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Archeological Investigations at the  
U.S. Atomic Energy Commission's Nevada Test Site  
and Nuclear Rocket Development Station

by  
Frederick C. V. Worman

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# ARCHEOLOGICAL INVESTIGATIONS AT THE U.S. ATOMIC ENERGY COMMISSION'S NEVADA TEST SITE AND NUCLEAR ROCKET DEVELOPMENT STATION

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## CHAPTER I INTRODUCTION

The Nevada Test Site (NTS) and the Nuclear Rocket Development Station (NRDS), operated by the U.S. Atomic Energy Commission (AEC), are located in southeastern Nye County, Nevada. Headquarters for NTS are at Mercury, Nevada, about 65 miles northeast of Las Vegas.

Observations on the test sites over a period of nearly 19 years by the author and others have located a number of areas of archeological, paleontological, and historical interest. Numerous surveys of specific areas culminated with a more complete reconnaissance of NTS and NRDS in early 1966 (Fig. 1). A report,<sup>1</sup> published in 1966, placed the 30 sites of the test areas (Fig. 2) as delineated by the AEC, into the following categories:

1. Areas of archeological interest — should not be disturbed prior to salvage.
2. Areas of unknown archeological interest — not to be disturbed without prior examination.
3. Areas of archeological interest — not likely to be disturbed.
4. Areas of no archeological interest — no building or testing restrictions.
5. Areas of archeological interest in contiguous off-site areas.

With the knowledge that some unauthorized excavations were taking place, it was suggested that certain specific sites be examined to obtain at least a cross section of NTS archeology and that an attempt be made to correlate the findings with those of surrounding areas. I felt that excavation and examination of certain sites which were being vandalized presented the most effective means of protection under available authority as expressed in the AEC Immediate Action Directive 5301-4

of August 27, 1965, regarding protection and preservation of antiquities on AEC-owned or controlled properties. With AEC concurrence and permission for the use of my time by the Los Alamos Scientific Laboratory (LASL) of the University of California, my request to conduct an archeological survey was made to and approved by the U.S. Department of the Interior through Paul J. F. Schumacher of their San Francisco office. The results of the program are given in this report.

Certain deviations from the usual archeological report will be noted. Locations are not pinpointed except in the case of well-known sites or those that have been destroyed by programmatic work related to construction or the release of nuclear energy. More archeological examination and excavation is needed to complete the full story and, while this effort is concerned with the summarization of present knowledge, it is not intended to serve as a field guide for unauthorized collecting.

Because the distribution of this report will include many persons whose interests lie in other fields, I have attempted, heeding the plea of Douglas Osborne<sup>2</sup> and others, to present the information in a manner understandable to the layman as well as to the archeologist.

Sites are designated by use of the numbering system introduced by the Smithsonian Institution. The first two numbers (26) indicate the state of Nevada when the states are placed in alphabetical order. (The addition of Alaska and Hawaii may move Nevada to 28.) The letters (Ny) represent the county in which the site is located. The last numbers refer to the site in the particular county. An additional number separated from the site designation, as 26Ny4/12 or 26Ny4-12 refers to the number of the artifact from the particular site.

were found at the east side of the knoll at 59 feet 6 inches at 56°, 65 feet 10 inches at 50°, and 87 feet 6 inches at 33° from Datum Point 2 (Fig. 16). The circles, about six feet in diameter, were on cleared bedrock. Trenches, test pit, and circles are shown in Fig. 17. The circles are smaller than the "sleeping circles," described by Rogers,<sup>33</sup> from the San Dieguito culture. I found lying down in them, on the hard rock, extremely uncomfortable after a short time. However, placing shrubs between the rocks converted the structures into excellent blinds where a hunter could wait for animals to come for water. Rogers mentions the possibility of use in hunting by later cultures.<sup>33</sup>

All fill was screened through a heavy-gauge 3/16-inch mesh which allowed for the recovery of small artifacts. Potsherds are numerous on and below the surface. Ten different types were represented. The numbers of each are listed in the pottery summary in Table I. Pottery will be discussed in a later section of the report. All non-ceramic artifacts are inventoried and described in Table II.

Cane Spring's importance is indicated by the large variety of artifacts found. The recovery of 122 artifacts in the small portion of the one campsite tested is a good prognostication of the amount of material that must remain. Pottery includes Basketmaker, Pueblo, and Paiute types. Lithic artifacts extend in time from the scraper-plane (Plates 5-A, 72-A, 73-A) of the San Dieguito I period of about 10,000 years ago<sup>33</sup> to the Desert-type point of the Paiute (Plate 1-G) and provide evidence of seasonal or periodic visits by various peoples over a long time span, during which this watering place served as both a haven and a source of food to many.

Lithic materials included 8 complete points, 18 partial points, 1 complete and 48 partial knives, 5 complete and 5 partial scrapers, 1 partial pendant, 1 excellent drill, and 2 graters. Artifacts are pictured in Plates 1 through 9. Partial knives are abundant at a number of sites, but complete knives are relatively few. I cannot give a plausible reason for the lack of complete specimens. Two basin-type metates are shown in Plates 7 and 9.

In all work, excepting surface surveys, flaking materials were collected from the surface and from the screen. All flakes which could have been used in the making of artifacts were saved and identified. Analyses were made where samples were numerous enough to have statistical significance. Cane Spring flakes are listed by percentages in Table III.



Fig. 16. Stone circles at Cane Spring with corrals in background, Area 27.

