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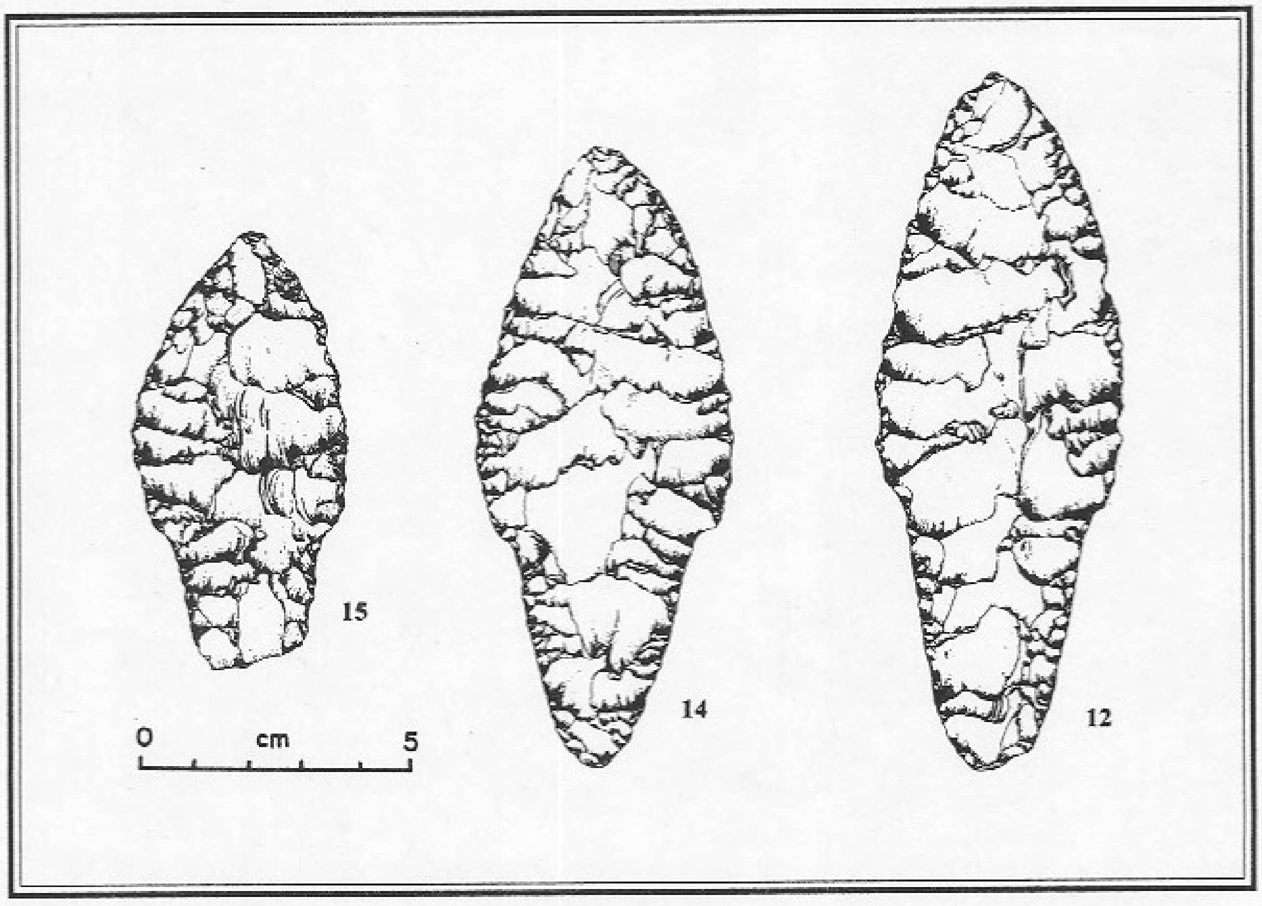

# A POSSIBLE RITUAL CACHE OF GREAT BASIN STEMMED BIFACES FROM THE TERMINAL PLEISTOCENE - EARLY HOLOCENE OCCUPATION OF NW NEVADA, USA

by

**Daniel S. Amick**

***Abstract***

*Recently, an assemblage of 19 obsidian tools has come to light following the death of their original collector. This collection apparently resulted from his excavations in an unknown cave in 1974 and may have been found buried together as a cache and ritual offering. These unusually large tools correspond to the Parman variety of the Great Basin Stemmed cluster, which is associated with the terminal Pleistocene-early Holocene occupation of the Great Basin region of North America. The assemblage contains six Parman projectile points, four stemmed bifacial preforms, five bipointed preforms, two ovoid bifacial blanks, one small triangular biface, and a thick scraper. Trace element studies of these materials suggest origins from five different obsidian sources near the High Rock country of NW Nevada. Comparison of this collection with Paleoindian biface caches from outside the Great Basin suggests some interesting parallels that may imply shared cultural behaviors between these groups.*

## INTRODUCTION

Although prehistoric caches of stone tools are fairly well known from the Great Basin region of North America, this paper describes what may be the first documented example of a terminal Pleistocene-early Holocene (TP-EH) cache of stemmed projectile points and preforms. It is potentially significant that early groups in the Great Basin were engaged in caching behavior because it offers an interesting comparison to stone tool caches associated with Clovis and other Paleoindian cultures in the western U.S. Like these other early biface caches, the McNine artifacts were also discovered in a private collection. This remarkable group of nineteen obsidian tools was only recently unveiled in a public artifact display, and was borrowed for this documentation and analysis. The primary goal of this study is to carefully describe this unique assemblage and bring it to the attention of the professional archaeology community.

Typologically, these tools correspond to the Parman projectile point variety, which can be defined as a distinctive morphological correlate of the Great Basin Stemmed (GBS) cluster (Tuohy and Layton 1977; Justice 2002a: 85-101). Trace element analyses suggest origins of these materials in the High Rock country of NW Nevada. This area, which covers about 150 square km, contains widespread prehistoric workshops where subspherical obsidian nodules were quarried from surface expo-

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sures (Ragir and Lancaster 1966). Interestingly, several attributes of these early stemmed bifaces resemble those reported from Clovis biface caches. These include their unusually large size, the grouping of a patterned set of various stage forms that reflect the general manufacture sequence, the leaving of prepared striking platforms on the margins, evidence of abrasion on dorsal ridges that resulted from transport wear, and ochre-like mineral staining. Production analysis suggests that this unique assemblage may also incorporate the blueprints for making these GBS points.

This paper presents the history and provenience of this collection, providing a reconstruction of its recovery, as well as its current status. While these observations are critical for establishing the spatial association of the assemblage, they unfortunately remain the most limiting because of their incompleteness. Discussion then moves on to detailed typological and technological descriptions of these artifacts, including considerations of their chronological placement and general significance, an obsidian geochemistry source analysis, and comparison to the technological patterns documented on other stone tool caches from the western U.S. The coherence of these distinctive technological and stylistic attributes within the assemblage provides the strongest argument for its interpretation as a ritual cache. The paper concludes with a discussion of the potential significance of this assemblage to the broader context of prehistoric lithic caching behavior, especially during the early human occupation of North America.

## COLLECTION HISTORY AND PROVENIENCE INFORMATION

This collection was brought to the attention of the artifact collecting community about two decades after it was found, when the group was purchased at a yard sale. The dealer who purchased the collection then sold it in 1996 to Mr. Morris Royels, who placed it on display at *Mary and Moe's Wigwam Restaurant and Casino* in Fernley, Nevada. This establishment is locally known for numerous exhibits of American Indian art and artifacts. The framed display of this collection (Figure 1) was first brought to my attention in October, 1996, by Mr. Steve Wallmann, a local avocational archaeologist. The Royels kindly granted our request to borrow the collection for scientific study and illustration. Furthermore, we were allowed to borrow two additional specimens, a stemmed point midsection (Specimen 18) and a large scraper (Specimen 19), associated with this collection but not included in the mounted display. Following the completion of our study, these artifacts were remounted within the frame as originally configured and once again placed on exhibit.

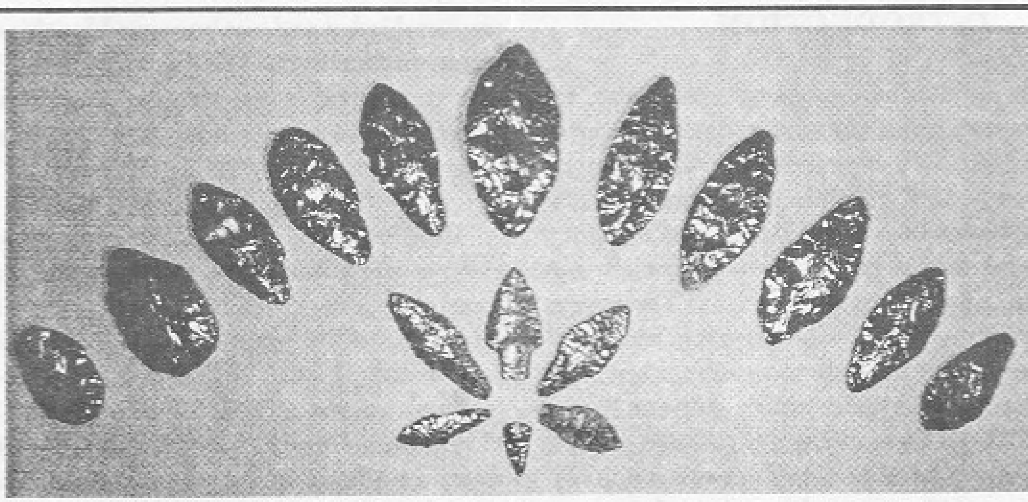

**Figure 1.** Configuration of the McNine assemblage as originally mounted within its framed dissplay case. For the purposes of this study, the specimens have been numbered as follows. Top row from left to right: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11. Bottom circle beginning from ten o'clock position: 12, 13, 14, 15, 16, 17. Specimens 18 and 19 are not included in the framed display.

These artifacts were recovered about 30 years ago by a collector named McNine, who was apparently living near Reno, Nevada. Documenting this collection is a spiral-bound notebook in which McNine drew outlines of each artifact, made brief descriptions of the artifact shape and the tool stone, and recorded each object's length and width in inches. On several pages, he dated these noted as 5/28/74. There is good reason to believe he acquired the artifacts on that date, because he also recorded spatial locations for several of the objects. These records on archaeological context and artifact provenience are sketchy and incomplete, but seem to confirm that he obtained the artifacts while digging inside a cave. For example, his first entry mentions a sloping cave and a later page contains the notation, " length beginning of cave 52'."

