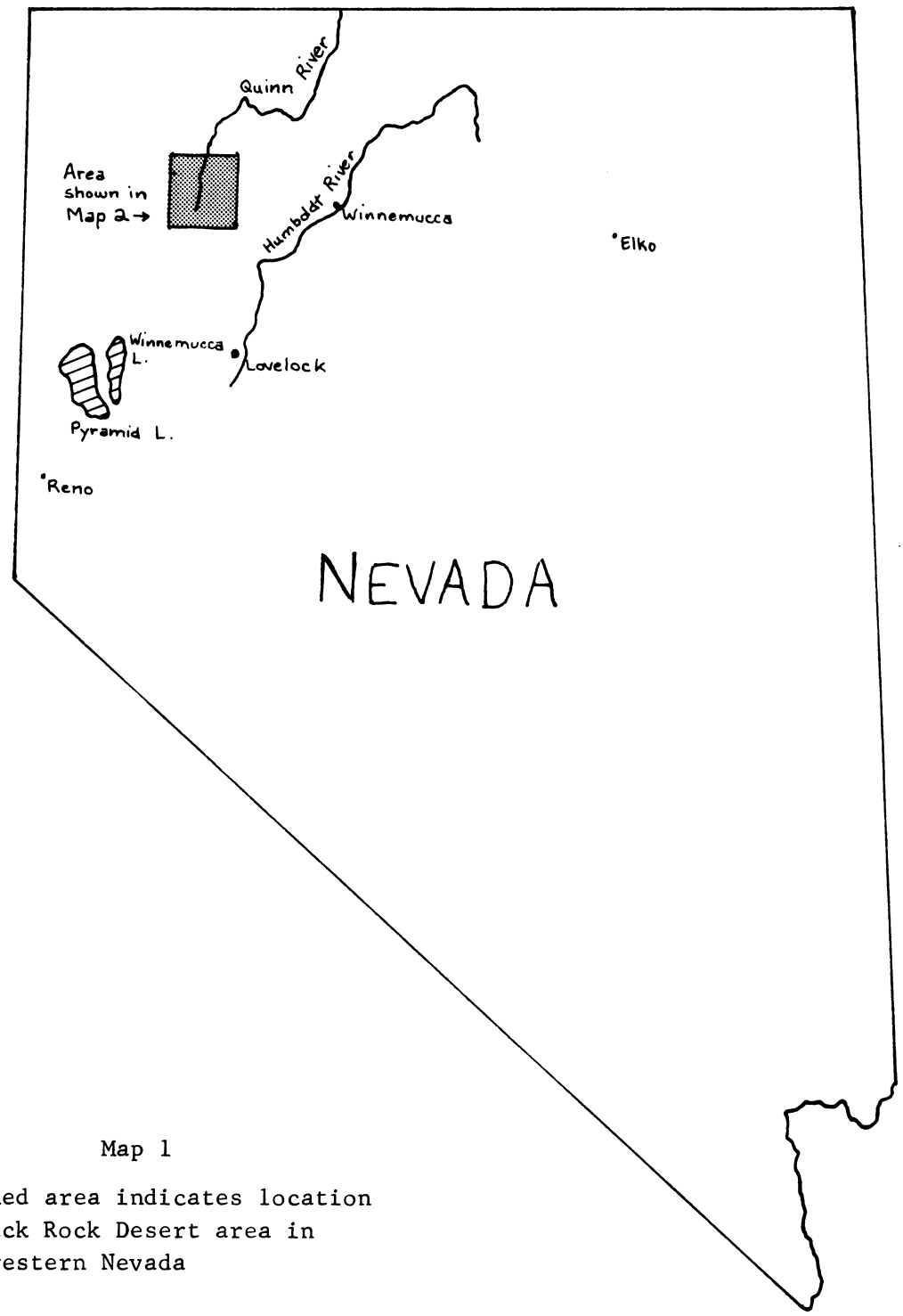
I. SURFACE ARCHAEOLOGY IN THE BLACK ROCK DESERT, NEVADA

C. William Clewlow, Jr.

INTRODUCTION

For three weeks in July 1966, a small field party led by Richard Cowan and William Clewlow, and under the direction of Dr. Robert F. Heizer of the University of California, Berkeley, conducted limited archaeological site survey in a portion of the Black Rock Desert north of Sulphur, in Humboldt County, Nevada. A number of sites were located, both on the desert floor and on the alluvial slopes which encircle the northern arm of the Black Rock Desert. These were mainly surface sites, and large surface collections were made in the course of the survey. It was immediately apparent that some of the artifacts collected, although found without stratigraphic context, were nonetheless of unusual interest in that they represented, typologically, a possible manifestation of early man in an area — namely, the Great Basin — where such evidence is notably scarce (Bryan 1965:44). The present analysis is intended to do no more than place on record the fact that a wide range of typologically early artifacts, particularly projectile points, were found in this area of northwestern Nevada. It is fully recognized that surface archaeology can do very little to help establish the cultural history of the Great Basin, and for this reason, this paper does not attempt to draw more than very minimal, perhaps even self-evident, conclusions. Hopefully, the larger cultural picture will be drawn from excavations at stratified sites, perhaps to be found in this area, containing similar artifact types in more meaningful association.

Since the collection of artifacts from the Black Rock Desert was quite large, and since the more ancient of the artifact types were, understandably, given a sort of emphasis in the analysis of the material, the problem arose as to how to present adequately the material which is typologically better known. As time and cost were inhibiting to the idea of drawing in detail or photographing all the pieces, it was decided that outline drawings of all projectile points mentioned in the text would be provided. Accompanying these are figure explanations which provide the catalogue numbers of the pieces as they are recorded in the University of California Lowie Museum of Anthropology at Berkeley (abbreviated LMA), as well as information on size, weight, and type of each specimen. All measurements are given in centimeters; weights are in grams. This procedure makes it possible to present a description of material from each site without including such information in the text, where (since



Map 1

Darkened area indicates location of Black Rock Desert area in northwestern Nevada

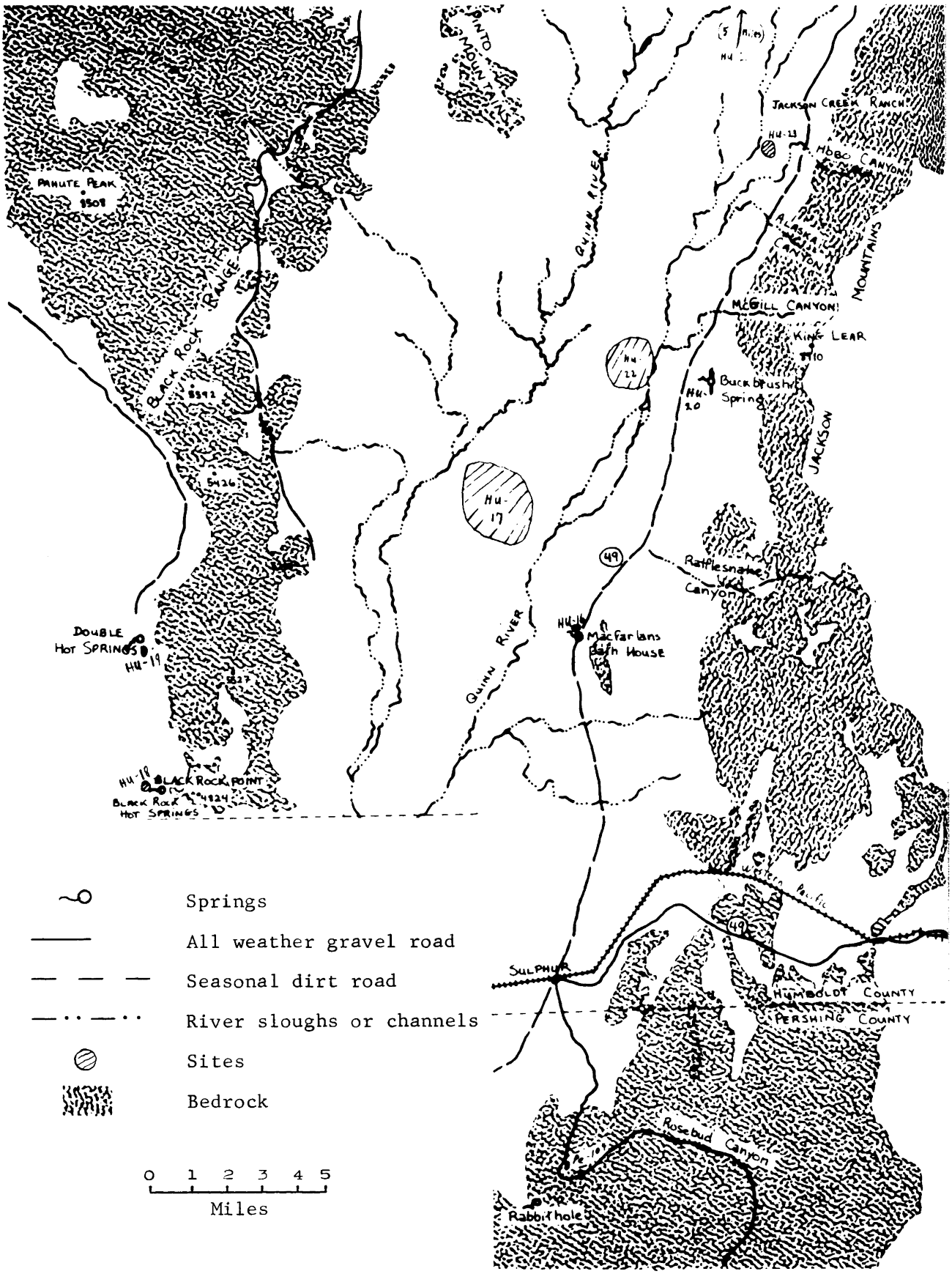
the pieces were found without stratigraphical context) the bulk of the data would be overly burdensome and incommensurate with its value to the description. All the relevant data are provided, however, with the outline drawings and in the terminal discussion of the various artifact types presented. In some cases where emphasis is considered necessary, the data are included in both figure explanations and in the text. While established point types are slightly glossed over, with the implied understanding that no really new insights are to be gained from a non-stratigraphic consideration of their attributes, a detailed treatment of unique or aberrant specimens is presented.

THE BLACK ROCK DESERT AREA

The Black Rock Desert of northwestern Nevada (map 1) is an enormous depression bounded by the Jackson Range to the east and the Black Rock and Granite ranges to the west. The most characteristic features of the desert are its extreme desiccation and the nearly total lack of surface relief. The region considered here is the sink or pool of the Quinn River, which flows in from Oregon to the northeast and dissipates itself in a number of dampish sloughs and channels some fifteen miles northwest of Sulphur (map 2). A belt of alluvial deposition skirts the actual desert flats, and provides a buffer between them and the fault-block mountains that rise steeply on either side of the desert. The entire Black Rock Desert covers portions of Humboldt, Pershing, and Washoe counties, but the portion with which we are immediately concerned lies north of Sulphur, in Humboldt County.

The general area of the Black Rock Desert was first noted by Fremont (1845: 214-216), who visited it in the winters of 1843 and 1844. Its primary historical significance is as a segment, indeed the most hazardous one, of the old Applegate Cutoff on the Immigrant Trail to California (Paden 1949:139-169).

Archaeologically, the region is very poorly known, although it has been felt for over twenty-five years that the area would be productive of important material (Heizer 1942:123). While the sites presented below are disappointing in that they lack stratigraphical context, the artifact range presented is nonetheless an unusually varied one, and serves to point out that, at least on typological grounds, there is hope that ultimately a very long cultural sequence may be established for the area.



Map 2. Black Rock Desert area (after Sinclair 1963)

Site NV-Hu-16

Fifteen miles north of the town of Sulphur, on a seasonal county road, lies a hot sulphur spring known as McFarlan's Bath House. Immediately west of the hot spring and just across the road, which at this point is a poorly graded cattle watering area, is the site of NV-Hu-16. It consists of a visible surface scatter of chippage, primarily chert, stretching some 225 feet east-west and 240 feet north-south, directly to the west of the road, which may be said to form its present day eastern boundary. The site is bounded on the south by a wide and deep dry wash, and attenuates slowly to the north and west.

Three test pits, spaced roughly evenly along the north-south axis, were dug in the site area, and no evidence of any midden deposit could be found.

Apparently a workshop site, NV-Hu-16 contained an abundance of chert chippage. Most of the pieces were sizable chunks weighing over 50 grams. A large number showed signs of having been used, primarily as hammerstones. The chippage was distributed rather evenly over the entire site area. Given the size of the site, the relative lack of projectile points may probably be explained by the fact that the area has been a source of interest to pothunters for years, and the more recognizable artifacts have long since been removed.

Six points were recovered at NV-Hu-16. Three (fig. 1a-c) are Rose Spring Corner-notched, and all are of obsidian. Two (fig. 1e,f) are Eastgate Expanding Stem type, one being of obsidian and the other of white chert. The remaining point is a diminutive specimen (fig. 1d) of rosy chert, with a split base and side notches, giving it the appearance of possessing enlarged "ears." As it is rather unusual, it has not been assigned a type name.

In addition to the classifiable points, sixteen fragments were recovered; six were made of obsidian and the remainder of chert.

One knife tip was found; the piece weighs 15.7 grams and is 58 x 35 mm. in size. It is made of brown laminar chert. A large awl or punch of white chert was also recovered (fig. 12b). It is made on a portion of chert cobble, the end being rather well retouched. Its weight is 48.8 grams, and its dimensions are 81 x 59 x 17 mm.

In addition to the chipped stone specimens, a few fragments of grinding tools were found and examined, but due to their badly decomposed state they were discarded.

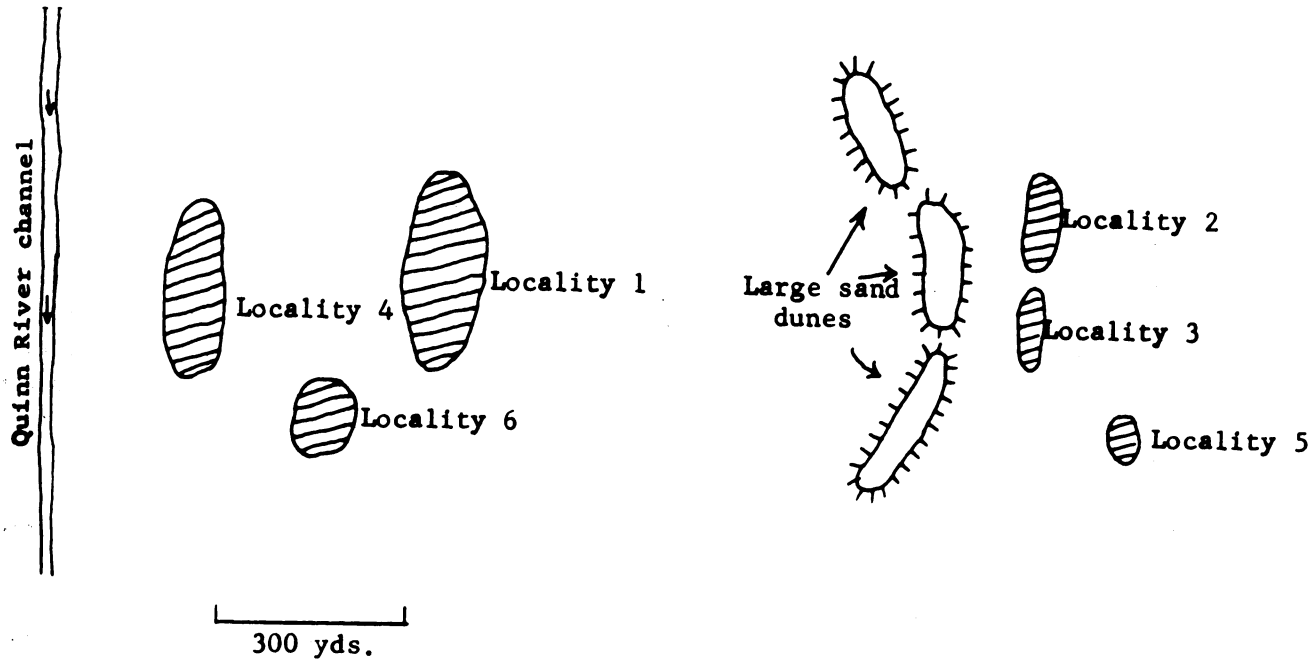
One shell bead was recovered from site NV-Hu-16. It is an Olivella type 3b2, modified saddle. This type has been previously recorded from Tommy Tucker Cave in Lassen County, California, and the Humboldt Lakebed site in Churchill County, Nevada (Bennyhoff and Heizer 1958:74).

Site NV-Hu-17

About three and one-half miles east and slightly to the north of McFarlan's Bath House, lies the approximate center of the site designated NV-Hu-17. At this site a large number of artifacts were recovered over a relatively large surface expanse. The artifacts did not occur continuously over the site area, but appeared in clusters or concentrations at a number of localities. A very few scattered specimens were recovered between localities, but in general this was not the case. Since the artifacts from all of the localities are quite similar typologically, and since it is several miles from the NV-Hu-17 area to any other areas with evidence of ancient activity, it was decided to retain one site number for the entire area, and to subdivide this into the six localities at which the artifacts were concentrated on the surface. In each of these localities the artifacts were found lying on the surface and without any other associations, as if they had simply been placed there by a passer-by. It is of interest to consider how this deposition may have occurred.

During the winter and after occasional summer storms, the desert floor is transformed into a sea of mud with standing water which "may extend over many square miles" (Sinclair 1963:6), and which, according to local informants may be up to one and one-half feet in depth. In the summer the area becomes utterly desiccated, the top 6-10 inches being a loose, fine silt under which lies a tough, gummy clay to a depth of at least 1500 feet (ibid.). It is the silty layer which we feel contains the artifacts, which are probably brought to the surface during the winter and deposited by the action of freezing and thawing (i.e. solifluction) of the silt layer, perhaps in combination with the "churning" of this layer while under water. That most of the artifacts lack signs of significant weathering can be explained by the extremely fine nature of the silt in which they are embedded or rest upon. So fine is this silt, that its abrasive qualities are minimal. Also, the slow movement which would occur under suspension in the silt would not appear to be as heavy a weathering factor as would the action of wind and sand if the pieces were exposed for a long period of time on an ablational surface.

Locality 1 is in the approximate center of the site, and is interesting in that it lacks all but the barest traces of vegetation over the greater portion. It is the largest area of concentration, being about 300 yards wide, and stretching about 600 yards north-south. It rises about two and



Schematic drawing of site NV-Hu-17

one-half feet above most of the immediately surrounding terrain. About 1700 feet east of Locality 1, a series of north-south anchored dunes rise about 6 feet.

Immediately east of these dunes lies Locality 2. This locality is almost one-half the size of Locality 1, and is about one foot lower in elevation. It has more plant cover, primarily shadscale and other salt-tolerant brush.

One hundred yards south of Locality 2 lies Locality 3, virtually identical in size, topography, and vegetation.

Locality 5 lies 300 yards southeast of Locality 3, and is about one foot lower than the latter. It is totally devoid of all vegetation, appearing, for all purposes, like an ocean beach.

To the west of Locality 1, and paralleling it in size and shape, is Locality 4. Since the latter locality is closer to the main channel of the Quinn River, it is somewhat lower and flatter than Locality 1, and is covered with a heavier plant growth. A distance of about 500 yards, devoid of artifacts, separates Localities 1 and 4.

At the southern end of this sterile "gap" is a very small concentration of artifacts which we have termed Locality 6. In actuality, since it lies roughly between their southern sections, it could be discussed in terms of a mixture of Locality 1 and Locality 4 artifacts.

Locality 1

Projectile points:- Only six identifiable projectile points (or fragments) were found at this locality. This fact is worth noting because it seems to be a formula for the entire site that at any locality with a paucity of projectile points there exists an abundance of crescentic stone objects, and vice versa. Two of the pieces are basal fragments of Large Side-notched or Northern Side-notched points; both are of obsidian. Two others are small Pinto Barbed points, also of obsidian. A fifth obsidian piece is probably a Humboldt Concave Base A type. All five points are shown in Figure 2a-e. The sixth specimen (pl. 1a), of mottled gray chert, is a basal portion of the point type which has been named below the Black Rock Concave Base type (see Locality 3). It has a hollow base, is relatively wide, and shows no basal edge grinding whatsoever. Six unclassifiable fragments of points, all of obsidian, were also recovered.

Great Basin Transverse points (pl. 1b-o). Among the more interesting of the artifact types recovered from the Black Rock Desert were the chipped stone objects of crescentic shape. Tadlock (1966), in a thorough study, has suggested that these objects are actually transversely hafted projectile points. In the present paper Tadlock's suggestion has been accepted, and amplified to the extent of naming the type "Great Basin Transverse points." A full discussion of the type and its naming is presented below. For terminological, as well as functional clarity, the new name for the type will be used throughout this report.

Fourteen crescentic objects of chipped stone were found at this locality. Nine of them are Tadlock's (1966:663) Type I, two are Tadlock's Type III "Butterfly" crescents, and two fragments, while obviously crescents, are not identifiable as to type. The final piece is not a finished specimen, but is a roughly crescent-shaped piece of orangish-chalcedony which has been blocked into its present form by percussion flaking. The negative flake scars on the piece are thin and irregular, although very well controlled, and suggest use of the so-called cylinder hammer technique in shaping the rough-out. All fourteen pieces are made of chalcedony or chert of various colors. Table 1 summarizes their dimensions.

It is important to note that in Table 1 and in all tables giving dimensions of Great Basin Transverse points, the category of length is merely the measurement of the longest axis of the specimen and does not consider what the functional length would be were the piece hafted. Tadlock's (1966) categories are the reverse, his length being equivalent to the width category of this report, and vice versa.

TABLE 1

Great Basin Transverse Points, NV-Hu-17, Locality 1

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-39836	5.8	2.0	0.6	7.7	I
2-39844	5.0	1.9	0.6	6.7	I
2-39839	5.0	1.8	0.5	4.7	I
2-39838	4.5	1.2	0.5	5.1	I
2-39832	4.5	1.8	0.4	4.8	I
2-39837	4.3	1.2	0.4	3.6	I
2-39847	3.3	2.2	0.5	5.2	I
2-39846	3.0	1.7	0.5	2.9	I
2-39849	3.0	1.6	0.4	2.2	I
2-39840	6.2	1.9	0.6	10.2	III
2-39833	5.8	2.1	0.5	8.5	III
2-39850	-	1.5	0.4	1.4	x
2-39857	-	1.4	0.3	1.1	x
2-39835	5.2	3.0	0.9	14.9	roughout

x = fragmentary

Tadlock's Type III specimens are characterized by a "prominent rounded notch in the center of the body portion of the concave edge" (1966:663). While the Type III specimens from NV-Hu-17 Locality 1 do not display this notch, they do have the flat or concave back edge which Tadlock has noted, and they are larger and heavier than the usual transverse point, another feature which Tadlock remarked. It seems justified, therefore, to assign them to Type III.

Crescent scrapers:- Six chipped stone objects which can best be described as crescent scrapers occurred at Locality 1. They have a superficial resemblance to the Great Basin Transverse points described above, but on close examination seem to be a totally dissimilar category of artifact. They are

made on a simple blade-like flake, fashioned by very simple pressure retouch around all the edges, usually on one face, but sometimes bifacially. The fact that most of the surface area on the crescent scrapers is unretouched means that they do not display true symmetry bilaterally, since the contours of the implements are determined by the strength and precision of the percussion blows which dislodged the flakes on which they were made. This is in contradiction to the transverse points which are bilaterally symmetrical, pressure flaked bifacially all over their surfaces, and generally exhibit parallel flaking. The crescent scrapers, as the accompanying tables indicate, are considerably lighter in weight and noticeably smaller in size than the average transverse point of any of the three types. Aside from their superficial similarity in form, the only specific attribute that crescent scrapers share with transverse points is their tendency to have been made of non-obsidian materials. It is possible that these scrapers were made with a punch technique for dislodging the original blade. If so, any traces of the striking platform would have been erased in the process of retouch of the edges. Table 2 lists the dimensions of the crescent scrapers from Locality 1, and they are illustrated in Plate 5a-f.

TABLE 2

Crescent Scrapers, NV-Hu-17, Locality 1

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-39834	4.0	1.7	0.25	3.0	bifacial
2-39843	3.5	1.6	0.50	2.9	bifacial
2-39842	4.3	1.6	0.40	3.1	bifacial
2-39841	4.5	1.9	0.50	4.3	bifacial
2-39845	3.2	1.5	0.30	1.7	unifacial
2-39848	3.5	1.2	0.40	2.4	unifacial

Thirty-five grams of chert chippage, as well as three nondescript fragments of knives made on laminar chert, were also collected at this locality.

Locality 2

Projectile points:- This locality produced only two previously named projectile points: one Northern Side-notched, and one probable Pinto Barbed. Both are made of obsidian, and are illustrated in Figure 2f, g.

Great Basin Transverse points (pls. 1p-r, 2a-i). Thirteen transverse points were found in this locality. Nine of them are Type I, two are Type II, and one is Type III. One fragment cannot be identified as to specific type. All the pieces are of chert, agate, or chalcedony. One specimen (pl. 2h) has a row of pronounced projections on its concave edge, and in this regard is reminiscent of some of Campbell's (Campbell and Campbell 1937:9-43) Lake Mohave examples, as well as some types which Wardle (1913:656-660) describes from San Miguel Island, California.

TABLE 3

Great Basin Transverse Points, NV-Hu-17, Locality 2

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-39875	5.0	2.40	0.70	9.1	I
2-39868	5.5	1.70	0.70	6.9	I
2-39869	5.0	1.50	0.50	5.1	I
2-39883	5.1	1.80	0.60	7.1	I
2-39882	3.8	1.85	0.55	3.8	I
2-39876	3.8	1.50	0.60	3.9	I
2-39886	3.3	1.40	0.40	3.1	I
2-39880	3.8	1.40	0.50	3.3	I
2-39881	3.1	1.00	0.50	1.9	I
2-39872	4.4	1.60	0.50	4.2	II
2-39866	4.3	1.60	0.50	4.1	II
2-39867	5.7	2.10	0.70	10.1	III
2-39884	-	1.60	0.30	-	x

x = fragmentary

Crescent scrapers (pl. 5g-k):- Five crescent scrapers were recovered at Locality 2, all being made of either agate or chert. One of the pieces (pl. 5g) is atypical in that in cross section it is subtriangular and rather steep-sided. This accounts for its being considerably thicker than the others.

