

To Langtry and Jora: A Middle Archaic Dart Point Reduction Sequence- the Pilote Cache

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Abstract

Langtry dart points and their closely aligned variants Val Verde, Arenosa, and Jora are temporal markers of the Middle Archaic Period in the Lower Pecos region of southwest Texas and northern Coahuila. Reduction sequences in the manufacture of these various stemmed points have not been previously described, although some researchers assume the Almagre point, also a defined Middle Archaic type, is a Langtry preform. A collection of lithic materials from Cueva Pilote, a small cave in the Sierra de Encantada of northern Coahuila, Mexico, included a cache of nine bifaces that illustrates the reduction sequence from early-stage preform to completed projectile point.

Introduction

A cache of nine bifaces that illustrates the reduction sequence from early stage preform to completed projectile point was excavated from a small cave in the Sierra de la Encantada of northern Coahuila, Mexico (Figs. 1, 2). The finished dart point is a classic example of the Langtry type which dates the cache to the Middle Archaic San Felipe subperiod, between 3200 and 4100 radiocarbon years ago, in the well-defined cultural chronology of the Lower Pecos River region (Bement 1991; Turpin 1991a). The cache is part of an unusual artifact assemblage that included such diverse items as a score of painted deer scapulae, over 60 marine and fresh-water shell beads, some 40 decorative snail shells, fragments of a domesticated gourd, and approximately 200 agave spines, some of which were still impaled in one of three slabs of agave leaf that apparently served as a form of pin cushion (Turpin and Eling 1999). Ethnographic reports and analogy to documented Mesoamerican religious practices suggest that such an assemblage is consistent with the use of the cave for ritual blood-letting, a hypothesis that was confirmed by blood protein residue analysis of some of the agave spines (Cummins and Puseman 1998). Given the ritual implications of the assemblage as a whole, the cache was probably a votive offering to the sanguinary deities that formed the core of Mesoamerican religion.

The Lower Pecos cultural area centers on the confluences of the Devils and Pecos rivers with the Rio Grande in Val Verde County, Texas and is defined by the distribution of the elaborate Pecos River style rock art for which the area is famous. The culture area is a Middle Archaic

phenomenon further defined by its well-dated index fossils among which the most distinctive are the Langtry and related dart point styles. The discovery of the distinctive polychrome paintings and these characteristic dart point styles in the Serranías del Burro has expanded the culture area into northern Coahuila, as far south as the Arroyo de la Babia, at least during the Middle Archaic Period (Turpin 1991b). Cueva Pilote is on the far fringes of the known range of the Pecos River style pictographs but is well within the broader distribution of the point types discussed here.

Suhm, Krieger and Jelks (1954) originally described the Langtry dart point style as:

Outline: Triangular blade with edges straight to concave or recurved, seldom convex, which is unique among Texas dart-point types. Usually exceedingly thin and finely chipped, even the largest ones. Shoulders prominent to widely outflaring, often uneven; barbs may sweep widely outward. Stems long, contracting, at times nearly parallel-edged or even expanding slightly. Bases are usually concave, even when stem contracts strongly, but may be straight or (rarely) convex. Possibly more than one type is represented, but features intergrade so that separation difficult. Dimensions: Total length about 4 to 7 cm., average about 6 cm. Maximum width across shoulders about 2.2 to 4 cm. Base .6 to 1.6 cm. Wide. Stem often 1/2 total length but ranges to 1/4. (Suhm, Krieger, and Jelks 1954:438).

The variation in the stem shape noted by Suhm, Krieger, and Jelks (1954) led Schuetz (1956) to name a second point type Val Verde which she described as:

The stems of this group are flared at the tips and, in addition, are beveled, usually on the right side of each face although occasionally on the left. Their length varies from 3.5 to 7 cm., their width from 1.9 to 3.5 cm. at the shoulders. (Schuetz 1956:141).

A third variant, recognized but not named by Schuetz, was later defined as the Arenosa point after the type site on the Pecos River near its confluence with the Rio Grande (Dibble 1969, Bement 1991). Arenosa is the Texas equivalent of the Jora type (Zubieta 1990) which Taylor (1966) considered an index marker of the Coahuila Complex, his equivalent of the long Archaic Period, based on his excavations at Frightful Cave and other Cuatro Ciénegas basin sites in Coahuila, Mexico.



Figure 1. Location map.



Figure 2. Cave opening, 20 m below the canyon rim and virtually invisible from above.

In an attempt to better describe the variation between these three forms, a sample of 101 projectile points from the Middle Archaic levels of Arenosa shelter (41VV99) were statistically analyzed (Bement 1991). Through the application of discriminant function analysis, it was determined that the three varieties were statistically separable. Two of these groups matched the descriptions of Langtry and Val Verde respectively. The third group was provisionally called Arenosa and described thusly:

Specimens of the Arenosa type have blades that range from 2.8 to 4.4 cm long, 2.3 to 3.2 cm wide and 0.5 to 0.7 cm thick. Shoulders are square although occasionally have incipient barbs. Stems contract at 96 to 106 degree angles with lengths ranging from 1.6 to 2.0 cm. The bases are from 0.5 to 0.7 cm wide and convex to pointed, adding from 0.06 to 0.08 cm to the length of the stem. Stems and bases are not usually beveled; however, both alternate and stem opposite the base beveling were noted. Haft angles ranged from 70 to 87 degrees with a mean of 79 degrees (Bement 1991:62).

