Fluted Point Recovered from San Diego County Excavation

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The granitic Peninsular Range topography of extreme northeastern San Diego County hides the remote, high mountain basin aptly named Lost Valley. The Anthropology Department of San Diego State University conducted an archaeology field school from 1997 to 2003 under the tutelage of Dr. Larry L. Leach. During the summer session of 2002, a fluted point was surprisingly shoveled into a 6-mm (1/4-in.) screen. Having passed through multiple levels of late prehistoric Cupeño domiciliation, several levels of sterile, sandy subsoil, and just centimeters above the exfoliating granitic bedrock, all other work at the site was halted to focus on recovering any and all pertinent data. This preliminary report lays out the known data, some hypotheses, and a tentative scheme for continuing research on this artifact, its environment, and what it all can tell us about the past.

The site, CA-SDI-2506, or "The Bog Site," is located in the Lost Valley Boy Scout Reservation in a mountain valley approximately midway between the low desert of Imperial County and the higher inland Warner Valley and Lake Henshaw. This site is one of several among a complex of sites located around Shingle Spring in the east end of the valley (Figure 1). Lost Valley was quite possibly the location of a small Pleistocene pluvial lake, as the valley bottom is near-level grassland with no trees or brush species that are common along the periphery of the basin. The site complex is less than 500 m from this former lakeshore and is adjacent to the tenacious spring that has remained productive even through 12 years of drought.

Up to the 2002 field season the site had been determined to be a late prehistoric to protohistoric Cupeño seasonal base camp with evidence of structures, hearths, milling stations, ground stone artifacts, middens, faunal remains, ceramic manufacture, lithic and bone tool production, and items of body adornment (Fleming 1999; Kidder and Leach 1981). There is also the possibility that this site may have been occupied on a year-round basis, at least intermittently, in the past. Within our excavations in SDI-2506, two possible Elko projectile points were collected, but their assignment to this classification is somewhat tenuous due to their incomplete condition, the thickness in relation to overall size, the "uniqueness" of the shape, and the inferior milky quartz material from which they were fashioned. These two artifacts may add an early prehistoric phase of occupation to the site, but the uncertainty inherent in the "possible" status of these examples necessitates that we exercise caution. Earlier investigations of the nearby sites hinted at occupations from Late Paleoindian times, represented in the form of "two large biface preforms and extensive site depth" (Pignolio et al. 1998:149).

The 2 m^2 unit from which the obsidian fluted point was excavated reached bedrock at between 100 and 130 cm, where the only other archaeological evidence found at that depth was a feature consisting of a grouped collection of four near-fist-sized gneiss-schist cobbles, two of which may possibly be cores. The surface geology of the area is mainly exfoliating, decomposing granite with nearby outcrops of quartz, gneiss, schist (McCulloch 1984), and at least one source of black tourmaline crystal that is represented throughout the excavations embedded in several quartz cores, flakes, and cobbles. The nearest presently known obsidian sources to this site are the Obsidian Butte locale to the southeast, and the Coso complex of quarries to the north. Both sources produce a dark gray material of varying quality. Visual sourcing suggested that this particular material was from the Obsidian Butte source since it appeared to present a slightly grainy texture visible only on a small basal portion where a tiny chip was inadvertently broken off during removal from its long stasis. This chip revealed an