TABLE 4

Crescent Scrapers, NV-Hu-17, Locality 2

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-39877	4.4	1.3	0.3	2.7	unifacial
2-39885	3.5	1.9	0.5	4.1	bifacial
2-39870	4.2	1.6	0.6	4.1	bifacial
2-39878	3.4	1.9	0.4	3.8	unifacial
2-39874	5.7	1.2	0.9	5.8	bifacial

Miscellaneous:- Two unusual bipointed objects of obsidian were collected at Locality 2. Both pieces are slightly curvate, and thus resemble transverse points. However, they are thick and biconvex (see Ragir and Lancaster 1966, for terminology) in cross section, and were probably made by very well controlled percussion flaking, in contrast to the thin, pressure flaked transverse points. The larger specimen (pl. 1t) shows grinding on a section 3 cm. long at the center of its convex edge. The piece is 9.2 x 2.1 x 0.9 cm. in size and weighs 17.5 grams. The smaller piece shows no grinding, is 5.7 x 1.6 x 0.8 cm. in size, and weighs 8.6 grams.

In addition to the above, six unidentifiable fragments of projectile points, two of chert and the others of obsidian, as well as 65.7 grams of obsidian waste and 72.0 grams of chert chippage, were found.

Locality 3

In terms of probable Early Man manifestations, Locality 3 produced the most interesting array of artifacts collected at NV-Hu-17. Fifteen identifiable projectile points were recovered. Three of these, all obsidian, are Pinto Barbed points (fig. 2h-j), while one appears to be an obsidian Northern Side-notched point (fig. 2l). Another is probably an obsidian basal portion of an Eastgate Expanding Stem point (fig. 2k).

Early point types:- Clearly of greater importance are the remaining ten projectile points from the Locality 3 collection. One of these (pl. 2r) is a large specimen of red and black obsidian, fluted on both faces, which is nearly identical to the fluted obsidian points from Borax Lake, California (Harrington 1948:63-71). This specimen was found by Mr. R. Mudge of Winnemucca, Nevada, and was loaned to the University of California for analysis. It is 6.9 cm. long (the tip is missing), 3.3 cm. wide, and 0.8 cm. thick. It weighs 18.8 grams. The basal concavity exhibits grinding, as do the edges on both sides for a distance of 2.8 cm. from the butt end. The channel flakes extend a distance of 2.7 cm. up each side of the point, and the surface of the channeled or fluted area displays unmistakable scratches or striations. These striations appear on both sides of the point, albeit on one side they are far more pronounced. Harrington (op. cit.) notes peculiar "scratches" on the channel portions of the Borax Lake points. Wormington (1957:61) suggests that the scratches were not intentionally produced, the implication being that these are the natural stress lines in the obsidian. On the specimen from site NV-Hu-17, Locality 3, however, the scorings are unmistakably man-made and intentional, and R. F. Heizer tells me that when he inspected the Borax Lake pieces at the Southwest Museum in November 1967, he definitely observed similar man-made scratchings (personal communication). Through a low-power hand lens, in fact, it is easily observed that the scorings, while usually parallel to one another, nonetheless cross each other and connect numerous times. Moreover, close scrutiny reveals that these striations were added over the top of minute stress lines or shatter marks, which are no doubt the result of the blow which also removed the channel flake. In the production of the point, broad, shallow flakes were removed, the flake scars meeting nicely at the midline of the point on both faces. Harrington (op. cit.) called the points at Borax Lake "Folsom" points. This designation is now considered somewhat erroneous (cf. Bryan 1965:162; Wormington 1957:61), and the point from Locality 3 will be referred to as a Borax Lake Fluted point. These points are pretty clearly allied to the Clovis tradition. They may be of considerable antiquity in California (Meighan and Haynes 1968).

Clovis point (pl. 2s). One red chert specimen was found which resembles, in great detail, the basal portion of what would be considered a "classic" Clovis point. Unfortunately, the piece is only a fragment, but what there is certainly has a Clovis appearance. The specimen is 3.5 cm. wide and 0.7 cm. thick. Broken off far above the midpoint, it displays broad, shallow flaking around the edges, which are smoothed by grinding. Extending upward from the basal concavity are pronounced flutes or channels. On one side the flute was produced by removal of a single flake. On the other, three such flakes were removed.

Black Rock Concave Base points (pl. 2j-q). The eight remaining points

are interesting in that they bear a resemblance to several already described projectile point types from the western United States. Most immediately noticeable, perhaps, is the resemblance of these pieces to Plainview points, whose shape, in turn, "is much like that of Clovis points except for the absence of fluting" (Suhm and Jelks 1962:2). The absence of fluting is a problem which involves certain technological aspects of stone tool manufacturing. Specifically, the critical consideration of unfluted points which are shaped very much like types which are often fluted is whether or not the unfluted examples are thick enough to have been fluted had the manufacturing artisan so desired.

This problem is neatly exemplified by the unfluted, yet Folsom-shaped, points which were recovered at the Midland site in Texas. Too small to be Plainviews, and so thin that they "probably could not be fluted on either side," the pieces were first merely called "unfluted Folsoms" (Wendorf et al. 1955:48). Later they were re-named and are now referred to as "Midland points" (Wendorf and Krieger 1959:67), with the observation that they were too thin to be fluted taken into account. By analogy, the eight concave base points from Locality 3 are to Clovis points what the Midland points are to Folsoms; namely, forms which are too thin to be fluted, rather than pieces which could have been fluted but were not. The latter category is a rather confusing one terminologically, and would include actual unfluted Clovis and Folsom forms as well as Plainview points.

While it is probably true that the eight concave base points from Locality 3 are nearly identical to many of the points which have been called Plainview found in an area extending from Mexico to Alaska (Wormington 1957: 109-110), it seems preferable to suggest a separate type name for the Locality 3 specimens for at least two reasons. First, as has been noted, a technological distinction could be made between many Plainview points which are thick enough to be fluted but simply were not, and the points from Locality 3 which are too thin for fluting. Second, at least some of the Plainview points were found in direct association with extinct bison forms (ibid., 107-108), and the entire Folsom — Plainview – Clovis, etc., complex has been defined around Pleistocene mammals. Since the Locality 3 points are surface finds, found in an area in which no Pleistocene mammal remains have been reported, and since, indeed, there is some evidence to support the view that an entirely different hunting orientation may have prevailed at the time the points were deposited (see Discussion, Great Basin Transverse points, below), it is deemed advisable to suggest that the points be called Black Rock Concave Base on the basis of their place of occurrence, descriptive attributes, and a few tenuous surface associations. It is hoped and implied, of course, that more concrete cultural affiliations for the point type will eventually be learned from work in the area at some as-yet-undiscovered stratified site.

Six of the points are made of various colored cherts, and two – the smallest – are made of chalcedony. Four of the specimens (pl. 2m-p) are widest at or above midpoint. All of the pieces have pronounced basal concavities, as well as very light edge-grinding on the lower portion of each edge. All are characterized by thin cross sections and by exhibiting broad, shallow, yet parallel flakes which meet at the mid-line of the points.

In addition to the above, ten unidentifiable fragments of obsidian and four of chert were recovered.

TABLE 5

Black Rock Concave Base Points, NV-Hu-17, Locality 3

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)
2-39905	7.5	2.5	0.4	10.8
2-39906	6.5	2.0	0.4	8.4
2-39907	5.0	1.9	0.5	6.1
2-39908	5.3	2.6	0.4	7.6
2-39909	6.0	2.5	0.3	7.3
2-39910	6.9	2.6	0.5	11.9
2-39911	7.2	2.9	0.5	13.3
2-39913	x	2.5	0.3	x

x = fragmentary

Great Basin Transverse points (pls. 3a-v, 4a-g). Twenty-nine transverse points were removed from Locality 3 and segregated according to Tadlock's (1966) types. Thirteen of the pieces are Type I, all non-obsidian. One of the most interesting Type I pieces (pl. 3b) shows evidence of having been reworked or resharpened some time after its original manufacture. Made of black chert, the piece (LMA 2-39923) exhibits a heavy bluish-white patina over most of its surface. The concave edge, however, has been resharpened and shows well-defined thin pressure flakes extending back toward the mid-line from the edge in a parallel fashion bifacially. This resharpening of the concave edge has interesting implications in regard to possible function of the crescentic stone pieces.

Nine of the specimens are Type II and seven are Type III "Butterfly" crescents. The dimensions of all the transverse points from Locality 3 are given below.

TABLE 6

Great Basin Transverse Points, NV-Hu-17, Locality 3

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-39919	6.5	2.1	0.7	10.1	I
2-39917	5.8	2.2	0.5	8.5	I
2-39933	6.0	2.0	0.6	7.3	I
2-39935	5.8	1.7	0.5	6.7	I
2-39929	5.8	1.6	0.5	7.2	I
2-39928	5.9	2.1	0.6	7.3	I
2-39939	5.0	2.0	0.6	6.7	I
2-39930	5.1	1.7	0.4	4.2	I
2-39925	4.1	1.2	0.4	2.9	I
2-39923	4.5	1.8	0.6	5.4	I
2-39950	x	2.4	0.5	x	I
2-39953	x	2.3	0.6	x	I
2-39952	x	2.1	0.6	x	I
2-39938	6.0	2.2	0.5	7.3	II
2-39943	5.1	2.1	0.4	5.8	II
2-39934	4.8	2.3	0.6	6.2	II
2-39926	5.5	1.9	0.5	5.6	II
2-39937	5.0	1.7	0.5	4.5	II
2-39931	4.8	1.8	0.5	4.4	II
2-39945	x	2.1	0.4	x	II
2-39949	x	1.7	0.5	x	II
2-39951	x	1.4	0.4	x	II

TABLE 6 (cont'd.)

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-39921	5.8	2.5	0.7	10.6	III
2-39942	5.9	2.2	0.6	10.8	III
2-39936	5.5	2.5	0.5	8.1	III
2-39940	5.6	1.8	0.6	6.5	III
2-39947	6.0	1.9	0.6	8.3	III
2-39924	5.5	2.0	0.5	6.9	III
2-39954	x	2.5	0.5	x	III

x = fragmentary

Crescent scrapers (pl. 51-n). Three crescent scrapers were found at Locality 3. All are non-obsidian. Two are very much like those described for Localities 1 and 2. The third (LMA 2-39922) is much large and heavier, and is triangular in cross section. It is probable that the piece is an imperfectly fashioned crescentic or transverse point which saw slight utility as a scraper.

TABLE 7

Crescent Scrapers, NV-Hu-17, Locality 3

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-39941	4.0	1.5	0.5	4.1	bifacial
2-39944	3.8	1.0	0.6	2.2	unifacial
2-39922	6.0	1.6	1.1	10.0	unifacial

Drill (pl. 61). One small drill or punch made from chert and showing slight wear was recovered.

Debitage. Thirty-two grams of chert and chalcedony chippage were recovered at Locality 3.

Locality 4

This locality produced perhaps the widest range of artifact types of any of the localities at NV-Hu-17. It was the only locality at which ground stone implements were recovered, and produced a wide variety of projectile points as well. Most of them are probably of a much later date than those from Locality 3.

Projectile points:- Forty-eight identifiable projectile points were recovered at Locality 4.

Rose Spring Corner-notched points (fig. 3s-z). Eight possible Rose Spring Corner-notched points were recovered. All are of obsidian and show a considerable amount of damage and abrasion. It is conceivable that they are badly weathered Pinto Barbed, or even Elko Corner-notched points which are no longer absolutely recognizable as such. Since they fall within the weight and size range (except for being a slight degree too thick) of well formed Rose Spring points, they are here tentatively assigned to that category. Such assignment is helpful in a general way, but without stratigraphic context, it is not to be used in making specific conclusions about the age range of the locality.

Elko-Eared points (fig. 3j-q). Eight of these points were recovered, two made of chert and the remainder of obsidian. As with the obsidian Rose Spring points, the Elko Eared pieces of obsidian appear to be heavily worn, perhaps by water action.

Elko Corner-notched point (fig. 3r). One obsidian point of this type was recovered from Locality 4.

Pinto Barbed points. Nine Pinto Barbed pieces were recovered. All are of obsidian and show wear or abrasion similar to that mentioned for the Elko Eared points.

Humboldt Concave Base A points. Four specimens of this type were found. All are of obsidian and show wear or abrasion as mentioned above.

Northern Side-notched points. Thirteen points of this type were found. Again, all are of obsidian and exhibit heavy wear. One of the pieces (LMA 2-39988) is an unfinished specimen which nonetheless shows the basic Northern Side-notched outline.

Gunther Barbed points (pl. 6c,d). Two of the most interesting points from Locality 4 are of the Gunther Barbed type (Treganza 1958:13-16; 1959:7,14-15,24-25). Both of the specimens are of obsidian, and their

measurements are 3.75 cm. long and 2.25 cm. wide. One weighs 2 grams, the other 2.4 grams. This places them well within the range of Treganza's Gunther Barbed type which varies from 2.5 to 4.2 cm. in length, 2.0 to 2.7 cm. in width, and 1.1 to 2.5 grams in weight (ibid. 1958:13-16,fig. 1). For Gunther Barbed points in Humboldt County, California, where they are very abundant, see Elsasser and Heizer (1966, pls. lu-y,15t-z: type 6). Both Locality 4 specimens show very delicate retouch and in contrast to the other obsidian points from the locality, they are not at all worn. Both have a sizable unworked area on one face, indicating that they were formed from very thin, flat flakes. This corresponds to Treganza's type description (loc. cit.). The two pieces are shown (pl. 6c,d) along with Gunther Barbed points from other sites in the Black Rock Desert are (pl. 6a,b).

Three final specimens (fig. 4n-p), while not identifiable as to type, are still recognizable as points. Two are made of obsidian and are badly worn, while the third (fig. 4n) is of red laminar chert, and is worn as well as being crudely manufactured.

Thirty-nine obsidian fragments of points and two chert fragments were also collected.

Great Basin Transverse points (pl. 4h-k). Four transverse points were recovered at Locality 4. The scarcity of these pieces is in contrast to the abundance of other projectile points, a pattern which was noted above. Three of the pieces are Type II (pl. 4i-k) and one is Type I (pl. 4h). While it is unusual for Type II transverse points to predominate at any given site or locality, the fact that this is the case at Locality 4 is most likely due to the small sample. As could be expected, the specimens are all of chert or chalcedony.

TABLE 8

Great Basin Transverse Points, NV-Hu-17, Locality 4

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-40049	3.2	1.5	0.4	3.1	I
2-40047	5.0	2.8	0.4	5.5	II
2-40048	5.5	2.3	0.7	10.6	II
2-40052	x	2.3	0.5	x	II

x = fragmentary

Scrapers:- Four unpatterned side scrapers were recovered. All are crudely fashioned unifacially on one edge of largish obsidian primary flakes ranging from 3.9 x 2.2 x 0.6 cm. in size and 5.2 grams in weight, to dimensions of 5.6 x 2.4 x 0.9 cm. and weight of 12.2 grams.

Knives:- Fourteen broken fragments of knives made on thin pieces of laminar chert, as well as two basalt knives on large side flakes, much like those from the lower Humboldt Valley (Elsasser 1958:36), were found. One of the basalt knives is illustrated in Figure 12a. One very crude chert roughout or blank, probably intended for a knife or point, was found.

Cores:- Five core-pebbles were recovered, two being of chert and three of basalt. Two of the basalt specimens show battering on one of their edges and were no doubt used as hammerstones.

Manos:- Two manos of granite were found. One is in good condition; it is 9.8 x 7.9 x 4.9 cm. in dimension and weighs 611 grams. It is shaped, being bifacially scored, rectangular in outline, and flat in cross section, with convex faces. The smaller piece, which is quite worn, is 8.4 x 5.4 x 2.5 cm., and weighs 241 grams. This piece is worn all around and was probably shaped like the larger specimen at one time.

Shell bead:- One shell bead, a spire-lopped Olivella type 1a, was found. A number of these occur in the Humboldt Sink area and are thought to be Early or Transitional Lovelock in age (Bennyhoff and Heizer 1958:64).

Debitage:- Some 208 grams of chert chippage and 117 grams of obsidian debitage were collected.

Locality 5

Great Basin Transverse points (pl. 41-p):- Five transverse projectile points were found at Locality 5. All were of chert or chalcedony. It is interesting that no chippage and no other artifacts of any type were present at the locality which is unusual for its complete lack of surface vegetation. These points are classified in Table 9.

Locality 6

Projectile points:- Nine named projectile points, all of obsidian, were collected at Locality 6. Five are Pinto Barbed (fig. 2m-q), two are Elko Eared (fig. 2r,s), and two are Northern Side-notched points (fig. 2t,u). One of the Pinto Barbed points (LMA 2-40098) had not been completed.

TABLE 9

Great Basin Transverse Points, NV-Hu-17, Locality 5

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-40089	5.3	2.0	0.5	4.2	I
2-39920	4.8	1.6	0.4	4.4	I
2-39932	4.5	1.9	0.5	4.4	II
2-40091	4.0	2.0	0.6	5.7	II
2-40090	5.0	2.8	0.6	1.6	II

Great Basin Transverse points. Six transverse points were located at Locality 6. Two of them (pl. 4u,v) are too fragmentary to type, one is Type II (pl. 4t), and three are Type I (pl. 4q-s). They are all of chert or chalcedony.

TABLE 10

Great Basin Transverse Points, NV-Hu-17, Locality 6

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Type
2-40111	6.75	2.0	0.5	9.8	I
2-40112	5.50	1.8	0.5	6.5	I
2-40108	4.80	2.0	0.5	7.2	I
2-40107	5.75	2.0	0.5	7.7	II
2-40113	x	1.8	0.4	x	x
2-40115	x	1.5	0.5	x	x

x = fragmentary

Crescent scrapers (pl. 5o-q):- Three crescent scrapers were found, two being made of chalcedony and one of agate. The agate specimen (LMA 2-40110) is broken along one edge due to an inclusion in the stone. Since it shows no use, it could be an imperfectly made crescent on a thin flake. The other two, however, are typical crescent scrapers.

TABLE 11

Crescent Scrapers, NV-Hu-17, Locality 6

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-40108	4.7	2.0	0.5	7.2	bifacial
2-40106	5.2	1.5	0.5	6.3	unifacial
2-40110	4.0	1.5	0.5	4.1	uncertain

In addition to the artifacts mentioned above, two obsidian scrapers made on the side of long primary flakes, and one fragment of a knife made of laminar chert were found at Locality 6.

Site NV-Hu-20

This site is located approximately 33 miles north of Sulphur on the same dirt road as site NV-Hu-16 (see map 2). The area is known locally and is shown on maps as Buckbrush Springs, because of the three extremely dense patches of buckbrush which grow here at a point about 400 feet due east of the road. These thickets are situated at 50 yard intervals along a north-south axis. Each thicket is roughly 50 yards long by 20 yards wide, and each is located on a slow seep, a factor which undoubtedly helps to explain the existence of the plants.

Artifacts were recovered from the area immediately west of the three buckbrush thickets. Chippage is apparent here on the surface for about 70 yards west of the thickets, in the direction of the road. It was hoped that the thickets might have concealed and protected midden deposits, but three test pits dug to depths of 4 feet, as well as numerous auger holes drilled around the thickets, failed to reveal any sign of occupational deposit. Our search for buried materials could scarcely be called thorough, however, and if the springs are ancient, the locality may have been one attractive to man.

Projectile points:- Twenty-five identifiable projectile points or fragments thereof were found at Buckbrush Springs.

Humboldt Concave Base A. The most numerous type of point (11) at this site is that which is here called Humboldt Concave Base A. All are

made of obsidian, and all but three of the points are rather fragmentary. It is conceded that this compounds the difficulty of positively assigning them to a certain type. Ten of the points are shown in Figure 5a-j. Moreover, it appears that the Humboldt Concave Base A points may bear certain developmental similarities to the Pinto series points, especially the Pinto Shoulderless, and this similarity creates further difficulties in the analysis of surface materials. Not only is some stratigraphic information needed to clarify each relationship between Pinto and Humboldt Concave Base A points, but the various types within the Pinto series need to be more precisely defined and their interrelationship worked out.

Four very roughly chipped points (fig. 5k-n) were recovered which exhibit square shoulders and bifurcate stems. They are similar to the Pinto Square-shouldered points from NV-Ch-15 in the Humboldt Sink. It is of interest that, on form alone, they appear as transitional between Pinto Square-shouldered and Elko Eared, the size and shape of the bifurcate stem determining to which type they appear most similar. Again, more stratigraphic work is necessary to see if such a formal seriation might be valid.

Northern Side-notched points (fig. 5o-q). Three of these points, all of obsidian, were recovered, as were two Elko Corner-notched and two Elko Eared points. The final point to be mentioned (fig. 5v) is one which, on formal outline, appears to mediate between the Northern Side-notched and Elko Eared series.

Points or blades:- Eighteen fragments of points or blades, seventeen of obsidian and one of white chert were recovered.

Knife (fig. 5w):- One crudely flaked obsidian knife, showing signs of utilization on both cutting edges, was found.

Scrapers:- Sixteen nondescript and/or fragmentary scrapers were found, most of them apparently made in the process of utilization of appropriate waste flakes. Thirteen of these are side scrapers worked unifacially along one edge. Six are of gray or brown chert and the remainder of obsidian. They range in size from 5.5 x 3.5 cm., weighing 21.5 grams, to 3.5 x 1.4 cm., weighing 2.6 grams.

One very interesting artifact from NV-Hu-20 is a white chalcedony scraper (pl. 5z) pointed at both ends and retouched unifacially around its entire periphery. It bears a superficial resemblance to the crescentic chipped stone objects or transverse projectile points found on the Black Rock Desert floor some six miles away, and for this reason, is carefully described here. The scraper, unlike the transverse points, shows no transverse flaking, but

is only secondarily retouched along one cutting face. Moreover, the scraper is worn smooth along its edges, as well as along the top of the cutting edge on the concave side. This contrasts with the points, which very rarely show signs of use and which are never worn smooth. The scraper is made on a long flake, and is 5.7 x 1.6 x 0.4 cm. in size and weighs 4.9 grams. It is similar to those artifacts from sites NV-Hu-17 and NV-Hu-22 which are referred to here as crescent scrapers.

Debitage:- A large number of obsidian waste flakes, weighing a total of 255.6 grams, were found on the site. Three portions of natural nodules, all fractured by heat, were also found. It is assumed from this that the site was used, at least occasionally, as a workshop. Further tests will show whether the obsidian nodules are from Cordero (see NV-Hu-25 below); it would appear from size and texture that this is likely.

Site NV-Hu-21

About eight miles west of the dirt road leading north from Sulphur, and four miles south of the Leonard Creek Ranch road, is an area of high anchored dunes and wind-sculpted silt compactions with a great deal of obsidian chippage visible on the surface. This area has been listed as site NV-Hu-21. Unfortunately, it had been fairly well denuded of artifacts by collectors before it claimed the attention of archaeologists. Indeed, the area is criss-crossed by auto tracks and footprints, probably due to its relative accessibility compared with other sites in the Black Rock Desert area. It serves as an excellent example of the extent to which a site, especially a surface site, can be thoroughly gleaned by private collectors.

Projectile points:- Twenty-seven projectile points complete enough to be classified were found at NV-Hu-21.

Northern Side-notched points (fig. 6c-p). Fourteen of the points recovered are of this type, and all are of obsidian. Four, also of obsidian, are Elko Corner-notched type (fig. 11m-p), while two others (fig. 11q, r) are Elko Eared.

Four rather poorly made pieces of obsidian (fig. 6q-t) have been classified here as Rose Spring Corner-notched points, although on account of their crudity it could be argued that they should not be classed. However, one basal portion of a white chalcedony Eastgate Expanding Stem point (fig. 6u) was found, and since the Eastgate series is roughly equivalent chronologically to the Rose Spring series (Heizer and Baumhoff 1961:128; Clewlow 1967:144), it seems warranted to anticipate that Rose Spring points should appear at the site.

Humboldt Concave Base A points. Two points of this type were found at NV-Hu-21. One (fig. 6b) is of an unusual and distinctive gray obsidian and is a typical point of this type. The other (fig. 6a), of greenish obsidian, is slightly atypical in that the basal cleft is markedly deeper and the two resulting "earlike" projections are more pronounced than one would expect.

Seventeen projectile point fragments were recovered; all but one were made of obsidian. Of these, nine are tips. None of the fragments could be typed.

Knives:- Five fragments of knives made on very thin pieces of laminar chert were recovered. This type of chert is characterized by its occurrence in thin pieces, both sides of which are covered by cortex. The process of tool manufacturing with this material is immensely simplified in that no large flakes or thinning flakes need be removed since the natural stone is already of the proper thickness. Only small flakes need be removed along the edges to form the cutting blade. Of the five pieces from site NV-Hu-21, four are merely chunks of chert with one edge worked. Two of these are illustrated in Figure 12c,d. The pieces range from 4.9 x 2.7 cm., weighing 7.5 grams, to 8.5 x 4.2 cm., weighing 33.3 grams. All four pieces are about 0.4 cm. thick. The fifth specimen (pl. 6g) is a basal portion of a knife which was fashioned in the shape of a large Elko Corner-notched point.

Scrapers:- Nine scrapers were found at NV-Hu-21, all of obsidian. Five of these are side scrapers showing unifacial utilization along one edge. As they are random and nondescript in appearance, it is likely that they are merely waste flakes which were utilized as scrapers. They are relatively small, the largest being 4.1 x 1.9 cm., and weighing 5.1 grams. The end scrapers (fig. 12e-h) appear to have been more purposefully fashioned. All four are fractured only at one end and are retouched and shaped along all the other edges. Three of the pieces are subrectangular, while the fourth is in the shape of a subtriangle. All four are lenticular in cross section (see Ragir and Lancaster 1966, for terminology), and are very much like the broken basal portions of Lind Coulee and Lind Coulee-like points, a number of which were found at site NV-Hu-22, some ten miles to the south. The end scrapers from NV-Hu-21 are too poorly flaked to have been the actual basal portions of points, but it seems reasonable to postulate that the broken point bases served as models for the peculiar later scrapers. The end scrapers all exhibit bifacial utilization around all the retouched edges, with wear being concentrated at the end. One of the pieces shows some wear along one face of the fractured edge. They are all very similar in size and weight, ranging from 3.6 to 2.6 cm., at 7.4 grams, to 2.7 to 2.4 cm., at 4.2 grams.

