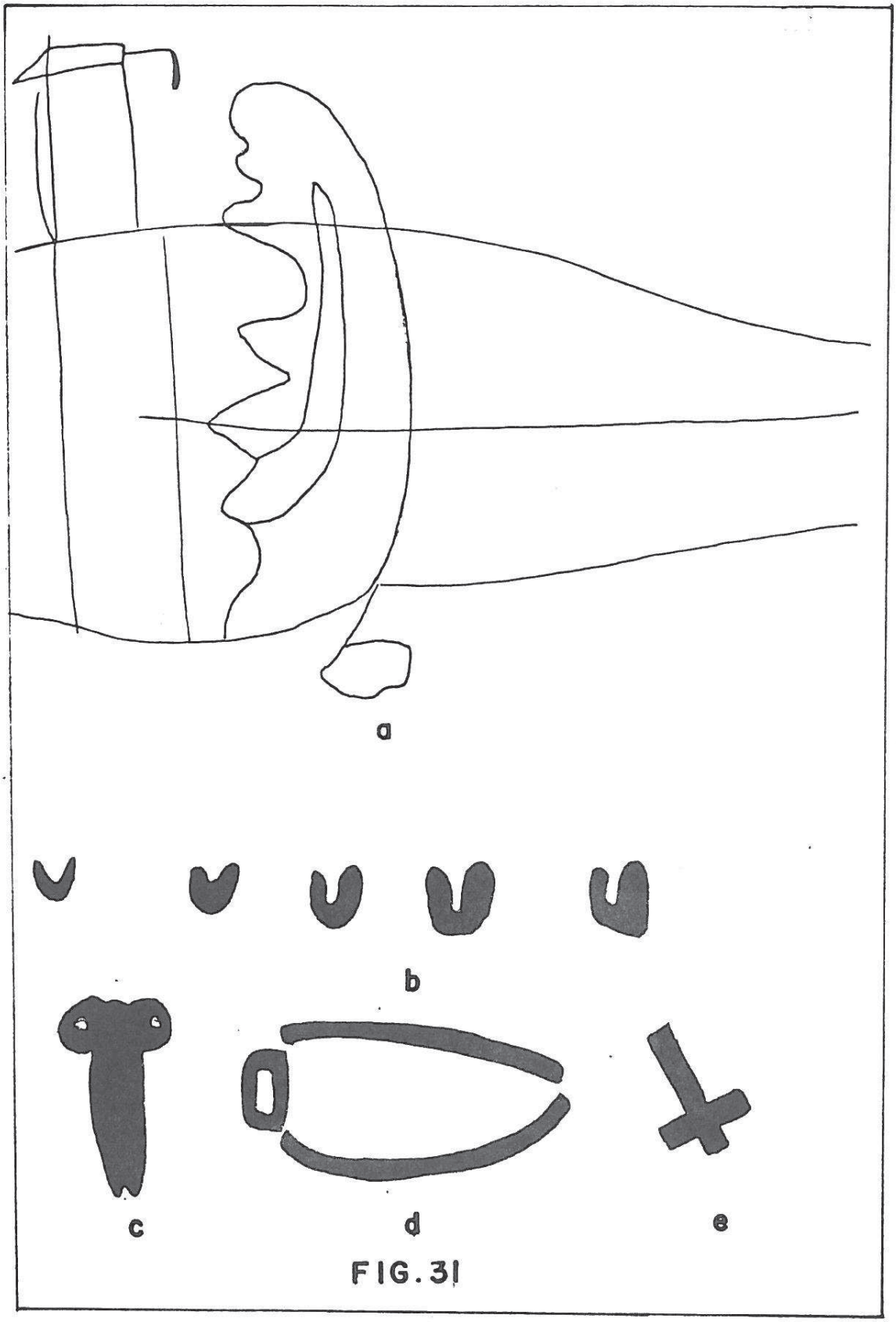

Figure 31. Site 111 (a) black. Site 2 (b-c) red. All one-fourth natural size.