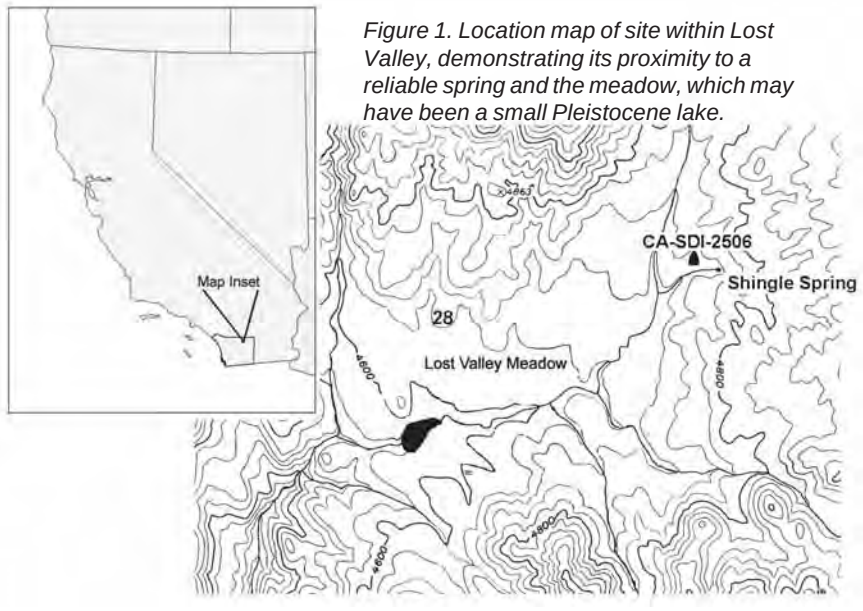

Figure 1. Location map of site within Lost Valley, demonstrating its proximity to a reliable spring and the meadow, which may have been a small Pleistocene lake.

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inclusion of a whitish mineral or pumice-like material that may have likely aided in the breakage because of the inherent fragility the inclusion would have caused. Since the presentation of this paper at the 2006 SCA Annual Meeting, the specimen was shipped to Dr. Richard Hughes, Director of Geochemical Laboratories in Portola Valley, California, for sourcing analysis using energy dispersive x-ray fluorescence (xrf). Quite unexpectedly, the results determined Casa Diablo Complex, specifically Lookout Mountain, as the source of the material (Hughes 2006).

The calibrated depth of deposition cannot be considered a highly reliable factor for determining age, as there is virtually no stratification visually observable. Bioturbation from tree roots and burrowing animals has caused disturbance through the unit and may have aided in movement of the point to its low depth. However, those disturbances seem limited to more recent deposition in the unit. Some plausibility of antiquity may be suggested here from the fact that the point was found at the lowest level possible, near the bedrock limit and that no other known, relatively recent artifacts had reached this depth. The fact that the obsidian material traveled more than 560 straight-line km from its geologic source supports the assumption that a nomadic, hunter-gatherer people were the transporting conveyors.

Thus far we have opted against getting an obsidian hydration date since it would require destructive means. Initially there was a possibility that the inadvertently removed basal chip could be used for this analysis, but it was not to be. We sent the specimen to Tom Origer of Tom Origer and Associates, Rohnert Park, California, for his expert opinion. Mr. Origer presented the options, only one of which was nondestructive, and that was to *not* perform a hydration analysis (Origer, personal communication 2006).

The next form of research to be conducted is currently under way. A protein residue analysis is in progress at the Paleo Research Institute in Golden, Colorado, under the direction of Dr. Linda Scott Cummings, and we expect the results soon.

ENVIRONMENT

During the terminal Pleistocene– early Holocene, it is commonly accepted that the Lost Valley area was cooler and wetter than today. R. Scott Anderson et al. (2002) have demonstrated through core samples, in an area not far from this location, that vegetation communities had lowered some 900 m in elevation, and temperatures were 4° to 5° C cooler during the Middle Wisconsin than what we typically observe today. Despite 12 years of recent drought, several species of oak (*Quercus* sp.) are surviving here, as are a cluster of incense cedar (*Calocedrus decurrens*) near the permanent spring. Pines (*Pinus coulteri, P. monophylla, P. quadrifolia*) are the predominant tree species today, and they are dispersed throughout the valley and up the mountain slopes (Gaughen 2001). The drought situation is taking its toll on the pines. Dead and dying trees are becoming more common as the near-surface groundwater sources desiccate out of the reach of their roots. There has been an obviously noticeable deterioration in tree health just since the 2002 summer field season. Throughout the 2003 field school, the distant drone of the chainsaws commonly broke the ambiance of serenity, a forlorn fugue of doom divulging the necrosis of another dendroid sentinel. After the excavation project was terminated, a wildfire devastated the area despite the preventative efforts of the property management personnel to reduce the threat with the removal of those dead and dying trees. A subsequent high seasonal, near-record rainfall has further altered the local environment, as has probably occurred at numerous times in the distant past.