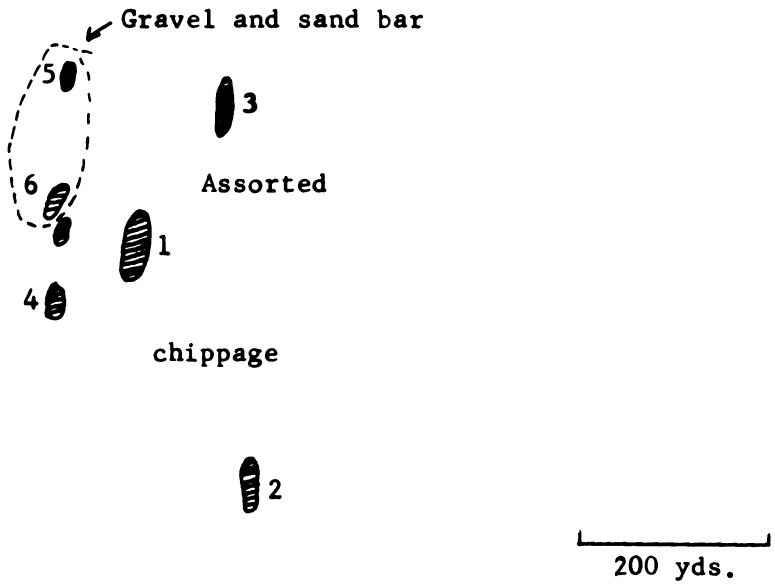
Site NV-Hu-22

Site NV-Hu-22 is situated approximately one and one-half miles due west of Buckbrush Springs. The area has a substantial plant cover of rabbit brush, shad scale, greasewood, and small sage. It is better watered and roughly 25 feet higher in elevation than NV-Hu-17, the other site at which a number of early artifact types were recovered.

NV-Hu-22 is a large site, if the area of surface scatter is to be considered in judging size, and like NV-Hu-17, is divisible into a number of distinct localities where artifacts are present in more abundance than in the immediately surrounding areas. Since the temporally diagnostic artifacts from any given locality of concentration at this site tend to be grouped around the same relative time horizon, and since the predominant time horizon for any one locality is usually different than the one for any other locality, the argument could be made that each locality actually represents a separate site. However, there is no actual break in the surface occurrence of artifacts between localities. That is, artifacts occur over the entire area embraced by the seven localities. The localities are delineated only by a much heavier concentration of artifacts. In such a situation, the term "site" for each locality seems unjustified, as the actual boundaries would be arbitrarily described. It would appear more useful to include the entire area within the site, and to assign each artifact within the area to the nearest locality of concentration. All the materials may then be considered together, and the risk of minimizing the significance of late or common artifact types by assigning them to one or more "late surface sites" is obviated. Since there are temporal differences between some of the localities, as represented by different horizon or time-markers, it is probably better to view these differences as what has been rather awkwardly termed "horizontal stratigraphy" within the same site, rather than to try to segregate the localities into separate sites on their own. Also, since artifacts occur in small numbers between actual localities, the alternatives were considered: whether they should be so described, or be included with artifacts from the nearest locality. The latter solution was decided upon.

Locality 1

Projectile points:- Locality 1, the central portion of site NV-Hu-22, produced the most varied collection of chipped stone artifacts. Identifiable projectile points or portions thereof were numerous. Of 77 recovered, 14 (fig. 7a-n) fit roughly into the Pinto Barbed category. Although some of the pieces are slightly smaller than the ideal type specimens, they are nonetheless most accurately typed as members of this category, especially in view of the other Pinto occurrences at this locality. All these pieces are made of obsidian.



Localities at site NV-Hu-22

Fifteen points from Locality 1 are of the Pinto Square Shouldered type (figs. 7o-t, 8a-i). They are characterized by straight bifurcated stems and pronounced shoulders which appear as the result of marked corner notching in some specimens. Thirteen of the pieces are made of obsidian, one is of white chert, and one of green jasper.

Seven Humboldt Concave Base A points (fig. 8j-p) were identified in the locality collection. Six of the pieces are of obsidian and one is of gray chert. Only two of the pieces are complete, but the remainder are easily recognizable from their distinctive basal portions.

Of great interest are the twenty-three points (or fragments of points) which are like a distinct type found at the Lind Coulee site in Washington. These are rather large, broad points with long, pronounced stems which constitute nearly one-third of the total length of the point (cf. Daughtery 1956:246). Four of these pieces are completely whole, another is nearly so. They are slightly heavier and longer than the points from Lind Coulee which range from 5.0 to 9.6 grams in weight and from 6.3 to 7.0 cm. in length (op. cit. 238,296). The Lind Coulee points from site NV-Hu-22 are quite like Style 2 of the Lind Coulee points, characterized by sharp lateral shoulders, asymetrical in that one is rounded and the other sharply formed, and they also have the parallel-sided stem point (op. cit. 146-147). All five of the complete points (pl. 7a-e) show parallel or slightly excurvate stem sides. These five points also show pronounced grinding on the stem sides,

as do some of the points which Daughtery recovered at Lind Coulee.

TABLE 12

Lind Coulee Points, NV-Hu-22, Locality 1

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)
2-40285	7.00	2.9	0.9	16.9
2-40287	7.50	3.0	0.7	14.6
2-40286	6.00*	2.6	0.7	11.5
2-40284	5.00	2.2	0.8	8.4
2-40347	3.75	2.2	0.8	5.7

* Specimen incomplete

It is of interest that all five of the points recovered from site NV-Hu-22 are of obsidian, while those from the Lind Coulee site are of opal, jasper, chalcedony, and basalt. In addition to the five complete specimens, eighteen basal fragments of Lind Coulee points were recovered. Seventeen of these are of obsidian, one is of basalt. All but three of the specimens show grinding or smoothing along the stem sides. Eleven of the specimens (pl. 7f-p) are roughly paralled-sided, while seven (pl. 7q-w) have what Daugherty (1956) calls tapered stems. While it is worthwhile to note these differences, it is improbable that any significance will be seen to attach to them. Rather, the type is quite distinctive as a single type regardless of whether the stem is slightly tapered or has parallel sides. It is not unlikely that these points have a generic affinity to the large stemmed points from Canada which Wormington (1957:134) calls Alberta points.

Twenty-three additional pieces - almost certainly broken point stems - were found which had been re-used as scraping or cutting tools. They are discussed as scrapers below.

Specimen LMA 2-40347 (pl. 7e) should be commented upon because of its unusual attributes. It is the smallest of the Lind Coulee type points, having the typical stemmed base. The upper portion of the piece, however, is unique in that it is rounded, or blunted, instead of coming to a point. The entire rounded portion has been intentionally ground and slightly battered, as if to produce a point intended to stun its target with impact,

rather than pierce it. The stem was ground but not battered. It could be argued that the piece was a hafted scraper instead of a stunning point, but two facts seem to mitigate against such a view. First, the dulling around the distal portion takes the form of many tiny hinge fractures, bifacially exhibited, which are the result of deliberate battering rather than of use as a scraper. Second, if the assumption is correct that the crescents from site NV-Hu-17 were used as transverse stunning points (see Discussion below), then the tradition would be present in the area and there is no reason why such stunning points ould not be made in occasional shapes other than crescentic.

Seven basal fragments were recovered from Locality 1 which are very similar in outline to those whole points from site NV-Hu-17 which have been designated Black Rock Concave Base points. Two of the specimens are of chert and exhibit no basal grinding. The other five pieces are of obsidian and show marked grinding on the sides, but not the concavities, of their bases. This is an interesting difference, and it would be helpful to know whether the grinding is due to a perceived difference in the materials, a temporal difference, or both. The question, of course, will remain unanswered until whole specimens are found in a datable, and preferably stratigraphical, context. At this time the specimens are all considered as Black Rock Concave Base points. Four of them are illustrated in Plate 8a-d.

The remaining eleven points from Locality 1 are also basal fragments. Ten of these are made of obsidian and are characterized by grinding on both sides, as well as on the flat or horizontal basal surface. These ten pieces appear very similar to what have been called Milnesand points (Wormington 1957:112). They possess a wedge-like, or bevel, base, and fall within the same range of width and thickness as the type specimens (Sellards 1955:343). The type specimens, however, are not of obsidian. Until whole points are found in stratigraphical context, certain identification cannot be made, but for convenience, these basal fragments will be called Milnesand-like points. The final piece, of laminar chert, is also classed, on shape alone, as Milnesand-like. It may be, however, simply a broken knife base, as it shows no grinding. Four of the Milnesand-like basal portions are shown in Plate 8e-h.

Seventy-nine presently unidentifiable fragments of points were recovered at Locality 1. Sixty-three are of obsidian, seven of basalt, and nine are chert. At least fifteen of these were probably basal portions of Lind Coulee type points. When the type collection of complete points becomes larger, it will no doubt be easier to recognize variation, and these basal fragments may then be classifiable. Until then, since positive identification cannot be made, it is safer to leave them in the unidentifiable category.

Great Basin Transverse points:- One nearly complete Type 1 transverse point of purple chalcedony was recovered (pl. 8j). One end of the piece had been broken off after its manufacture. It weighs 6 grams, and is 4.8 cm. in length, 1.9 cm. wide, and 0.65 cm. thick. Three fragments of crescents were also found (pl. 8k-m). Two of these, both of chalcedony, appear to be broken and perhaps unfinished Type I transverse points. The third fragment, of brown chert, is very rudely fashioned, and is probably a roughout for an indeterminate type of crescent.

Two fragmentary pieces which appear to be crescent-shaped but which do not fit any of Tadlock's (1966) categories were found. They are not as wide or as lenticular in cross section as Tadlock's types. Since the specimens are incomplete, it is not possible to discern if they are actually crescent-shaped, or if they are more ring-like, like those which were found at the Karlo site (Riddell 1960:30,fig. 10b-d, pl. 3e). The two pieces, one of chert and the other of obsidian, have tentatively been designated as Type II crescents (see table 15 below).

Scrapers:- Three large obsidian end scrapers (fig. 12i-k) were found at Locality 1, and seem to have been made in a sufficiently uniform fashion to constitute a deliberate type. All were made on a single large primary flake, then retouched and utilized unifacially. One of the pieces (LMA 2-40376) shows considerable smoothing from wear. While usage is heaviest at the end opposite the bulb of percussion, some utility is also shown on the sides of the pieces.

One large chert side scraper was found, weighing 13.7 grams, and being 6.25 cm. long and 3.00 cm. wide. Made on a long flake, it has been utilized on two sides unifacially.

Of unusual interest at Locality 1 is the artifact type here called crescent scrapers, so named because of their superficial similarity in shape to the crescentic stone objects – presumably stunning points for projectiles – which are so abundant in the general Black Rock Desert area. These crescent scrapers, while at first appearing to be true crescents, are in fact quite different. The scrapers are smaller, lighter, and less carefully made than actual crescents. Moreover, while the true crescents are the result of extensive pressure flaking of a larger piece, the crescent scrapers are simple elongate flakes which have been slightly retouched around the edges to achieve the desired shape. Of eight specimens (pl. 5r-y), four are bifacially retouched and four are worked on only one face. Utility scars are faintly apparent on all the pieces. All eight pieces are made of brownish chert.

An interesting possibility, to explain the peculiar shape of these pieces, is that they were modeled after the crescentic stunning points common to the area. Perhaps some of these pieces were even found and re-used as scrapers (see re-used specimen from site NV-Hu-17, Locality 3). Their shape may have been found to be convenient, and the simplified blade-like form of crescent scraper may have emerged as a result of a new manufacturing procedure aimed at approximating an old shape.

TABLE 13

Crescent Scrapers, NV-Hu-22, Locality 1

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-40186	2.95	1.40	0.30	2.1	bifacial
2-40166	4.30	1.50	0.65	4.8	bifacial
2-40177	3.60	1.35	0.56	3.7	bifacial
2-40167	3.40	1.30	0.50	3.0	bifacial
2-40357	2.80	1.10	0.45	2.0	unifacial
2-40165	3.50	1.00	0.35	1.6	unifacial
2-40169	3.00	1.50	0.41	1.9	unifacial
2-40168	5.10	1.60	0.45	4.4	unifacial

The final scraper type from Locality 1 is evidenced in the scrapers thought to be made from the dislodged stems of Lind Coulee type points. Twenty-three of these pieces (pl. 7a-w) were recovered, one made of jasper and the remainder of obsidian. All of them are shaped roughly like the broken point stems described above. Five of the pieces show no grinding, but exhibit tiny scars on both faces which seem to be the result of cutting or scraping. The other eighteen pieces show the same tiny scars, but these scars were caused after the sides of the pieces had been ground in a manner identical to the grinding on the actual point stems. Some of these pieces had also been reworked or resharpened. It appears, then, that this type of scraper represents a re-use of broken artifacts; namely, stemmed points. The twenty-three scrapers have an average length of 2.2 cm., an average width of 2.9 cm., an average thickness of 0.6 cm., and an average weight of 3.5 grams.

Knives:- One possible knife (fig. 13a) was found. It is a percussion flaked piece with utility scars bifacially exhibited along one edge. It is 4.5 x 2.5 x 0.5 cm., and weighs 9.7 grams. In addition, three large, nondescript flakes, weighing roughly 58 grams each, and measuring approximately 6.5 x 5.7 x 1.5 cm., were recovered. One is made of basalt, the others of chert. All three show signs of having been incidentally utilized for cutting or chopping.

Core choppers or hammerstones:- Three large cores of a nondescript nature were found; one is of basalt and two are of chert. All three show signs of utility as hammerstones or choppers. The smallest is 6.2 x 4.5 x 2.6 cm., and weighs 83.7 grams; the largest is 10.8 x 9.5 x 7.5 cm., and weighs 277.6 grams.

Blades:- Four blades (fig. 13b-e) were recovered at Locality 1. Two of these are large fragments; one is made of brown chert and the other is of obsidian. Both are percussion flakes and show broad lenticular cross sections. The remaining two are thin, long fragments, both of obsidian. They show considerable wear on their edges.

Gravers:- Two obsidian gravers (pl. 6e,f) were recovered at Locality 1. One is a long, slender, and thick piece, with a subtriangular cross section. The tip end shows some smoothing from wear. The other is of a different shape, having been made on a broad, thin flake with a small, sharp engraving point fashioned at the opposite end from the bulb of percussion.

Drills:- One tan chert drill (pl. 6k) was found. The tip of the specimen is missing, but the bottom portion, a broad, roundish base, is present. The bit was biconvex in cross section. A second drill (pl. 6j), made of red and black jasper, is longer and thin; it was probably not completed.

Miscellaneous chipped stone objects:- Locality 1 yielded a number of rather unusual and interesting chipped stone objects. Among these are four pieces of natural quartz crystal. One has been rather crudely flaked into a sort of projectile point measuring 3.00 x 1.25 cm., having a thickness of 0.6 cm., and weighing 2.4 grams. The crudeness of the flaking is probably a result of the quality of the material which is very difficult to fracture evenly. It is worth noting that quartz crystal points were recoved from the Lehner site in Arizona (Wormington 1957:56; Haury et al. 1959:14-15). Two of the pieces are larger amorphous specimens which appear to have suffered some damage as a result of use as scraping or cutting tools. The nature of the material makes a more accurate diagnosis impossible. One perfect six-sided crystal was recovered. It has not been modified in any way. Quartz crystals of this sort were characteristic burial offerings in Early Horizon graves in Central California. Projectile points of quartz were also made (Heizer 1949:19-20).

One probable pendant of white chalcedony was found (fig. 14d). The piece was made on a broad, thin primary flake, and consists of little more than the flake modified by thirteen variably-sized notches placed around its perimeter.

Two splinters of obsidian (pl. 8r,s) were recovered from Locality 1. They are unusual, not only for their shape, but also for the fact that they are remarkably well worn on all edges. No use for the pieces can be suggested at present. They may be obsidian "bangles" such as those reported in Central California from Early through Late Horizons (Heizer 1949:24). Such bangles occur naturally in great abundance in the High Rock Canyon area to the west. A collection of these was made by R. F. Heizer in August 1962, and is now in the Lowie Museum of Anthropology.

For the final artifact from the site, no probable use or function can be suggested either. It is an elongate, subrectangular object (pl. 8u) made with random pressure flaking on a thin piece of unusually colored black, pink, and white chert. None of the edges of this rather colorful piece show any evidence of having been utilized.

Chippage:- Over 1150 grams of chippage, most of it obsidian, was recovered from Locality 1. Many of the pieces may have been incidentally used as scrapers or cutters. At least three varieties of obsidian - green, black, and gray - were present in the chippage.

Locality 2

Two hundred yards due southeast of Locality 1, a concentration of artifacts were found in an area of similar terrain and plant cover. While not plentiful, they were roughly equivalent typologically to those from Locality 1, but since the area between the two localities was only sporadically productive of surface chippage, it has been decided to designate the second area of concentration as Locality 2.

Projectile points:- Twenty projectile points or fragments of such (figs. 10j-t,11a-f) were recovered from Locality 2 and subjected to typological segregation. One Northern Side-notched point of obsidian was present, as were three Humboldt Concave Base A points. Two of the latter are fragmentary and made of obsidian, while the whole specimen is of yellow chert. Four Pinto Square Shouldered and three Pinto Shoulderless points were recovered, all of obsidian.

Two examples of what were called Milnesand-like points at Locality 1 were found at Locality 2. Unfortunately, like the earlier examples, these two pieces are only basal fragments. Both are of obsidian and exhibit grinding on both sides, as well as on the flat basal portion.

Four basal fragments of Black Rock Concave Base A points, all of obsidian and with grinding present on the sides but not in the basal concavity, were found.

Three basal fragments (pl. 7x-z) from Lind Coulee type points were found. Two of these are of obsidian, the third is of chert. All three show grinding on the sides, gradually becoming less obvious towards the base.

Sixteen unidentifiable point fragments, three made of chert, one of basalt, and the remainder of obsidian, were recovered.

Great Basin Transverse points:- Four probable transverse points were found at Locality 2. Two of them (pl. 8o,p), while fragmentary, are probably Type I examples. Both are made of chert. A third fragment (fig. 8q), larger and cruder, could have been a roughout for the same type of crescent. The final piece, also incomplete, is not typeable.

Scrapers:- Twelve scrapers were collected at Locality 2. One is a nondescript obsidian fragment which was heavily used on one side. Another, also of obsidian, is a re-used stem of a Lind Coulee type point, such as those described from Locality 1. The remaining ten are of the distinctive crescent scraper type made on elongate flakes or blades, and more fully described under Locality 1. One of these pieces is of obsidan, one of basalt, and the rest are of chert.

TABLE 14

Crescent Scrapers, NV-Hu-22, Locality 2

LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Retouch
2-40180	4.0	1.8	0.52	2.3	bifacial
2-40173	4.5	1.5	0.56	4.6	bifacial
2-40174	4.3	1.5	0.50	3.7	bifacial
2-40172	3.8	1.4	0.60	3.3	bifacial
2-40171	5.5	1.7	0.50	7.0	unifacial
2-40182	3.8	1.2	0.78	3.0	unifacial
2-40176	4.3	1.8	0.50	4.9	unifacial
2-40191	3.3	1.2	0.40	1.7	unifacial
2-40444	3.5	1.9	0.30	4.3	unifacial
2-40184	4.0	2.1	0.60	4.0	unifacial

Gravers:- Three chert gravers were found, representing two possible types. The largest is a "keeled" specimen (pl. 8t), obviously complete, and consists of a thick ovoid base from which projects a keeled "beak" which served as the engraving end of the implement. The piece shows very little sign of having been heavily utilized. It is 5.5 cm. long, 2.9 cm. at its greatest width, 1.2 cm. thick, and weighs 14.1 grams. The other two gravers (pl. 6h,i) are smaller, and are the apparently broken tips of larger pieces. They are little more than flat blades, trapezoidal in cross section, and retouched along the sides toward a tapering tip.

Debitage:- Sixty-three grams of chippage, thirty-six of it obsidian and the rest chert, were collected at Locality 2.

Locality 3

One hundred and fifty yards northest of Locality 1 (the central locality of site NV-Hu-22) lies Locality 3, where a small number of artifacts were recovered. Four projectile point fragments of an identifiable nature are included in this collection. One of the point fragments is a Black Rock Concave Base piece (fig. 10g), one is a Pinto Square Shouldered (fig. 10i), while the third is an Elko Corner-notched specimen (fig. 10h). The fourth piece is similar to a Lind Coulee type point except for the fact that the stem is rectangular and slightly concave at the bottom. Neither the sides nor the basal concavity of the stem are ground. It is quite like the Alberta type (Wormington 1957:134), and is illustrated in Plate 8i. All four points are made of obsidian.

Sixteen unidentifiable fragments of points were found at Locality 3; all but one, of white chalcedony, were made of obsidian.

Knives:- Two knives were collected. One, of basalt (fig. 13g), is made on a long basalt flake, subtriangular in cross section, and worked unifacially on one edge. The other, made of chert, is roughly shaped bifacially along both sides (fig. 13f). This piece may have been a roughout for a smaller knife, since some cortex remains. It was fashioned with percussion blows, leaving a series of hinge fractures along its sides.

Hammerstones:- Four small, roundish core hammerstones were recovered at Locality 3. One, of basalt, is the smallest of the four, measuring 6.2 x 5.1 x 1.8 cm. and weighing 68 grams. The other three are made of chert, the largest measuring 6.1 x 4.5 x 4.1 cm., and weighing 124 grams.

Locality 4

About 100 yards directly west of the central area of the site lies Locality

4h where six projectile points, two knives, and a small core scraper were collected. One of the projectile points is a stem from a Lind Coulee type point, ground on both sides. Three of the points are Pinto Square Shouldered, and two are Pinto Barbed. All six are made of obsidian, and are shown in Figure 11g-1.

One of the knives (fig. 13i) is a small obsidian piece, while the other (fig. 13h) is made of black chert and is larger, although incomplete.

The core scraper is of gray chert, is relatively small and does not show extensive use. It measures 4.3 x 2.8 x 1.9 cm., and weighs 28.4 grams.

Locality 5

Roughly 40 yards north of Locality 4 there rises a slender ridge of gravel and sand, which runs north-south for a distance of about 70 yards. The top of the ridge is elevated about 8 feet above the surrounding flats. At the north end of the ridge, a small concentration of artifacts was found at an area which has been designated as Locality 5. Thirteen identifiable projectile points were found here.

Among these were three Rose Spring Corner-notched pieces of obsidian (fig. 9q-s), one Elko Eared (fig. 9t), and two Elko Corner-notched points (fig. 10a,b) of obsidian. In addition, there were four Pinto Square Shouldered pieces (fig. 10c-f). Three broken-off stems of Lind Coulee type points (pl. 7x-z), two of obsidian and one of jasper, were collected. All of these show grinding on the sides.

One large fragment of a chert knife from Locality 5 is illustrated in Figure 14a. Two scrapers were found: one, of obsidian, is made on a discoidal flake, slightly retouched on two sides. The other, on a smaller piece of chalcedony, is more deliberately shaped and may have been hafted, if the protruding stem can be considered evidence of such. These pieces are shown in Figure 14b,c).

About 194 grams of assorted small waste flakes of chert and obsidian were also recovered.

Locality 6

At the south end of the gravel ridge on which Locality 5 is located, another concentration of artifacts was noted and the spot was designated Locality 6.

Nine projectile points were found at this locality, all made of obsidian.

One is an Eastgate Expanding Stem; three are Pinto Square Shouldered; and two others are Rose Spring Corner-notched. Three of the points are not of an identifiable type, although one (fig. 9p) is quite similar to Humboldt Basal-notched points from Hidden Cave (Roust and Clewlow 1968) and from site NV-Ch-15, in the Humboldt Sink (Heizer and Clewlow 1968).

One chipped stone punch (fig. 14e) made of white chalcedony and sub-triangular in cross section was found. Two basalt knife fragments, and 96.7 grams of obsidian and chert chippage, were also collected.

Locality 7

This area is located at the base of the gravel ridge directly beneath Locality 6. On the basis of lineal distance between the two localities there is little reason to separate them. However, since they are divided by a topographical feature, namely, the gravel ridge, it would appear to be wiser to consider them as separate localities.

Two Pinto Square Shouldered points, one of obsidian and the other of chert, were found. Two obsidian Rose Spring Corner-notched and two chert Desert Side-notched, as well as one obsidian Northern Side-notched pieces, were collected. All of these points are shown in Figure 9a-g. The final point from this locality is a probable Gunther Barbed point, illustrated in Plate 6b.

A slightly damaged Type I Great Basin Transverse point of brown chert, weighing 3.1 grams and measuring 3.5 x 1.6 x 0.5 cm., was found and is shown in Plate 8n.

Site NV-Hu-23

Site NV-Hu-23 is a small area, exhibiting surface obsidian refuse, which is located in the greasewood flats roughly three and one-half miles northwest of the mouth of Alaska Canyon, which opens from the Jackson Range to the east of the Black Rock Desert.

Eleven classifiable points were recovered from site NV-Hu-23. Four of these are Humboldt Concave Base A points (fig. 1h-k), while four are Northern Side-notched (fig. 1n-q). One of the pieces is the basal portion of an obsidian Elko Corner-notched point (fig. 1m). A chert fragment of what appears to be the base of an Elko Eared piece (fig. 1l) is also present. The final point from this site is one which has long tangs on either side of what appear to be very deep corner notches. Of greenish obsidian, the piece exhibits very delicate and skillful secondary retouch. For classificatory

ease it has been called a Gunther Barbed point, and it is illustrated in Figure 1r and Plate 6a.

In addition to the identifiable points, eleven fragments of projectile points were found. All the pieces but one were of obsidian, the exception being of green chert. Seven of the fragments were point tips.

Site NV-Hu-25

The site of NV-Hu-25, which we believe is actually a "quarry" or source area for natural obsidian, is located about one and one-half miles due south of the Cordero Mine, near McDermott, in the extreme northern portion of Humboldt County. At least three color variations - green, black, and banded red with black - occur on the sides of the hills which form a sort of natural amphitheatre at the site area. What appear to be eruption craters are evident on both rims of the amphitheatre, and probably explain the presence of obsidian there. Most of the obsidian occurs in small (i.e. walnut-sized) nodules, but local collectors have pieces the size of grapefuits and coconuts, and it may be safely assumed that large nodules were available there in aboriginal times.

Over ten pounds of obsidian were collected from the slopes of the hills immediately behind the present-day mill at Cordero. Most of the obsidian is in the form of small, natural nodules which weigh an average of 29 grams each and are roughly 6 cm. in diameter. Most of them exhibit a thin, gray cortex over their outside surfaces. Some of the nodules are of bottle green obsidian, and since this color variation is relatively scarce, it may be suggested that Cordero represents the source of the green obsidian which shows up in an occasional artifact from the Black Rock Desert, eighty miles to the southwest.

In addition to the raw obsidian, five obsidian point fragments were recovered at site NV-Hu-25. Only one can be identified - as a possible Elko Corner-notched point (fig. 1s).

DISCUSSION

Before summarizing the various sites and their significance to the archaeology of the Black Rock Desert area, it will perhaps be of value to review the data on the projectile point types which have been mentioned in the descriptive portion of this report. Projectile points, especially those which have been defined as horizon markers, are often the most valuable artifacts for delineating culture history in the Great Basin (Heizer and Baumhoff 1961:123). This is most certainly the case in surface sites such as those we are dealing with in this report. Fortunately, many of the point types recovered from the sites described above have at least relative temporal and cultural significance, and can therefore be of assistance in establishing a tentative, even though sketchy, cultural sequence for the area (cf. Clewlow 1967:146).