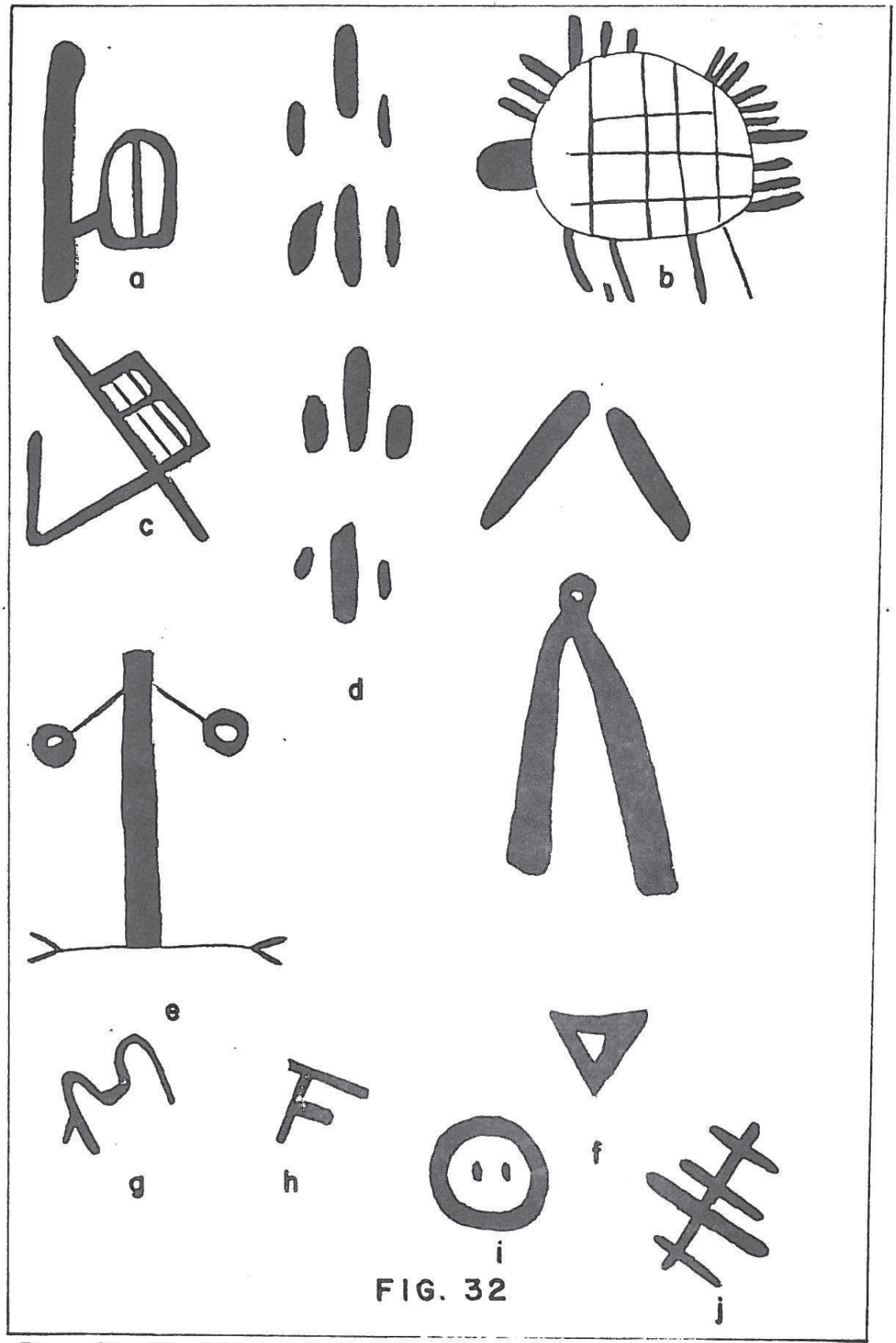

Figure 32. Site 2 (a-j) red. One-fourth natural size.

Figure 33. Site 2 (a-b) red. One-fourth natural size.

Figure 34. Site 2 (a-c) red. One-fourth natural size.

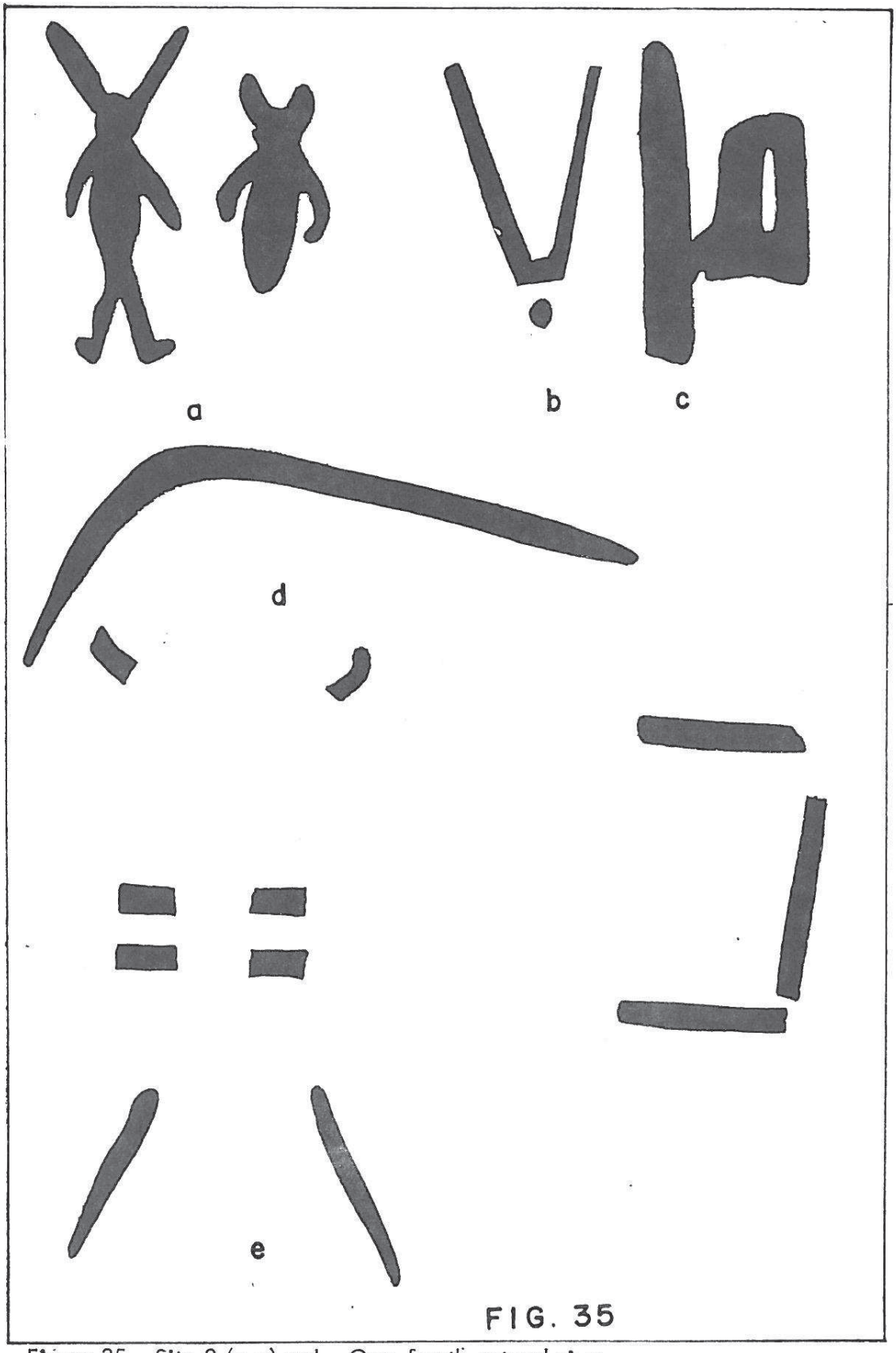

Figure 35. Site 2 (a-e) red. One-fourth natural size.