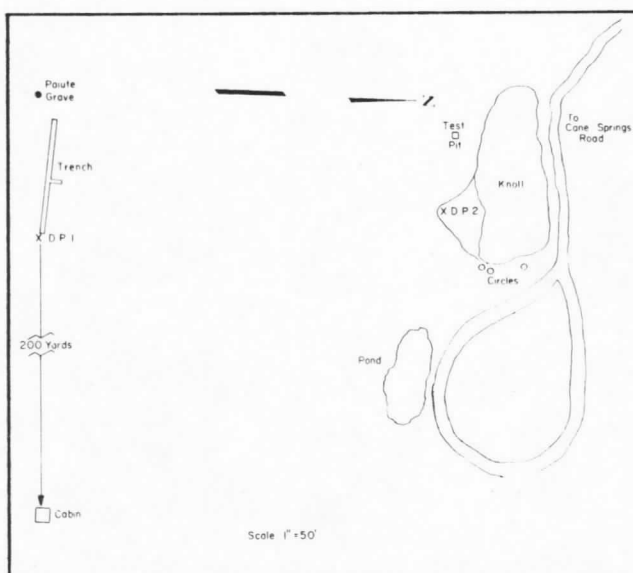


Fig. 17. Map of Indian campsite excavations and features at Cane Spring, Area 27.

Historical artifacts included 62 whole or broken beads found by screening the fill from a Paiute grave "dug" by some past vandal. Photographs of the 36 best samples are shown in Plate 8-B. All were trade articles consisting of nine

white "seed" beads, an early trade item in the Northwest, which was introduced into the Plains area before 1850.<sup>34</sup> Seventeen blue beads were of the Cornaline D'Aleppo type, which have been made near Venice, Italy, since the 18th century. Also referred to as Hudson's Bay beads, they were among the earliest used in the Canadian trade.<sup>35</sup> One partial, round, red glass bead with the perforation in the middle of a white core was also found. Others were hexagonal cobalt glass of a slightly later time. Bead sizes are tabulated below.

	<i>Thickness</i> (mm)	<i>Outer diameter</i> (mm)
White "seed" beads	1.85 to 3.1	3.2 to 3.57
Cornaline D'Aleppo	2.2 to 2.5	3.2 to 3.9
Hexagonal blue	5.0	5.0

The wall thickness of all beads was approximately 1.0 mm.

Another historical artifact was a round, lead ball (Plate 8-A), cast in a steel bullet mold of the type, with a built-in sprue cutter, used from 1800 to 1870. The caliber is of the popular size used in light rifles of the same period. It also corresponds to the size used in the .36 caliber "Navy"

Colt revolver which was popular from 1851 to 1870. These revolvers used an oversized ball to avoid multiple discharges which frequently occurred with loose powder loading.<sup>36</sup>

**SITE NAME: TOPOPAH SPRING**

**SITE NO.: 26Ny201**

**MAP: USGS, NE 1/4 Topopah Spring Quadrangle**

**LOCATION: Lat. 36°56'19" N., Long. 116°16'17" W.**

**ELEVATION: 5,700 feet**

Topopah Spring is on a south facing slope in a box canyon at the head of Topopah Wash at the southwest foot of Shoshone Mountain. The wash runs southward, passing to the west of Little Skull Mountain and the Striped Hills, crosses U.S. Highway 95 about one-half mile east of Lathrop Wells, and empties into the Amargosa Desert. Derivation of the name "Topopah" was discussed in the section on Tippih Spring.

The water supply now consists of a small amount in the rear of a tunnel which was dug into a slope east of the ranch debris (Fig. 18). Remains consist of a concrete foundation and a