Desert Side-notched points

These small, distinctive triangular points with marked side notches are common all over North America, and extend at least as far south as the Valley of Mexico. In the Great Basin they are common in late sites, and are generally considered to date from 1300 A.D. to historic times (Baumhoff and Byrne 1959:33,60-61; Heizer and Clewlow 1968; Clewlow 1967; Heizer and Baumhoff 1961; Lanning 1963).

Gunther Barbed points

This type point is primarily associated with the northwest coast of California, and with southern Oregon where it is characterized by its exaggerated tangs and long, thin, triangular body (Treganza 1958:14; Elsasser and Heizer 1966: text sections discussing projectile point type 6). Although it may seem that the specimens from the Black Rock Desert are too far east of the primary range of the type points in California to be classified as such, it is argued that there are a number of items in the Black Rock Desert collections which bear unusual affinities to California materials (i.e. Borax Lake Fluted points, quartz crystals, and beads of marine shell), and since our specimens correspond perfectly with Treganza's descriptions, they have been described as Gunther Barbed types. In California this type is chronologically equivalent to Desert Side-notched points (Treganza 1958:15).

Rose Spring Corner-notched points

These small, usually well-executed specimens are characterized by a relatively wide variation in side and stem shape (see Heizer and Baumhoff 1961: 123; Lanning 1963:252). The form, however, is centered around a basic corner notched piece with squarish shoulders or small barbs. These points have been recovered from the upper levels of stratified sites such as Wagon Jack and

South Fork shelters (Heizer and Baumhoff 1961:130; Heizer, Baumhoff and Clewlow 1968), and are believed to date between 500-1300 A.D. (Lanning 1963:278; Clewlow (1967:144-145).

Eastgate Expanding Stem points

This type is probably a variation of the Rose Spring Corner-notched type, but with slightly more prominent and broader barbs, and a more pronounced and wider stem. It is believed to be about the same age as the Rose Spring points (Heizer and Baumhoff 1961; Lanning 1963).

Elko Eared/Elko Corner-notched points

These largish, well-made points have recently been defined as time-markers in the Great Basin, and it is fairly certain that they were being used between 1300 B.C. and 600 A.D. (O'Connell 1967). In appearance they are often very close to Pinto Barbed, and sometimes Pinto Square Shouldered points, the difference being that the Pinto types are shouldered and stemmed with parallel stem tips while the Elko points are more triangular in outline, with flaring stems (ibid., 131).

Northern Side-notched points

These large, basically triangular points, with broad, deep side notches and quite large, often flaring and pronounced basal portions, have been named Northern Side-notched by Gruhn (1961:129-131), who feels that they may be as old as late Anathermal times in the northern Great Basin. While it is difficult to accept such an early date for the points in the Black Rock Desert vicinity without specific stratigraphical proof, it is nonetheless safe to assume in this study that the type is earlier than the Elko series points, and may be of early Medithermal age. At Surprise Valley to the west, Northern Side-notched points apparently are earlier than Elko types in deposits at the Menlo site (O'Connell, personal communication). Northern Side-notched points, also called Madeline Side-notched, precede the Elko series in the desert sequence of northern California (Baumhoff and Olmsted 1964:10).

Pinto Shoulderless points

Of the three Pinto subtypes represented in the Black Rock Desert area collections, these large, leaf-shaped pieces with deeply concave or notched bases are the least well made. Somewhat simple in form, they are distinguished from Humboldt Concave Base A types, which they often resemble (Clewlow 1967: 144), by their relative crudeness and width. Harrington (1957:51) found them to be the oldest of the Pinto subtypes at the Stahl site, and feels that Pinto points from that site in general date from the end of the "Great Drought," that is, the early Medithermal (ibid., 72).

The dating of Pinto points, or, more precisely, the problem of whether they may be a reliable indicator of Altithermal occupation, is an acute problem in the archaeology of the Black Rock Desert region. Baumhoff and Heizer (1965) have pointed out that a paucity of archaeological remains characterizes the Altithermal temperature age in the Great Basin. In the Black Rock Desert region, where on typological grounds there is evidence that man was present in Anathermal times or earlier (cf. Clovis Fluted points, Great Basin Transverse points), as well as in Medithermal times through the protohistoric period, the question arises as to whether there is evidence for an Altithermal occupation in the area. Lister (1953:265) feels that Pinto type points (stemmed, indented base points) might be an horizon marker for the period "between the Folsom and recent horizons," a time span which is of little use in the problem of the Altithermal. Susia (1964:30-31) has discussed the implications of Pinto assemblages in regard to the absence of evidence for food grinding, but has not attempted to further clarify dating of the point type. Wormington (1957:180) believes that there is no conclusive evidence for their predating the Altithermal, and notes that these points were common after the dry interval (ibid., 68). Because no positive evidence has been adduced for granting Pinto points a date earlier than early Medithermal times in the Lake Lahontan basin, and since there is still a great deal of uncertainty for the temporal placement in other physiographic zones, it appears unlikely that the type would be older than 2500-1300 B.C. in the Black Rock Desert, and in the prsent report they are considered as a post-Altithermal type. Lanning (1963:277-280) is of the opinion that the Owens Lake Pinto manifestation is likewise a post-Altithermal one. It is worth noting that Richard Cowan has recently completed excavation of a stratified site at Barrel Springs (NV-Pe-104) in the Jackson Range just east of the Black Rock Desert, where occupation during a long dry period would be much more feasible than in the playa to the west (see map 1), and he reports no traces of Altithermal habitation (Cowan, personal communication). Hurt (1966) has pointed out that in the Northern Plains during the Medithermal, sites were generally located higher up in the hills, where conditions tend to be more moist, or near permanent springs. A similar situation would seem likely in the Great Basin if it had been occupied at all during the long drought.

Pinto Square Shouldered points

Prominent, straight-sided stems with shallow notches or concave bases and rounded or upward-sloping shoulders characterize this type. It cannot now be assigned a separate temporal period from other Pinto types, although on developmental grounds it seems to be transitional between the Sloping Shoulder and Barbed types (Harrington 1957:51).

Pinto Barbed points

The Pinto Barbed type, which may be a developmental variant of the Square Shouldered type, is characterized by having more distinctive barbed shoulders, deeper concavities or notches in the stem bases, and a tendency toward scalloping or seriation (Harrington 1957:52). In the Black Rock collections these pieces seemed to phase into the Elko series and, in some cases, separation of the two was difficult. It will be of value to ascertain, in a stratified situation, whether a development from the Pinto Barbed to the Elko Corner-notched did occur.

Humboldt Concave Base A points

Humboldt Concave Base A points are large, leaf-shaped in outline form, thick and biconvex in cross section, and with a narrow concave base. They are named after the Humboldt Lakebed site (NV-Ch-15) where they commonly occur, but seem to have a wide distribution in the Great Basin (Clewlow 1967:144-145; Heizer and Clewlow 1968). The author at one time felt that the type might be temporally equivalent to the Pinto series (Clewlow 1967), but has recently modified this position and now suggests that the type may predate Pinto points. Evidence for such a view, aside from the striking similarity of the Humboldt type to other early leaf-shaped forms, is from the stratigraphic position of the points in several Great Basin sites. At Hidden Cave, for example, the four points which were found in Anathermal deposits were all Humboldt Concave Base A pieces (Roust and Clewlow 1968). Pinto type points at the same site were limited to Medithermal layers. At Rose Spring, Humboldt points were found in the deepest depositional layer (Lanning 1963:254), and the specimen from Wagon Jack Shelter was in a stratigraphically inferior position (Heizer and Baumhoff 1961:130). Perhaps the difficulty in substantiating this type as early in the Great Basin is due to the fact that the basic elongate concave base form was used for a long time span, from Humboldt Concave Base A through Humboldt Concave Base B through Cottonwood Triangular points, with size and weight of the pieces diminishing as they approach the late prehistoric and early protohistoric periods. Thus, great care must be exercised in interpreting the age of surface collections in which these points are abundant. While most of our specimens are probably Medithermal pieces, it is nonetheless probable that the heavier ones (those over 6 grams) in the Black Rock Desert area may be somewhat older.

Lind Coulee type points

The large, well made, stemmed and shouldered points known as Lind Coulee type points were firmly dated as Anathermal at the type site (Daugherty 1956:259). Since crescentic chipped stone objects (Great Basin Transverse points) as well as the basal portion of one large concave base point were also found at Lind Coulee, it is not surprising that similar artifacts occur

in surface association with the Lind Coulee points in the Black Rock Desert area. While a more precise dating of these points may soon be established (cf. Bryan 1965:172-173; Warren 1967:183), it is sufficient for the purposes of this study to recognize their Anathermal age.

Milnesand-like points

Milnesand or Milnesand-like points seem to have a sporadic but wide distribution in North America (Wormington 1957:110-112). While often found in non-stratigraphic contexts, the type specimens were associated with bison remains (Sellards 1955). On this basis, as well as on technological similarity to such types as Clovis, Folsom, Midland, and Plainview (Bryan 1965:49), it seems safe to assign them an Anathermal date in the Black Rock Desert.

Clovis and Borax Lake Fluted points

Only one Clovis point, a basal fragment from site NV-Hu-17, Locality 3, was found in the Black Rock site survey. Clovis points are quite old in the Southwest, where they are often associated with elephant remains. Although some surface finds have been made (Campbell and Campbell 1940; Shutler and Shutler 1959), Clovis points have not been found stratigraphically in the Great Basin, and it would be imprecise and unsafe to imply any age greater than Anathermal for the one surface specimen found at NV-Hu-17.

The Borax Lake Fluted point is interesting in that it bears remarkable similarities to several of the pieces described by Harrington (1948:63-71). It is made of obsidian and has distinct scratches or striations scored into one of the channel areas. These scorings are undoubtedly man-made, and in fact overlie natural stress lines present in the obsidian. Wormington (1957: 61) has intimated that the original Borax Lake points are not artificially scored, but possess somewhat pronounced natural stress lines. We have considered the possibility that this specimen is either a modern fake or an ancient point from some other locality and alleged to have been found at site NV-Hu-17. There is such an abundance of other early types from this area that we do not believe the genuineness of the piece or its actual recovery at the site can be seriously questioned. At the same time, we cannot be certain about these matters. Later work in the Black Rock area may settle the question. The specimen from NV-Hu-17 is very similar to an obsidian fluted point with striations in the flute channels recently reported from Washoe County in northwestern Nevada (Richards 1968).

Recent obsidian hydration studies on the original Borax Lake pieces indicate that they may have considerable antiquity (Meighan and Haynes 1968).

Black Rock Concave Base points

The point type which has been designated Black Rock Concave Base is only amenable to very relative dating at this time. While the type seems to be distinct and recognizable on a formal and technological level, and while its surface associations are apparently consistent, it is nonetheless unwise to offer a specific guess as to absolute age until some of the specimens are recovered stratigraphically. It may be noted that there seems to be a time difference implied in the horizontal distribution of obsidian versus non-obsidian specimens of this type. Non-obsidian examples occur primarily in surface association with crescentic chipped stone objects (Great Basin Transverse points) which may have an antiquity in excess of 7000 B.C. (Tadlock 1966:665). It is of interest that classic early point types such as Clovis, Folsom, Plainview, and Midland are not made of obsidian. Obsidian examples of Black Rock Concave Base points, while occurring sporadically at several of our sites, seem to be associated with point types such as Lind Coulee, which, while dating to at least 6747 $\pm$ 400 B.C. (Bryan 1965:173) at the type site (where they are, incidentally, not made of obsidian), occur less consistently with Great Basin Transverse points at site NV-Hu-22. The obsidian Lind Coulee type points found at NV-Hu-22 and the obsidian Black Rock Concave Base pieces may be slightly later than the non-obsidian examples found at the same site. Since all the specimens were recovered from the surface, any such subtle refinement of age differences is nothing more than pure guesswork. It seems quite safe, however, to consider the Black Rock Concave Base points, whether of obsidian or flint, to be Anathermeral in age.

Great Basin Transverse points

Tadlock has published (1966) an interesting discussion of the distribution, dating, and typological attributes of lunate chipped stone objects which he calls crescents and which we prefer to label Great Basin Transverse (GBT) points. These pieces, which are time-markers in the western United States, are dated by him at either 7000-5000 B.C. or earlier than 7000 B.C. (ibid., 672-673). They have been found in Nevada, Oregon, Idaho, Utah, California, and Washington, but seem to be more prominent in the Great Basin area where they are usually associated with dry playa lakes or river channels (ibid., 664). On the basis of 121 crescents studied by him, Tadlock distinguishes three types which vary somewhat in size and shape.

The 82 Great Basin Transverse points recovered by us from the Black Rock Desert area and described above, are congruent with the categories established by Tadlock and can be accommodated to his types. As may be seen in Table 15, the specimens collected by us consist of 44 Type I pieces, 20 Type II specimens, and 10 Type III examples. Six untyped examples and two roughouts were also collected. In addition to the GBT points which were collected by the 1966 field party, photographs and measurements were taken at that time

of 177 additional examples in private collections in Winnemucca, Fernley, and Sulphur. Of these 125 pieces were Type I, 19 were Type II, and 17 were Type III; 16 specimens were not typeable. In weight, size, and material, these points conform to Tadlock's type descriptions and are similar to the 82 specimens collected by us. At least 51 of the privately owned specimens (specifically, those in the Mitchell collection at Sulphur) were found at site NV-Hu-17. A total of 87 other GBT points, all in private collections in Winnemucca and Lovelock, were examined by our field party but were not weighed or photographed. On the basis of this visual inspection, we believe that they also conform to Tadlock's descriptive types. What is so interesting about the 264 pieces in private collections which we examined is that they have all been gathered within the past five years in the area of the Black Rock Desert which is discussed in this report. In other words, 346 GBT points - nearly three times the total reported by Tadlock from the entire western United States - have recently been collected in one relatively limited spatial area. Of these, 122 specimens (71 in our collection, 51 in the Mitchell collection) come from one site; namely, NV-Hu-17. Such astounding numbers of a similar artifact, even though found in a non-stratigraphic context, would seem to warrant some consideration of their probable function.

A number of persons have published speculations as to the possible use of crescentic stone objects in western North America. In the first published reference to crescents, Wardle (1913:660) suggested their use as surgical instruments. Since then it has been suggested that they were used as ceremonial pieces (Rogers 1929:464; 1939; Kidder 1932:34), while others have felt that they were probably scrapers (Cressman et. al. 1936:35) or cutting instruments (Cressman 1942:83-85; Gifford and Schenck 1926:86; Daughtery 1956:248-249), or perhaps decorative amulets (Warren 1967:174). In the Old World, very similar artifacts of flint were used as drill-bits in Egypt (Singer 1954:193, fig. 117). The author has received various informal suggestions from interested persons who have felt that the Black Rock specimens were willow cutters, fishhooks, fish-scalers, or fish-gorges. Unfortunately, there is no direct associational information available which would afford a clue to their function. There is, however, a growing body of indirect evidence which may be utilized in postulating the most probable use for crescents.

Tadlock (1966) notes that crescents appear to be associated with dry playa lakes, and are probably contemporaneous with the so-called big game hunting cultures which are characterized by the making of fluted, parallel-flaked, concave base points. In addition, chipped crescents are generally characterized by their thinness, by being worked bifacially around their entire circumference, and by an almost complete lack of utility scars on any edge. The Black Rock collection indicates that considerable numbers of these artifacts were in use at some sites, and the distribution of the finds from sites NV-Hu-17 and NV-Hu-22 seems to indicate a reverse correlation in numbers of

crescents to projectile points of the same time horizon; that is, few projectile points occur at spots where there is an abundance of crescents, and vice versa. Any discussion of probable function should take these facts into consideration.

The lack of wear patterns or usage scars is perhaps the most convincing argument against the idea that crescents were used as scrapers. This is all the more convincing in view of the fact that a number of crescent-shaped scrapers were found at the Black Rock Desert sites which showed use scars and which were produced by a quite different manufacturing process. These crescentic scrapers seem to be the same age as GBT points. If this is true, the use of GBT points as scrapers seems all the more unlikely. The same lack of use scars makes it improbable that the crescents were intended to perform a cutting function. Moreover, the fact that they are sharply worked on all edges would make them awkward to use barehanded and difficult to haft as a cutting implement. Unless we imagine a vast pre-Columbian medical center on the shores of the Black Rock Desert post-Lahontan lakes, it is difficult to accept the GBT points as surgical instruments. The large number of pieces found and the considerable amount of time and energy which must have been invested in their manufacture make it unlikely that these points served a ceremonial purpose. The same objection could be raised to the suggestion of their use as amulets or decorations.

Tadlock (1966:672), in commenting upon the width, length, and weight of the crescents, suggests that they may have been hafted and used as transverse projectile points. This appears to be a very cogent explanation, one which would also account for the thinness of the pieces. This thinness, required for proper hafting, explains the manufacturing technique of bifacial, circumferential, parallel-flake finishing. Any other technique of manufacture would result in a piece improperly shaped or too thick and heavy for hafting as a projectile point. Nor would one expect to find prominent signs of wear or use on projectile points. Technologically speaking, the term projectile point seems most adequate for the pieces.

The question, then, becomes one of inquiry as to what use the so-called early big game hunters would have for a transverse projectile point, a weapon tip limited in piercing ability. To begin with, there is increasing doubt that early hunters relied as heavily upon big game as was previously thought. This is particularly true in the Great Basin (Jennings 1966:84), where no big game economies have been demonstrated archaeologically. What has been demonstrated for the Great Basin of early times is a diversified hunting, fishing, and gathering pattern, a pattern in which much smaller prey, such as water fowl, plays an important part (Daugherty 1956:259; Warren 1967:182-184). Ethnographically, blunted points used for striking and stunning, rather than piercing, small game, especially birds, have a

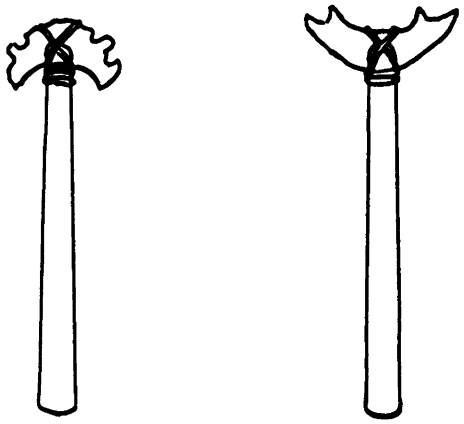
wide distribution and are reported for the Great Basin and Central California in historic times (Steward 1941, fig. 2e; Gayton 1948a, fig. 10d; 1948b:146, 219). It does not seem unlikely that stunning points would have been known to hunters of 7000-5000 B.C. in the Great Basin, and it is here suggested that the crescentic stone objects under discussion served precisely this purpose. The wide arc or striking surface of a transverse point would provide a greater relative margin of permitted inaccuracy in firing at small game. It is a fact well known to modern ornithologists (and we can assume the same to have been true of aboriginal hunters) that birds are easily disabled by the shock of being struck. Unlike many, perhaps most, other animals, the bird's physiological reaction to a blow is to immobilize it. Other animals are less prone to being disabled by a relatively light shock, and the easiest way to secure them is by more direct means, such as piercing their bodies with a pointed projectile (dart or arrow). The extensive use of the sling or other pellet-propulsion devices for bird hunting is another illustration of the particular susceptibility of avian forms to disablement by a body blow. That primitive hunters are capable of recognizing specific vulnerabilities of certain animals is abundantly proved, and one could cite the use of plant stupefacients for securing fish (Heizer 1953) or the Great Basin hunting technique termed "antelope charming," which exploits the fatal weakness of these elusive animals - their curiosity (Steward 1938:34; 1941:218-220; Hopkins 1883:57).

If we assume that these crescentic stunning points were used to secure waterfowl, then we will have taken a step toward explaining the particular association of the pieces with now dry playa lakes in the Great Basin, The large number of these pieces found in the Black Rock Desert does not conflict with this interpretation, and the seeming mutual exclusion of conventional stone projectile points with crescents at a given locality would seem to fit with the explanation that some areas were favored for waterfowl hunting while others were more productive of mammalian fauna. Such a pattern is not unusual in Great Basin hunting patterns of more recent date (Steward 1938). In Mesolithic Europe, flint transverse or chisel-ended arrow tips used for bird hunting (and probably other game) are well known (Clark 1952:36), and blunt-ended wooden arrowheads are attested for Maglemosian sites in Denmark for shooting birds and small mammals. The bunt or stunning arrow form is also widely known ethnographically in the New World, being either made in the form of a wooden knob or consisting of a hollowed-out articular end of an artiodactyl tibia and set on the end of the projectile shaft. These latter may be evidence of the modern perseveration, in a different form, of an ancient hunting practice.

The limited localities where these crescents are concentrated at the Black Rock Desert sites represent, in all probability, favored hunting areas for waterfowl, and the large numbers of crescents at these spots represent the remains of projectiles that were fired and not recovered.

If this interpretation is correct, it would seem likely that the pieces were hafted in a manner similar to that suggested by Rogers (1929:465) and shown below. It is suggested that such an interpretation fits the available evidence better than any other, and in view of this, and in order to avoid confusion with known ceremonial crescents of different form (see Kidder 1932: 34-35; Riddell 1960:30), it is further suggested that the crescent types first delineated by Tadlock (1966) be referred to by the name "Great Basin Transverse points." Thus the distinction between crescents which were probably projectile points, scrapers which are crescent-shaped but technologically distinguishable, and ceremonial crescents, could be terminologically justified.

In regard to these distinctions, it would be of interest to know whether the crescent scrapers were intentionally modeled after the transverse points, and, if so, if their shape had a particular functional benefit. It would also be interesting to learn if the three types of transverse points have any functional, temporal, or geographical distinctions. Tadlock (1966:672) comments on the apparent absence of Type III crescents in western Nevada, and quite correctly attributes it to a sampling error. While we collected 10 of these pieces in 1966 and acquired information and photographs of 17 others, the proportion is till a small one in the total series of 346 specimens. It is assumed that future stratigraphical work, hopefully in dry caves, will illuminate the temporal and functional aspects of Great Basin Transverse points.



Possible hafting of crescentic blades
in cleft sticks with asphaltum.
(From Rogers 1929:465, fig. 2.)

SUMMARY AND CONCLUSION

As has been mentioned or implied numerous times above, it is unfortunate that the material artifacts described in the preceding pages were recovered in a situation which lacked stratigraphical context. However, since many of the specimens recovered can be assigned to a relative chronological position on the basis of typology, and since the general archaeology of the Black Rock Desert area is relatively unknown, the broad outline of the sequence there can be suggested on the basis of surface collections.

Similar artifact types, and even similar assemblages, have been found in widely scattered areas of the Great Basin. Tadlock (1966:664-665) discusses the distribution of GBT points and notes their occasional association with early point types such as Folsom and Clovis. Lind Coulee type points have been noted as present in assemblages with GBT points and Folsom-like points for many years (Cressman et al. 1936:34-35). The Black Rock assemblages, while not representing any new artifact types, are important in that they contain a greater number of typologically early pieces than have heretofore been recovered in the same area.

Another interesting feature about the cultural materials from the Black Rock Desert is the long span of time represented in the typologically distinct artifacts. Not only is the earlier component of the collections well represented, but the entire Medithermal point sequence (Clewlow 1967), including protohistoric types, is also present in sufficient numbers to allow the assumption that the area has been continuously occupied, except perhaps during the Altithermal. A whole series of interpretative questions revolve around the nature of the cultural adaptations in the Great Basin over a long period of time (Jennings and Norbeck 1955; Jennings 1964). It would appear from surface reconnaissance that in the Black Rock Desert one might find evidence of prehistoric populations living there over a long enough period of time to adequately test the Desert Culture thesis, as well as the Antevs climatological scheme, in an archaeological setting. Although we found no sites with stratified depositional sequences of long duration during our brief survey of 1966, there is no reason to assume that they do not exist. The area is a large one, caves and rock shelters abound in canyons on either side of the basin. We tested over forty such sites, and yet we surveyed intensively only a small portion of a much larger, promising territory. As this report indicates, the artifact inventory is such that it is not unwarranted to hope or expect that the area will be productive in the future of one or more significant stratified sites.

On the basis of the surface archaeology, several observations may be made, particularly concerning the older material. Table 15 shows the distribution

of the various point types by site. As may be noted, the presumed oldest pieces (i.e. Black Rock Concave Base, Lind Coulee, Borax Lake, Clovis, Milnesand-like, and Great Basin Transverse points) are found at eleven localities (Localities 1-6 at site NV-Hu-17 and Localities 1-5 at site NV-Hu-22). The single damaged Type I piece from Locality 7, NV-Hu-22, is not considered significant here. All of these localities lie in the structural basin which, while now desert, clearly once held a great deal of water. As all of the early types are of Anathermal age, and since they seem to occur only in the structural depression once occupied by lake or marsh, it is reasonable to infer that human activity in the Black Rock Desert area during the Anathermal centered around the lake or lake-margin, and was probably focused on hunting of the various mammals and avifauna there. Although a few fragments of grinding tools were found at site NV-Hu-17, it is not possible to associate these temporally, with any assurance, with the Anathermal points. Thus, our evidence does not permit comment upon possible gathering activities of the early populations. The large numbers of scrapers present with Anathermal points, however, indicate, in all probability, hunting-associated activities.

As Table 15 indicates, certain examples of rather late point types are also found at sites NV-Hu-17 and NV-Hu-22. There are large numbers of Northern Side-notched, Pinto, and Elko points, dating, we believe, from the first half of the Medithermal or perhaps earlier. The numbers of these pieces are small, however, when compared to either the number of early point types at these two sites, or to the numbers of similar Medithermal types which are commonly found at surface sites elsewhere in the Great Basin. This would seem to indicate that the Black Rock Desert basin, while used to some extent as a hunting and perhaps camping area during the early Medithermal, was not utilized as extensively as it was during the Anathermal, when it presumably presented a much wetter, and therefore more favorable, habitat. It would seem likely that during the latter part of the Medithermal, that is, in late prehistoric and early protohistoric times, the actual desert basin was used even less. Only rare occurrences of Rose Spring or Desert Side-notched points are noted for these sites. The typical sites of the final portion of the Medithermal were probably much like site NV-Hu-16. This site is relatively late, judging from the point types and the Olivella beads recovered. A few grinding tool fragments occurred at this site, which was so situated that its inhabitants could utilize the runoff from hot springs which literally boil forth from the top of the cone at the east side of the surface scatter.