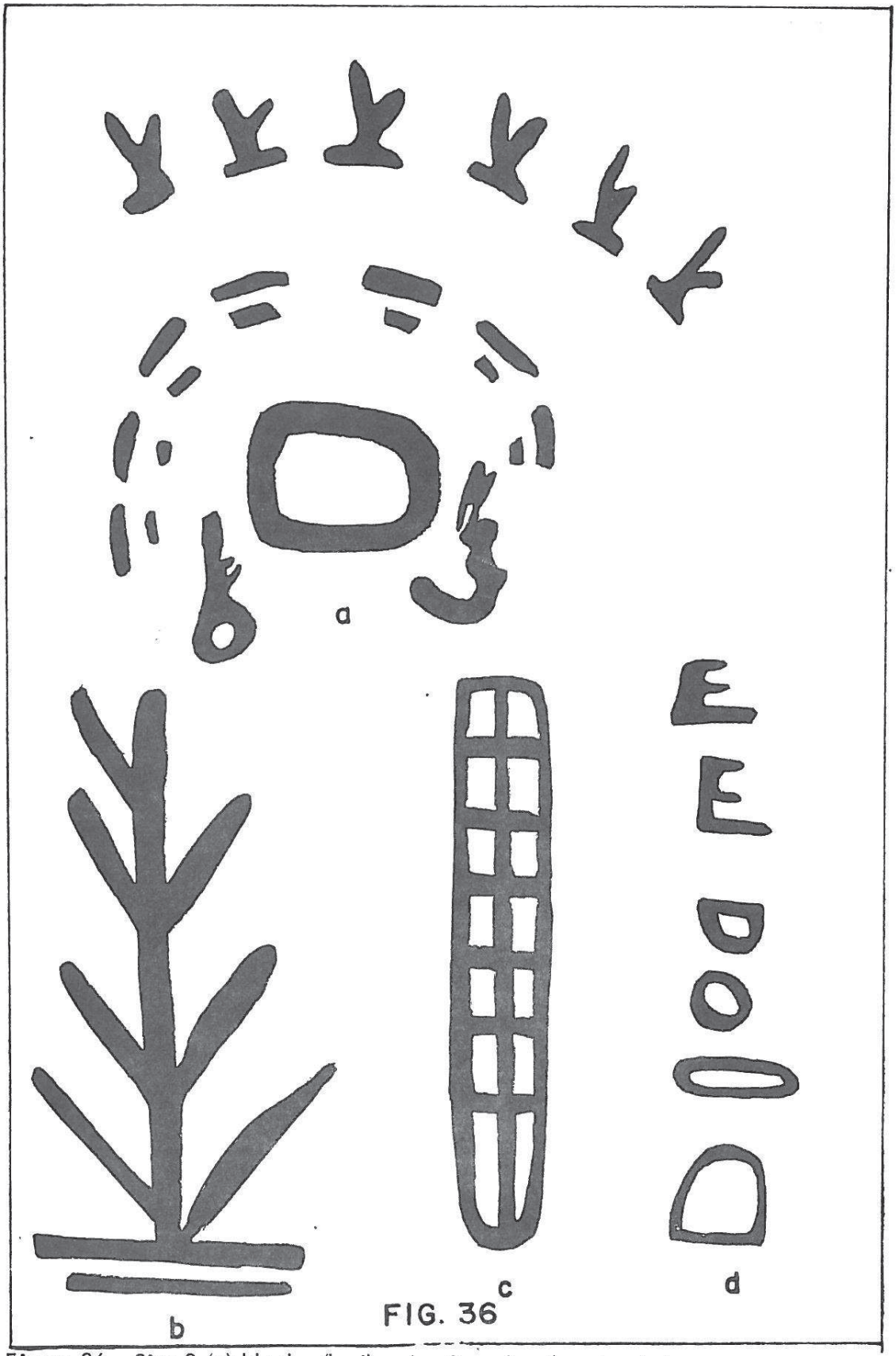

Figure 36. Site 2 (a) black, (b-d) red. One-fourth natural size.