These handwritten notes also report that some artifacts were recovered from shallow depths ranging from 7 to 46 cm, but several were apparently found on the cave surface, as indicated by the term "top" used in describing their locations. Although the location of this cave was not documented, results of the geochemical fingerprinting of the obsidian suggest it is almost certainly in NW Nevada. This region is fairly accessible to artifact collectors in the Reno area. Unfortunately, the details about McNine's collecting history have remained obscure because he appears to have worked independently and pursued his relic hunting activities in seclusion.

About one-third of these artifacts (Table 1) exhibit discontinuous thin films of what appear to be dark reddish-brown clay, which represents a kind of sediment commonly expected in upland settings and cave deposits in the NW Great Basin. However, this adhering film does not march the white and yellow sediments described for the Parman artifact-bearing deposits found in Hanging Rock Shelter and Last Supper Cave in NW Nevada (Layton and Davis, cited in Grayson 1988: 44-46, 105-106). It is also possible this film may represent ferric oxide, commonly known as red ochre and frequently associated with Paleondian assemblages (Frison 1991: 41; Roper 1991; Tankersley *et al.* 1995; Frison and Bradley 1999; Haynes 2002), as well as with certain Holocene burial complexes in the northwestern states (Pavesic 1985). Microscopic examination (10-40X) of the brownish film adhering to the McNine artifacts suggests that it resembles red ochre staining, but it may be necessary to conduct detailed mineralogical and chemical studies (e.g., Tankersley *et al.* 1995) to identify this substance with certainty.

In his notes, McNine documented a few other items including animal skulls, bone, and burned wood, which seem consistent with the kind of material preservation expected from a cave in this arid region. A minimal provenience system appears to have been used, as the locations of several artifacts are referenced in therm of their distance from a "mark." These records suggest a horizontal scatter ranging up to eight meters. While these records are very cursory, this amount of dispersion cannot entirely support the conclusion that these materials were found buried together within an intact cache pit. Although the Simon Clovis cache in southern Idaho was exposed by a road grader, it was similarly reported to have been about 30-45 cm below the surface and dispersed over 5.5 meters (Butler 1963: 22-23).

Despite the limitations of the contextual and provenience information for the McNine collection, it should be noted that several widely accepted examples of early stone tool caches in North America have much lesser documentation. The accidental discovery and unsystematic recovery of several Clovis biface caches was described by Tankersley (2002: 104-108) and contextual information for several Clovis blade caches was reviewed by Collins (1999: 150- 172). Bulldozers, road graders, and similar heavy equipment were responsible for exposing and disturbing the original context of the Clovis biface caches from Simon, Anzick, and Crook County and the Clovis blades from Blackwater Draw. The Drake cache of Clovis bifaces and the Walsh cache of Hell Gap bifaces were found on the surface of plowed fields where they had been exposed and disturbed by tillage (Stanford and Jodry 1988; Stanford 1997a, 1997b). Similarly, most of the Rummels-Maske Clovis cache was gathered from a plowed surface without recording spatial associations an the remainder was recovered by subsequent professional excavations from which the provenience records have been lost (Anderson and Tiffany 1972; Morrow and Morrow 2002). The purported Clovis-age biface caches from Sailor-Helton (Mallouf 1994) and Busse (Hofman 1995, 1997) were

**Table 1**. Descriptive attributes and size dimensions of the McNine obsidian tools (sorted by tool type)

| Specimen-Tool Type | Gram Weight | Axial Length | Max Width | Max Thick | Reddish Clay Film Residue | Transport Abrasion | Obsidian Source Assignment |
|---|---|---|---|---|---|---|---|
| 1 - Biface Blank | 87.1 | 104.5 | 67.1 | 12.3 | none | both faces | Bordwell Spring |
| 2 - Biface Blank | 214.1 | 130.6 | 86.2 | 17.7 | none | both faces | Bordwell Spring |
| 3 - Early Stage Preform | 96.6 | 134.0 | 62.7 | 11.6 | one face | both faces | Bordwell Spring |
| 6 - Early Stage Preform | 237.4 | 173.9 | 85.4 | 15.2 | none | both faces | Windmill Quarry |
| 7 - Early Stage Preform | 117.0 | 160.9 | 61.1 | 10.4 | none | both faces | Bordwell Spring |
| 8 - Early Stage Preform | 122.8 | 159.8 | 64.2 | 12.8 | one face | one face | Bordwell Spring |
| 10 - Early Stage Preform | 85.3 | 135.6 | 56.9 | 10.8 | none | both faces | Bordwell Spring |
| 4 - Late Stage Preform | 111.5 | 148.0 | 65.2 | 10.6 | one face | both faces | Bordwell Spring |
| 5 - Late Stage Preform | 95.1 | 142.7 | 67.1 | 11.6 | one face | both faces | Pinto Peak |
| 9 - Late Stage Preform | 121.2 | 155.1 | 70.1 | 12.8 | none | one face | Bordwell Spring |
| 11 - Late Stage Preform | 62.5 | 112.7 | 54.5 | 9.8 | none | both faces | Bordwell Spring |
| 12 - Parman Projectile Point | 41.9 | 129.7 | 45.0 | 7.1 | both faces | none | Bordwell Spring |
| 13 - Parman Projectile Point | (37.0) | (103.3) | 51.2 | 7.0 | none | none | Bordwell Spring |
| 14 - Parman Projectile Point | 37.1 | 115.7 | 47.5 | 8.3 | one face | none | Bordwell Spring |
| 15 - Parman Projectile Point | (23.7) | (83.0) | 40.2 | 6.6 | none | light | Fox Mountain |
| 17 - Parman Projectile Point | 16.1 | 89.0 | 31.5 | 6.0 | none | both faces | Cowhead Lake |
| 18 - Parman Projectile Point | (31.8) | (71.2) | 44.7 | 7.1 | one face | none | Fox Mountain |
| 16 - Small Triangular Preform | 6.1 | 51.3 | 27.0 | 5.6 | none | both faces | Pinto Peak |
| 19 - Large Scraper | 26.3 | 51.1 | 45.3 | 13.4 | none | none | Pinto Peak |

**Note**: Measurements of axial length, maximum width, and maximum thickness are recorded in millimeters; measurements for broken specimens are indicated as incomplee by placing the values within parantheses.

both found and excavated without documentation. Provenience information about the Clovis biface cache recovered from Cluster C at the Lamb Site (Gramly 1999: 28-31, 35-36) is limited to a map of relative artifact densities across a grid of 2 x 2 meter squares excavated in a plowed field.

In summary, it is important to recognize that, with the possible exception of the Clovis cache from East Wennatchee (Gramly 1993), very few of these widely acknowledged caches of early stone tools were documented *in situ* or had their spatial associations recorded before collection. Contextual evidence for interpretation of the McNine assemblage as a cache is limited, but nevertheless more secure than most other reported early caches. In addition, the highly coherent patterning of the raw materials, knapping style, and technological production features within the McNine assemblage is clearly suggestive of the distinctive kinds of characteristics that have defined many other reported Paleoindian stone tool caches. A review of these characteristics and the behavioral interpretations of caching behavior in the Great Basin and throughout the Paleoindian record of North America is provided later in this paper, but first, the basic artifact classifications and competitive descriptions are provided.

## ARTIFACT DESCRIPTIONS AND COMPARISONS

The artifacts within the McNine collection can be classified into six distinctive categories based on technological and morphological criteria (Table 1). These groups include six Parman projectile points (stemmed but unfinished), four late stage preforms (stemmed), five early stage preforms (bipointed), two ovoid biface blanks, one small triangular preform, and one heavy scraper. These preforms and points document a Parman production sequence with three arbitrary stages, which overlap but show slight reductions in size (especially length) and significant changes in shaping goals, mostly related to production of the stem.

Several artifacts exhibit damage from modern rough handling indicated by transverse bending breaks and steep, irregular flaking along the margins where these freshly broken surfaces are readily distinguishable from the original surfaces that are slightly dulled by weathering (Table 2). Three of the projectile points have recent bending fractures that removed the proximal ends of their stems; thus it was not possible to obtain complete measurements of axial length or weight for these artifacts.

Damage may have been more common among the projectile points because of frequent handling following recovery. One projectile point (Specimen 18) was damaged by shattering and a recent bending fracture that removed its tip, resulting in a shouldered midsection fragment. Such bending fractures can commonly occur among relatively thin stone artifacts when they are dropped on hard surfaces or sharply struck with heavy digging implements like picks or shovels. Fresh surfaces on several steep, irregular flake removals are present on one late stage (stemmed) preform (Specimen 4). This pattern is consistent with the kind of artifact damage often associated with careless excavation techniques. This evidence of modern damage lends support to the conclusion that these prehistoric tools were obtained by rough digging in an archaeological deposit.

Careful examination of these artifacts also revealed heavy abrasion on the prominent flake scar ridges of several specimens (Figure 2). This unusual wear pattern results from face-to-face contact and rubbing of stone artifacts during transport. An excellent description of this wear pattern and how it forms is presented in the analysis of the Fenn cache of Clovis bifaces (Frison and Bradley 1999: 81-82). It has been suggested that many of the tools in the Fenn cache were packed in red ochre inside a leather pouch or bag. It is unclear exactly how the McNine bifaces were packed, but this distinctive wear pattern suggests bundled transport following their production, which was halted for different specimens at various points during the manufacturing process.

**Figure 2.** Photographic close-up of transport abrasion wear on flake scar ridges on the face of Specimen 6, the largest early stage preform.

**Table 2.** Technological attributes of post-manufacture wear, damage, and production found in each biface category.

| Attribute | Parman Projectile Points | Late Stage Stemmed Preforms | Early Stage Bipointed Preforms | Ovoid Bifacial Blanks |
|---|---|---|---|---|
| Transport abrasion | n=2 33% | n=3 75% | n=5 100% | n=2 100% |
| Reddish clay residue | n=2 33% | n=3 75% | n=2 40% | n=0 |
| Modern damage | n=3 50% | n=1 25% | n=0 | n=0 |
| Platform remnant | n=0 | n=2 50% | n=0 | n=0 |
| Plano convex cross section | n=2 33% | n=4 100% | n=3 60% | n=2 100% |
| Cortex remnant | n=1 17% | n=1 25% | n=4 80% | n=0 |
| Cortex at both ends of biface | n=0 | n=0 | n=2 40% | n=0 |
| Mended bending fracture remnant | n=0 | n=1 25% | n=0 | n=1 50% |
| Lateral assymetry | n=0 | n=3 75% | n=0 | n=0 |
| Margin abrasion | n=4 66% | n=1 25% | n=0 | n=0 |
| Abraded distal knob | n=4 66% | n=1 25% | n=0 | n=0 |
| Distal tip burination | n=1 17% | n=0 | n=0 | n=0 |
| Totals | n=6 35% | n=4 24% | n=5 29% | n=2 12% |

Note: Bottom totals list row percentage of each biface category while percentage figures in body of the table represent attribute proportions within each biface category (column percentages).