The association of late sites with springs is a feature which emerges from our Black Rock Desert survey. Site NV-Hu-20 (at Buckbrush Springs) is associated with a natural freshwater seep. Site NV-Hu-21 (to the north) appears in an area with sufficient calcaeous deposition to warrant the

assumption that a mineral water spring was once active there. Sites NV-Hu-18 and NV-Hu-19 are located at hot springs near Black Rock Point (see map 2), and appear to have been camp sites as evidenced by a scatter of surface chippage. Projectile points from these two sites are in a private collection in Gerlach, and although a few Elko and Northern Side-notched specimens are present, the vast majority of over 150 points from each site are of the Rose Spring Corner-notched or Desert Side-notched variety. This we take to indicate that the sites are late, and their position is to be primarily connected with the nearby springs. Thermal springs are common in the Black Rock Desert area, as well as in the Great Basin generally, along the borders of the fault block mountains (King 1965:846-847), and it is probable that later occupants of the area were forced to rely heavily upon them for potable water. Occupants of earlier sites would have been able to depend upon the open lake in the basin for water. If this were the case, it would indicate that the peoples in the Great Basin were lake-oriented in early times, as well as later (cf. Jennings and Norbeck 1955; Heizer and Krieger 1956:6; Baumhoff and Heizer 1965:703-704).

Recently an attempt has been made to define the artifact assemblage which represents the so-called San Dieguito complex (Warren 1967). Crescents, as well as a variety of scraper types and blades, are included in the definition, and it is inferred that the San Dieguito complex may represent a sort of lineal descendant of the cultural expression found at the Lind Coulee and Five Mile Rapids sites (ibid., 182-184). While it is true that a number of San Dieguito type artifacts are present in the assemblages from sites NV-Hu-17 and NV-Hu-22, there is no reason to believe that the GBT points and crescentic scrapers were deposited any later in time than the Lind Coulee and Black Rock Concave Base points with which they are generally associated. The so-called San Dieguito manifestations do not occur in isolation, and in each case they are associated with other, and presumably earlier, pieces. Thus, on the basis of the surface archaeology in the Black Rock Desert area, there can be seen no evidence for any entity which is identifiable as the "San Dieguito complex."

At site NV-Pe-104, in the Jackson Range near Barrel Springs, a number of largish cores, choppers, knife blades, and hammerstones similar to those described by Warren (1967:174) were recovered at several surface sites, as well as in a stratified deposit exposed in a dry wash. While their crude workmanship made them appear to be typologically ancient, extensive excavation at the site in the summer of 1967 by Richard Cowan for the Nevada Archaeological Survey revealed that the area was a source for the chert from which the pieces were made. Cowan has shown conclusively that the pieces were merely quarry blanks of relatively recent age, which were found in unquestionable stratigraphic association with Elko and Rose Spring points (Cowan, personal communication). Only one San Dieguito site (the C. W.

Harris site in San Diego County, California; Warren 1967) is stratified, and perhaps due to its very scanty artifact inventory, there is some doubt as to whether or not it may be a "pre-projectile point" station (Jennings 1966:83). Until this situation is more clearly resolved, and in view of the evidence presented by Cowan's excavations, as well as the Black Rock Desert surface collections, there would appear little warrant in suggesting a San Dieguito manifestation in the Black Rock Desert.

A more relevant problem is one which concerns itself with when man first made his appearance in the Black Rock Desert area. Typologically, some of the points collected from the area can be argued as indicating an early Anathermal occupation. Geological evidence, however, seems to demand that a more conservative estimate be made. As has been discussed above, the assemblages which were recovered from the Desert basin show a minimum of wear due to weathering or water-rolling, and afford no evidence that they were ever subjected to deep water immersion. Lake Lahontan at its maximum was between 510-529 feet deep in the area where most of our collections were made (Russell 1885:32,pl. V), and it seems entirely unrealistic to assume that ancient man would have had cause to lose his artifacts in the center of such a deep lake, even if we could explain lack of wear on the recovered pieces. Morrison's detailed studies (cf. 1961, 1964, 1965) on Lahontan geology in the Carson Sink have enabled him to arrive at an interpretation which differentiates three late deep-lake periods of progressively more shallow fill. The first of these Sehoo lake formations was in the Pleistocene period, as was the middle Sehoo lake (Morrison 1965:277). Both of these members were also over 4000 feet in surface altitude, and some 100 feet above the Black Rock Desert floor. The late Sehoo lake, however, reached an altitude of only 3990 feet, or less (ibid. 1964:101), and it is this lake which would have created the vast, marshy, lakeside situation into which the present interpretation of the artifact record best fits. None of the earlier lakes would have afforded a productive ecological zone in that area, and it is our suggestion that man first moved into the Black Rock Desert as the middle Sehoo lake receded into the even shallower final lake manifestation. There is some evidence that a similar initial human entry date may characterize the Carson Sink area (ibid. 1965:102; Grosscup 1956). Morrison (1965:277) places the date of the middle Sehoo lake recession in the beginning of the Anathermal. Such a placement is in accord not only with at least some of the archaeological evidence (Baumhoff and Heizer 1965), but also with four separate radiocarbon dates which date the final Lahontan maximum at just prior to 9700 years B.P. (Broecker and Orr 1958: 1028). The typological evidence which has been presented above would not disagree with the 9700 B.P. date.

In short, then, it is suggested that occupation of the Black Rock Desert

by small diversified hunting groups began toward the beginning of the Anathermal period, probably shortly after 7700 B.C. No archaeological, typological, or geological evidence known to us argues, at this time, for an earlier date for the appearance of man in the area.

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TABLE 15

Point Types by Site in the Black Rock Desert

Type	Hu-16	Hu-17						Hu-20	Hu-21	Hu-22							Hu-23	Hu-25
		Loc.1	Loc.2	Loc.3	Loc.4	Loc.5	Loc.6			Loc.1	Loc.2	Loc.3	Loc.4	Loc.5	Loc.6	Loc.7		
Rose Spr. Corner-notched	3				8				4					3	2	2		
Elko Corner-notch					1			2	4			1		2			1	1
Elko Eared					8		2	2	2					1			1	
Eastgate Expanding Stem	2			1					1						1			
Northern Side-notched		2	1	1	13		2	3+ 1 tran w/EE	14		1					1	4	
Pinto Barbed		2	1	3	9		5			14			2					
Pinto Square Shoulder								4 tran w/EE		15	4	1	3	4	3	2		
Pinto Shoulderless											3							
Humboldt Concave Base A		1			4			11	2	7	3						4	
Black Rock Concave Base		1		8						7basal frags	4	1						
Lind Coulee										23 style2	2basal frags	1	1	3				
Desert Side-notched																2		
Gunther Barbed					2											1	1	

Borax Lake Fluted				1														
Clovis				1 frag														
Milnesand-like										11	2basal frags							
Untyped	1Eared si.not. split base				3 worn (1 crude)										3 (1 sim.to Hum. Basal Notch)			4
Totals	6	6	2	15	48	none	9	23	27	77	19	4	6	13	9	8	11	5 frags
Great Basin Trans.																		
Type I		9	9	13	1	2	3			3	3 (1 rgh out)					1		
Type II			2	9	3	3	1			2								
Type III		2	1	7														
Untyped		2	1				2				1							
Roughout		1								1								
Totals	none	14	13	29	4	5	6	none	none	6	4	none	none	none	none	1	none	none

Abbreviations used: tran = transitional; EE = Elko Eared; sim = similar; si.not. = side notched; rgh = roughout; Hum = Humboldt

EXPLANATION OF ILLUSTRATIONS

Accession numbers of those of the Lowie Museum of Anthropology
Figures are shown four-fifths actual size

Point type abbreviations used:

BRCB	Black Rock Concave Base	HCBA	Humboldt Concave Base A
DSN	Desert Side-notched	LC	Lind Coulee
ECN	Elko Corner-notched	NSN	Northern Side-notched
EE	Elko Eared	PB	Pinto Barbed
EES	Eastgate Expanding Stem	PS	Pinto Shoulderless
GB	Gunther Barbed	PSS	Pinto Square Shouldered
GBT	Great Basin Transverse	RSCN	Rose Spring Corner-notched

Figure 1

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-16							
a.	2-39768	1.97	1.37	0.21	0.3	Obsidian	RSCN
b.	2-39801	2.11	1.23	0.30	0.9	do.	do.
c.	2-39767	2.70	1.40	0.29	1.0	do.	do.
d.	2-39766	3.47	1.27	0.50	1.8	Chert	No type
e.	2-39769	1.80	2.10	0.41	1.4	Obsidian	EES
f.	2-39302	1.97	1.75	0.40	1.9	Chert	do.
g.	2-39785	5.76	3.47	0.61	15.7	Bedded chert	Knife tip
NV-Hu-23							
h.	2-40508	2.25	1.15	0.40	1.4	Chert	HCBA
i.	2-40505	3.25	1.40	0.30	2.0	Obsidian	do.
j.	2-40504	3.00	1.70	0.45	2.7	do.	do.
k.	2-40503	4.50	2.00	0.30	2.0	do.	do.
l.	2-40500	-	-	0.45	-	Chert	EE
m.	2-40501	-	3.00	0.40	2.6	Obsidian	ECN
n.	2-40507	-	1.60	0.40	-	do.	NSN
o.	2-40499	2.75	1.80	0.40	2.0	do.	do.
p.	2-40498	3.25	2.00	0.45	2.4	do.	do.
q.	2-40506	-	-	0.40	0.8	do.	do.
r.	2-40502	-	2.25	0.40	1.8	do.	GB
NV-Hu-25							
s.	2-40535	2.60	2.20	0.20	2.2	Obsidian	ECN

Figure 2

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-17, Locality 1							
a.	2-39812	4.00	1.70	0.50	3.0	Obsidian	HCBA
b.	2-39819	2.50	1.80	0.50	1.6	do.	PB
c.	2-39821	2.50	2.00	0.40	1.6	do.	do.
d.	2-39822	2.00	1.80	0.50	1.4	do.	NSN
e.	2-39824	2.80	2.00	0.40	1.9	do.	do.
NV-Hu-17, Locality 2							
f.	2-39859	3.10	2.20	0.55	3.0	Obsidian	PB
g.	2-39823	2.10	2.20	0.40	2.8	do	NSN
NV-Hu-17, Locality 3							
h.	2-39891	2.50	2.00	0.60	2.8	Obsidian	PB
i.	2-39889	3.00	2.00	0.30	1.7	do.	do.
j.	2-39892	1.75	2.00	0.50	1.8	do.	do.
k.	2-39893	1.50	2.50	0.30	1.5	do.	EES
l.	2-39894	2.25	2.50	0.50	2.9	do.	NSN
NV-Hu-17, Locality 6							
m.	2-40096	3.00	2.25	0.50	2.2	Obsidian	PB
n.	2-40097	2.25	1.75	0.50	2.0	do.	do.
o.	2-40099	2.50	2.25	0.40	2.0	do.	do.
p.	2-40098	3.25	2.00	0.40	2.3	do.	do.
q.	2-40092	3.50	2.75	0.50	2.8	do.	do.
r.	2-40093	2.50	1.75	0.40	1.7	do.	EE
s.	2-40095	2.75	2.25	0.50	2.5	do.	do.
t.	2-40141	1.75	2.25	0.50	1.8	do.	NSN
u.	2-40094	3.00	1.50	0.40	1.4	do.	do.

Figure 3

NV-Hu-17, Locality 4							
a.	2-39996	3.50	2.50	0.50	3.7	Obsidian	PB
b.	2-39968	3.25	2.50	0.50	2.1	do.	do.
c.	2-39995	3.00	2.50	0.50	2.4	do.	do.
d.	2-39959	4.00	3.00	0.50	3.8	do.	do.
e.	2-40019	2.00	2.00	0.70	2.8	do.	do.
f.	2-39992	2.50	2.00	0.50	2.8	do.	do.
g.	2-39984	2.75	2.10	0.60	4.1	do.	do.

Figure 3 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-17, Locality 4							
h.	2-39963	2.25	1.75	0.40	1.1	Obsidian	PB
i.	2-39964	2.75	2.25	0.40	2.0	do.	do.
j.	2-39958	4.00	2.50	0.40	3.4	do.	EE
k.	2-39971	2.75	1.75	0.50	1.7	do.	do.
l.	2-39960	4.00	2.00	0.50	2.7	do.	do.
m.	2-39966	2.75	2.25	0.30	1.6	do.	do.
n.	2-39974	3.75	1.50	0.45	2.7	do.	do.
o.	2-39967	2.75	2.00	0.40	1.7	Chert	do.
p.	2-39991	3.25	2.25	0.35	2.8	Obsidian	do.
q.	2-39962	2.50	2.25	0.40	1.8	do.	do.
r.	2-39961	3.75	2.75	0.40	2.4	do.	ECN
s.	2-39987	2.75	1.80	0.40	1.5	do.	RSCN
t.	2-39969	2.25	2.00	0.35	1.3	do.	do.
u.	2-39973	3.25	1.75	0.35	1.6	do.	do.
v.	2-39965	3.00	2.00	0.40	1.9	do.	do.
w.	2-39970	2.50	1.80	0.35	3.0	do.	do.
x.	2-40064	2.75	2.25	0.50	2.0	do.	do.
y.	2-39981	2.10	1.90	0.30	1.5	do.	do.
z.	2-39986	2.50	2.30	0.30	1.8	do.	do.
a'.	2-39998	4.50	1.75	0.40	3.9	do.	HCBA
b'.	2-40000	2.75	1.75	0.65	3.4	do.	do.
c'.	2-40002	2.50	1.75	0.50	1.8	do.	do.
d'.	2-40001	2.25	1.75	0.50	1.7	do.	do.

Figure 4

NV-Hu-17, Locality 4							
a.	2-39988	5.00	1.60	0.50	3.9	Obsidian	NSN
b.	2-39978	3.50	2.00	0.40	2.9	do.	do.
c.	2-39977	3.00	2.50	0.50	3.1	do.	do.
d.	2-39989	2.75	1.80	0.60	3.0	do.	do.
e.	2-39979	3.50	1.75	0.40	2.4	do.	do.
f.	2-39985	4.25	2.60	0.40	3.5	do.	do.
g.	2-39990	3.25	2.00	0.40	2.2	do.	do.
h.	2-39976	3.00	1.75	0.50	1.7	do.	do.
i.	2-39975	1.75	2.00	0.50	1.7	do.	do.
j.	2-40015	2.50	1.00	0.25	0.9	do.	do.
k.	2-40010	1.75	0.75	0.30	0.3	do.	do.

Figure 4 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gm.)	Material	Type
l.	2-40012	2.25	1.00	0.40	0.8	Obsidian	NSN
m.	2-40009	1.75	1.25	0.40	0.8	do.	do.
n.	2-39982	3.50	2.40	0.50	3.8	do.	No type
o.	2-40003	3.70	2.00	0.60	4.5	Obsidian	do.
p.	2-40007	3.00	1.50	0.60	2.3	do	do.

Figure 5

NV-Hu-20

a.	2-40146	1.00	1.00	0.50	0.9	Obsidian	HCBA
b.	2-40153	2.25	1.40	0.30	0.9	do.	do.
c.	2-40148	1.50	1.50	0.60	1.3	do.	do.
d.	2-40150	2.00	1.50	0.50	1.8	do.	do.
e.	2-40145	1.75	1.70	0.30	1.0	do.	do.
f.	2-40147	2.50	2.00	0.60	3.4	do.	do.
g.	2-40135	2.50	1.80	0.50	2.5	do.	do.
h.	2-40131	2.50	1.80	0.45	1.7	do.	do.
i.	2-40132	3.00	1.50	0.90	3.0	do.	do.
j.	2-40136	2.30	1.50	0.80	2.4	do.	do.
k.	2-40129	3.25	2.10	0.62	3.2	do.	PSS
l.	2-40140	2.50	2.00	0.60	2.3	do.	do.
m.	2-40149	2.00	1.90	0.60	1.8	Chert	do.
n.	2-40144	1.00	2.00	0.30	0.6	Obsidian	do.
o.	2-40142	2.00	2.10	0.43	1.4	do.	NSN
p.	2-40126	3.75	1.90	0.38	1.8	do.	do.
q.	2-40125	4.25	1.60	0.50	2.4	do.	do.
r.	2-40151	2.50	2.60	0.30	2.6	do.	ECN
s.	2-40130	4.25	2.40	0.55	3.3	Chert	do.
t.	2-40143	2.00	2.10	0.30	0.6	Obsidian	EE
u.	2-40127	4.50	2.80	0.50	4.8	do.	do.
v.	2-40124	3.75	2.40	0.57	4.7	do.	Transitional
w.	2-40133	5.75	3.00	0.80	12.8	do.	No type

Figure 6

NV-Hu-21

a.	2-40649	1.50	1.90	0.60	3.5	Obsidian	HCBA
b.	2-40648	3.25	2.00	0.60	3.9	Lt.gr.ob.	do.

Figure 6 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-21							
c.	2-40632	2.75	2.25	0.40	2.1	Obsidian	NSN
d.	2-40631	4.00	2.00	0.60	4.7	do.	do.
e.	2-40623	2.75	1.75	0.40	1.6	do.	do.
f.	2-40626	2.25	2.00	0.60	3.6	do.	do.
g.	2-40633	3.50	2.50	0.70	4.6	do.	do.
h.	2-40635	3.25	2.50	0.60	2.2	do.	do.
i.	2-40624	2.50	2.25	0.60	2.2	do.	do.
j.	2-40627	3.50	2.50	0.40	3.4	do.	do.
k.	2-40630	4.00	1.75	0.40	2.5	do.	do.
l.	2-40634	3.00	2.25	0.50	2.2	do.	do.
m.	2-40625	3.75	2.00	0.60	4.5	do.	do.
n.	2-40629	2.50	1.75	0.40	1.6	do.	do.
o.	2-40628	3.75	2.25	0.60	3.4	do.	do.
p.	2-40622	4.50	2.25	0.50	4.0	do.	do.
q.	2-40644	3.00	1.75	0.50	2.7	do.	RSCN
r.	2-40643	2.25	2.00	0.40	1.4	do.	do.
s.	2-40639	2.75	2.00	0.60	2.3	do.	do.
t.	2-40641	2.75	2.00	0.70	2.8	do.	do.
u.	2-40647	3.00	2.00	0.42	2.1	White chalcedony	EES

Figure 7

NV-Hu-22, Locality 1							
a.	2-40229	5.00	2.50	0.50	3.4	Obsidian	PB
b.	2-40210	3.25	2.50	0.60	3.7	do.	do.
c.	2-40254	2.75	1.80	0.50	1.9	do.	do.
d.	2-40215	2.50	2.40	0.50	2.5	do.	do.
e.	2-40242	2.75	2.30	0.50	1.5	do.	do.
f.	2-40209	2.75	2.60	0.50	2.0	do.	do.
g.	2-40243	2.75	2.00	0.50	1.8	do.	do.
h.	2-40451	3.00	2.50	0.60	3.0	do.	do.
i.	2-40240	3.50	2.60	0.50	3.4	do.	do.
j.	2-40247	2.50	2.50	0.50	1.5	do.	do.
k.	2-40245	2.25	2.70	0.50	1.9	do.	do.
l.	2-40220	3.00	1.80	0.80	3.0	do.	do.
m.	2-40241	2.00	1.40	0.60	2.0	do.	do.
n.	2-40253	2.50	1.90	0.40	1.5	do.	do

Figure 7 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
o.	2-40227	4.25	2.10	0.60	4.4	Chert	PSS
p.	2-40211	2.75	1.60	0.40	1.6	Obsidian	do.
q.	2-40219	3.75	2.40	0.50	3.3	Gr.jasper	do.
r.	2-40212	2.50	2.20	0.60	2.9	Obsidian	do.
s.	2-40222	2.75	2.50	0.60	3.6	do.	do.
t.	2-40214	3.50	2.50	0.50	3.7	do.	do.

Figure 8

NV-Hu-22, Locality 1

a.	2-40228	4.50	2.40	0.50	4.3	Obsidian	PSS
b.	2-40236	2.50	1.90	0.50	1.7	do.	do.
c.	2-40225	2.75	2.10	0.60	2.9	do.	do.
d.	2-40213	2.00	1.90	0.40	1.3	do.	do.
e.	2-40205	2.75	2.30	0.50	2.2	do.	do.
f.	2-40218	2.75	2.30	0.60	2.5	do.	do.
g.	2-40248	2.25	1.50	0.50	1.4	do.	do.
h.	2-40231	2.75	1.70	0.50	1.6	do.	do.
i.	2-40233	3.00	2.00	0.50	2.0	do.	do.
j.	2-40418	2.25	2.40	0.70	3.2	do.	HCBA
k.	2-40272	2.25	1.50	0.50	1.8	do.	do.
l.	2-40417	2.75	1.70	0.40	2.1	do.	do.
m.	2-40397	1.50	1.70	0.40	2.3	Chert	do.
n.	2-40274	1.75	1.90	0.70	2.0	Obsidian	do.
o.	2-40273	2.50	1.40	0.50	1.6	do.	do.
p.	2-40267	3.25	1.90	0.50	2.7	do.	do.

Figure 9

NV-Hu-22, Locality 7

a.	2-40525	2.50	1.70	0.70	2.3	Chert	PSS
b.	2-40528	2.50	2.80	0.50	2.2	Obsidian	do.
c.	2-40514	2.30	1.20	0.40	0.6	do.	RSCN
d.	2-40528	2.50	1.80	0.50	2.2	do.	do.
e.	2-40511	2.80	1.00	0.30	0.6	Chert	DSN
f.	2-40512	2.80	1.50	0.30	0.8	do.	do.
g.	2-40513	4.80	1.80	0.50	2.2	Obsidian	NSN

Figure 9 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-22, Locality 6							
h.	2-40515	2.00	2.20	0.40	1.4	Obsidian	EES
i.	2-40519	3.30	2.50	0.50	2.6	do.	PSS
j.	2-40518	3.50	2.00	0.50	2.7	do.	do.
k.	2-40520	3.00	2.50	0.50	3.3	do.	do.
l.	2-40449	3.80	2.00	0.90	5.3	do.	No type
m.	2-40448	3.50	1.20	0.40	1.9	do.	do.
n.	2-40516	2.50	1.20	0.40	0.7	do	RSCN
o.	2-40517	2.00	1.30	0.50	0.8	do.	do.
p.	2-40523	5.00	2.40	0.60	6.2	do.	No type
NV-Hu-22, Locality 5							
q.	2-40250	2.50	1.50	0.40	0.8	Obsidian	RSCN
r.	2-40251	2.30	1.30	0.40	0.7	do.	do.
s.	2-40453	2.50	1.50	0.40	1.0	Chalcedony	do.
t.	2-40237	3.50	1.50	0.50	2.2	Obsidian	EE

Figure 10

NV-Hu-22, Locality 5							
a.	2-40464	1.50	2.00	0.20	0.9	Obsidian	ECN
b.	2-40454	2.70	2.00	0.50	2.0	do.	do.
c.	2-40208	2.50	2.00	0.50	2.4	do.	PSS
d.	2-40217	2.50	2.00	0.50	2.2	do.	do.
e.	2-40206	3.00	2.20	0.50	2.3	do.	do.
f.	2-40244	1.80	2.40	0.50	2.5	do	do
NV-Hu-22, Locality 3							
g.	2-40486	2.75	2.80	0.70	2.5	Obsidian	BRCB
h.	2-40460	2.00	2.20	0.50	2.0	do.	ECN
i.	2-40452	2.75	2.10	0.50	2.1	do.	PSS
NV-Hu-22, Locality 2							
j.	2-40238	4.50	0.60	2.10	4.5	Obsidian	NSN
k.	2-40239	3.00	2.30	0.40	2.9	do.	PSS
l.	2-40230	3.00	2.00	5.00	2.4	do.	do.
m.	2-40224	3.00	2.80	0.57	4.8	do.	do.

Figure 10 (cont'd.)

	LMA No.	Length (cm.)	Width (cm.)	Thickness (cm.)	Weight (gr.)	Material	Type
NV-Hu-22, Locality 2							
n.	2-40216	3.00	2.40	0.57	4.8	Obsidian	PSS
o.	2-40434	3.25	0.70	2.10	4.7	do.	Milnesand
p.	2-40389	3.25	0.70	2.10	5.3	do.	do.
q.	2-40394	2.00	2.20	0.49	1.9	do.	BRCB
r.	2-40391	2.00	1.80	0.50	1.4	do.	do.
s.	2-40390	2.25	0.50	2.50	3.4	do.	do.
t.	2-40395	1.75	2.00	0.50	1.4	do.	do.

Figure 11

NV-Hu-22, Locality 2							
a.	2-40392	2.00	1.60	0.40	1.6	Obsidian	HCBA
b.	2-40393	1.80	1.90	0.50	1.7	do.	do.
c.	2-40263	7.80	1.90	0.70	10.2	Yellow chert	do.
d.	2-40265	2.70	1.85	0.60	4.1	Obsidian	PS
e.	2-40264	5.00	1.90	0.60	5.7	do.	do.
f.	2-40266	4.00	1.70	0.80	4.0	do.	do.
NV-Hu-22, Locality 4							
g.	2-40235	2.60	2.00	0.50	2.6	Obsidian	PSS
h.	2-40223	3.40	1.90	0.50	2.7	do.	do.
i.	2-40246	2.40	2.90	0.60	2.6	do.	do.
j.	2-40234	3.00	1.70	0.40	1.7	do.	PB
k.	2-40256	1.90	2.00	0.30	0.9	do.	do.
l.	2-40293	1.90	1.80	0.60	2.7	do.	LC
NV-Hu-21							
m.	2-40640	3.50	2.00	0.60	3.9	Obsidian	ECN
n.	2-40636	3.00	2.25	0.45	1.9	do.	do.
o.	2-40642	3.75	2.00	0.40	2.2	do.	do.
p.	2-40645	3.00	2.00	0.60	3.4	do.	do.
q.	2-40638	2.75	2.50	0.60	3.3	do.	EE
r.	2-40637	3.50	2.75	0.50	3.6	do.	do.

Figure 12

	LMA No.		Site
a.	2-40086	Basalt knife	NV-Hu-17, Loc. 4
b.	2-39782	Chert punch	NV-Hu-16
c.	2-40663	Laminar chert knife	NV-Hu-21
d.	2-40665	do.	do.
e.	2-40655	End scraper	do.
f.	2-40656	do.	do.
g.	2-40657	do.	do.
h.	2-40658	do.	do.
i.	2-40373	do.	NV-Hu-22, Loc. 1
j.	2-40381	do.	do.
k.	2-40376	do.	do.

Figure 13

a.	2-40410	Knife	NV-Hu-22, Loc. 1
b.	2-40348	Blade	do.
c.	2-40353	do.	do.
d.	2-40375	do.	do.
e.	2-40441	do.	do.
f.	2-40483	Knife	NV-Hu-22, Loc. 3
g.	2-40496	do.	do.
h.	2-40429	do.	NV-Hu-22, Loc. 4
i.	2-40371	do.	do.