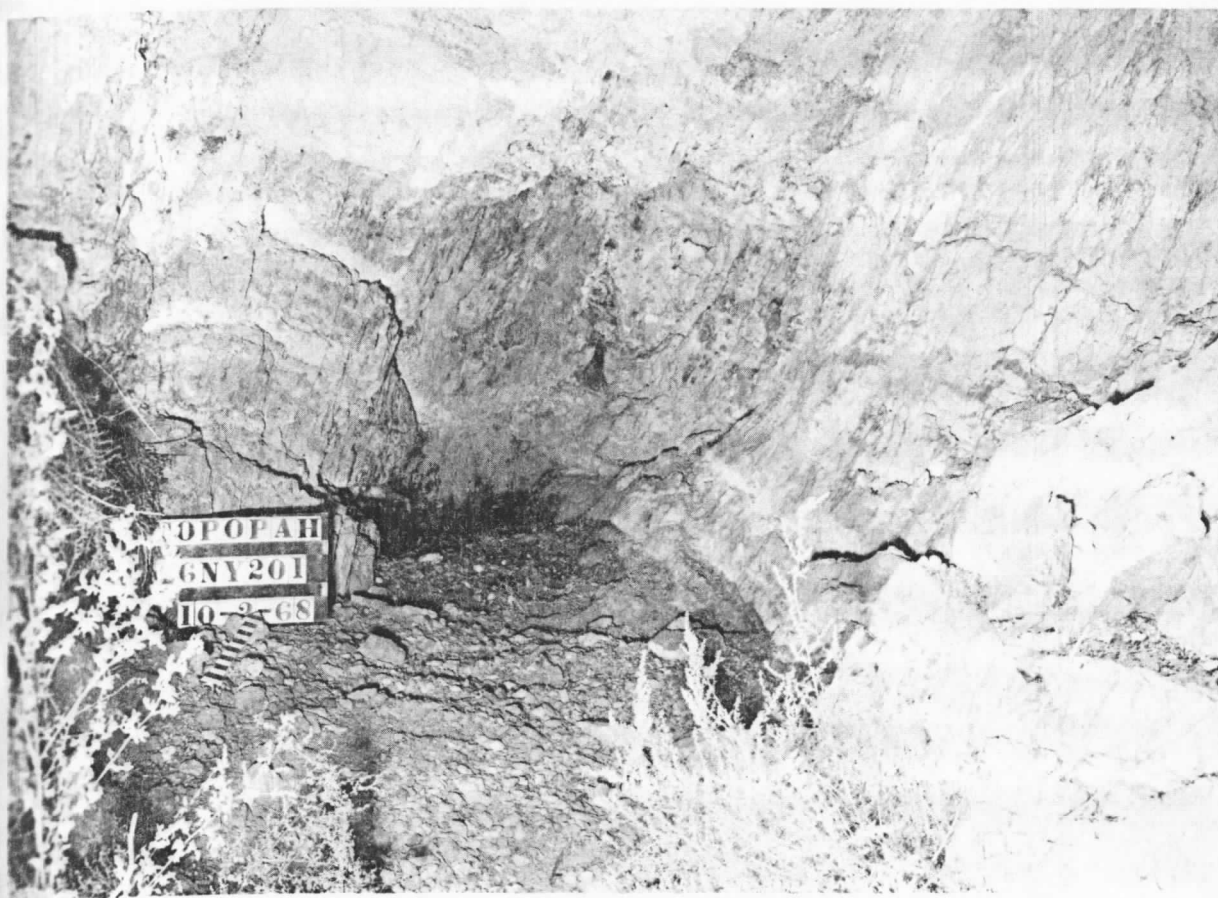


Fig. 18. Topopah Spring, Area 29.



4 feet 3 inches high, and 8 feet 8 inches deep. A small north-south trench had been dug by someone in search of artifacts. Materials from this shelter, entirely of a historical nature, consisted of eight trade beads. The beads are described in Table X and shown as a group in Plate 16-F. Figure 24 is a photograph of the shelter.

Rockshelter #2, a distance of 40 yards west of #1, is a somewhat smaller beehive-shaped cavity 8 feet 7 inches wide, 5 feet 1 inch high in front tapering to 1 foot 9 inches in rear, and 6 feet 1 inch deep. The shelter is well-blackened from fires and, with the exception of one white chert projectile point, appeared from evidence to be of historical time. A semicircle of stones in

front appears to be the remains of a small pen, possibly for confining a burro or two. Artifacts are described in Table X. Six beads were evidently from an Indian culture. Other materials probably belonged to a prospector or horse hunter. A rivet marked "LS & Co. SF" was identified by the manager of Levi Strauss and Company in San Francisco, who stated in a telephone conversation with me that it was one of their early types, and that the earliest date would have been 1850 when the factory was opened there. A small pumice object, which appears to be a tobacco pipe with a small bowl and an opening for a reed stem, was carved and incised with a metal knife. The objects are shown in Plate 17. The shelter is depicted in Fig. 25.

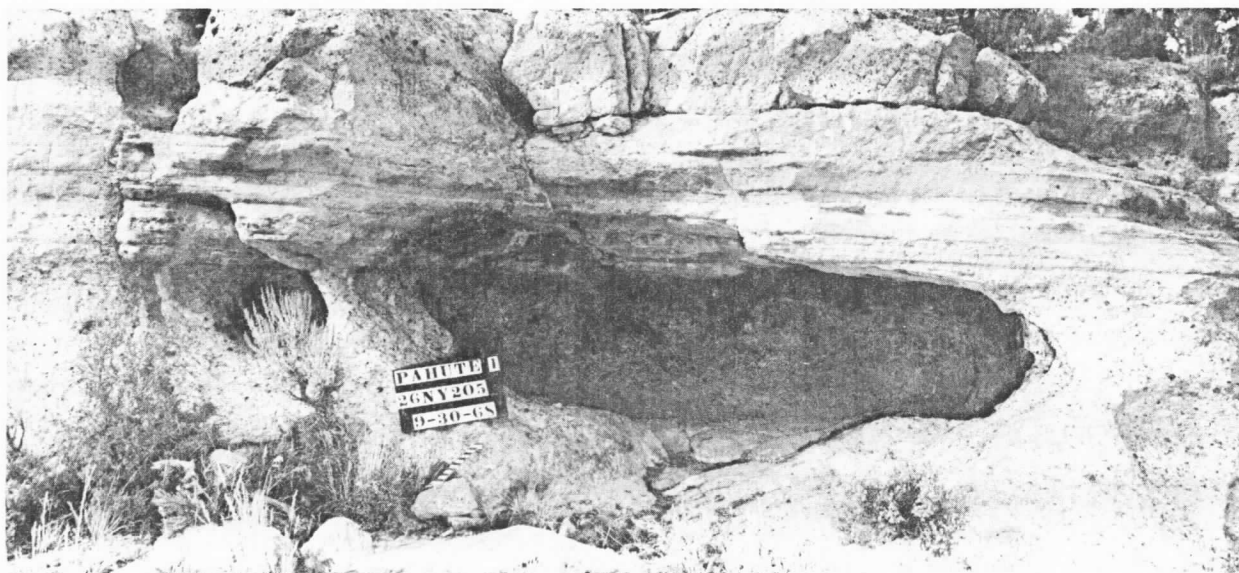


Fig. 24. Pahute Mesa Rockshelter #1 (26Ny205-1), Area 19.