All of the bifacial blanks and preforms in the McNine cache exhibit abrasion patterns indicative of bundled transport, but only two of the projectile points exhibit such wear. It appears that all the McNine biface blanks and preforms were manufactured, then packed and transported to their final resting place, but that only a couple of the points from the unusual sources (i.e. Fox Mountain and Cowhead Lake) were transported in this manner. No evidence of transport abrasion was observed on four of the projectile points and the large scraper, suggesting that these artifacts were packed or transported differently, or that they were not deposited with the rest of the assemblage.

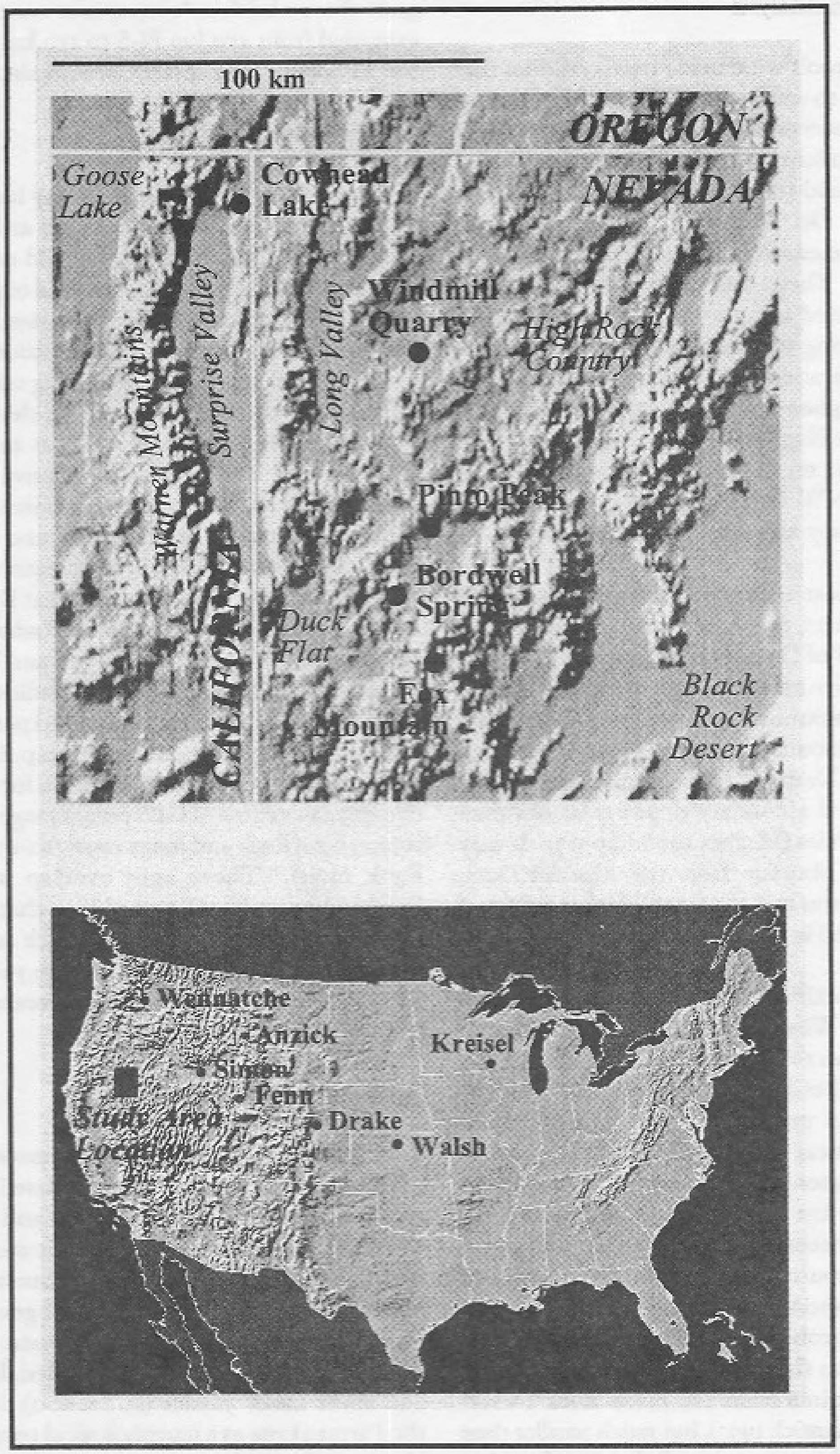


**Figure 3.** Regional map of northwestern Nevada showing the obsidian source locations identified within the McNine assemblage.

Obsidian Source Analysis

All of these tools were made from obsidian that has been traced to sources in NW Nevada. Assignment to these sources has been determined statistically through multivariate discriminant analysis of selected minor and trace elements. This work was performed by Dr. Richard E. Hughes of the Geochemical Research Laboratory in Portola Valley, California. These data on artifact geochemistry were generated using x-ray fluorescence spectrometry following standardized analytical procedures and classification methods that are thoroughly described in Hughes (1986, 1988, 1995). It is important to note that Hughes (1986) maintains extensive comparative data on the geochemistry of obsidian sources in the NW Great Basin and continues to assess the accuracy and reliability of his results.

The three most common sources identified in the collection (n=17, 89%) are found within a 25 km radius E and NE of Duck Flat (Figure 3). This cluster includes twelve artifacts from Bordwell Spring, three from Fox Mountain, and two from Pinto Peak, all located in the southern portion of the High Rock country in NW Nevada. These sources are characterized as related secondary deposits of obsidian cobbles and nodules (Hughes 1986: 325-327). It may be notable that obsidian from the adjacent Duck Flat source (Ericson *et al.* 1976: 233; Hughes 1986:325) is not represented in this assemblage.

The largest artifact, an early stage preform, is assigned to the Windmill Quarry in the Massacre Lake area (Hughes 1986:324), which is approximately 50 km north of Bordwell Spring. In addition, the smallest Parman projectile point is assigned to Cowhead Lake near Bidwell Mountain (Ericson *et al.* 1976:227; Hughes 1986:308), which is located approximately 100 km NNW of Bordwell Spring. Although the archaeological find spot is unknown, these obsidian source areas are within 100 km of each other, suggesting that the construction of this assemblage was probably a local phenomenon. This range is similar to that reported for the sources of obsidian GBS points from the Black Rock Desert in NW Nevada (Amick 1997), but much smaller than the 400 km N-S movements of obsidian found at the Sadmat and Coleman GBS sites in the western Great Basin (Graf 2002). Jones *et al.* (2003:19) suggests these obsidian "conveyance zones" may have extended from 450 km N-S to 150 km E-W during the TP-EH in the central Great Basin.

Chronological Estimate

Obsidian hydration analysis may have been able to provide age estimates for these artifacts, but it was not attempted because it would require defacing the artifacts through the removal of petrographic thin sections. Not only does this destructive sampling result in the loss of aesthetic value (of concern to the owners), but there are growing scientific questions about the reliability of age determinations from this method (Ridings 1996), as well as its ability to provide little more than relative chronological estimates. In any case, it has been clearly demonstrated through stratigraphy and typological cross-dating that GBS points represent some of the earliest cultural remains in the Great Basin (Layton 1972; Bedwell 1973; Bryan 1980; Touhy 1980; Beck and Jones 1997; Beck 1999; Bryan and Touhy 1999; Jones and Beck 1999). Review of radiocarbon dates associated with these early stemmed points suggests a temporal range of 7,080-11,200 b.p. (radiocarbon years), while the radiocarbon dates for the distinctive Parman variety of GBS points range from 8,260-10,290 b.p. (Beck and Jones 1997: 192-196; Jones and Beck 1999). These ages overlap with several Paleoindian cultural complexes that are better known outside the Great Basin, such as Clovis, Agate Basin and Hell Gap (Frison 1991: 39-62), but the physical evidence of such contemporaneity remains sparse (Haynes 2002: 257-260).

Parman Projectile Points

Assignment of the McNine stemmed projectile points and preforms to Parman is based on previous considerations of morphological and geographic variability within the GBS cluster, or what has sometimes been referred to as Western Stemmed (Willig and Aikens 1988:3-5). Following the general distinctions within this cluster (Justice 2002a: 85-101), two major forms are commonly identified: Lake Mojave and Silver Lake. Justice (2002a:100) distinguished the Parman type as a morphological correlate of this cluster and stated:

Parman is perhaps the same form as the

stemmed points excavated from Lind Coulee, Washington, and may warrant being distinguished from lake Mojave and related projectile point types. The Parman type also expresses an indentation at the shoulder/haft juncture and ovate base trait similar to the Silver Lake type.

Originally considered as a variant of the GBS series based on his archaeological research in the High Rock country, Layton (1979:47) defined Parman:

> ... on the basis of surface collections from three localities around the margins of pluvial Lake Parman and excavated specimens from Hanging Rock Shelter. Parman points generally range from 3 to 7 cm in length and thus represent a distinctly shorter length mode than Cougar Mountain specimens. Parman points also manifest considerably more variation in form and flaking than do Cougar Mountain specimens. Parman points usually have broad blades and square to sloping shoulders. A few are single shouldered. Flaking is irregular. Stems are generally proportionally shorter than blades, and stem bases vary from rounded to square. Edge grinding is usually less proportioned than on Cougar Mountain specimens.

Based largely on obsidian hydration evidence, Layton (1972, 1979) believed these Parman points dated around 8,000 - 9,000 b.p. and suggested they could be classified into two distinctive styles – square base and rounded base. Points in the McNine collection are distinctly rounded base. Many scholars have noted the very close similarity of Parman to the shouldered, rounded base" Style 2" points found at Lind Coulee in the channeled scablands of central Washington (Daugherty 1956: 246). Carlson (1983: 79-81) suggested the Lind Coulee tradition may span between 8,700 ± 300 and 10,810 ± 275 b.p. in the Far West, which is similar to the estimates proposed for Parman in the Great Basin.