Figure 14

a.	2-40476	Knife	NV-Hu-22, Loc. 5
b.	2-40530	Scraper	do.
c.	2-40374	Core scraper	do.
d.	2-40198	Possible pendant	NV-Hu-22, Loc. 1
e.	2-40469	Punch	NV-Hu-22, Loc. 6

Plate 1

	LMA No.	Type	Site
a.	2-39818	BRCB	NV-Hu-17, Loc. 1
b.	2-39838	GBT Type I	do.
c.	2-39837	do.	do.
d.	2-39846	do.	do.
e.	2-39839	do.	do.
f.	2-39844	do.	do.
g.	2-39849	do.	do.
h.	2-39836	do.	do.
i.	2-39832	do.	do.
j.	2-39847	do.	do.
k.	2-39833	GBT Type III	do.
l.	2-39840	do.	do.
m.	2-39857	Untyped fragments	do.
n.	2-39850	do.	do.
o.	2-39835	Roughout	do.
p.	2-39867	GBT Type III	NV-Hu-17, Loc. 2
q.	2-39866	GBT Type II	do.
r.	2-39872	do.	do.
s.	2-39873	Obsidian bipoint	do.
t.	2-39871	do.	do.

Plate 2

a.	2-39881	GBT Type I	NV-Hu-17, Loc. 2
b.	2-39869	do.	do.
c.	2-39880	do.	do.
d.	2-39876	do.	do.
e.	2-39868	do.	do.
f.	2-39886	do.	do.
g.	2-39883	do.	do.
h.	2-39875	do.	do.
i.	2-39882	do.	do.
j.	2-39913	BRCB	NV-Hu-17, Loc. 3
k.	2-39907	do.	do.
l.	2-39909	do.	do.
m.	2-39908	do.	do.
n.	2-39910	do.	do.
o.	2-39905	do.	do.
p.	2-39906	do.	do.
q.	2-39911	do.	do.
r.	uncatalogued	Borax Lake Fluted	do.
s.	2-39912	Clovis	do.

Plate 3

	LMA No.	Type	Site
a.	2-39952	GBT Type I	NV-Hu-17, Loc. 3
b.	2-39923	do.	do.
c.	2-39225	do.	do.
d.	2-39950	do.	do.
e.	2-39939	do.	do.
f.	2-39935	do.	do.
g.	2-39953	do.	do.
h.	2-39928	do.	do.
i.	2-39929	do.	do.
j.	2-39930	do.	do.
k.	2-39919	do.	do.
l.	2-39933	do.	do.
m.	none	do.	do.
n.	2-39934	GBT Type II	do.
o.	2-39931	do.	do.
p.	2-39949	do.	do.
q.	2-39926	do.	do.
r.	2-39943	do.	do.
s.	2-39951	do.	do.
t.	2-39937	do.	do
u.	2-39945	do.	do.
v.	2-39938	do.	do.

Plate 4

a.	2-39954	GBT Type III	NV-Hu-17, Loc. 3
b.	2-39936	do.	do.
c.	2-39947	do.	do.
d.	2-39942	do.	do.
e.	2-39921	do.	do.
f.	2-39924	do.	do.
g.	2-39940	do.	do.
h.	2-40049	GBT Type I	NV-Hu-17, Loc. 4
i.	2-40048	GBT Type II	do.
j.	2-40052	do.	do.
k.	2-40047	do.	do.
l.	2-39920	GBT Type I	NV-Hu-17, Loc. 5
m.	2-40089	do.	do.
n.	2-39932	GBT Type II	do.
o.	2-40090	do.	do.
p.	2-40091	do.	do.

Plate 4 (cont'd.)

	LMA No.	Type	Site
q.	2-40111	GBT Type I	NV-Hu-17, Loc. 6
r.	2-40108	do.	do.
s.	2-40112	do.	do.
t.	2-40107	GBT Type II	do.
u.	2-40113	Untyped	do.
v.	2-40115	do.	do.

Plate 5

a.	2-39834	Crescent scraper	NV-Hu-17, Loc. 1
b.	2-39843	do.	do.
c.	2-39842	do.	do.
d.	2-39841	do.	do.
e.	2-39845	do.	do.
f.	2-39848	do.	do.
g.	2-39874	do.	NV-Hu-17, Loc. 2
h.	2-39877	do.	do.
i.	2-39885	do.	do.
j.	2-39870	do.	do.
k.	2-39878	do.	do.
l.	2-39941	do.	NV-Hu-17, Loc. 3
m.	2-39944	do.	do.
n.	2-39922	do.	do.
o.	2-40110	do.	NV-Hu-17, Loc. 6
p.	2-40108	do.	do.
q.	2-40106	do.	do.
r.	2-40186	do.	NV-Hu-22, Loc. 1
s.	2-40166	do.	do.
t.	2-40177	do.	do.
u.	2-40168	do.	do.
v.	2-40167	do.	do.
w.	2-40169	do.	do.
x.	2-40165	do.	do.
y.	2-40357	do.	do.
z.	2-40160	do.	NV-Hu-20

Plate 6

a.	2-40502	GB	NV-Hu-23
b.	2-40521	do.	NV-Hu-22, Loc. 7

Plate 6 (cont'd.)

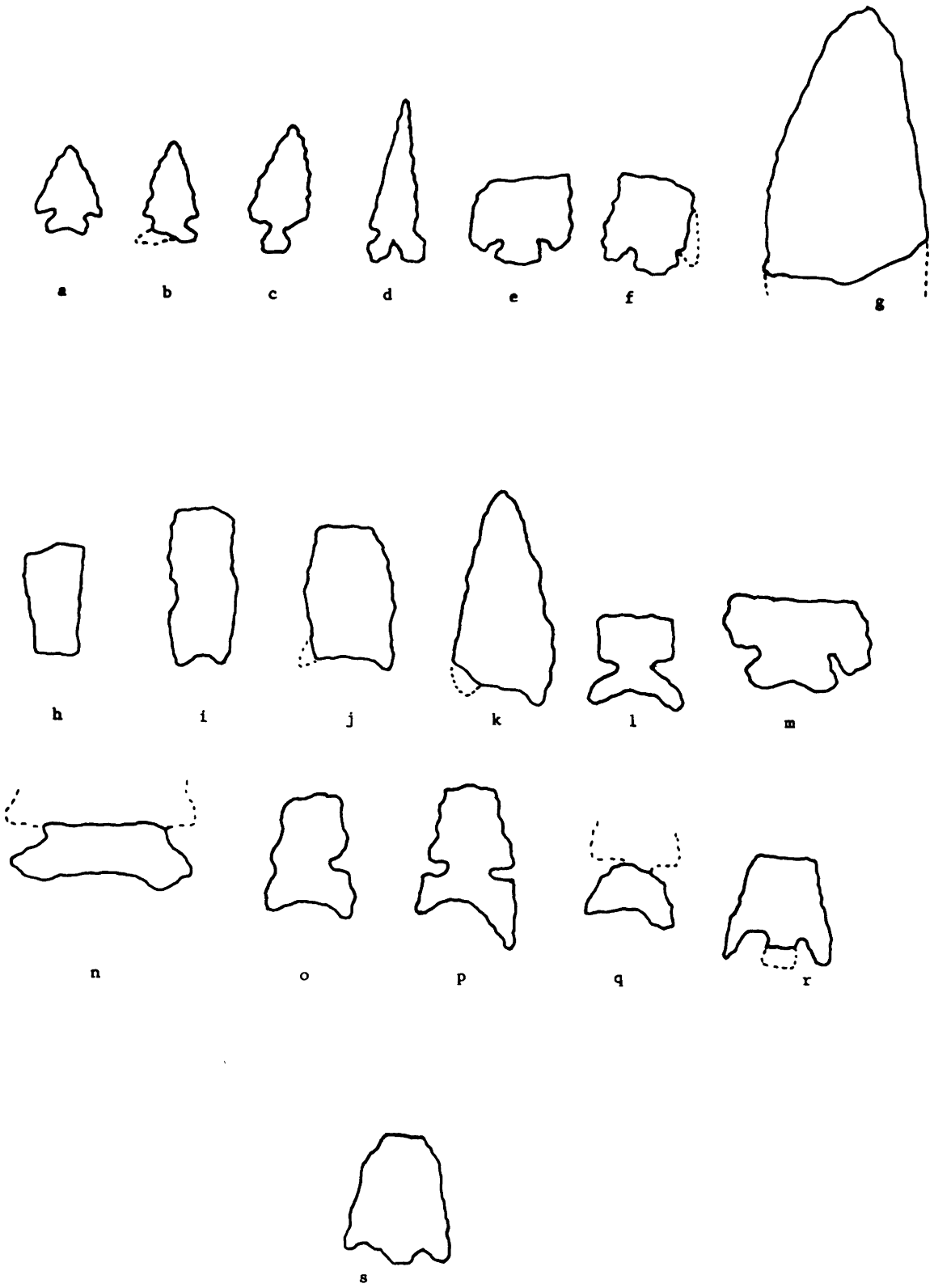
	LMA No.	Type	Site
c.	2-39997	GB	NV-Hu-17, Loc. 4
d.	2-39994	do.	do.
e.	2-40200	Graver	NV-Hu-22, Loc. 1
f.	2-40410	do.	do.
g.	2-40650	Chert knife base	NV-Hu-21
h.	2-40367	Graver	NV-Hu-22, Loc. 2
i.	2-40195	do.	do.
j.	2-40201	Drill	NV-Hu-22, Loc. 1
k.	2-40194	do.	do.
l.	2-39918	do.	NV-Hu-17, Loc. 3

Plate 7

a.	2-40285	LC	NV-Hu-22, Loc. 1
b.	2-40287	do.	do.
c.	2-40286	do.	do.
d.	2-40284	do.	do.
e.	2-40347	do.	do.
f.	2-40288	do.	do.
g.	2-40322	Parallel-sided stems	do.
h.	2-40301	do.	do.
i.	2-40349	do.	do
j.	2-40323	do.	do.
k.	2-40321	do.	do.
l.	2-40300	do.	do.
m.	2-40415	do.	do.
n.	2-40334	do.	do.
o.	2-40314	do.	do.
p.	2-40305	do.	do.
q.	2-40343	Tapered stems	do.
r.	2-40313	do.	do.
s.	2-40310	do.	do.
t.	2-40436	do.	do.
u.	2-40331	do.	do.
v.	2-40336	do.	do.
w.	2-40308	do.	do.
x.	2-40326	LC base	NV-Hu-22, Loc. 2
y.	2-40304	do.	do.
z.	2-40325	do.	do.
a'.	2-40333	do.	NV-Hu-22, Loc. 5
b'.	2-40291	do.	do.
c'.	2-40346	do.	do.

Plate 8

	LMA No.	Type	Site
a.	2-40270	BRCB	NV-Hu-22, Loc. 1
b.	2-40268	do.	do.
c.	2-40271	do.	do.
d.	2-40419	do.	do.
e.	2-40279	Milnesand-like	do.
f.	2-40276	do.	do.
g.	2-40277	do.	do.
h.	2-40275	do.	do.
i.	2-40487	Alberta	NV-Hu-22, Loc. 3
j.	2-40179	GBT	NV-Hu-22, Loc. 1
k.	2-40190	do.	do.
l.	2-40192	do.	do.
m.	2-40181	do.	do.
n.	2-40529	do.	NV-Hu-22, Loc. 7
o.	2-40175	do.	NV-Hu-22, Loc. 2
p.	2-40365	do.	do.
q.	2-40356	Roughout	do.
r.	2-40369	Obsidian bangle	NV-Hu-22, Loc. 1
s.	2-40196	do.	do.
t.	2-40193	Graver	NV-Hu-22, Loc. 2
u.	2-40197	Knife	NV-Hu-22, Loc. 1



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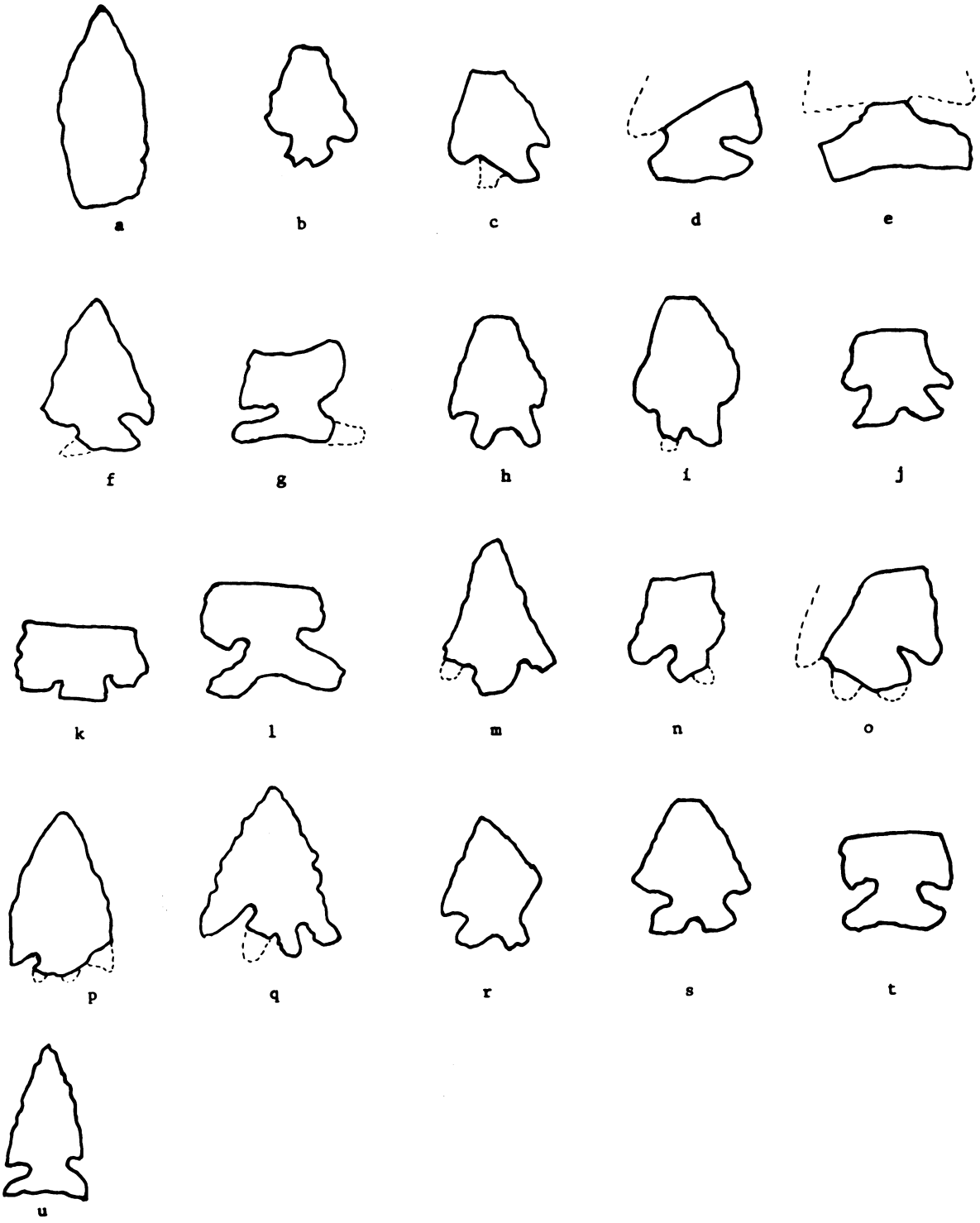

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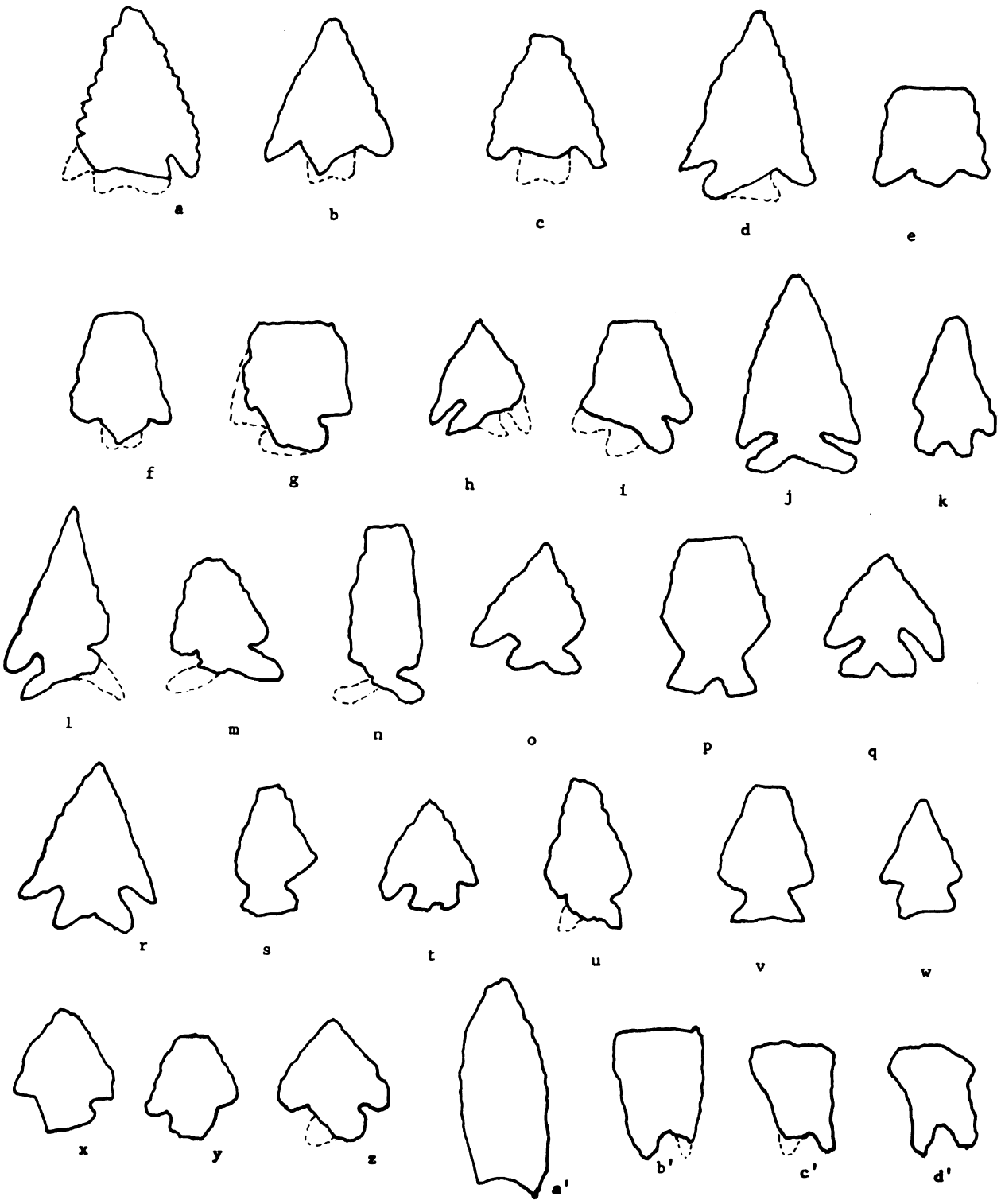

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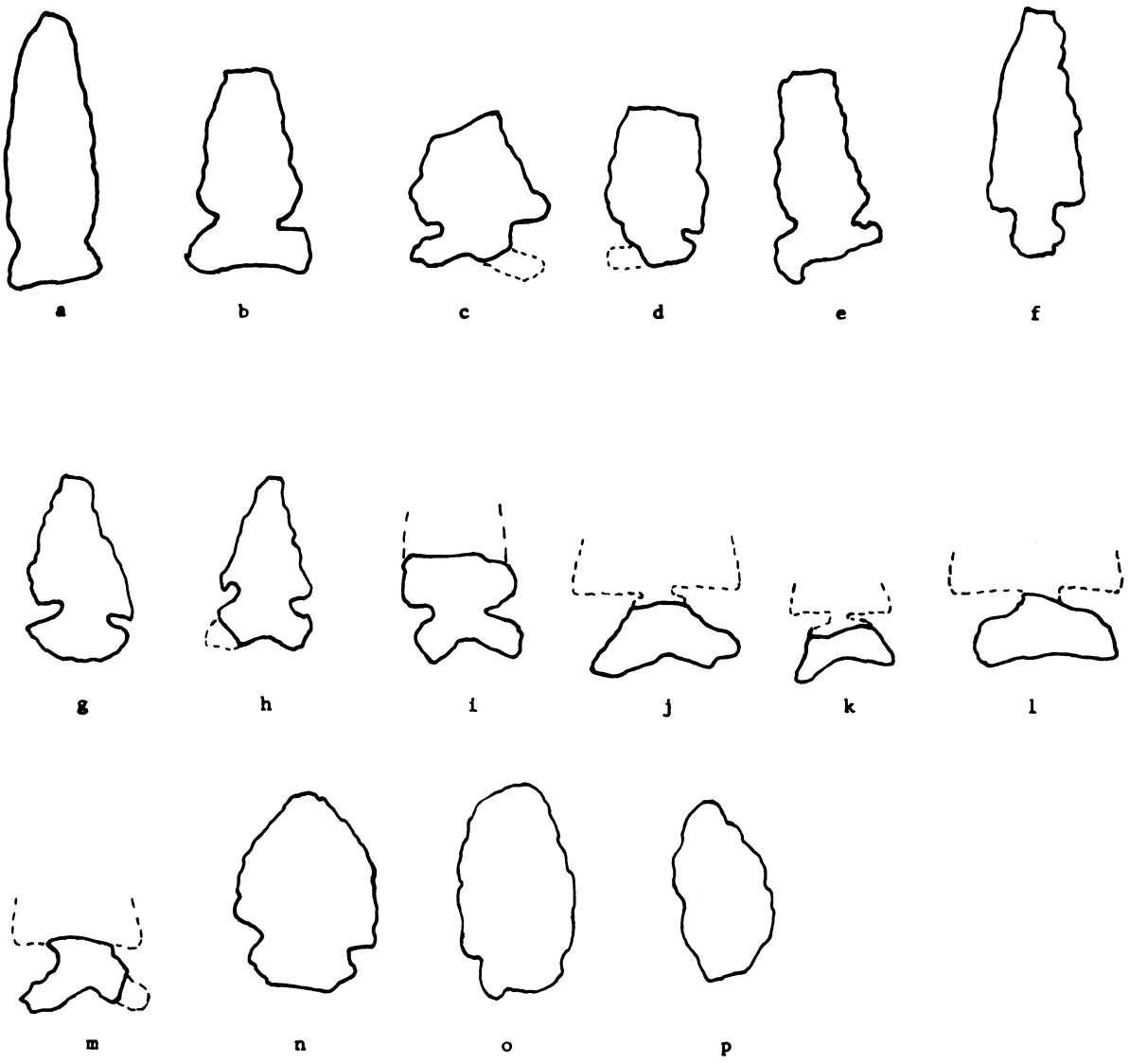

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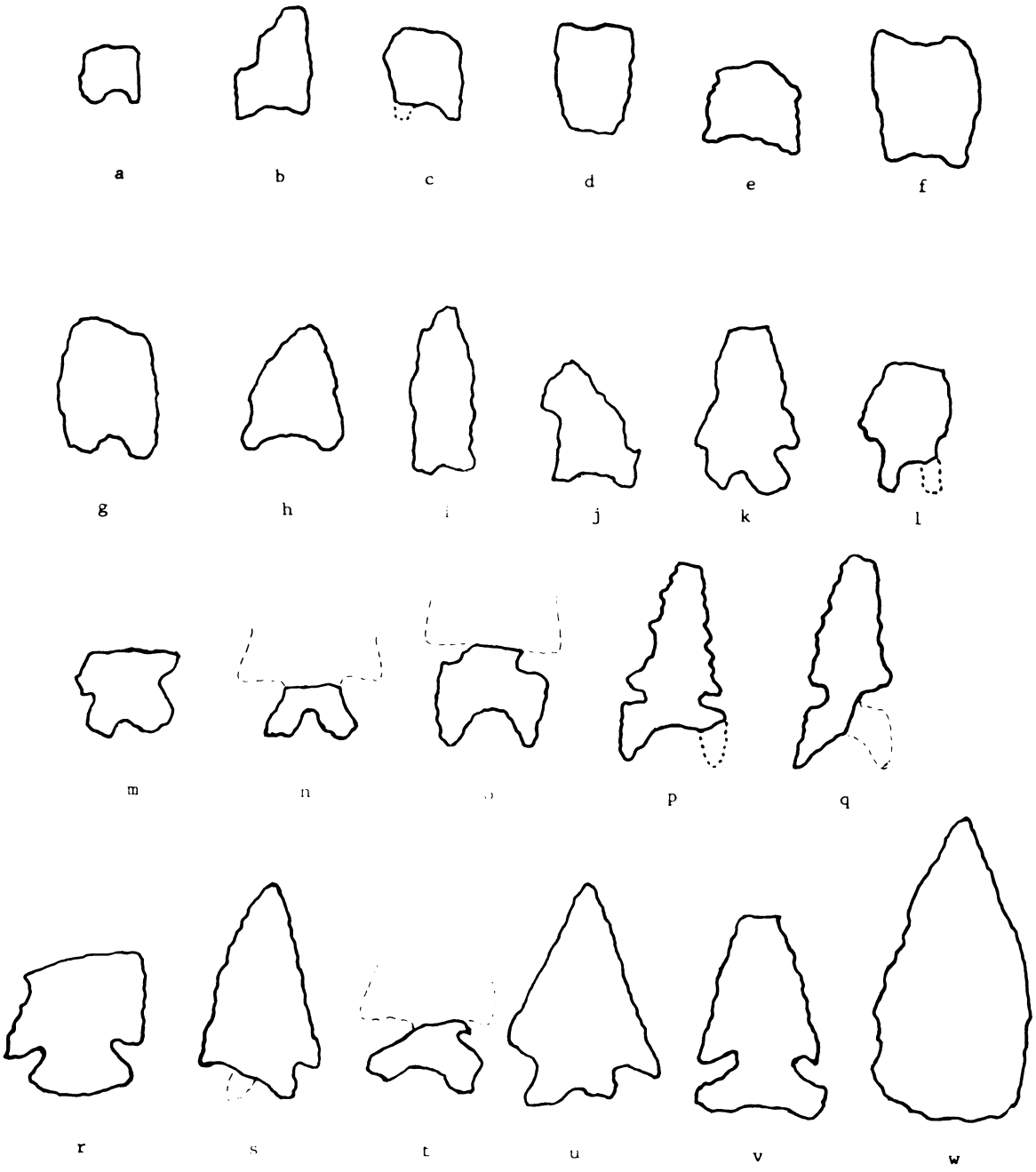