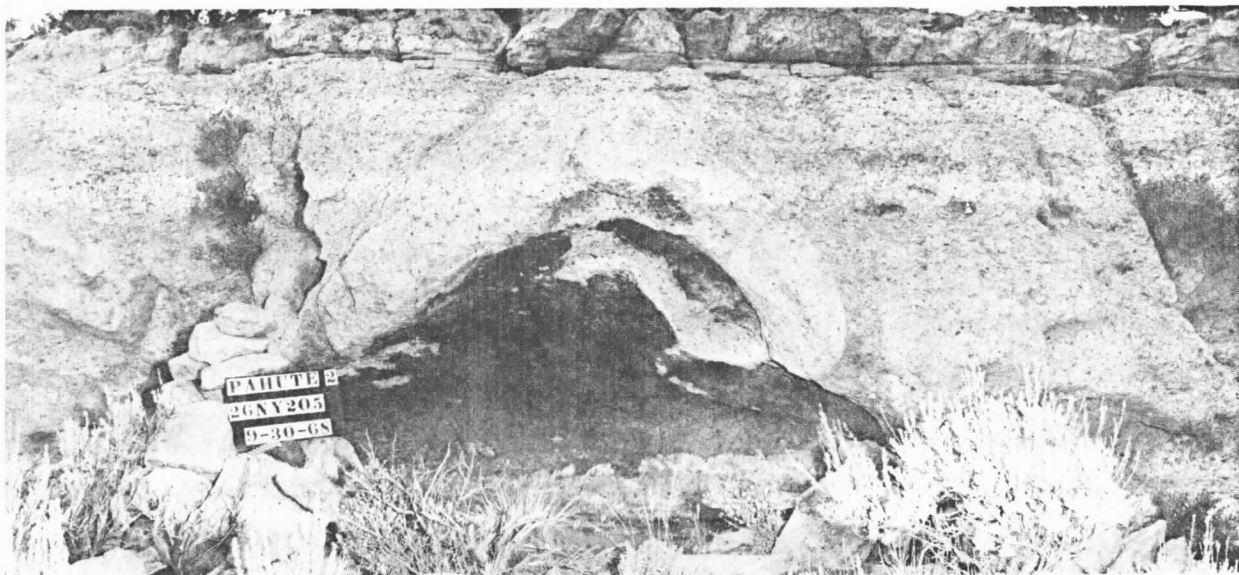


Fig. 25. Pahute Mesa Rockshelter #2 (26Ny205-2), Area 19.

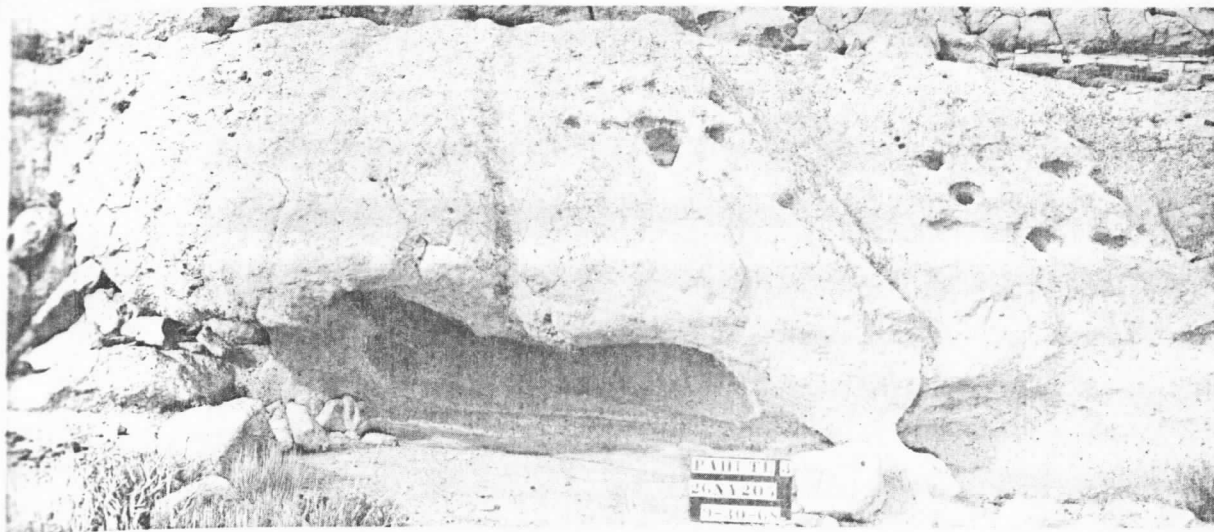


Fig. 26. Pahute Mesa Rockshelter #3 (26Ny205-3), Area 19.

Rockshelter #3 is a small depression in the face of the bench located 25 yards west of Rockshelter #2. The fill was one inch deep at the maximum, and the only artifact was a four-hole metal trouser button (Plate 17-G; see also Fig. 26 and Table X.).

Rockshelter #4 is a large, two-roomed cavity. The two caves are connected at the rear by a passageway 33.5 inches wide. A sketch of the ground plan, indicating the openings to the two rooms is shown in Fig. 27. The solid rock areas are indicated by dashed lines. The height of the left-hand room varies from 20 inches at the wall to a maximum of 40 inches at the center. The right-hand room has an overall height of 28 to 30 inches, tapering to 18 inches at the edges. The exterior of a portion of the structure is depicted in

Fig. 28. Eolian fill varied from 0 to 3 inches in depth. Sixteen trade beads and a well-made banded chert scraper make up the artifact list. They are included in Table X and are pictured in Plate 17.

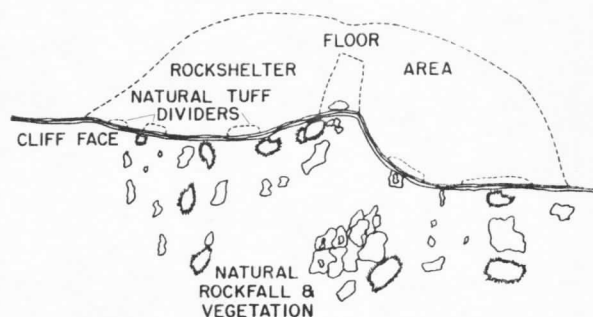


Fig. 27. Floor plan sketch of Pahute Mesa Rockshelter #4 (26Ny205-4), Area 19.



Fig. 28. Portion of exterior of Pahute Mesa Rockshelter #4 (26Ny205-4), Area 19.