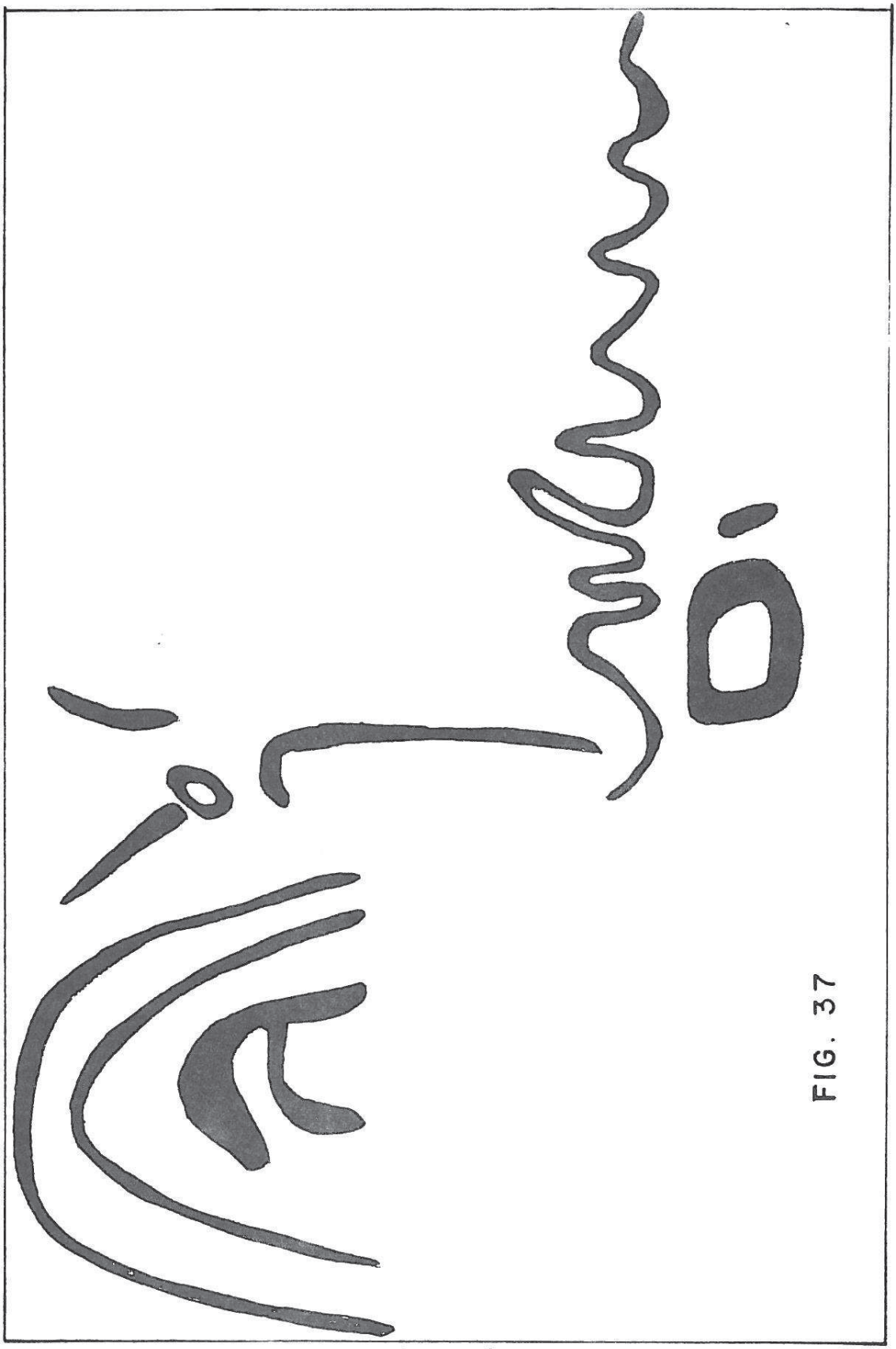

Figure 37. Site 2, red. One-fourth natural size.

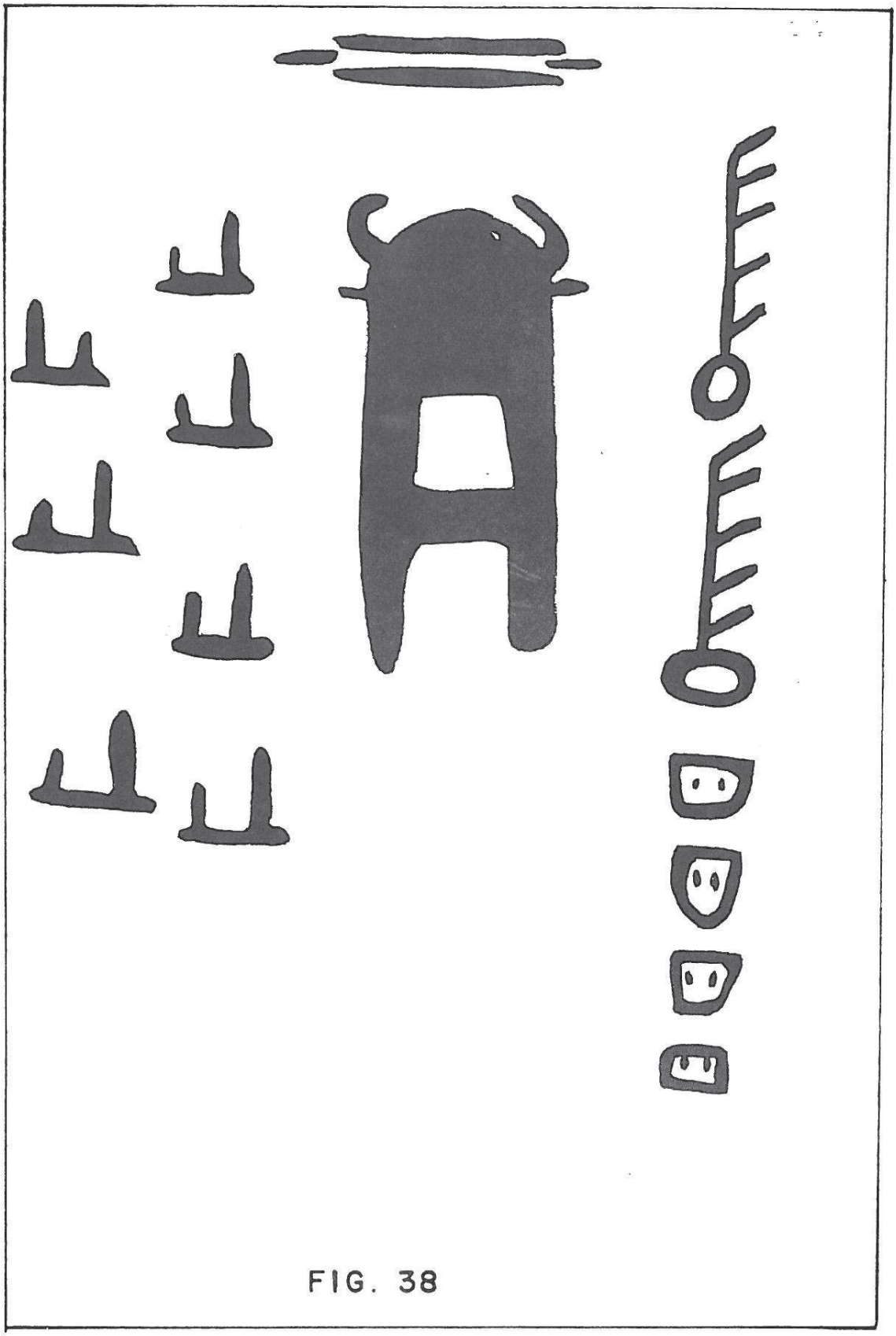

Figure 38. Site 2, red. One-fourth natural size.