PHYSICAL DESCRIPTION

The point is flaked from obsidian that has been determined to be from the Casa Diablo Complex, specifically, Lookout Mountain (Hughes 2006). This is somewhat surprising since the source is approximately 560 km from its terminal provenience. The heavily encrusted patina of the point made the task of visual sourcing difficult, as the only clearly visible portion of the artifact's surface is a small chip from the base that was inadvertently broken off during the process of collecting and transport from the field. The small fragment was retained and will be used wherever possible for analysis, so as to gain as much data possible without any additional detrimental affects to the main portion of the point.

Fluting is restricted to only one face, and visual evidence of basal grinding or polishing is absent to the naked eye (see rendering, Figure 2). However, under higher magnification, two possible points of grinding or smoothing for hafting cordage contact may be seen on the proximal edges. One side shows a slight node that appears to be ground smooth, while the opposite side exhibits a slight indentation with similar qualities. The size of the point fits well within other fluted Paleoindian points found in the west; however, the fluting is somewhat less defined than many, and the blade edges are wholly excurvate or convex, as is the base. The base is somewhat atypical and may suggest reuse after breakage and/or re-shaping for ease of hafting. Flenniken and Raymond (1986) performed experiments on reproductions of late Archaic to early prehistoric Elko points, including breakage and rework. These experiments demonstrate a case for the possibility that our fluted point could have broken at the base and subsequently been reworked.

The obsidian is dark gray to black, glassy to slightly grainy, and exhibits a small inclusion of whitish pumice where the small chip was removed from the base. The overall surface patina is extreme, and without the removed chip it would have been difficult to identify the lithic material as obsidian, much less assess its geologic source.

If this artifact is indeed a Clovis or the western version of a Clovis, it differs from the "classic" Clovis in these ways: (1) the edges of the base and adjacent sides show little sign of grinding or polish except for that mentioned above; (2) the base is not concave as are the "classic" Clovis examples and the western Clovis-like fluted points; (3) fluting occurs on one face of the point only. Although the fluting is restricted to one side it appears that it was an intentional addition since at least two parallel longitudinal flakes were removed in the process of its manufacture. As stated above, the possibility remains that this could be a reworked example of a larger broken point, which could have had

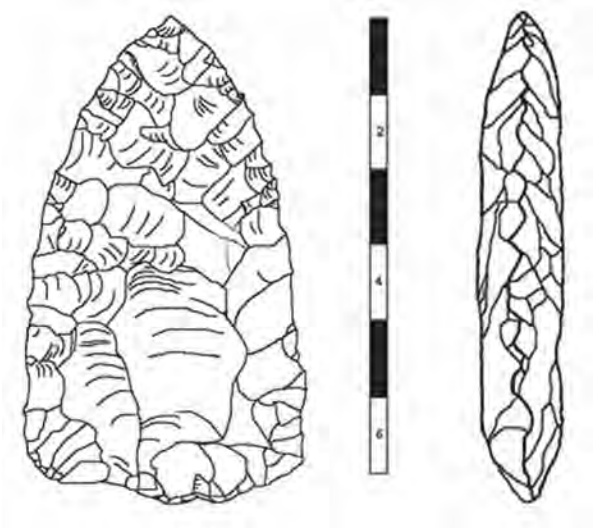

Figure 2. Point digitally sketched from photograph overlays and rendered in Photoshop CS. Sketching lines are somewhat inferred due to opaque patina obscuring the flake removal borders, hatching lines, and the more subtle ripples. The broken chip portion is included in lower left basal area (darker lines). Illustration by George Kline 2006.

longer flutes and/or more of the "classic" Clovis features. When focusing on the broken chip, the basal portion of the point appears to possibly have been stemmed, but the presence of a stemmed base does not equate to the presence of fluting. The thick, crusty patina obscures much of the visual directional fracturing and flaking clues. More could possibly be learned in this sphere from further research and after a rudimentary cleaning. Conchoidal fracture arcs on the fluted portions are vaguely discernable through the crusty scale. A protein residue analysis will be performed before cleaning. The research plan includes analysis of the patina, another potential source of information and evidence.