# Big George's Cave (26Ny213)

212) immediately above the cave serve as an indication of considerable Indian occupation before that of white settlers. When I first visited the cave, it contained the typical paraphernalia of a prospector. A hand-made table, a rectangular can heater with stovepipe to the outside, a bedstead, and a washtub were evidence of a long stay. Two burro collars and sundry pieces of harness hinted at the resident's occupation as did a small holding corral in front of the cave. In a visit to the site in 1964, accompanied by Carl Cuntz of LASL and Gay Kauffman and Doc Colyer of the NTS *News*, we named it the "Prospector's Cave".<sup>45</sup> Photographs taken by Wheeler, in 1940, called it "Big George's Cave" and preference is given here to that designation. Occupation extended into comparatively recent times, corroborated by the presence of a page from the *Saturday Evening Post* datelined 1925 and a Missouri sales tax token which was first used in 1937. A still earlier visit

to this area is substantiated by the inscription "O. S. Lodwick and wife Mary 1905" (Fig. 35) on a large boulder above the cave. A wide-angle photograph of the interior of the cave confirms the removal of some historical material (Fig. 36). Heavy blackening of the ceiling from many fires may also be noted in the picture.

Materials shown in Plate 24 and described in Table XVI were all removed from a 3 foot by 3 foot by 4-inch-deep test pit in the center of the cave. Six Southern Paiute Brownware sherds were all typical of the ware (Table I). Two partial mandibles, with teeth, from a mule deer and a jackrabbit, were remnants of someone's hunting prowess. A splinter awl and a blue, hexagonal trade bead were from an Indian culture. Although well away from any future construction or testing, this site, if excavated, could be of both historical and archeological value.



Fig. 35. Historical inscription on boulder above Big George's Cave, Area 18.

Table X. Nonceramic Artifacts from Pahute Mesa Rockshelters, 26Ny205

ACCESSION NO.	PLATE NO.	TYPE	MATERIAL	PROVENIENCE	REMARKS	DIMENSIONS (cm)		
						L.	W.	T.
26Ny205								
1	16-A	Chopper	Gray fossiliferous chert	General surface in front of shelters	Percussion flaked	7.0	4.1	3.3
2	16-D	Polishing stone	Obsidian	General surface in front of shelters	One face smooth	2.6	2.2	1.54
3	16-E	Polishing stone	Obsidian	General surface in front of shelters	One face smooth, one face concave	2.5	2.1	1.70
4	16-C	Polishing stone	Obsidian	General surface in front of shelters	One face smooth and concave	2.3	2.0	1.58
5	16-B	Partial knife	Obsidian	General surface in front of shelters	Rounded base diagonal fracture	4.5	2.9	1.01
-----								
SITE 26Ny205-1								
26Ny205-1								
1	16-F	4 blue beads	Glass	Fill 0-2"	Round trade	0.31 to 0.38	0.30 to 0.38	0.16 to 0.27
1	16-F	2 white beads	Glass	Fill 0-2"	Round trade	0.31 to 0.33	0.31 to 0.33	0.18 to 0.26
1	16-F	Red bead with white core	Glass	Fill 0-2"	Large round trade	0.373	0.368	0.283
1	16-F	Red bead with black core	Glass	Fill 0-2"	Round trade	0.362	0.362	0.314



Table X. Concluded

SITE 26Ny205-2								
ACCESSION NO.	PLATE NO.	TYPE	MATERIAL	PROVENIENCE	REMARKS	DIMENSIONS (cm)		
						L.	W.	T.
26Ny205-2								
1	17-A	Projectile point	White chert	Fill 0-2"	Rounded base, no stem	4.4	2.0	0.55
2	17-C	Rivet	Metal	Fill 0-2"	Levi Strauss & Co.	0.965	0.965	0.550
2	17-B	Nail	Metal	Fill 0-2"	Horseshoe	4.5	0.50	0.26
2	17-D	Boot lace hook	Metal	Fill 0-2"		—	—	—
2	17-E	Bead	Shell	Fill 0-2"	Not trade	0.60	0.50	0.10
2	17-F	2 Beads, red with white core	Glass	Fill 0-2"	Trade, round	0.32 to 0.36	0.32 to 0.36	0.213 to 0.214
2	17-F	White bead	Glass	Fill 0-2"	Trade, round seed	0.319	0.319	0.260
3	17-J	Pipe	Pumice	Fill 0-2"	Small, incised. shaped with metal knife	2.6	2.1	1.33
SITE 26Ny205-3								
26Ny205-3								
1	17-G	Button	Metal	Fill 0-1"	4-hole trouser	1.62	1.62	0.26
SITE 26Ny205-4								
26Ny205-4								
1	17-I	7 Blue beads	Glass	Fill 0-3"	Round trade	0.331 to 0.402	0.331 to 0.402	0.216 to 0.306
1	17-I	7 White beads	Glass	Fill 0-3"	Round trade seed	0.295 to 0.424	0.295 to 0.424	0.217 to 0.333
1	17-I	Red bead with brown core	Glass	Fill 0-3"	Round trade	0.512	0.512	0.351
1	17-H	Bead	Bone	Fill 0-3"	Tubular, incised, not trade	1.1	.333	.313
2	17-K	Partial scraper	Banded chert	Fill 0-3"	Oval, domed, well flaked, percussion	—	4.4	1.72

No artifacts in Sites 26Ny205-5 and 26Ny205-6

Table XV. Nonceramic Artifacts from 26Ny212

ACCESSION NO.	PLATE NO.	TYPE	MATERIAL	REMARKS	SURFACE DIMENSIONS (cm)		
					L.	W.	T.
26Ny-212							
1	25-L	Scraper	Obsidian	Oval. domed thumb scraper	3.7	3.5	1.57
2	25-K	Scraper	Obsidian	Oval. snub-nosed	3.9	2.1	1.57
3	25-J	Scraper	Obsidian	Thumb type. nondescript	5.2	4.0	0.79
4	25-E	Scraper	Obsidian	Thumb type. crescentic	4.5	2.3	0.78
5	25-D	Worked flake	Obsidian	Unidentifiable	3.2	1.8	0.73
6	25-I	Scraper	White chert	Oval. thumb type	5.2	3.2	0.67
7	25-A	Partial knife	White chert	Rectangular base	—	2.2	0.56
8	25-F	Partial knife	Chalcedony	Tip portion	—	2.6	0.58
9	25-H	Partial knife	Obsidian	Tip portion	—	2.7	0.53
10	25-B	Partial knife	Obsidian	Tip portion	—	1.9	0.49
11	25-G	Partial knife	Obsidian	Tip portion	—	2.5	0.69
12	25-C	Partial point	Obsidian	Basal portion of blade, stem broken off, excellent bifacial pressure flaking	—	1.8	0.31

Artifacts 4, 9, 10, 11, and 12 show secondary pressure flaking.