Despite evidence of mesic climate and exploitation of associated marshland birds and small mammals at Lind Coulee, Daugherty (1962:145) concluded from butchered bison remains that "hunting of a large form of bison was the primary economic activity." But because of the lack of regional comparative evidence, he did not feel "able to state with assurance that the hunting of these animals was not simply a sporadic or seasonal economic activity." Our knowledge of the economic adaptations of Lind Coulee and Parman groups remains uncertain, but it appears that northern Great Basin groups at this time occasionally hunted large ungulates, especially bison, and exploited highly ranked marshland resources (Beck and Jones 1997: 216-221). Although the McNine assemblage has little to contribute directly to this issue, it is worth noting the technological similarities of these impressive projectile points called Parman in the Great Basin with the Lind Coulee points associated with bison hunting.

Six of the McNine artifacts (Figure 4) are classified as projectile points, based on several attributes suggesting the final stages of manufacture for hafting and use. These tools are distinguished by general symmetry, prominent shoulders, and margin grinding on the stem. However, none of these points appear to have been used. In fact, all have an unusual tip preparation suggesting that they represent the penultimate stage of tool manufacture. Five of these points have intentionally blunted knobs with light grinding on their distal tips; they do not have the fine-edged, acute tips expected of functional projectile points. This intentional blunting may represent a way of protecting them from damage before use, which would have required minimal pressure flaking to create an effective tip.

More likely, this blunt knob represents preparation for the unusual form of tip finishing that has been documented among GBS points and sometimes referred to as "squared-off chisel bit" or "burin-faceted" (Tuohy 1969: 139). Notably, Green *et al.* (1998:449) have described this distinctive tip form on the point associated with the terminal Pleistocene human burial at the Buhl site in southern Idaho. Bone collagen dates suggest an age of 10,675± 95 b.p. for this female skeleton (Green *et al.* 1998: 440), while classification of the point suggests affiliation with the Windust type, which is best known from the Columbia Plateau, although sometimes reported from the northern Great Basin. Windust can be distinguished from Parman in having a much shorter and roughly squared base. Although Windust is different in morphology from the GBS cluster, it overlaps temporally as well as geographi-

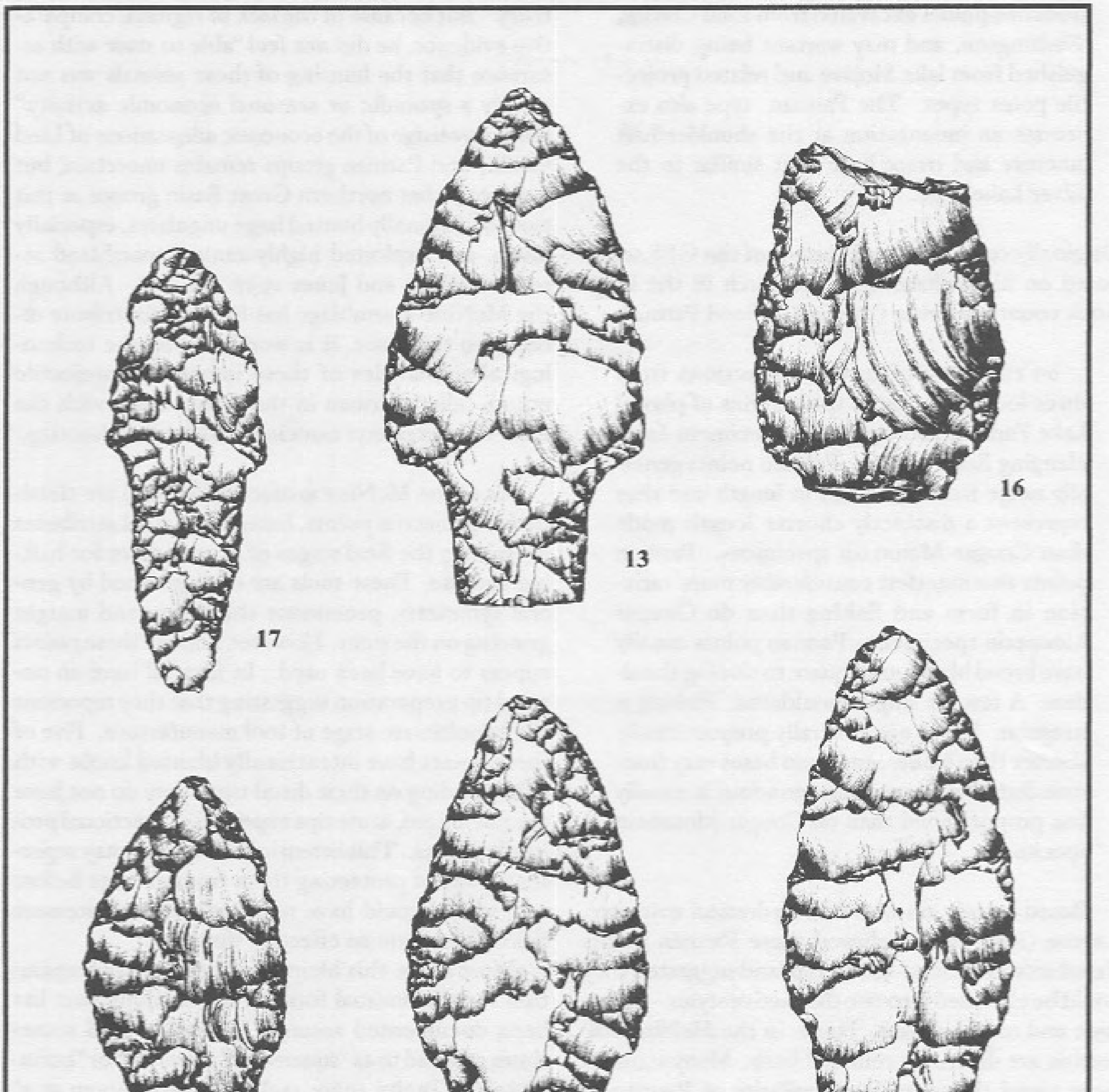


**Figure 4.** The six Parman projectile points in the McNine assemblage.

**Table 3.** Metric attributes of the Parman projectile points in the McNine collection.

| Specimen | Gram Weight | Axial Length | Max Width | Max Thick | Ratio of Width to Thick | Neck Width | Shoulder Width | Blade Thick | Blade Length | Stem Thick | Stem Length |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 41.9 | 129.7 | 45.0 | 7.1 | 6.34 | 34.0 | 41.4 | 7.1 | 79.8 | 6.8 | 49.9 |
| 13 | (37.0) | (103.3) | 51.2 | 7.0 | 7.31 | 28.6 | 51.2 | 7.0 | (76.7) | 6.4 | (26.6) |
| 14 | 37.1 | 115.7 | 47.5 | 8.3 | 5.72 | 33.3 | 41.4 | 8.3 | 73.7 | 6.7 | 42.0 |
| 15 | (23.7) | (83.0) | 40.2 | 6.6 | 6.09 | 27.7 | 36.6 | 6.6 | (57.0) | 6.0 | (26.0) |
| 17 | 16.1 | 89.0 | 31.5 | 6.0 | 5.25 | 23.7 | 31.5 | 5.7 | 43.0 | 6.0 | 46.0 |
| 18 | (31.8) | (71.2) | 44.7 | 7.1 | 6.30 | 30.7 | 44.7 | 7.1 | (63.8) | (7.1) | (7.4) |

**Notes**: Measurements recorded in millimeters; measurements for broken specimens are indicated as incom plete by placing values within parentheses.

cally (Beck and Jones 1997: 189; Justice 2002a :85).

My experimental efforts at replicating this burin-faceted tip suggest that the establishment of a thickened and abraded projection is necessary as a flaking platform for the successful removal of tranchet-like tip sharpening flakes. These experiments sometimes also produced what I considered failures when pressure was misdirected and the sharpening flake ran along the tip margin, creating a burin scar similar to the one on Specimen 12 in the McNine collection. Tuohy (1969) described this type of burin facet in his study of GBS points, but implied that it was produced intentionally.

Continued reduction through the resharpening and rejuvenation of GBS points was likely to cause increases in relative thickness, loss of shoulders, and shortening of the stem. Such typical use-life changes might be expected to result in different classifications within the GBS cluster (e.g., shouldered forms changing to unshouldered). Regardless of these potential effects connected with use and resharpening, there is substantial size variation among the McNine points (Table 3). Beck and Jones (1997: 190) have also noted how various measures of size among GBS points "could be accounted for by resharpening" but have concluded that these "types represent valid distinctions." These relative size differences in the McNine collection are greater in the projectile points than among the preforms or blanks. Interestingly, this characteristic of relatively greater size variation in projectile points is also true of the Clovis caches from Simon (Woods and Titmus 1985) and Fenn (Frison and Bradley 1999).

Overall, the Parman points and preforms in the McNine assemblage are about twice as large as those typically described from the High Rock country (Layton 1979). The McNine bifaces are also much thinner relative to their maximum width, suggesting they were more skillfully made. Regarding the pattern of superior manufacture and making larger than average-sized tools, Chandler (2001:5) remarked that Paleoindian caches almost always contain "oversize specimens as if made to show and not for use." In this sense, McNine conforms to the characteristics of most other Paleoindian caches. Chandler (2001:4) also observed that Paleoindian caches "may contain lithic tools in various stages of reduction, what you might imagine an illustration from a flintknapper's instruction manual to look like." This pattern is replicated in the McNine assemblage, especially with its inclusion of four late-stage and five early-stage preforms.