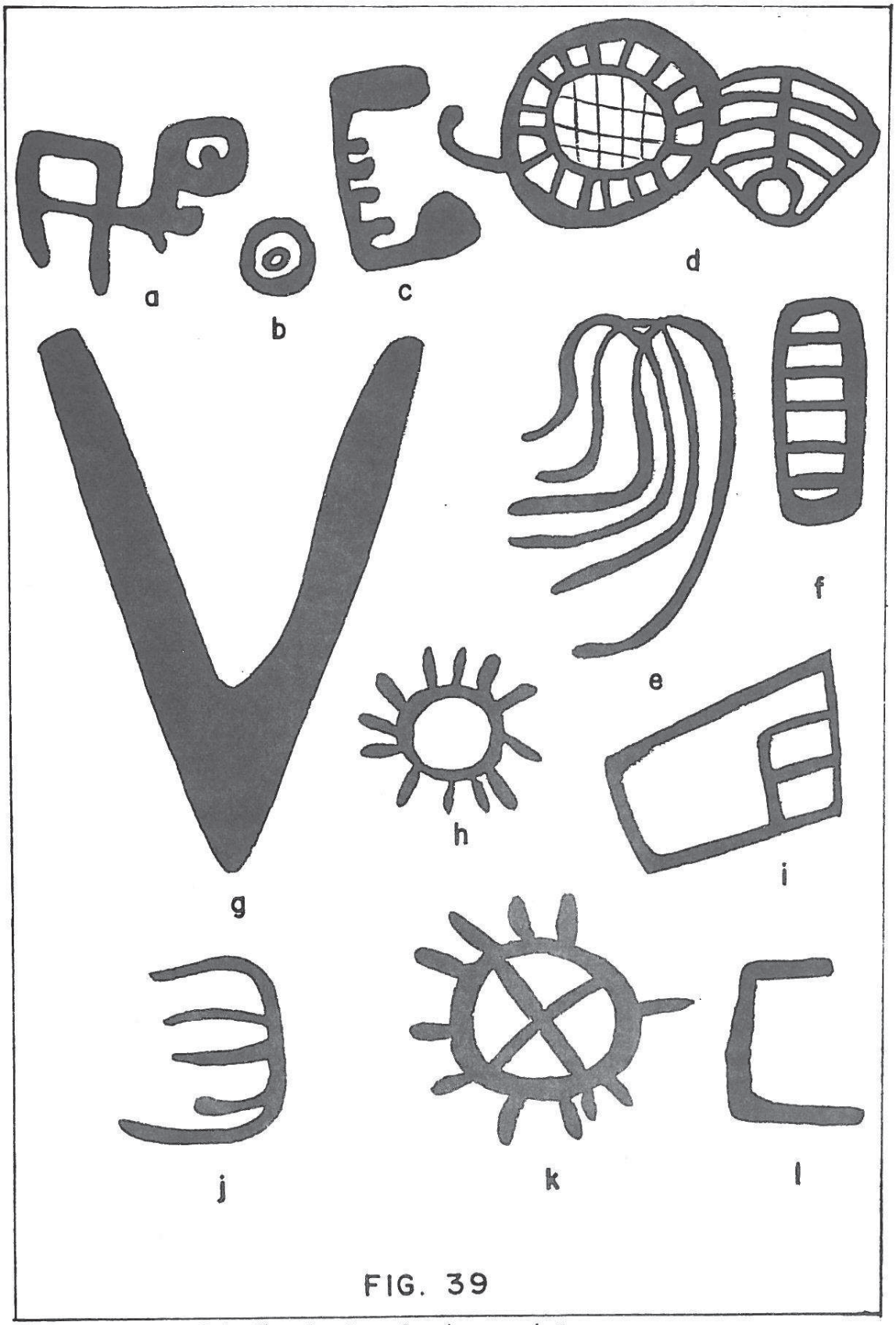

Figure 39. Site 2 (a-1) red. One-fourth natural size.

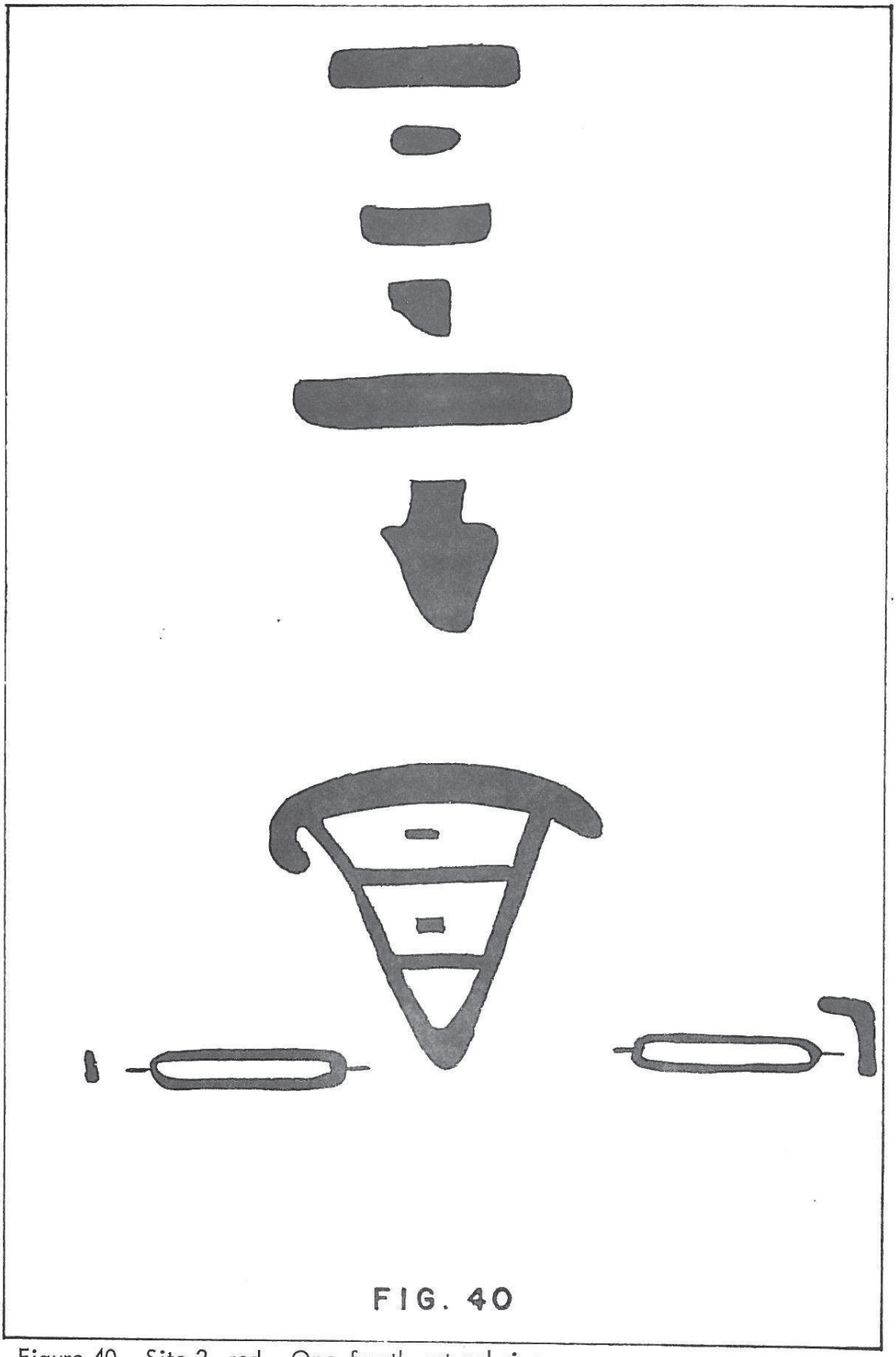

Figure 40. Site 2, red. One-fourth natural size.