Table XVI. Nonceramic Artifacts and Other Materials from 26Ny213

ACCESSION NO.	PLATE NO.	TYPE	MATERIAL	REMARKS	TEST PIT 3'×3'×4" deep DIMENSIONS (cm)			
					L.	W.	T.	
26Ny213								
1	24-A	Right mandible, portion with teeth	Bone - deer	Part of mandible from <i>Dama hemionus</i>	—	—	1.49	
2	24-C	Right mandible, with teeth	Bone - rabbit	Jackrabbit, <i>Lepus</i> <i>californicus</i> or <i>Lepus</i> <i>townsendii</i>	5.2	3.0	0.49	
3	24-B	Splinter awl	Bone	Unidentifiable mammal	9.7	1.7	0.44	
4	24-E	Sales tax token	Metal	Missouri, 1937 or later	2.3	2.3	0.103	
5	24-D	Bead	Glass	Cobalt blue, hexagonal, trade	0.54	0.41	0.100 wall	

Note: 1, 2, and 4 are not artifacts.

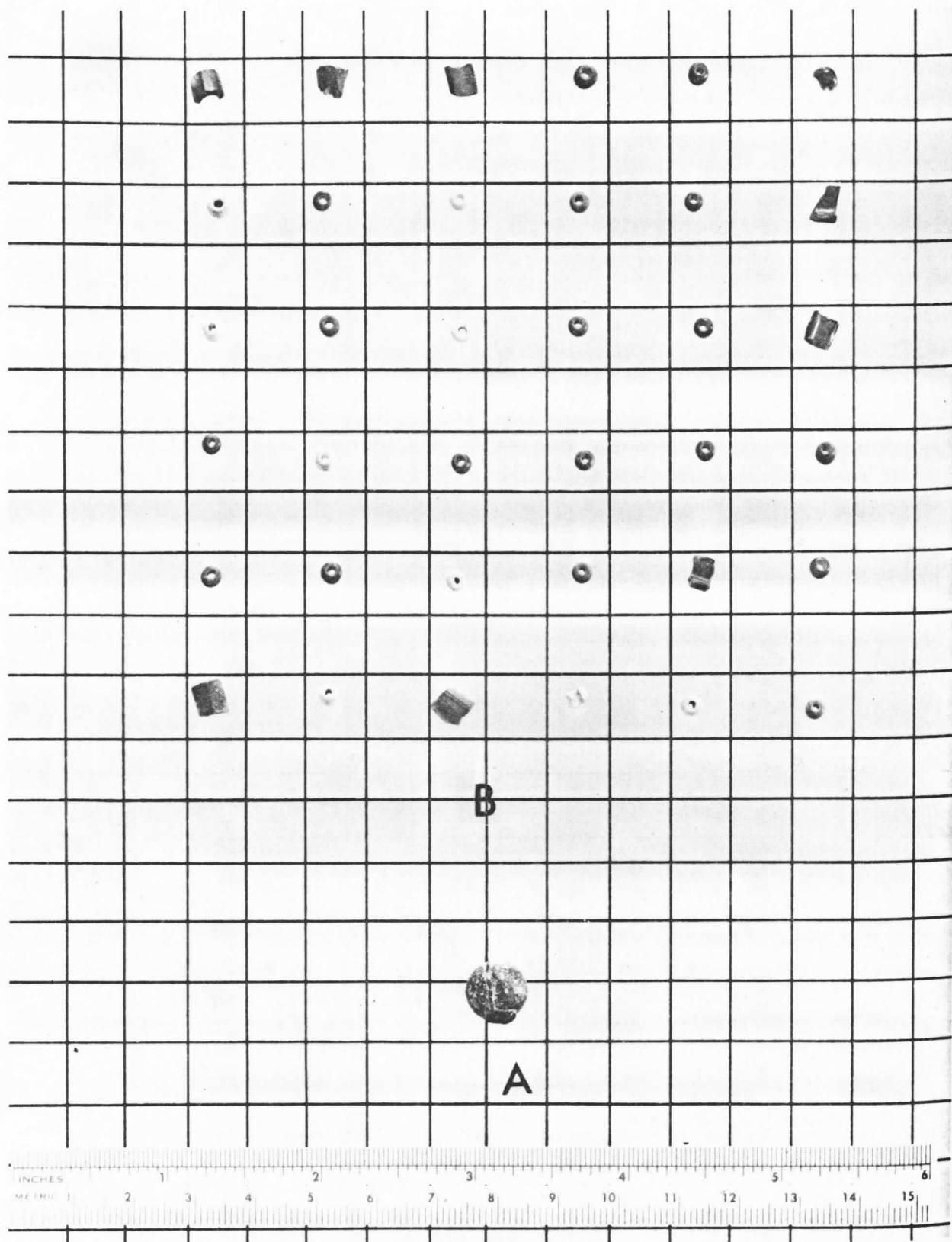


Plate 8. Historical artifacts from Cane Spring.