Late Stage (Stemmed) Preforms

Four of the McNine bifaces are classified as late stage preforms (Figure 5). These preforms are generally characterized by the emerging definition of the stem and lateral asymmetry resulting from incomplete thinning and shaping operations. One of these (Specimen 11) has the same margin grinding

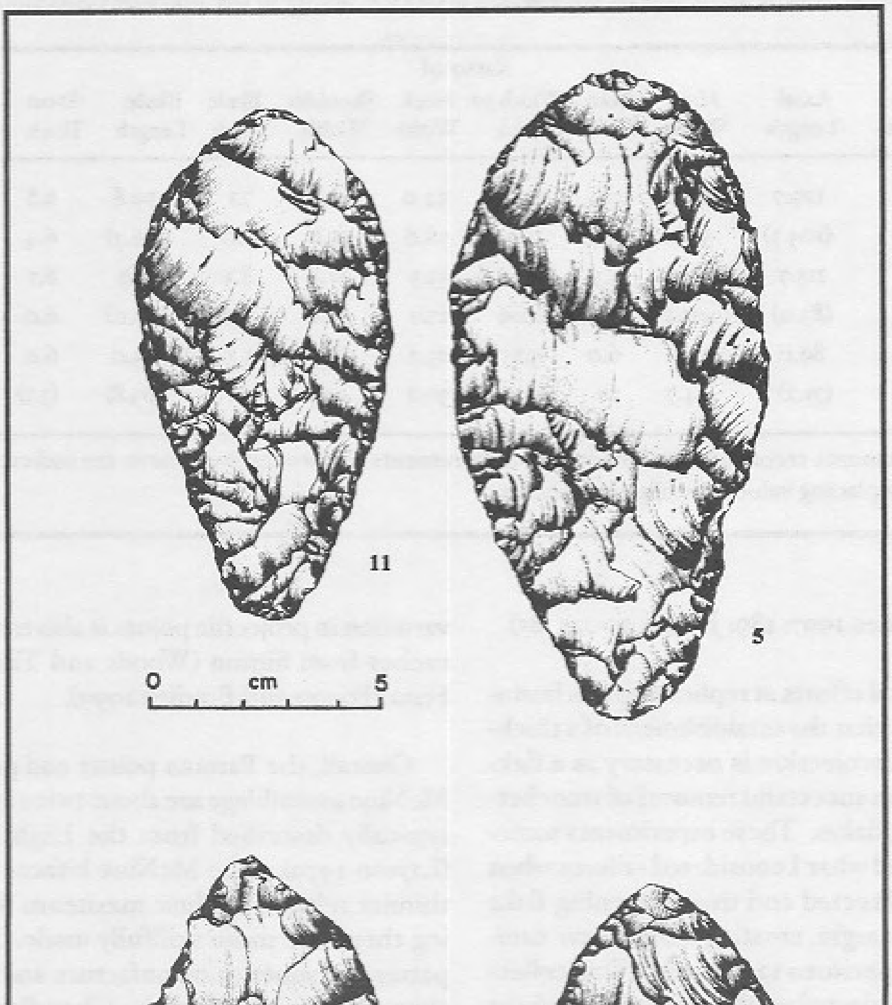


**Figure 5**. The four late stage (stemmed) preforms in the McNine assemblage.

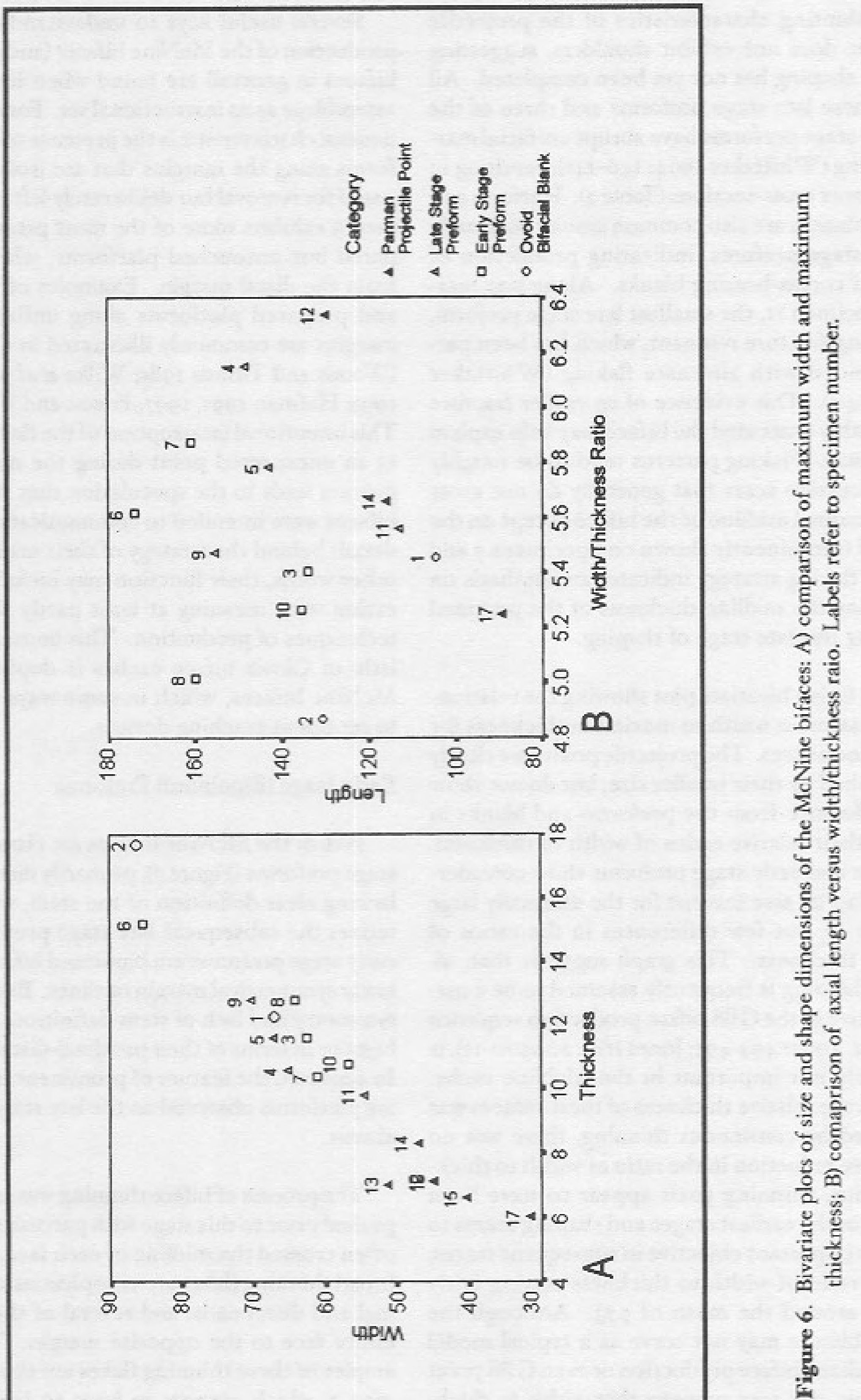


**Figure 6.** Bivariate plots of size and shape dimensions of the McNine bifaces: A) comparison of maximum width and maximum thickness; B) comparison of axial length versus width/thickness raio. Labels refer to specimen number.

and tip blunting characteristics of the projectile points but does not exhibit shoulders, suggesting that final shaping has not yet been completed. All four of these late stage preforms and three of the four early stage preforms have abrupt unifacial margin beveling (Whittaker 1994: 140-141), resulting in plano-convex cross-sections (Table 2). Platform and cortex remnants are also common among both early and late stage prefoms, indicating production of flakes and cortex-bearing blanks. Along one margin of Specimen 11, the smallest late stage preform, is a bending fracture remnant, which has been partially mended with alternate flaking (Whittaker 1994: 13-140). This evidence of an earlier fracture that probably truncated the biface may help explain its small size. Flaking patterns tend to be roughly serial percussion scars that generally do not cross the longitudinal midline of the biface except on the distal end (prominently shown on Specimens 5 and 11). This flaking strategy indicates an emphasis on maintaining the midline thickness of the proximal end during this late stage of shaping.

Figure 6a is a bivariate plot showing the relationship of maximum width to maximum thickness for the McNine bifaces. The projectile points are clearly distinguished by their smaller size, but do not show much difference from the preforms and blanks in terms of their relative ratios of width to thickness. Late stage and early stage preforms show considerable overlap in size (except for the unusually large Specimen 6), but few differences in the ratios of width to thickness. This graph suggests that, although thinning is frequently assumed to be a major objective in the GBS biface production sequence (Beck *et al.* 2002: 494-495; Jones *et al.* 2003:10-11), it is evidently not important in the McNine cache. Although the relative thickness of these bifaces was maintained by continuous thinning, there was no progressive reduction in the ratio of width to thickness. Thus, thinning goals appear to have been achieved in the earliest stages and shaping seems to be a more important objective in subsequent stages, with the ratio of width to thickness staying fairly constant around the mean of 5.73. Although the McNine bifaces may not serve as a typical model for generalized biface production or even GBS point production, this case suggests that width-to-thickness ratios alone may be inadequate for classifying bifaces in terms of their serial order of production.

Several useful keys to understanding the serial production of the McNine bifaces (and perhaps GBS bifaces in general) are found when looking at this assemblage as an instructional set. For example, one unusual characteristic is the presence of striking platforms along the margins that are isolated and prepared for removal but deliberately left intact. Specimen 9 exhibits some of the most prominently prepared but untouched platforms, which protrude from the distal margin. Examples of well-isolated and prepared platforms along unfinished biface margins are commonly illustrated in Clovis caches (Woods and Titmus 1985; Wilke *et al.* 1991; Gramly 1993; Hofman 1995, 1997; Frison and Bradley 1999). This intentional interruption of the flaking sequence at an unexpected point during the manufacturing process leads to the speculation that these unusual bifaces were intended to communicate some of the details behind the strategy of their manufacture. In other words, their function may include communication with meaning at least partly linked to the techniques of production. This unusual characteristic of Clovis biface caches is duplicated in the McNine bifaces, which in some ways may be seen to represent teaching devices.

## Early Stage (Bipointed) Preforms

Five of the McNine bifaces are classified as early stage preforms (Figure 7), primarily distinguished by lacking clear definition of the stem, which characterizes the subsequent late stage preforms. These early stage preforms are bipointed bifaces with generally symmetrical margin outlines. Because of their symmetry and lack of stem definition, they are ambiguous in terms of their proximal-distal orientation. In addition, the feature of prominent isolated striking platforms observed on the late stage preforms is absent.