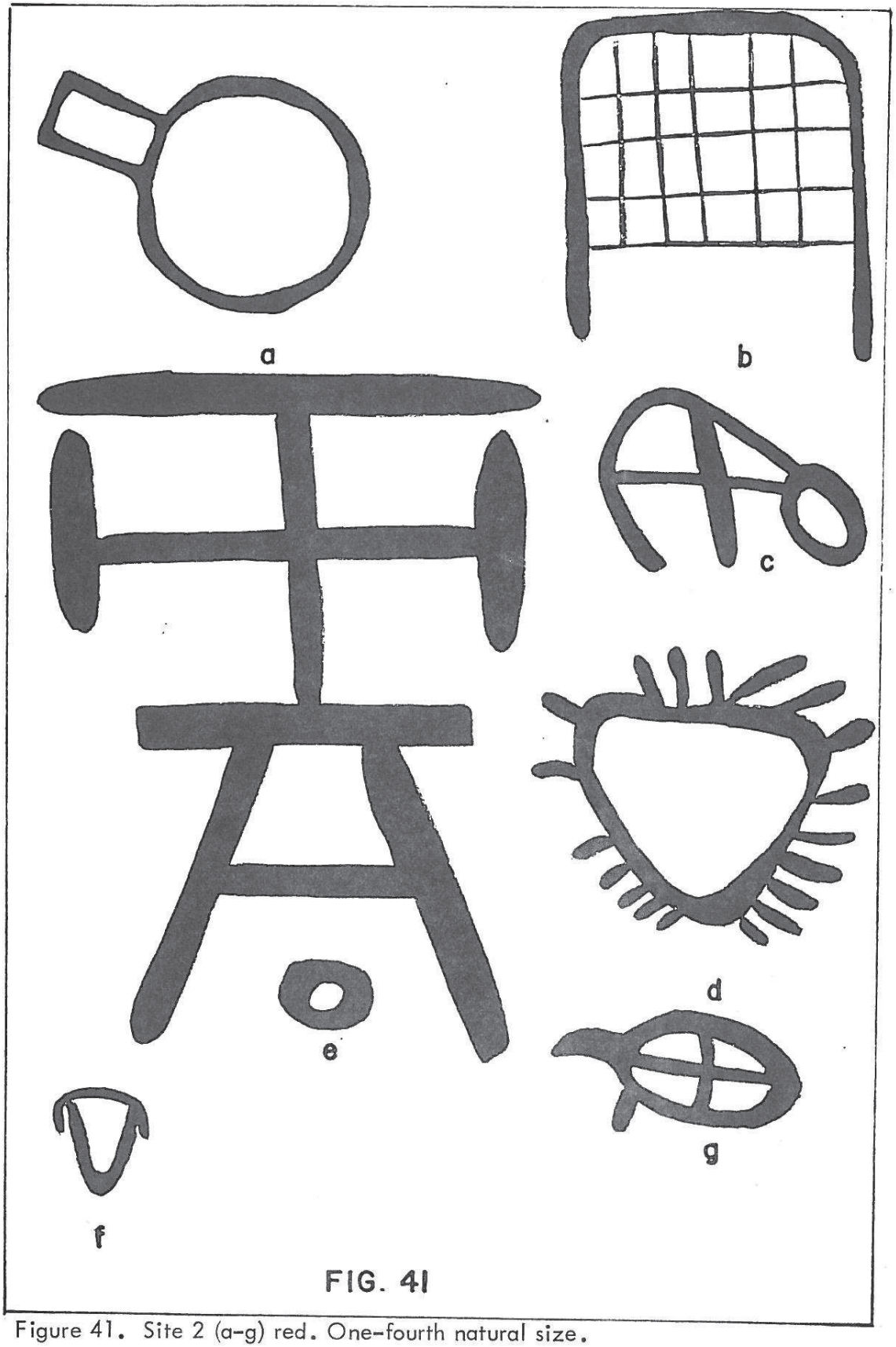

Figure 41. Site 2 (a-g) red. One-fourth natural size.

CHAPTER VII
DISCUSSIONS AND CONCLUSIONS

METHODOLOGICAL

There are two natural phenomena which can aid the archaeologist in this area of the Bighorn Basin. The first is obvious and is applicable to almost any region: sites often concentrate in the vicinity of springs. In this area the springs are at the heads of canyons; many of the sites are either on the interfluves above the canyon heads or along small terraces or rockshelters in the canyon walls.

The second is a marker plant. It was noticed that every rockshelter with any type of midden had a fairly heavy growth of currant (Ribes americanum) across their entrances. This association may be coincidence and not have a cause and effect relationship. It may simply be that midden provides soil depth and is usually near a water source. It is also possible that the midden matrix may provide plant nutrients particularly required by Ribes. What ever the reason for the association, it makes surveying easier; for the investigator can direct his attention to any heavy growth of currant and find an area of human occupation.

THEORETICAL

The Bighorn Basin and surrounding mountains have been the home of various groups of people for thousands of years. The Canyon Creek drainage system has produced projectile points ranging from Plano to the Historic Period. It seems fair to assume that during the Plano the area was much wetter than it is today. As yet it is impossible to know what type of subsistence patterns were used by Paleo-Indian groups. There is only one Plano site excavated in the basin to date, the Horner Site, a Cody Complex site. It was an extinct bison butchering site. It is the only evidence of extensive bison herds in the basin.

The Bighorn Basin and sourrounding mountains provide three basic types of environment: Sonoran Zone or basin floor, Transition Zone or canyon areas and Alpine Zone or high elevation. Each has some different flora and fauna, and each has an optimum time of year for human utilization regulated by climate conditions. The archaeological sites in these three environments are also different. Only two of the areas, the Transition Zone and Alpine Zone, were investigated this summer, and excavations took place in only the Transition Zone.

Two sites have been investigated and reported on in the basin floor; the Edgar Site (Coe 1959) and the Sand Creek Site (Frison 1967). The Edgar Site was an area of deflation and produced artifact material from many different time periods with no stratification. The Sand Creek Site, also an area of deflation, produced several milling stones and manos along with Middle Prehistoric Period projectile points. Though no other sites have been reported, general indications from the basin floor indicate a

higher percentage of grinding tools, sandstone milling stones and manos, than in the other two zones. This indicates that seed food was important in the diet. When comparisons are made to the Shoshoni Basin floor it is found that grinding tools are frequent there also (Mulloy 1954).