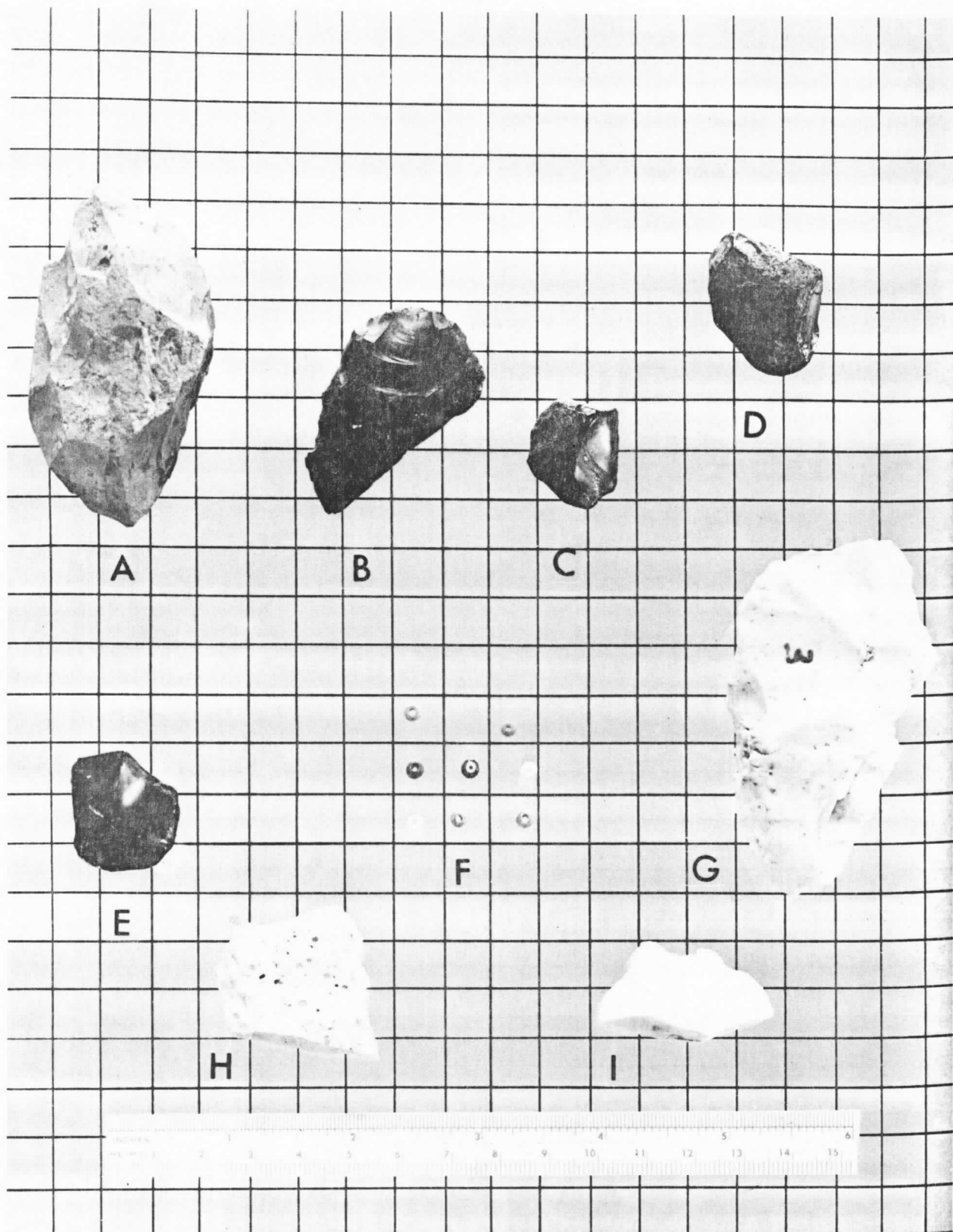


Plate 16. Lithic artifacts from Buckboard Mesa Road Rockshelter (26Ny204-1) and Pahute Mesa Rockshelter (26Ny205-1).