Conclusions

The discovery of the Paleoindian point at Lost Valley certainly created many questions, and thus far only some have been answered. As of now, obsidian hydration analysis has been rejected due to its destructive nature. Additionally, rind penetration rates have not been calibrated for obsidian that has been weathering for extreme spans of time, so extreme rind thickness will only suggest relative antiquity, but not a reliable calibrated date in years. The single fact that the piece exhibits at least two parallel longitudinal flute-flakes gives some credence to its antiquity. Another line of evidence relating to antiquity was the depth at which it was found. No late prehistoric occupation items had reached this depth from bioturbation. As this specimen was shoveled into a screen, its in situ status was indeed compromised. However, we do know its position within only a few centimeters horizontally, and its precise depth within 2 cm, where it rested for millennia. The fluted side exhibited a thick deposit of what appears to be calcium carbonate and possibly iron oxide, which if this is the case, would suggest that the specimen rested fluted side down. So the "in situ" status was not totally compromised. The only unknown provenience is in what direction the specimen "pointed," which would tell us little if anything.

Having perused a plethora of published materials pertaining to fluted points and Paleo-western bifacial points, I have yet to find another representative similar to this unique example. If one were to suggest that this specimen is a knife, it is indeed a thick and relatively

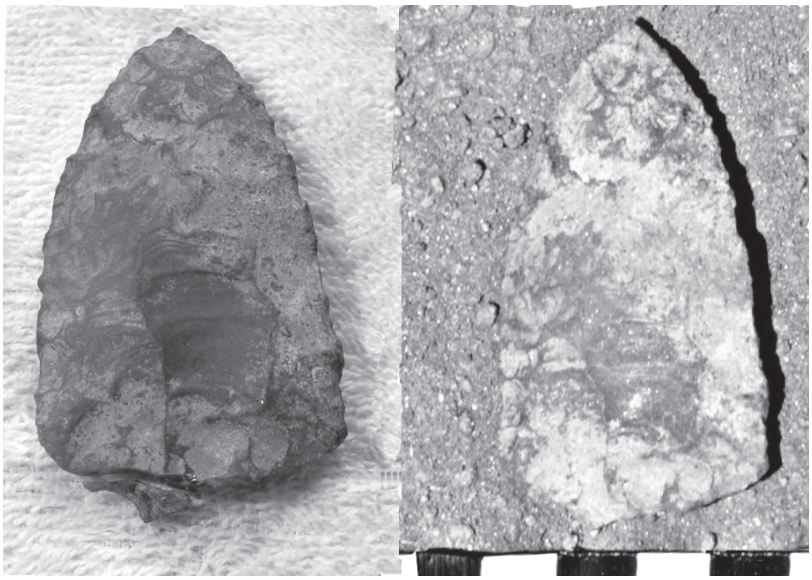

Figure 3. Comparison of lab photo of point (left) and in situ photo with scale (right). George Kline 2006

dull-edged one, and the blade's cutting edge angle is relatively obtuse. This rather blunt blade angle sacrifices sharpness for durability, and it seems that only the tip is rather sharp. Perhaps after publication, and in time, some similar examples may come to light to aid in the identification or classification of this artifact. Since a large portion of western fluted points are housed in private collections and have lost their provenience, this "in-situ" find adds another source of data to the growing, but still exiguous data base of western Paleoindian research.

There is also the remote possibility that this artifact was transported by more recent cultures from another location. If this were true, it would more likely have been intermingled with later artifacts closer to the surface levels. That this find came from below sterile layers separating the more recent Cupeño or Cahuilla occupations suggests a separation in temporal assignment as well.