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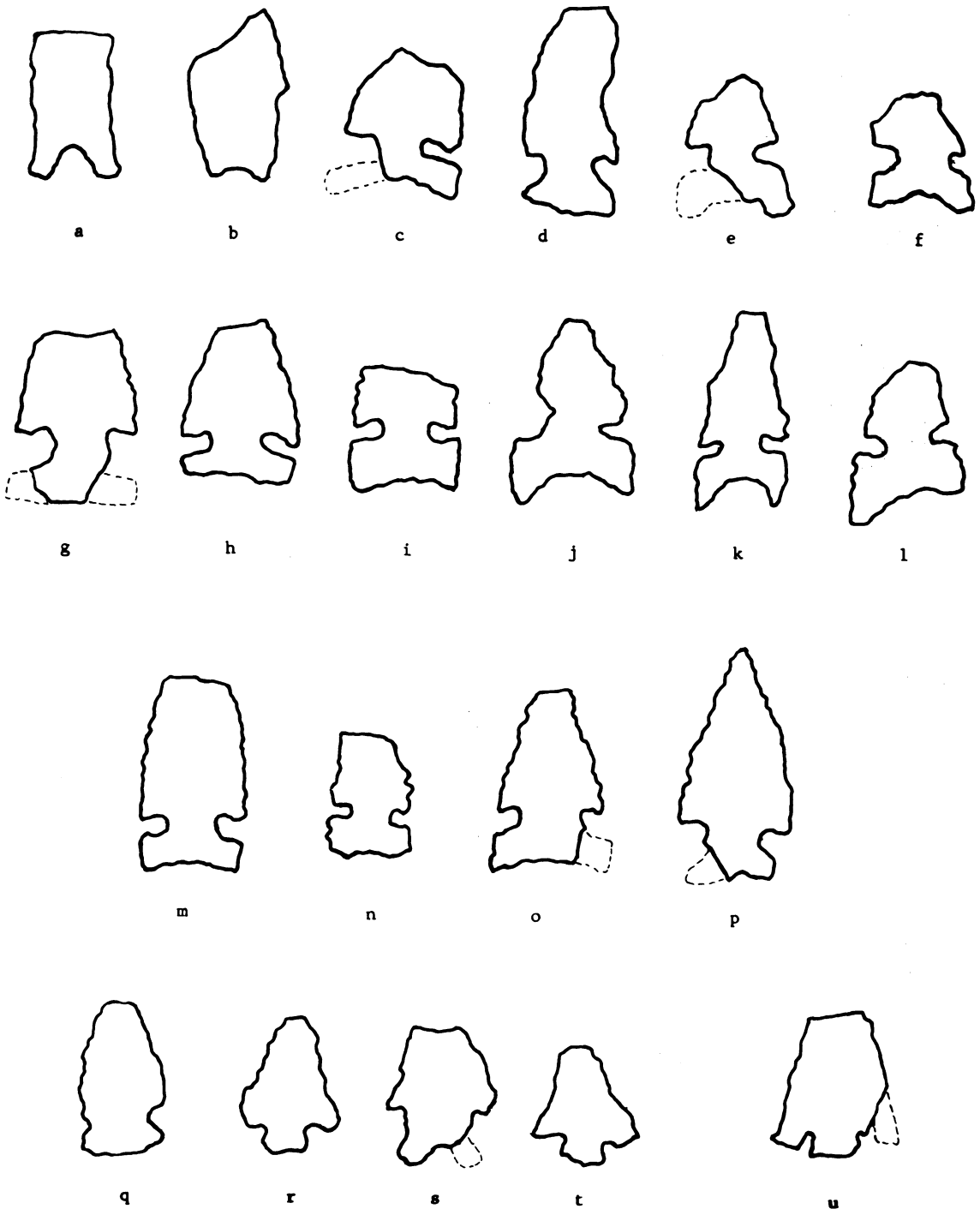

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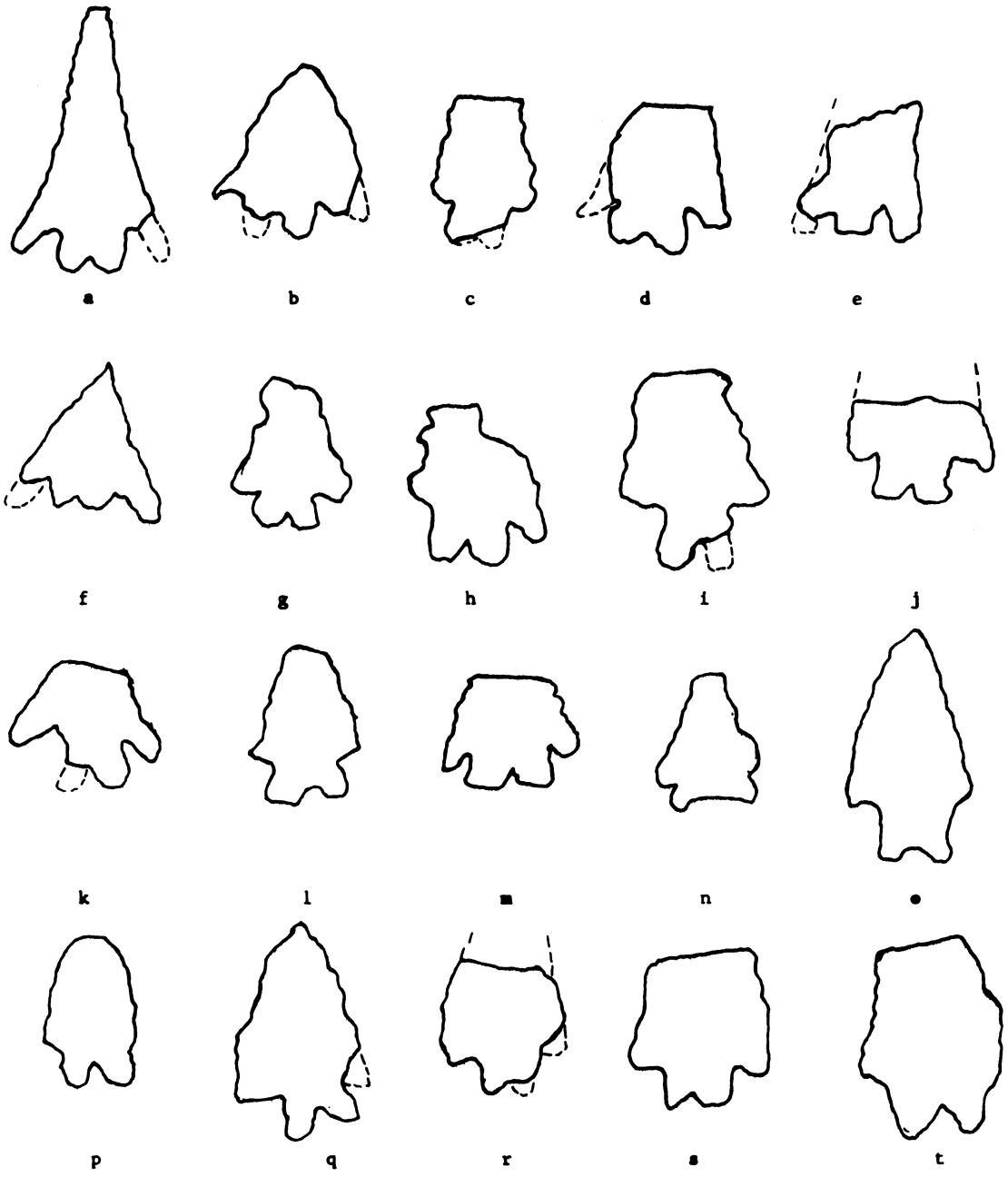

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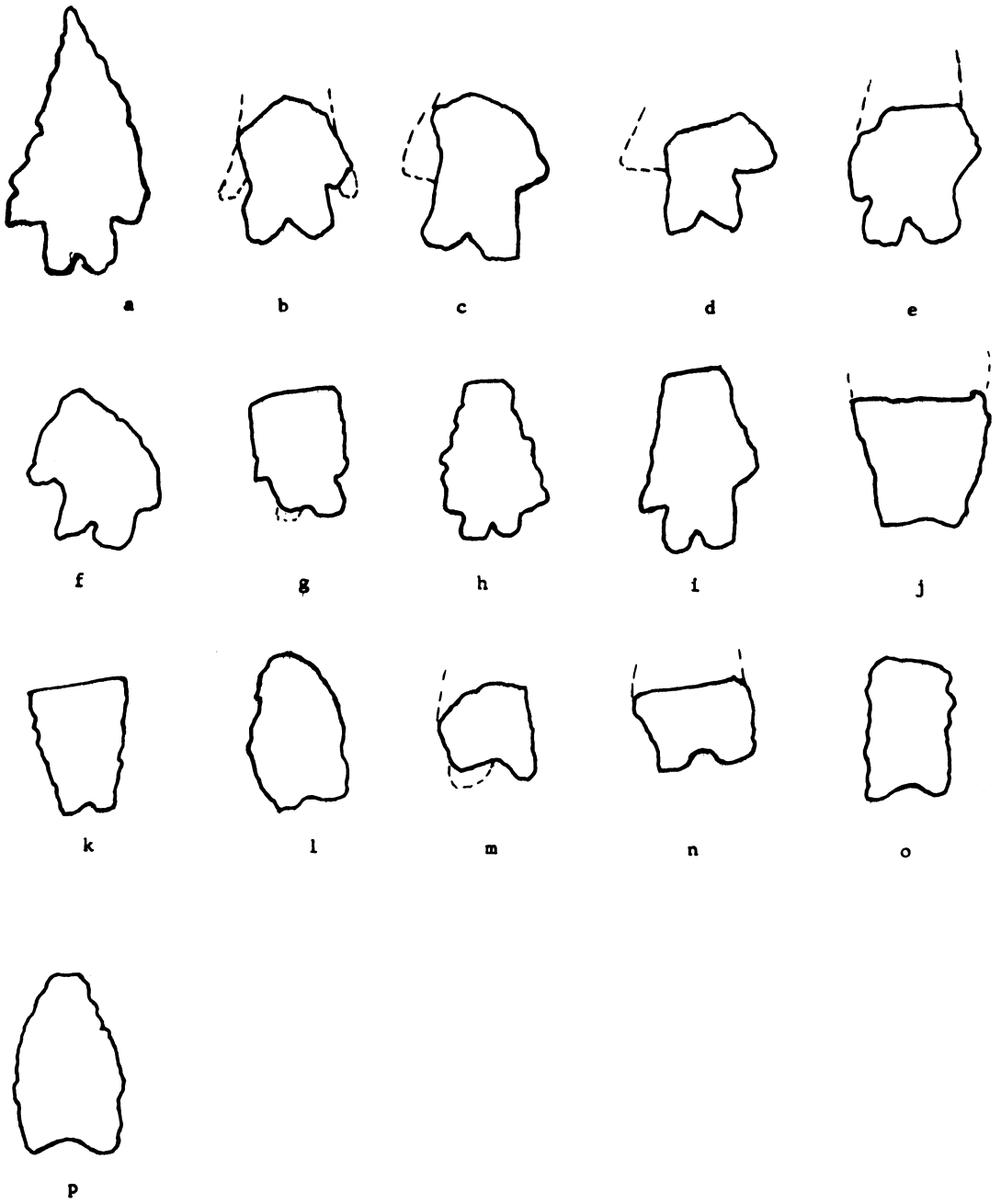

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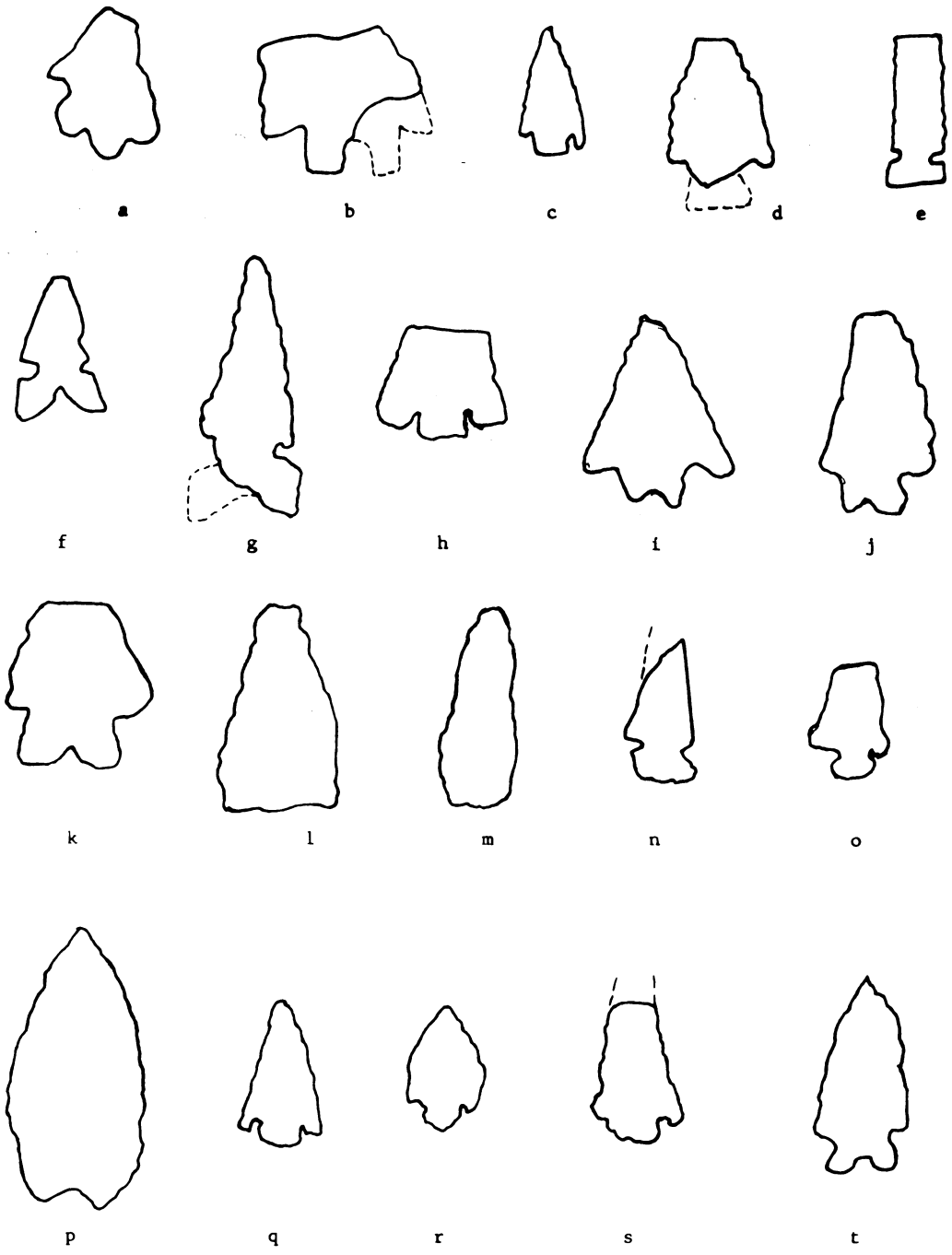

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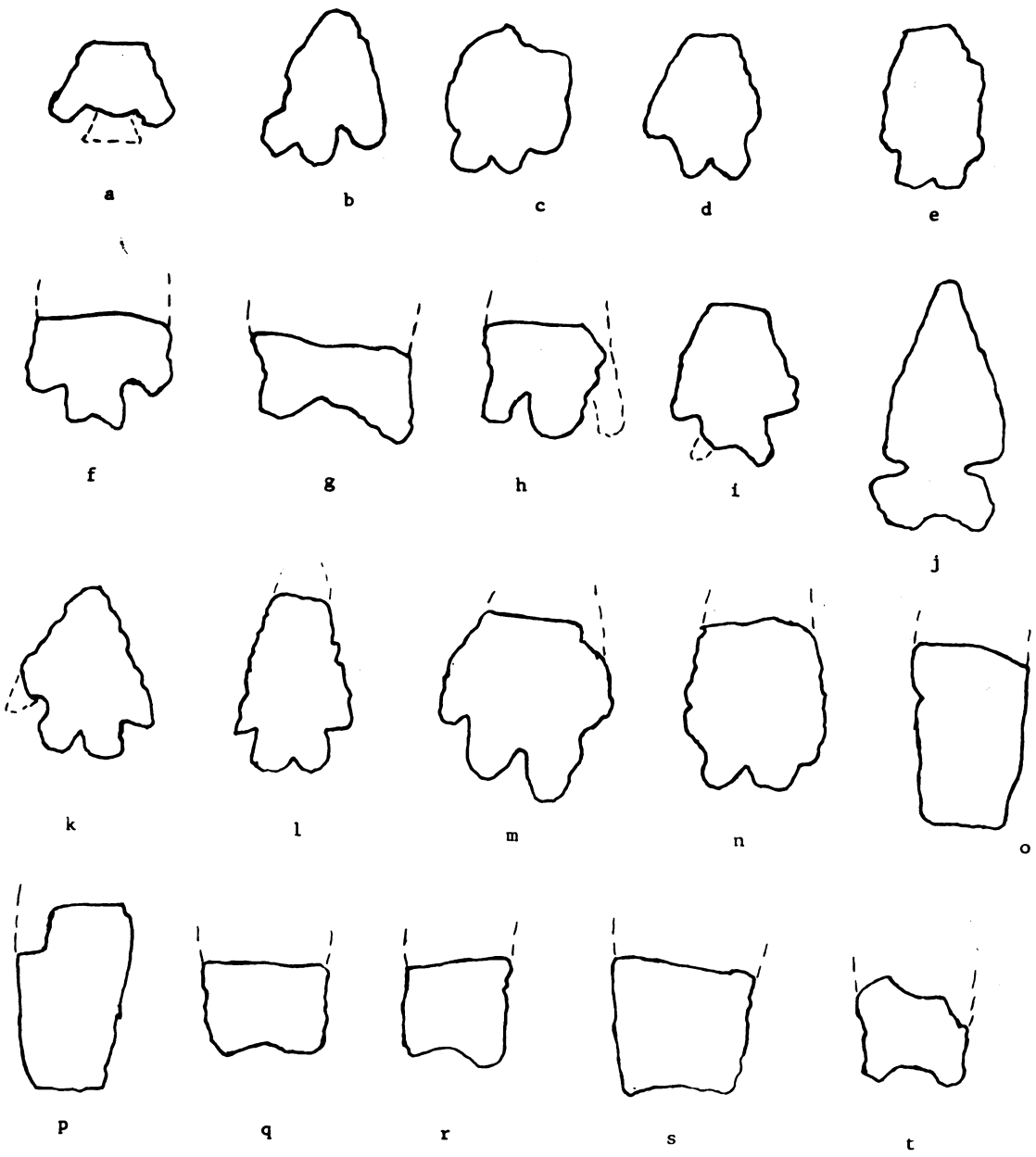

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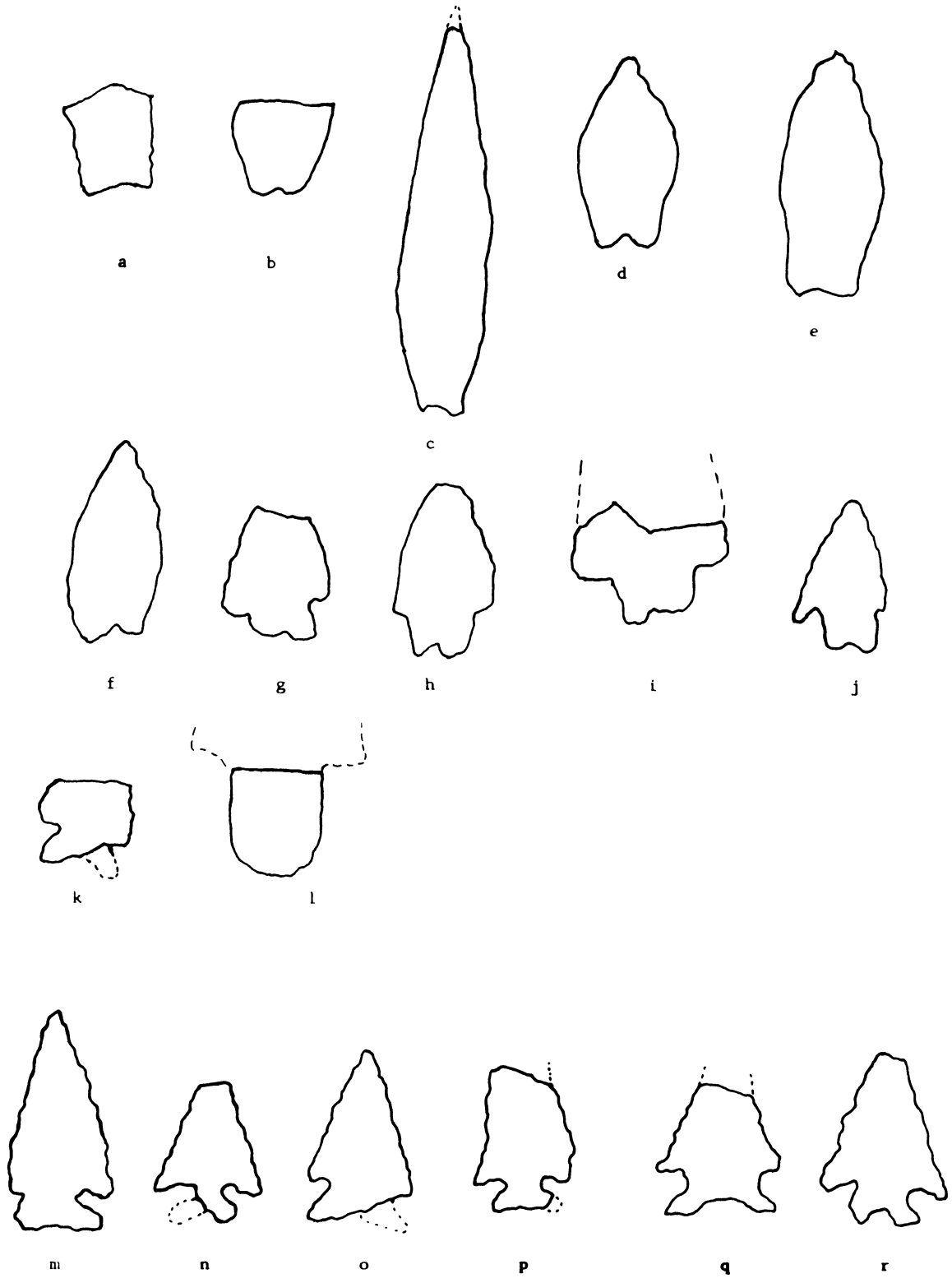
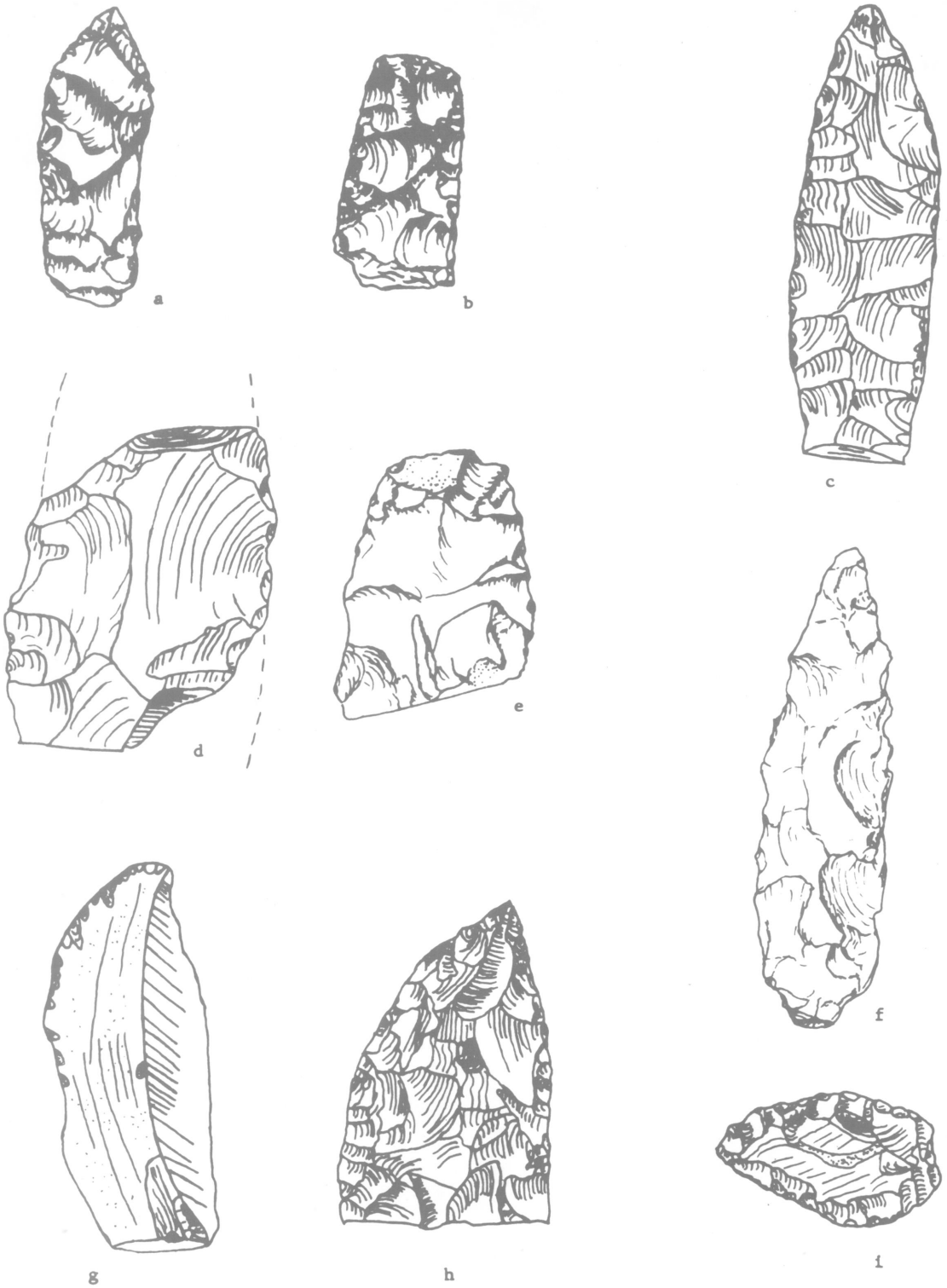