The process of biface thinning was largely accomplished prior to this stage with percussion flakes that often crossed the midline of each face. These long, broad thinning flakes are conspicuous at both proximal and distal ends, and several of them cross the entire face to the opposite margin. The best examples of these thinning flakes are shown on Specimen 3, which appears to have an irregular lateral margin because of a thinning flake termination that removed a small portion of that edge. This distinc-

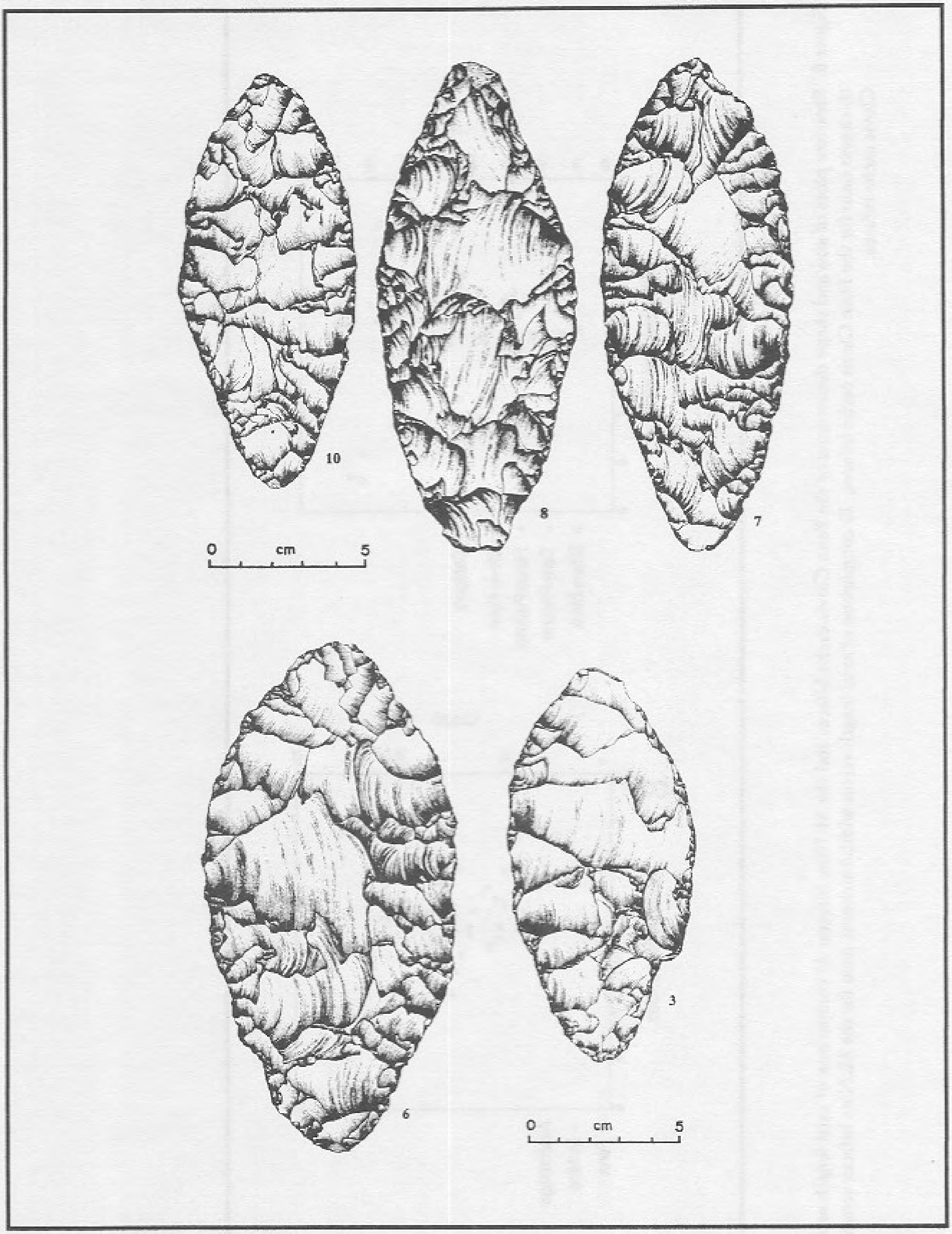


**Figure 7.** The five early stage (bipointed) preforms in the McNine assemblage.

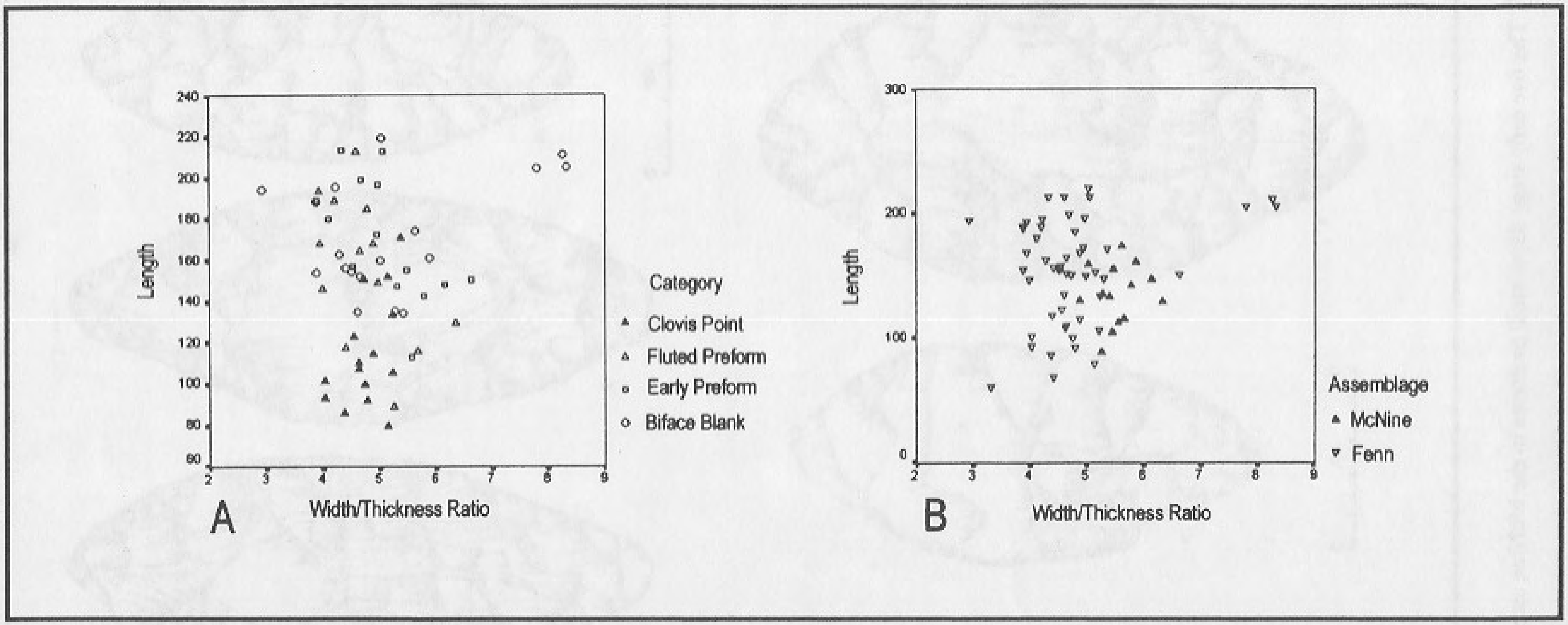


Figure 8. Bivariate plots of size and shape dimensions of the Fenn Clovis cache bifaces and the McNine bifaces: A) comparison of axial length versus width/thickness ratio for the Fenn Clovis cache bifaces; B) comparison of axial length versus width/thickness ratio for the McNine bifaces versus the Fenn Clovis cache bifaces.

tive biface thinning technique, known as overshot flaking, is particularly effective, although it requires superior flaking skills to execute successfully. It is a biface thinning technique that appears to have been invented independently at several different times and places, but it was a hallmark of Clovis biface manufacture and was especially prominent in cache assemblages (Woods and Titmus 1985; Wilke *et al.* 1991; Bradley 1993:253; Gramly 1993; Frison and Bradley 1999).

Overshot flaking has not been commonly observed in technological descriptions of GBS biface manufacture, such as Barbieri's (1937) replication study of the Lake Mohave implements, Tuohy's (1970) analysis of the Coleman quarry and workshop materials, and Hattori's comments on variation observed in the production of stemmed points at Rye Patch (quoted in Rusco 1984: 19). The appearance of overshot flaking on the McNine bifaces is not conspicuous, but it adds another technological affinity with the patterns documented in Clovis biface caches. Such similarities are significant when considering the statements of Fagan (1988: 389), who concludes from his comparative analysis of the Clovis and GBS debitage assemblages found at the Dietz site in south-central Oregon that the "manufacturing techniques and methods of platform preparation" are "strikingly different." We would expect differences between Clovis and GBS lithic technology, but the exact nature of those differences remains poorly studied.

The early preforms in the McNine collection are also characterized by plano-convex cross-sections, resulting from unifacial margin beveling, and cortex remnants including rinds in both ends of the biface (Table 2). Cortex remnants at both tips on Specimen 8 and 10 indicate a desire to maximize the length of these preforms given the limitations of raw material package size. Bivariate comparison of biface length against the width/thickness ratio (Figure 6B) shows how relative thickness is fairly constant (ranging from 4.8 to 6.4), while the production sequence of the McNine preforms and points shows a general trend toward decreasing average length (ranging from 174 to 83 mm). In fact, reduction in length distinguishes these biface stages better than width/thickness ratio, which is normally employed for this purpose. The two ovoid bifacial blanks deviate from this pattern, suggesting they should not be considered as representative of this particular biface production sequence.

There is considerable overlap in the length and width measurements of these early and late stage preforms, but the points are notably smaller, reflecting the greater loss of length and width that occurs during final shaping. Interestingly, similar patterns of difference in size and shape can be seen in the production sequence of the Fenn cache (Figure 8A). These large Clovis bifaces show substantial overlap in their width/thickness ratios regardless of stage category. Likewise, there is notable overlap in the maximum lengths of the Fenn preforms and blanks, while the projectile points are generally distinguished by their smaller size in all dimensions.

The scatterplot in Figure 8B compares length versus width/thickness ratio of the McNine versus Fenn Clovis bifaces. This comparison demonstrates the similar size range of bifaces in these assemblages, except for the largest pieces in the Fenn cache. It also shows a corresponding relationship of width to thickness that is proportional to artifact size. In fact, when comparing equivalent lengths, the McNine bifaces tend to be thinner relative to width, which contradicts the common assumptions that GBS biface technology emphasized the production of thick cross-sections and that fluting produced thinner bifaces. These graphs also show that the three largest platter-shaped biface blanks in the Fenn cache deviate significantly toward exceptionally large size and relative thinness, and may represent a separate class of artifacts. Wilke *et al.* (1991:245-249) have drawn similar conclusions in their analysis of the Anzick cache, in which unusually large Clovis bifaces were distinguished as bifacial flake cores.