CONTINUING RESEARCH

The focus of the 2003 field season paid particular attention to the lower levels of adjacent units. At least two units at the same elevation east and west, and one line of three units to the south produced only relatively recent artifact assemblages nearer to the surface. The site will now remain dormant at least until the completion of pending laboratory work and analyses. Further excavation is not planned, nor is there a continuing agreement with the current landowner to conduct additional field schools or other excavation activities.

The next question to be posed will relate to the protein residue analysis. Further analyses will include a technological analysis, a continuing perusal of applicable published materials, and interviews with specialists and colleagues.

Additionally, research on other similar finds in nearby communities and surveys of adjacent lands have been proposed by the authors and are currently in the planning stages. A thorough perusal of published and unpublished documents pertaining to similar finds, and inquiries into local museums will factor into the research as well.

Eventually, after checking for potential residues, microscopic analysis should reveal the presence or absence of use wear or hafting evidence that may be obscured by the thick mineral patina.

Future research and excavations in the area would have to be negotiated with the landowner and do not seem out of the question. Other possibilities for research may include meadow sediment core samples to delineate paleoenvironments and to document the possible existence of a Pleistocene lake. Additional research activities may also include lakeshore test trenches or pits and the survey of adjacent canyon floors leading to other likely sites of past habitation in the desert towards Borrego Springs, the Warner Springs Valley, and the Chihuahua Valley. A. L. Kroeber (1925:689–692) suggested that late prehistoric Cupeño peoples were culturally connected to their neighbors to the east, west, and north, based on linguistic and mythological/religious similarities, and there is a similar likelihood that earlier peoples would have also used these same topographical corridors through the canyons to travel from one valley floor to another in search of sustenance and other resources.

With the recent discoveries predating Clovis sites and the renewed controversy it has fostered in California archaeology, additional data are needed to guide us in our research and in whatever direction it may lead us. The location of this artifact is data in itself. Whether early Americans migrated from east to west or from west to east, Lost Valley presents an environment that could have proven beneficial to travelers or hunters following game or seasonally migrating between the coast and the inland Lake Cahuilla.

Since the bulk of California Paleoindian artifacts present a dearth of provenience data, this find presents another clue as to where we may discover other supporting data. As similar environments and topography are present throughout Southern California, these may be places to reevaluate and reconsider in this context.

QUESTIONS

Fluted points throughout the New World are commonly thought to have regional differences but are classified upon an unofficial set of similarities set around the presence of those longitudinal flutes. The shapes of the blades differ significantly, the basal portions differ from almost flat to the extreme in convexity, and then again the presence of basal or proximal grinding is variable. The similarities are said to outweigh the differences among Clovis points (Haynes 2002:1), but how many differences does it take to make the negative call? The *raison d'être* of the fluted point is commonly agreed to be the taking of large game animals.

The fact that this particular point was found near the edge of a Pleistocene lake adds to the data supporting a Clovis classification. The size alone suggests its use for taking sizable prey. It is the enigmatic negative aspects of this particular example that foster questions. The base of this point is the most puzzling feature. There is a hint of a stemmed base suggesting that it may have broken off and subsequently reworked and reused, or possibly the entire base was broken off and reworked, resulting in the final form. When additional lab data on this artifact are completed, perhaps we will acquire a relative date, which will hopefully lead us to some answers, and undoubtedly to pose new research questions.

If we have learned anything from this find, it is that, as always in archaeology, we never know exactly what will come out of the earth when we excavate. Since this find has originated from a mountain environment, we now have another clue as to where to look for additional finds such as this. The close proximity of Lost Valley to the Pleistocene pluvial lakes of the western Great Basin, and the possibility of the Lost Valley meadow being a silted-in Pleistocene lake may suggest the plausibility of additional sites for continuing research in eastern California and the bordering mountain valleys. Certainly we should endeavor to take another temporally specific gaze at Lost Valley.

Acknowledgements

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