The sites in the Canyon Creek drainage system produced few grinding tools and a high percentage of cutting and scraping tools and projectile points. Grinding tools were found at two of the excavated sites: sites 2 and 10, producing only two manos, one milling stone and one broken grinding tool. Sites 20 and 29 each produced one grinding tool: a mano and a milling stone fragment.

In comparing the sites described here to others of the Transition Zone within the immediate area, the same lack of grinding tools is common to all but one site, Leigh Cave. At Daugherty Cave only two possible seed grinding tools were recovered from Level I, Late Middle Prehistoric Period: a possible mano and a grinding slab (Frison 1968). Spring Creek Cave lacked any grinding stones that might have been used for seed grinding; it is also a late Middle Prehistoric Period site (Frison 1965). The open Late Prehistoric Period sites investigated in the area, Canyon Creek Butte Site and Ten Sleep Creek Site, also produced no grinding stones for seed preparation (Frison 1967). Leigh Cave, an Early Middle Prehistoric Period site, the one known exception in the area, had several grinding stones apparently for seed preparation: 3 milling slabs and 3 manos (Frison and Huseas 1968).

There are several sites that fall into the Transition Zone in other areas of the Bighorn Basin. They also tend to show a lack of grinding tools in their assemblages. Only one mano was found at Wedding-of-the-Waters Cave in Level II, Late Middle Prehistoric Period (Frison 1962). The Seven Springs Site, a Late Prehistoric Period Site, produced one possible mano (Frison 1967). The Medicine Lodge Site produced very few grinding tools that appear to have been used for plant food preparation. Those found were recovered from between 0 and 6 feet, Late Middle to Late Prehistoric Periods. Among the Bighorn Canyon Sites few grinding tools were recovered except at Bottleneck Cave. Most of the grinding tools from Bottleneck Cave had traces of hemitite and were probably not used for food preparation (Husted 1969). However, a grinding stone was found in Level I, a grinding stone and manos from Level II and in Level III 3 grinding stones and 4 manos, all Early Middle Prehistoric Period. One grinding stone was found at Level IV and one grinding slab and one fragment from Level V, both Late Middle Prehistoric Period. The brief report on Mummy Cave mentions grinding stones for Layer 30 and 36, Early Middle and Late Middle Prehistoric, but does not indicate the number or relative frequency to other artifacts (Wedel, Husted, Moss 1958).

Going outside the Bighorn Basin, a small number of grinding tools were found at Pictograph Cave, Montana (Mulloy 1958). One metate and one mano at Level I, Early Middle and two manos at Level III, Late Prehistoric Period. Birdshead Cave in the Shoshoni Basin on the flanks of the Owl Creek Mountains, also produced few seed grinding tools (Bliss 1950). There was one metate fragment from Level II, Early Middle

Prehistoric Period, two manos from Level III also Early Middle, one metate fragment from Level V, Late Prehistoric and three manos from Level VI also Late Prehistoric Period.

Referring to Table 5, the lack of projectile points found, may seem to contradict the statement of relatively higher percentage of projectile points in the Transition Zone. However, this particular area has been carefully surface collected every year for ten years or more. I contend that this intense collecting has biased the sample in regards to projectile points and other finely made artifacts.

The apparent lack of importance of grinding stones is carried to an extreme in the high elevation sites. No grinding stones were found in the surface collected sites in the Bighorn Mountains. From the one excavated and reported site, the Bentzen-Little Bald Mountain Site, one metate and one mano were found out of context, and their description does not include a postulation of use (Bentzen 1963). The lack of grinding stones is probably a result of the environment. The high elevation provides few plants with seeds of nutritional value. Many of the grasses tend to be short with a seed size of impractical use for food. These high elevation sites probably represent strictly hunting oriented groups, thus the heavy concentration of choppers and cutting and scraping tools.

The explanation for the different tool assemblages for the Transition Zone and basin floor cannot be limited to a description of food resources, for both have exploitable plant and animal resources. It is probable that the same people utilized all three zones over the period of a year. It is safe to assume that their exploitation of the high elevations would be limited to the two or three summer months, for even game moves down to the lower zones in the fall. From purely a climatic point of view it would be most logical for them to move into the basin floor in the winter, for less snow falls in this zone, even though the canyons along the base of the mountains are more hospitable in the winter. This would mean the Transition Zone would be used in the time of milder climate, spring and fall.

Plant resources would also encourage this type of use pattern. The basin floor in early spring provides the first bulbs, young shoots and leafy vegetables, however, it quickly dries out after early spring. Its grasses ripen in summer but seeds remain on the stems until fall. During winter its plants would not provide much, but a storage of fall collecting could keep the group from starvation, possibly supplemented by a little game.

In late spring the Transition Zone would be favored for bulbs and tender shoots which are at their best at this time of year. In late summer and fall fruits and nuts are ripening as well as the grasses. Game is also plentiful in this zone during the spring and fall. The sites show hunting evidence, bone refuse as well as the tool assemblages, and many sites show evidence of fruits and nuts.

This type of pattern, taking into account regional variation, is similar to the

historic Washo tribe. They utilized both the basin environment of western Nevada and the Transition Zone and high elevations of the Sierra Nevada. A single environment could not provide a year around supply of food (Downs 1966).

The Washo lived the winter on seeds, pinon nuts and meat that had been gathered in the fall. They lived the winter in the less severe basin environment. It was a difficult time (Downs 1966:13).

> The last of the seeds and meat taken in the fall were usually consumed by the end of winter and the weeks before spring were a time of starvation. Hunting was seldom good at this time and gathering was even less so. Late winter was a time of death....The early weeks of spring provided fresh food in the form of bulbs and early grasses.

For the Washo gathering was always important. In the late spring and summer they gathered fruits, bulbs and fresh shoots and leaves. Hunting was most important in late summer and early fall. In early spring fishing was of prime importance (Downs 1966). This possibility is not found in the Bighorn Mountains to the extent it was for the Washo at Lake Tahoe.