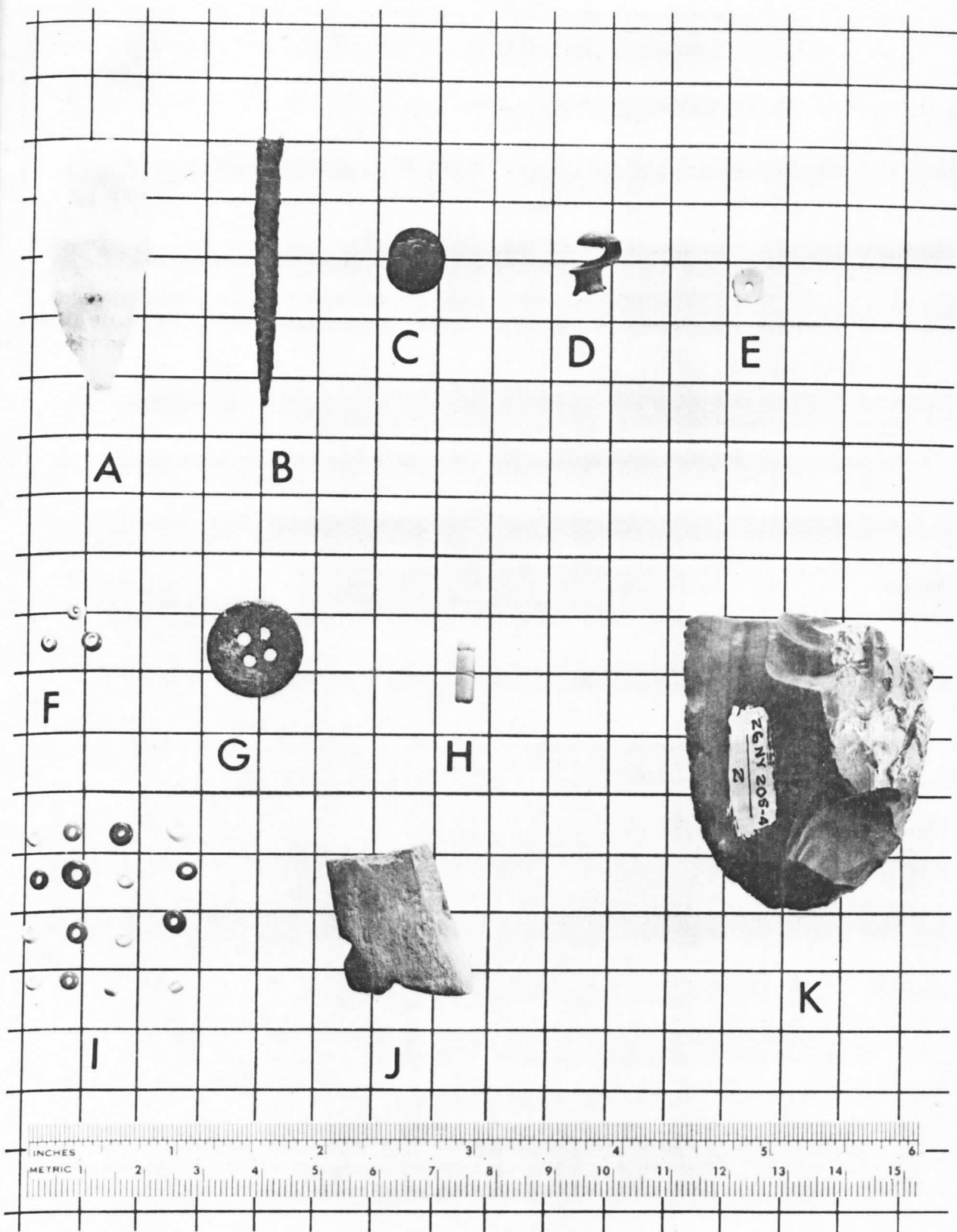


Plate 17. Materials from Pahute Mesa Rockshelters 26Ny205-2, 26Ny205-3, and 26Ny205-4.

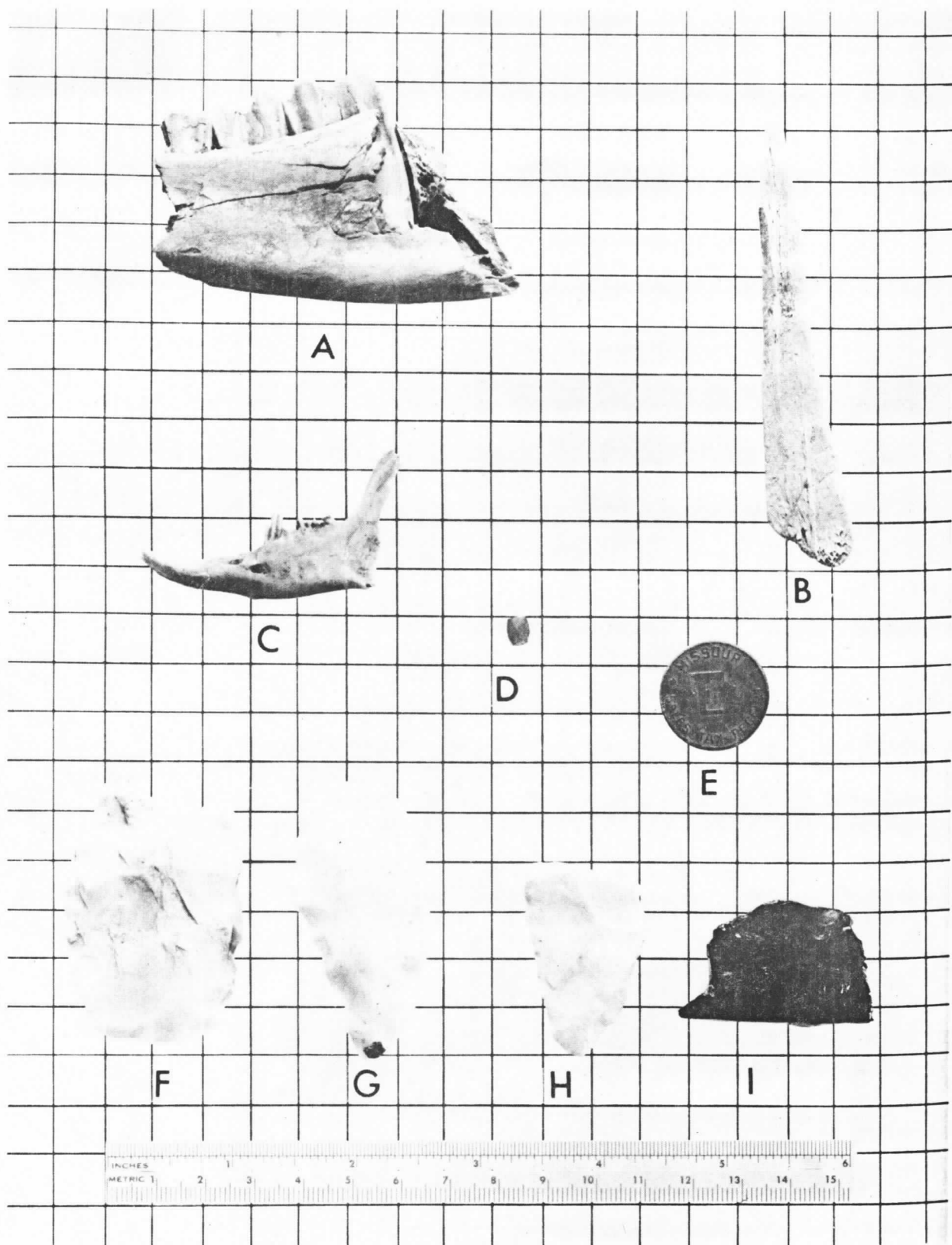


Plate 24. Excavated materials from Big George's Cave. 26Ny213 (A, B, C, D, E) and campsite north of Shoshone Mountain. 26Ny216 (F, G, H, I).