Ovoid Bifacial Blanks

Two bifaces in the McNine assemblage differ significantly from the rest (Figure 9). These bifaces are categorized as ovoid biface blanks and have relatively thick cross-sections and short lengths. Their surfaces exhibit random and less refined percussion flaking than the preforms. Both have pronounced plano-convex cross-sections reflecting an asymmetrical reduction strategy with one face reduced further than the other. These two artifacts do not

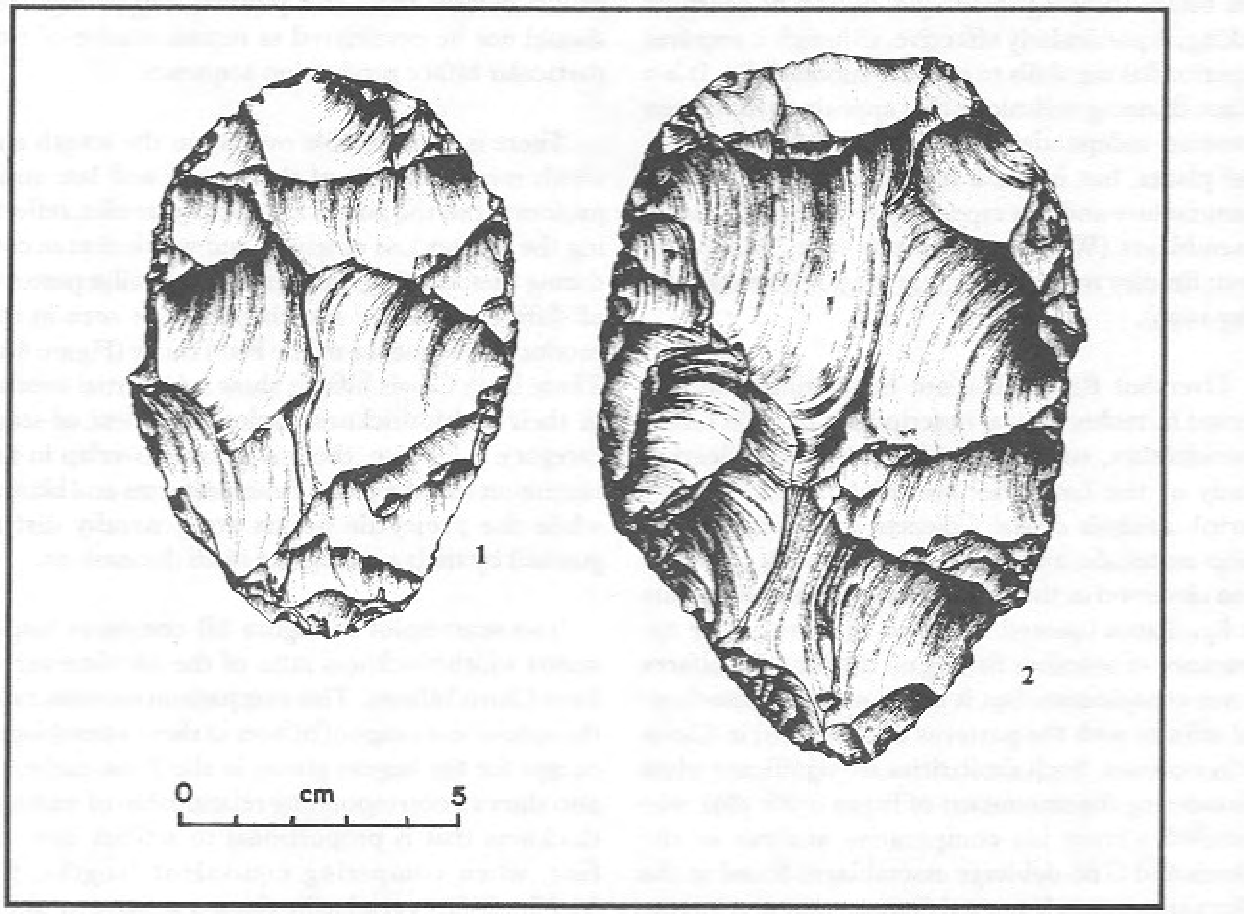


Figure 9. The two ovoid bifacial blanks in the McNine assemblage.

appear to be typical representatives of the biface stage forms that would have lead to the production of the McNine preforms and points. The functional role of these objects is unclear, but they may represent bifacial cores that are reworked fragments of larger bifaces, intended to be used for the production of flake blanks. This possibility is suggested by the partially mended remnant of a bending break observed on the lateral margin of Specimen 2.

Triangular Preform

Specimen 16 is a triangular preform and there are reasons to doubt that it should be associated with the rest (Figure 1). Morphologically, this is a small, plano-convex biface. The distal end exhibits a bending fracture and a cortex remnant possibly associated with the platform of the original flake that served as the blank for its manufacture. This small triangular preform would have been unsuitable for the production of a Parman point and is more consistent with the parameters required for making a Late Archaic or Late Prehistoric point typologically related to the Elko, Rosegate, or Western Triangular clusters (Justice 2002a: 320-378). It appears to have been shaped largely by pressure flaking, whereas percussion flaking is typical of the rest of the McNine assemblage. It is possible that this artifact represents remains of a later occupation that is associated with the earlier assemblage through sediment mixing or careless recovery method.

Despite these reservations, Specimen 16 also exhibits abrasion on both faces, which may have resulted from transport wear. It has been assigned to the Pinto Peak obsidian source, which also appears to have been the source for one of the late (stemmed) preforms (Specimen 5) and the large scraper (Specimen 19). Consequently, it seems to have come from the same region as and experienced post-manufacture abrasion similar to the other specimens in the

McNine collection. It is uncertain how this small triangular preform is associated with the McNine assemblage, but it is distinctive enough in morphology and technology to warrant caution in considering it as part of the early stemmed biface group.

Scraper

Specimen 19 is an unframed artifact that is purportedly associated with this collection, but there are doubts about its inclusion in the McNine assemblage similar to those surrounding Specimen 16. This relatively thick, heavy scraper was assigned to the Pinto Peak obsidian source and does not exhibit any transport abrasion. It was made from a flake or split cobble, indicated by a remnant flake scar on its ventral surface. The dorsal surface exhibits a cortex remnant, while the ventral surface has been flaked along its margins to shape and resharpen the working edges. Because of this ventral surface flaking, it cannot be categorized as a unifacial scraper despite its pronounced plano-convex cross-section and clearly defined abrasive wear along the bit edge. It is clear that this artifact comes from NW Nevada and that it served as a scraping tool, but its chronological age and association with this group of stemmed projectile points and preforms is uncertain. However, many previously reported biface caches, including those of Clovis age, have included other tool forms such as scrapers.

## BIFACE CACHES AND CACHING BEHAVIOR

The contextual information and distinctive technological attributes of the McNine assemblage (especially the large bifaces) suggest it is consistent with previously reported caches of stone tools, including several with Paleoindian associations. This proposal requires consideration of tool caching behavior and biface caches in the archaeological record. Schiffer (1987: 78-93) distinguished several kinds of caches, which he carefully differentiated from grave goods. One common secular form is what he terms a "banking cache," which results when "people hide or bury artifacts, especially valuables, for safekeeping, and these can become lost" (Schiffer 1987: 78). Banking caches can include situations in which tools or gear are stored in anticipation of seasonal activities or unexpected needs (e.g., Binford 1979).

A common form of symbolic caching behavior identified by Schiffer (1987:79) is a "ritual cache," which he defines as "a reasonably discrete concentration of artifacts, usually not found in a secondary refuse deposit; in addition, ritual caches generally contain complete artifacts, sometimes unused that are intact or easily restored." Archaeological interpretation of the prehistoric intention motivating the construction of a cache deposit is complicated and it can be difficult to distinguish between banking caches and ritual caches, especially in the absence of formal shrines (Schiffer 1987: 79; Collins 1999: 175). It may be equally difficult to distinguish grave goods from such caches in the absence of human skeletal remains.

Caches of chipped-stone bifaces have been reported from a wide range of chronological contexts in the northern Great Basin and Columbia Plateau, these caches exemplify a diverse set of technological products and behavioral functions (Muto 1971). Stone tool caches from this region have been suggested to represent utilitarian as well as sacred functions. Utilitarian purposes are commonly assumed when the contexts include unfinished implements that display relative uniformity. However, the diversity of unfinished stage forms represented in the McNine assemblage argues against production for later retrieval, finishing and use. When such caches are found in raw material-scarce environments, they are often interpreted as representing a planned strategy to ameliorate the uneven distribution of materials relative to group mobility patterns. But access to raw materials was not an important problem to overcome in the obsidian-rich environment of the High Rock country where the McNine assemblage was apparently deposited. It should also be pointed out that this assemblage is distinguished by tools that are unbroken (except for damage inflicted during recovery and modern handling); therefore, it does not match the expectations for an assemblage of production discards from a quarry workshop.

When such caches are found in raw material-rich environments, it is sometimes argued that they represent production for exchange. For example, Wilke and McDonald (1989: 51) distinguished several kinds of prehistoric caching behavior, including "raw material caches," that were "most often used in areas where highly desired, expendable commodities such as obsidian were obtained, field processed, and traded." The role of social exchange cannot be ruled out in explaining the movement of lithic materials during the TP-EH occupation of the Great Basin (Jones *et al.* 2003: 9, 37-38), but there is little evidence to suggest a significant level of production for trade at this time. In contrast, there are certain locations within this region where the serial production of standardized bifacial blanks for exchange probably developed during the mid-Holocene.

This region has produced a substantial number of Holocene age caches of bifacial preforms that appear to relate to secular needs. These caches can be attributed to various Archaic traditions and typically contain several to hundreds of percussion-flaked bifaces that are relatively small and uniformly shaped. For example, it has been suggested that the cache of 28 obsidian lanceolate "Haskett-like" projectile points (ranging 47-105 mm in length) from Lava Island Rockshelter in central Oregon was intended to provision hunting parties during the TP-EH (Minor and Toepel 1984, 1989). Likewise, Pavesic (1966) reported a small cache of early Archaic lanceolate preforms made from welded tuff in SE Idaho suggested to date to 4,000 - 6,000 B.C. The China Creek cache from SW Idaho, reported by Kohntopp (2001: 22-23), contained several chert and chalcedony bifaces of similar shapes but variable sizes (ranging form 132 to 88 mm in length), which he proposed may have been made and ritually buried by a single Early Archaic oo Late Plano period knapper between 7,000 and 4,850 B. P. In contrast, the Rock Creek cache from south-central Idaho, which is believed to date about 1,000 B. C., contained 32 ignimbrite bifaces (each approximately 55 x 35 x 8 mm) that are fairly standardized and are interpreted to have been a stash of unretrieved blanks for making Elko series projectile points (Plew and Woods 1986).