The Washo had two points in their year round of activities that allowed large gatherings--the whitefish run at Lake Tahoe in spring and the pinon nut harvest in the late fall. Apparently, the Bighorn Mountains and Basin provided no such concentrated food resource. The basin probably did not support any large bison herds either, compared to the Plains areas to the east, for there are no bison trapping or jumping sites reported. The people forced by scheduling their resource exploitation, would probably spend most of the year in small groups rarely larger than an extended family and often no bigger than nuclear family units. The size of the utilized shelters in the Transition Zone indicate this pattern.

It is quite possible that for several thousand years, beginning with the altithermal period and ending with the advent of the horse which allowed people to be mobile for greater distances, these people moved from basin floor to Transition Zone to high elevations back to the Transition Zone and finally to the basin floor. The climate, tool assemblage and ethnographic evidence all point to this conclusion.

When the horse was introduced into the area, in the Historic Period, the pattern changed. The horse would have made it possible for hunting parties to move occasionally into the good bison areas which were north, east and west of the basin. Also bison apparently moved into the basin due to pressure outside. It may have also encouraged groups to move as family units or even larger groups to exploit environments outside the basin for part of the year. One can assume that this would have provided a more stable food source, making life a bit less severe. However, the use of the plant resources would probably have required the old gathering pattern. Therefore, the Historic Period evidence for the Transition Zone is largely hunting assemblages, as in the Middle Prehistoric Period.

BIBLIOGRAPHY

Becker, Clarence F. and John D. Alyea

1964 Temperature Probabilities in Wyoming. Bulletin 415 of the Agricultural Experiment Station. University of Wyoming, Laramie.

1965 Precipitation Probabilities in Wyoming. Bulletin 416 of the Agricultural Experiment Station. University of Wyoming, Laramie.

Bentzen, R. C.

1963 The Bentzen-Little Bald Mountain Site, Plains Anthropologist, Vol. 8, No. 19, pp. 41-51. Lincoln.

Bliss, W. L.

1950 Birdshead Cave, A Stratified Site in the Wind River Basin, Wyoming. American Antiquity, Vol. 15, No. 3, pp. 187-96. Menasha.

Carey, Merritt

1917 Life Zone Investigations in Wyoming. North American Fauna, No. 42, U. S. Department of Agriculture, Bureau of Biological Survey. Washington, D. C.

Coe, M. D.

1959 The Edgar Site, Northwestern Wyoming. American Antiquity, Vol. 24, No. 4, pp. 431-3. Salt Lake City.

Conner, Stuart W.

1962 A Preliminary Survey of Prehistoric Picture Writing on Rock Surfaces in Central and South Central Montana. Anthropological Paper (No. 2) of the Billings Archaeological Society. Billings.

Darton, N. H.

1906 Geology of the Bighorn Mountains. Professional Papers No. 51 United States Geological Survey. Washington, D. C.

Daubenmire, R. F.

1959 Plants and Environment, A Textbook of Plant Autecology. Wiley and Sons. New York.

Downs, James F.

1966 The Two Worlds of the Washo, An Indian Tribe of California and Nevada. Holt, Rinehart and Winston. San Francisco.

Frison, G. C.

1962 Wedding of the Waters Cave, A Stratified Site in the Bighorn Basin of Northern Wyoming. Plains Anthropologist, Vol. 7, No. 18, pp. 246-65. Lincoln.

Mulloy, William
1954 Archaeological Investigations in the Shoshone Basin of Wyoming. University of Wyoming Publications, Vol. XVIII, No. 1, 2, 3. Laramie.

1958 A Preliminary Historical Outline for the Northwestern Plains. University of Wyoming Publications in Science, Vol. XXII, No. 1. Laramie.

Olsen, Stanley J.
1964 Mammal Remains from Archaeological Sites Part 1, Southeastern and Southwestern United States. Papers of the Peabody Museum of Archaeology and Ethnology, Vol. LXI, No. 1. Harvard University, Cambridge.

Over, W. H.
1941 Indian Picture Writing in South Dakota. Archaeological Studies, Circular 4. University of South Dakota Museum, Vermillion.

Renaud, E. B.
1936 Pictographs and Petroglyphs of the High Western Plains. Archaeological Survey Series, 8th Report. University of Denver, Denver.

1938 Petroglyphs of North Central New Mexico. Archaeological Survey Series, 11th Report. University of Denver, Denver.

Sowers, Ted
1939 Petroglyphs and Pictographs of Dinwoody. Archaeological Project, Work Project Administration. Laramie

1940 Petroglyphs of West Central Wyoming. Archaeological Project, Work Project Administration. Laramie

Taylor, D. C.
1957 Two Fremont Sites and Their Position in Southwestern Prehistory. University of Utah Anthropological Papers, No. 29. Salt Lake City.

Trotter, John F.
1954 Geology of the Nowood Creek-Ten Sleep Area, Washakie County, Wyoming. University of Wyoming, Laramie.

Wedel, W. R., W. M. Husted and J. H. Moss
1968 Mummy Cave: Prehistoric Record from Rocky Mountains of Wyoming. Science, Vol. 160, pp. 184-86. Washington, D. C.

Wilson, Charles W. Jr.
1938 The Ten Sleep Fault, Johnson and Washakie Counties, Wyoming. Journal of Geology, Vol. 46, pp. 868-81. Chicago.

Yanovsky, Elias
1936 Food Plants of the North American Indians. United States Department of Agriculture Miscellaneous Publications, No. 237. Washington, D. C.

Appendix I

Archaeological Site Survey Record

1. Site _____ 2. Map _____ 3. County _____

4. Twp. _____ Range _____; _____ 1/4 of _____ 1/4 of Sec. _____

5. Location _____

_____

_____ 6. On contour elevation _____

7. Other designations for site _____

8. Owner _____ 9. Address _____

10. Previous owners, dates _____

11. Present tenant _____

12. Attitude toward excavation _____

13. Description of site _____

14. Area _____ 15. Depth _____ 16. Height _____

17. Vegetation _____ 18. Nearest water _____

19. Soil of site _____ 20. Surrounding soil _____

21. Previous excavation _____

22. Cultivation _____ 23. Erosion _____

24. Buildings, roads, etc. _____

25. Possibility of destruction _____

26. Features _____

27. Artifacts _____

_____

28. Remarks _____

29. Accession No. _____ 30. Sketch Map _____

31. Published references _____

32. Date _____ 33. Recorded by _____ 34. Photos _____