Figure 11

Figure 12



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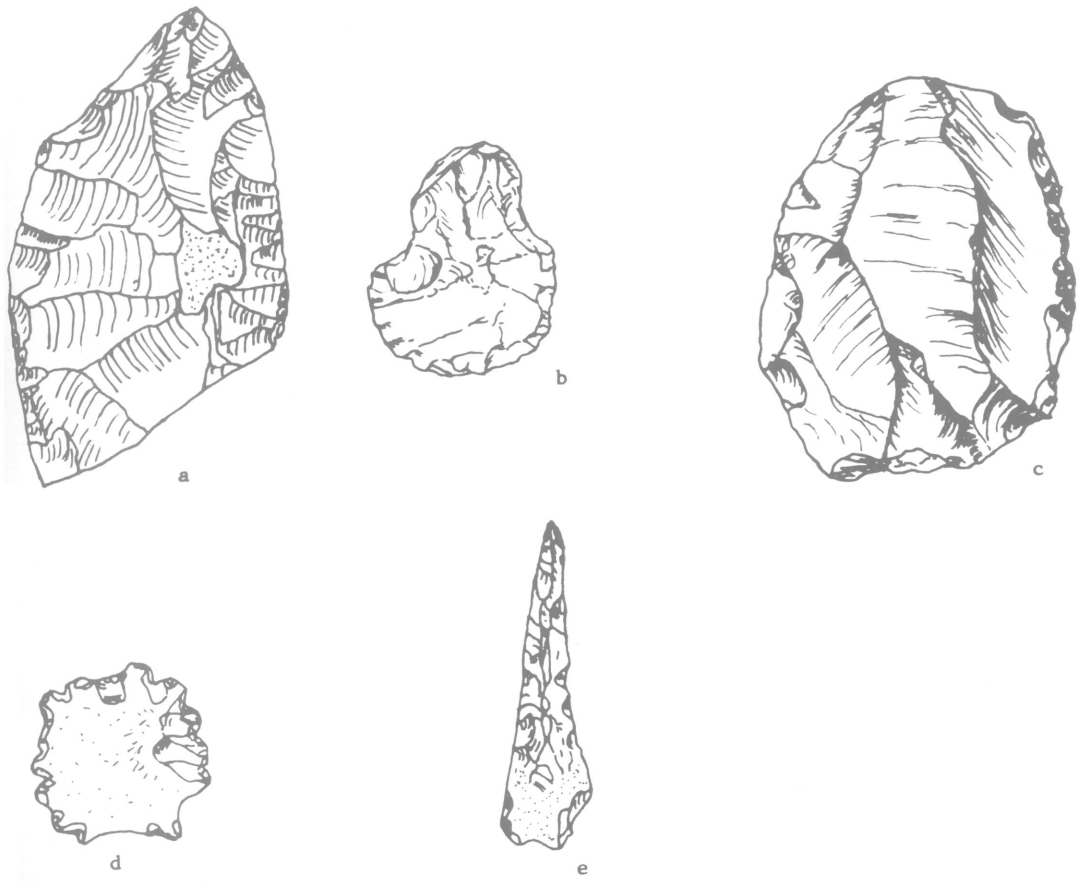

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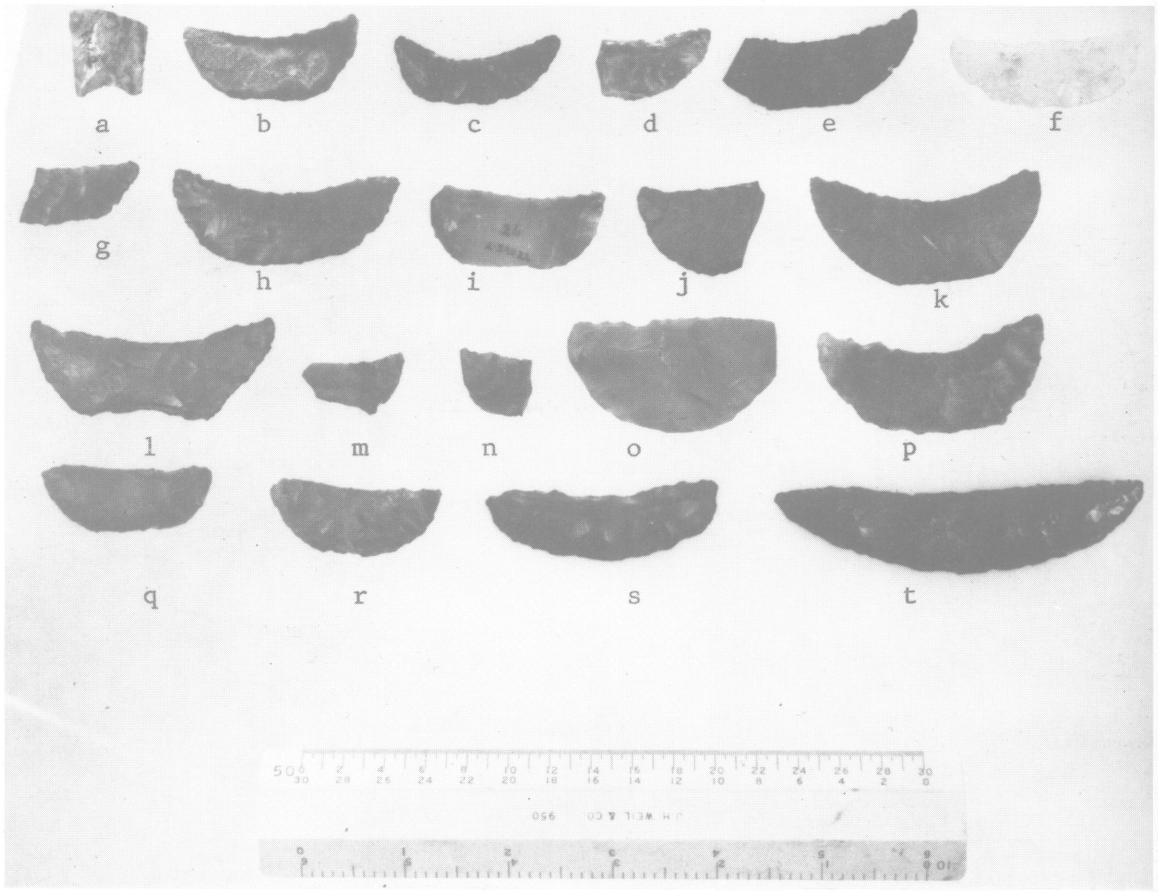

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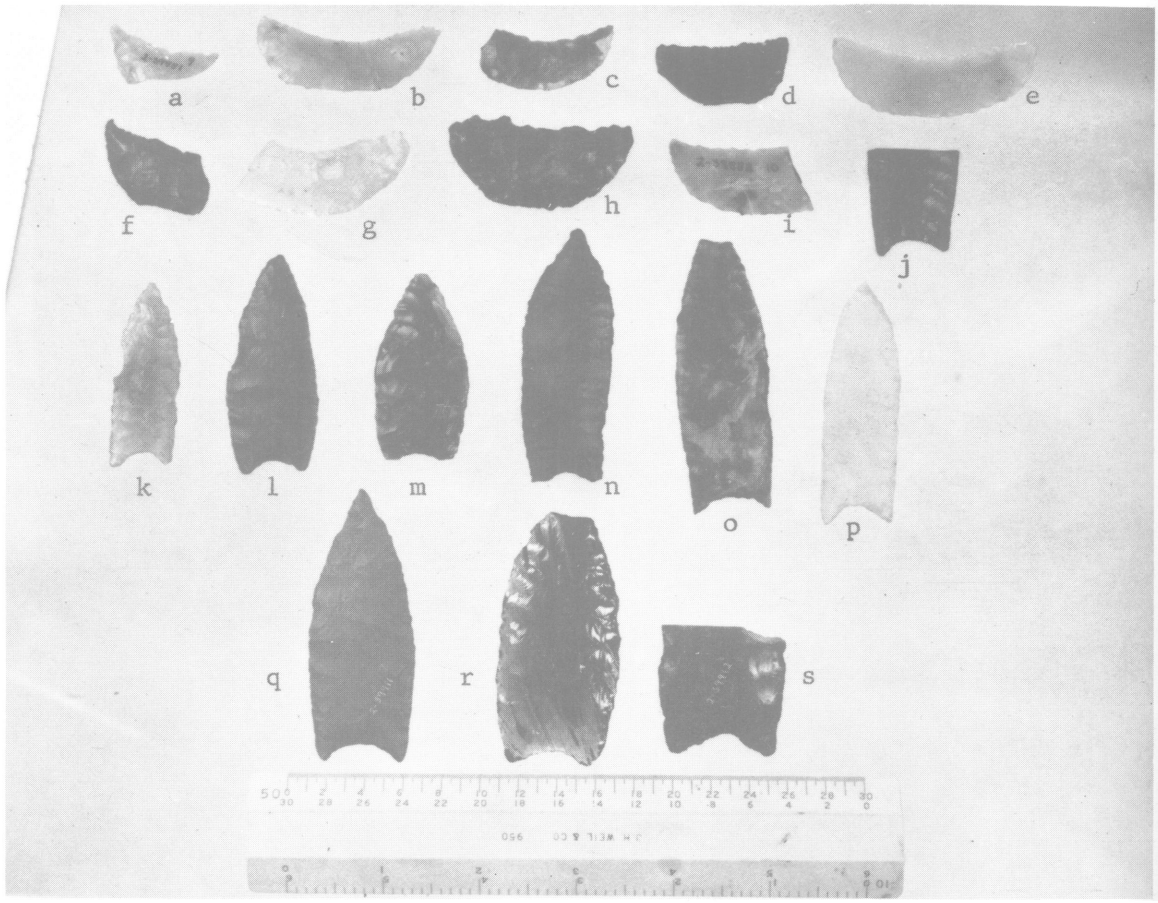

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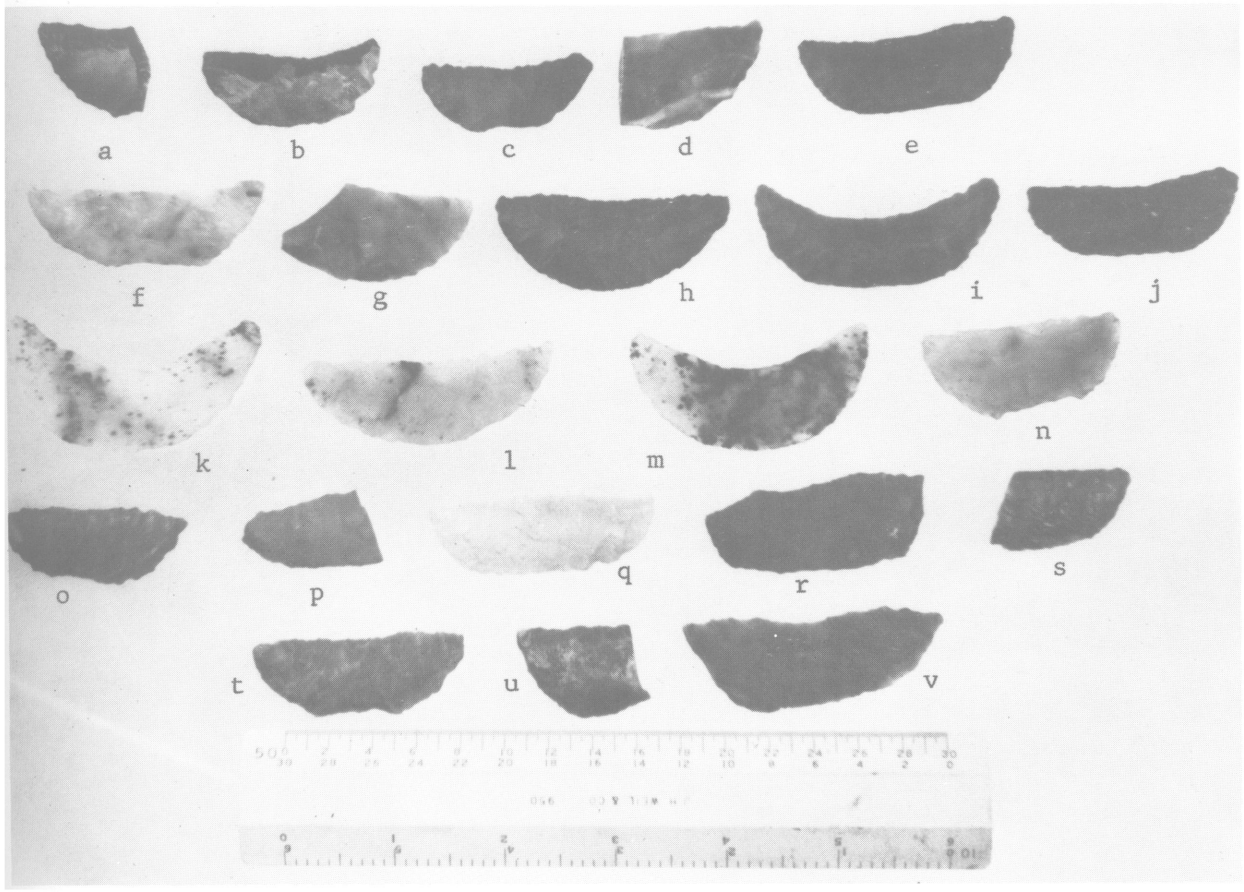

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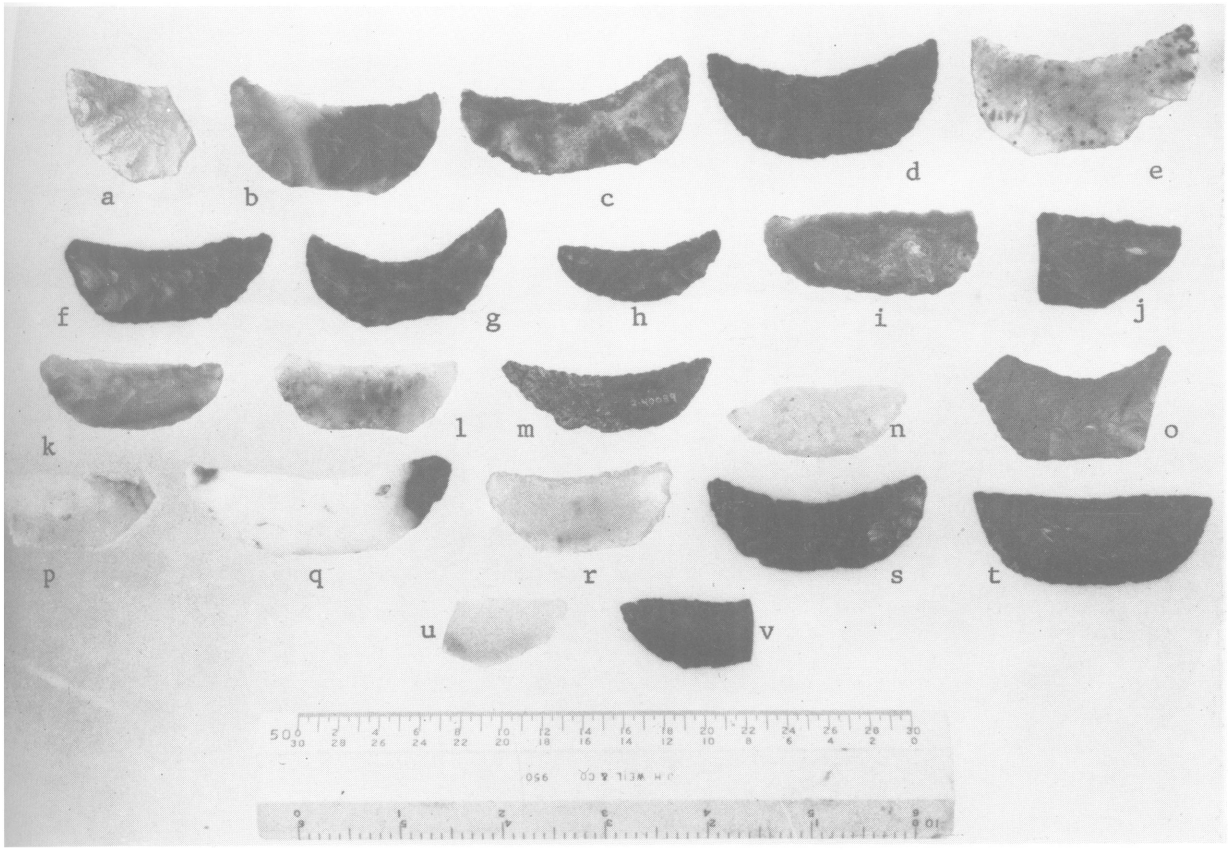

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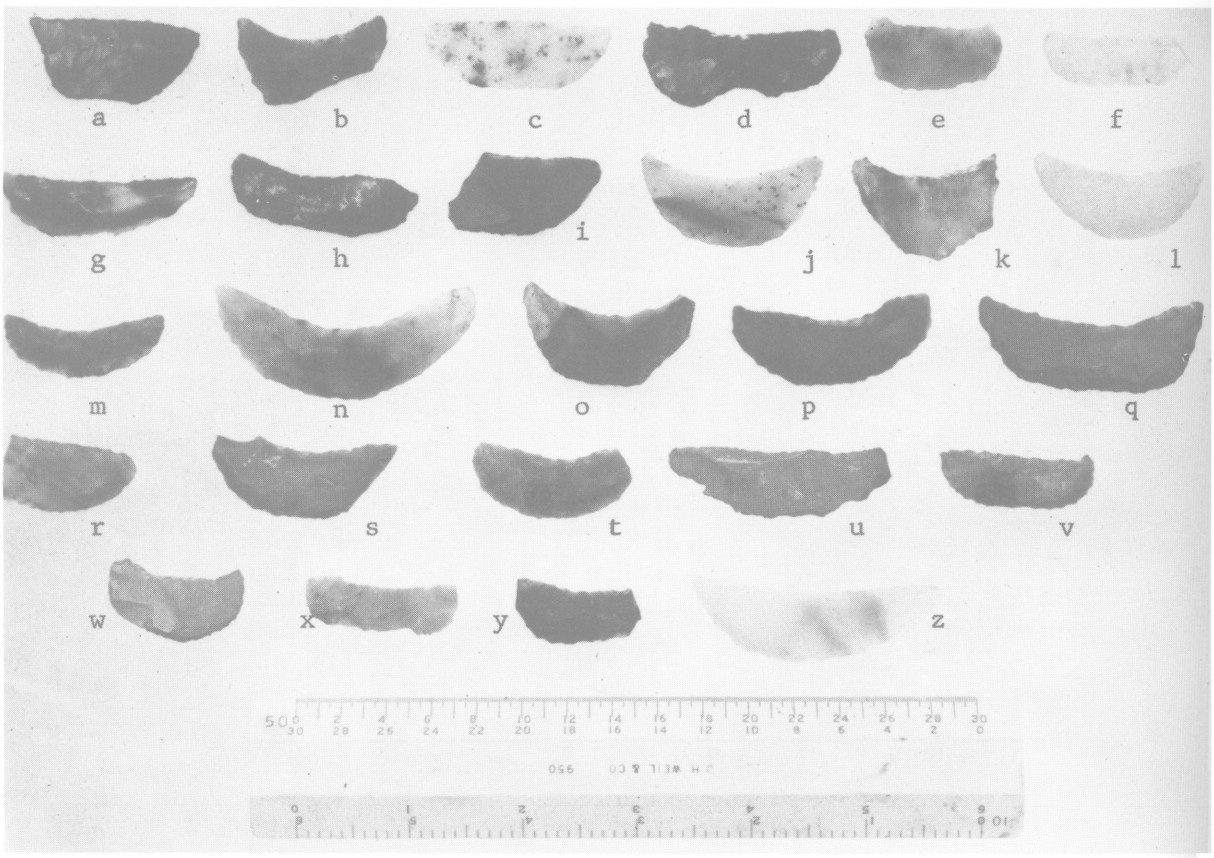

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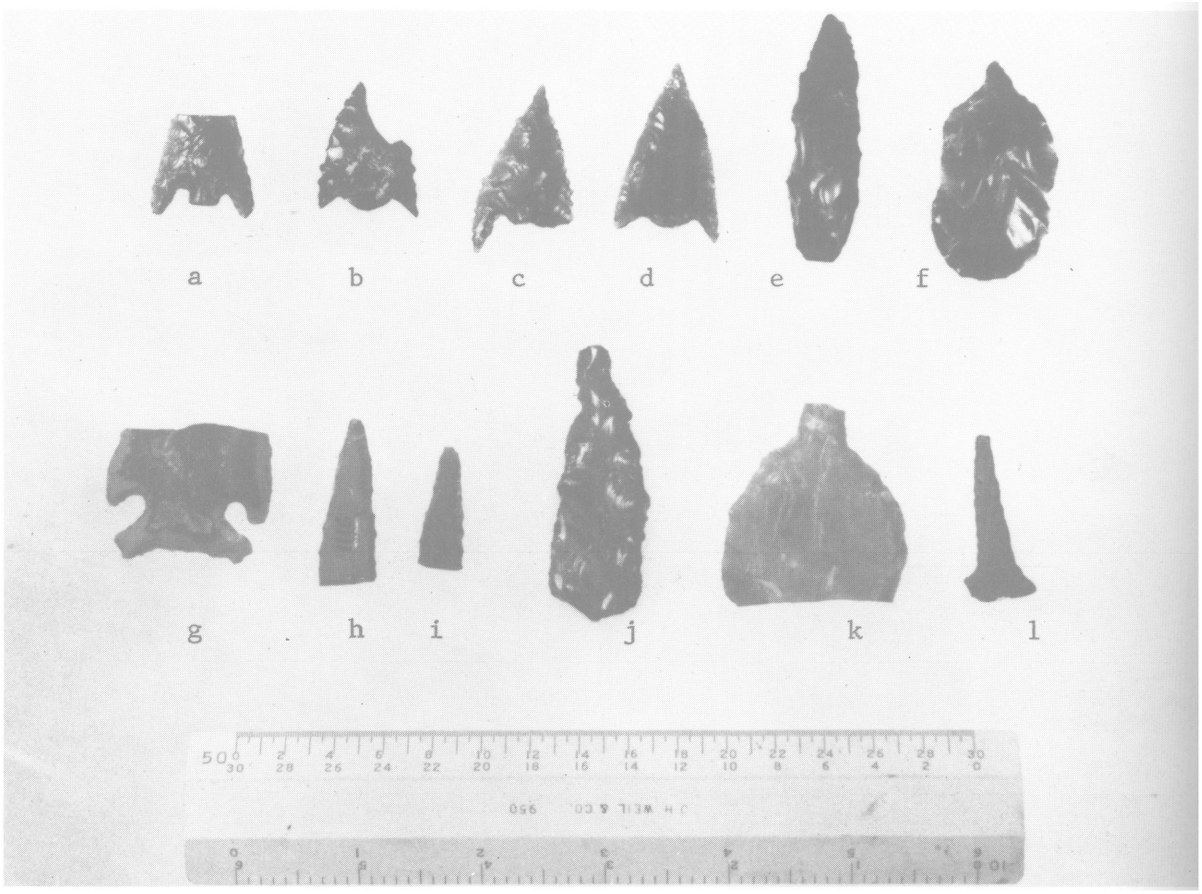

Plate 6

Plate 7

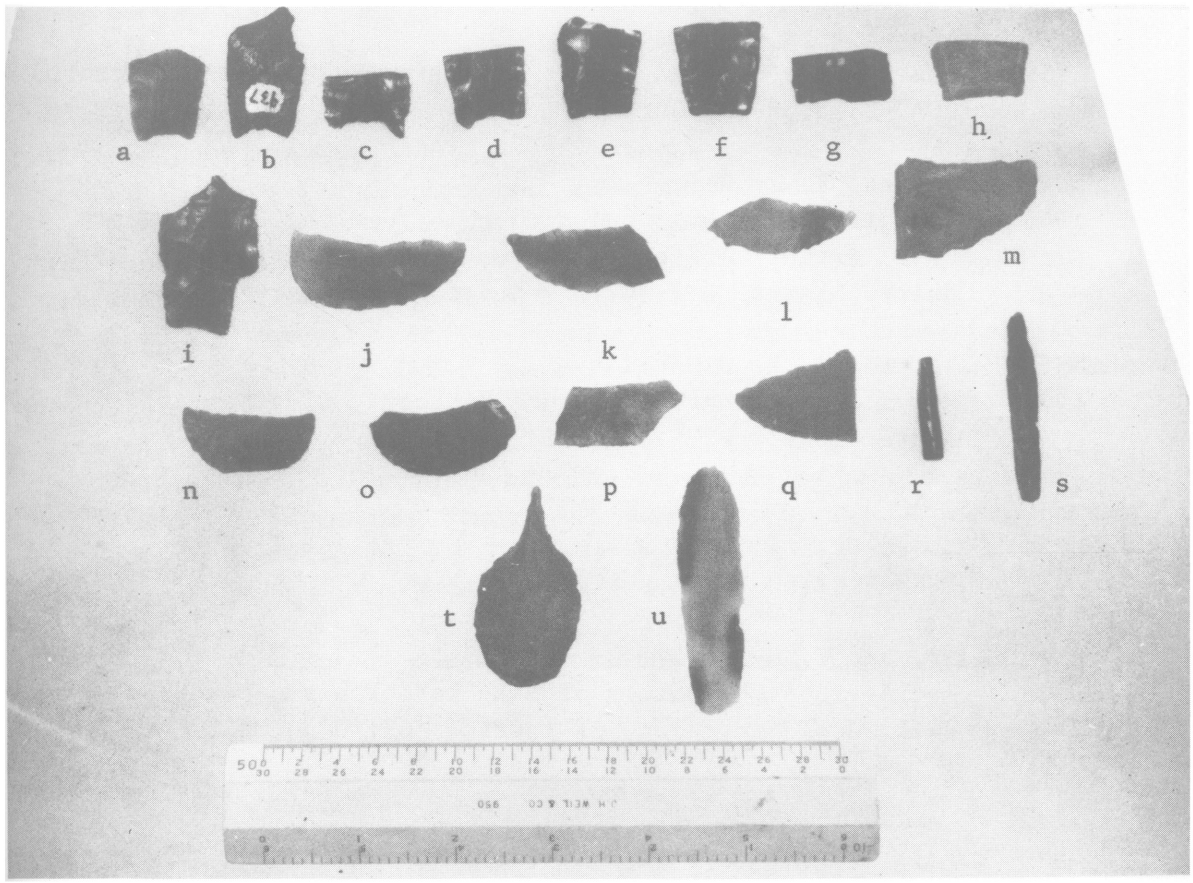

Plate 8

BIBLIOGRAPHY

Abbreviations Used

AA	American Anthropologist
AAnt	American Antiquity
APS	American Philosophical Society
-P	Proceedings
BAE	Bureau of American Ethnology
-B	Bulletin
CIW	Carnegie Institute of Washington
-P	Publication
ISCM	Idaho State College Museum
-OC	Occasional Papers
SWM	Southwest Museum
-M	Masterkey
-P	Papers
UC	University of California
-AR	Anthropological Records
-ASR	Archaeological Survey Report
-PAAE	Publications in American Archaeology and Ethnology
-PL	Publications in Linguistics

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