Numerous caches that contain 30 to more than 2,000 lanceolate bifaces have been reported from the Deschutes River Basin of central Oregon (Scott *et al.* 1989: 111). Analysis of lanceolate points from the Pahoehoe site in this region led Scott and her colleagues (1986, 1989) to question the purported age and function of the Lava Island points. Furthermore, these authors have argued that many of the biface caches in central Oregon may represent items produced for a regional system of trade and exchange during the Middle and Late Archaic. At the Lava Butte site in this same region, these researchers have documented seven large, finely-flaked, laurel-leaf shaped bifaces (each approximately 140 x 45 mm) believed to be a Middle Archaic cache ( ca. 5,000 B. C. to A. D.), which they propose was specifically produced as part of an intermontane system of trade and transport (Davis and Scott 1991: 48-49).

From the Warner Valley in south-central Oregon, Weide and Weide (1969) reported a cache containing a lump of yellow ochre, a flaking tool, 31 ovate bifaces (approximately 60 x 35 x 8 mm), and a projectile point that were closely packed in a shallow pit. The projectile point resembles those from the Humboldt cluster (Justice 2002a: 148-168), ranging in age from 6,000 B. C. to A. D. 600. They state these artifacts are "not easily interpreted as a group of blanks buried for later use" (Weide and Weide 1969:28), apparently suggesting some ritual function but failing to support this assertion.

Nonetheless, some of the biface caches reported from Archaic occupations of southern Idaho and central Oregon clearly represent ritualistic deposits associated with human burials. For example, the Western Idaho Archaic Burial Complex (Pavesic 1985), which dates from 2,000 to 2,500 B. C., is distinguished by human internments that include dozens to hundreds of large obsidian blanks and preforms and side-notched points. These massive artifacts typically range up to 190 x 110 x 10 mm in size and include distinctive "turkey-tail" forms and bifacial "blades" made from local materials and lacking evidence of transport abrasion.

The earliest known examples of biface caches in the NW U.S. come from the Clovis sites of Simon in Idaho (Butler 1963; Woods and Titmus 1985), East Wennatchee in Washington (Gramly 1993), and Anzick in Montana (Wilke *et al.* 1991). The function of these and several other Clovis caches remains poorly understood. Haynes (2002: 106, 259, 262) preferred to consider them in strictly utilitarian terms as caches of raw material intended to reduce travel costs in regions where lithic materials are scarce. On the other hand, Frison (1999: 272-273) cautiously offered the possibility that these unusual aggregates may represent burial offerings as part of an institutionalized set of ritual activities. Similarly, Stanford (1997a: 36) stated the Drake Clovis cache from north-central Colorado "may have been deposited for ritual purposes." The best case for consideration of these fantastic Clovis biface caches as grave goods is found at Anzick with its partial skeleton of a Clovis age child, which is stained with red ochre (Lahren and Bonnichsen 1974; Owsley and Hunt 2001). If these assemblages represent ritual inclusions associated with human burials, the use of the term "cache" is arguably inappropriate because, according to various authorities, it should refer to temporary storage of utilitarian materials in anticipation of future needs ( Binford 1979; Wilke and McDonald 1989; Kornfeld *et al.* 1990). Regardless of their potential interpretation as burial furniture, it is difficult to maintain a strictly utilitarian function for these unfinished tools of extraordinary size, which are made from exceptional raw materials, stained with red ochre, and carefully concealed in subterranean batches (Collins 1999: 173).

It is possible the McNine collection of unusually large GBS preforms and points may have functioned as a ritual offering or funerary contribution. McNine's notes suggest skeletal material would have been preserved, because he referred to finding small and medium-sized animal skulls. These terse descriptions may represent misidentifications of human (juvenile?) remains or he may not have documented the human remains he encountered. Regardless of these uncertainties, this assemblage is distinguished by several remarkable features that argue against interpretation as a utilitarian cache: 1) none of the objects appear to have been used; even the projectile points seen to have been arrested at a penultimate stage of manufacture; 2) a diverse sequence of diagnostic late stage production forms is represented; 3) these tools are oversized and show evidence of transport wear; 4) greater-than-average skill level characterizes their manufacture; 5) several flaking platforms were carefully isolated and prepared but not removed, suggesting they may have been left intentionally to serve as static representations of the process of Parman point manufacture; and 6) many of these pieces are coated with a reddish-brown mineral film, perhaps red ochre, often associated with ritual internments. Although artifact caches have not previously been associated with either Clovis of GBS sites in the Great Basin, an intriguing and massive 102 x 65 x 13 mm fluted Clovis preform base (comparable in size to those from Fenn, Simon, and East Wennatchee) has been reported from the Tosawihi Quarry in north-central Nevada (Ataman and Drews 1992: 183-185). This unique artifact suggests some connection between the Great Basin and the makers of these large Clovis caches. The McNine collection may suggest that resident makers of GBS points sometimes shared in similar "cache" production behaviors, as did western Clovis groups.

## SUMMARY AND DISCUSSION OF ASSEMBLAGE SIGNIFICANCE

Despite considerable research and debate, the chronological and cultural relationships between the early Stemmed Traditions and the Fluted Point tradition (especially Clovis) have remained unresolved (Bryan 1980; Carlson 1983; Beck and Jones 1997; Bryan and Tuohy 1999; Jones and Beck 1999; Haynes 2002: 67, 258). While there is debate about the exact age ranges of these two distinctive archaeological traditions in the Great Basin, most now agree that they overlapped in time. In his recent monograph on the Clovis culture, Haynes (2002: 258) concluded that, "Clovis-like fluted points may date as late as 10,500 rcybp in the Great Basin ... . Their use may have overlapped with the use of the earliest stemmed points." Beck and Jones (1997: 196-197) have drawn similar conclusions from their careful review of the admittedly slim radiocarbon evidence from the Great Basin.

Archaeologists have long speculated on the possible cultural relationships between the GBS tradition in the Great Basin and Far West with some of the contemporaneous and later Paleoindian groups best known from the Great Plains region who also produced lanceolate, stemmed projectile points, such as Hell Gap and Agate Basin (e.g., Bryan 1980; Bryan and Tuohy 1999; Stanford 1999: 310-316). Although the possible connections between early stemmed point complexes in the Plains and the Great Basin remain poorly understood (Carlson 1983: 82-83; Beck and Jones 1997; Justice 2002b: 90, 105-107), biface caches have also been reported for the Hell Gap and

Agate Basin cultural complexes. A group of 15 oversized Hell Gap bifacial preforms, known as the Walsh cache have been documented from north-central Kansas (Stanford 1997b). These bifaces average 215 x 82 x 110 mm in size and are made from Niobrara chert, which is immediately available. In his illustrated description of the Walsh cache, Stanford (1997b:40) suggested, "Given their large size and the fact that they were cached at the quarry site, it can be postulated that they were offerings made at the quarry ... and may well have been part of the Hell Gap ideology." In addition, Carr and Boszhardt (2003) have documented 74 Agate Basin projectile point preforms from western Wisconsin. This silicified sandstone assemblage, known as the Kriesel cache, appears to represent a utilitarian set of prepared blanks (averaging 95 x 27 x 8 mm) that was stored but never retrieved.

Although contextual evidence is limited for the McNine assemblage, it may represent a stone tool "cache" similar to those reported for Clovis and other Paleoindian cultures. This possibility suggests an interesting behavioral connection among these early human groups. Furthermore, intriguing linkages among several of the diverse TP-EH cultures of western North America are suggested by similarities between the McNine assemblage of GBS bifaces and the Lind Coulee tradition of the Columbia Plateau and the burin-faceted Windust point from the Buhl burial on the Snake River Plain. From the standpoint of the Great Basin, it implies that early Stemmed Tradition groups were not entirely isolated from the cultural dynamics surrounding them. This conclusion is not unexpected, given the apparent complexity of the western cultural landscape at this time (see Beck and Jones 1997). Clearly, the nature of this interaction is poorly understood, but the intriguing evidence from the McNine assemblage suggests that it deserves further investigation.

The production of oversized projectile points during the TP-EH extends to the Dalton culture in the midcontinent of North America. Large Dalton points, sometimes called Sloan (Dalton) points, which range up to 380 mm in length, have been associated with mortuary behavior at the Sloan cemetery in eastern Arkansas (Morse 1997: 17). Walthall and Koldehoff (1998) have argued that the concentration of isolates and caches of Sloan points in the central Mississippi River Valley represents a system of ceremonial exchange that was associated with alliance networks in response to potential resource risk and conflicts between bands. In fact, they noted that production of large, well-made lithic artifacts for use as ritual valuables and burial furniture can be traced throughout the prehistoric record of North America and within the ethnographic records of aboriginal North America and Australia. Caches of oversized stone tools reflecting superior workmanship have also been documented in a a few Upper Paleolithic sites of eastern and central Europe (White 1997: 30). These extensive occurrences may suggest that the ritual activity of stone artifact production and deposition among prehistoric hunter-gatherers had considerable time depth and geographic scale.

The McNine assemblage is impressive but perhaps not within the spectacular realm of Clovis caches like Fenn, Simon, Anzick, and East Wennatchee. Likewise, the Walsh cache of Hell Gap bifaces is impressive but difficult to regard as overwhelming in terms of their technical accomplishment of aesthetic virtue. Such variability may be a reflection of production differences between fluted points and TP-EH stemmed points, which require a careful and skillful manufacturing process but are relatively simple to make (Bradley 1993: 257). Interestingly, Bradley (1993: 257) suggested that the differences between these distinctive TP-EH stone technologies are great enough to demonstrate that stemmed points (i.e. Agate Basin) were not derived from the fluted point tradition (i.e. Folsom.)

The less sensational nature of these possible caches of early stemmed tradition bifaces, like the McNine collection, makes it difficult to differentiate their prehistoric purpose as utilitarian or ritual. It is hard to know exactly what kind of behavior the McNine assemblage represented because the analysis of similar caches has shown that the interpretation of function may depend more on context than content. Lamentably, for many of the early lithic caches in North America, contextual information is minimal. But, as noted by Collins (1999: 177), it is still important that archaeologists carefully document and analyze these assemblages to expand our understanding of their place in the lifeways and adaptive strategies of these colonizing populations.

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