The three point types are primarily differentiated on the basis of stem characteristics. Radiocarbon dates from a number of sites in the Lower Pecos River region and Coahuila indicate that all three types –

Langtry, Val Verde and Arenosa/Jora – are contemporaneous manifestations of the same lithic tradition (Bement 1991; Turpin 1991a). The Almagre point type, another contracting stem form of equivalent age and distribution, is considered to be a preform of the Langtry type based on the wide, thick body and often irregular flaking pattern (Suhm, Krieger and Jelks 1954:396; Turner and Hester 1985:69-70). The recovery of an assemblage of preforms and finished projectile points in Cueva Pilote offers the opportunity to follow the reduction sequence shared by the Langtry and Arenosa/Jora types.

The Cache

Cueva Pilote is a small cave in the northern Encantada Valley south of the Big Bend in the Rio Grande. The cave is 6 meters long by 4 meters wide and contained shallow (<1 meter deep) deposits that were completely excavated (Turpin and Eling 1999). The lithic cache from Cueva Pilote consists of one early stage preform, five middle stage preforms, one late stage preform, one finished Langtry dart point, and one finished Jora dart point. Although their proveniences vary, the bifaces were in a rough circle with the Langtry point on the eastern edge in a unit that contained no other significant artifacts of any type or material.

Technological Aspects

Lithic reduction sequences have been defined for various tools (e.g. Callahan 1979). A common component of such reduction sequences is the tendency of the flintknapper to take several items to a certain stage along the reduction trajectory before finishing any particular specimen. This tendency leads to the accumulation of pieces worked to a similar stage. A typical “staged” sequence includes stops at the blank, preform, and finished tool stages. Depending on the intricacies of the finished product, this over-simplistic reduction sequence may contain eight or more definable stages. One widely recognized reduction sequence is that defined by Callahan (1979) for Paleoindian projectile points. Callahan defines a sequence of stages based on distinct characteristics including width, thickness, type of percussor, and finished morphology.

Archaeological evidence for staging in lithic reduction is found in the recovery of caches containing multiple examples of items at the same point in the reduction sequence. Some caches contain specimens at different stages, providing a more complete view of the reduction sequence. Such is the case at Cueva Pilote.

Staging in the Middle Archaic Lithic Tradition

Nine bifaces from Cueva Pilote display characteristics attributable to the reduction sequence from early-stage preform to finished projectile point. These specimens illustrate the staged approach employed in the manufacture of Langtry and Arenosa/Jora dart points.

Early Stage Preform

The first specimen, A-5, is an early stage preform (Fig. 3a). The proximal and distal end of this biface are already differentiated. All reduction has been accomplished using a direct percussor, probably soft hammer billet. The edges of the stem are alternately beveled, allowing the removal of long thinning flakes that carry over the midline of the biface. In this manner, each surface is being thinned predominantly from one edge. Platforms are ground for strength. Remnants of ground edges separate flake removal scars. The body of the preform is also alternately beveled. The beveling, however, is opposite that seen in the stem, indicating the knapper rotated the artifact in his hand, reversing the distal and proximal ends. As seen on the stem, the thinning flakes traverse the midline of the body and platform edges are ground. Flake removal is widely spaced, producing a distinctly sinuous edge. This early stage preform is 67.7 mm long, 37.7 mm wide, and 10.5 mm thick. Greatest width is found at the incipient shoulders. The stem comprises 22.15% (15 mm) of the entire length and the body the remaining 77.85% (52.7 mm). The stem is 9 mm thick. This specimen is made from tan Edwards Plateau chert and retains a patch of cortex along the edge of one shoulder.

Middle Stage Preforms

The Pilote collection contains five middle stage preforms. The first, C-1, displays a well-developed shoulder (Fig. 3b). The stem is greatly thinned by lateral flaking, forming a distinct stepdown from the shoulders. As seen in the early stage preform, the stem edges are alternately beveled, facilitating the thinning of each surface. On the body, flake removals initiated along the right edge of each surface traverse beyond the midline. This thinning technique reduces the distinctly alternately beveled cross section to a nearly lenticular cross section. The edges of the body are more sinuous than those of the stem. Platforms are lightly ground. Overall, this specimen is 73.6 mm long, 47.2 mm wide and 10 mm thick. The stem is 23.8% (17.5 mm) of the total length and has a thickness of 8 mm, well within the range seen in finished Langtry points (see Bement 1991). The body is 56.1 mm long, or 76.2% of the total length. This specimen is made of banded dark brown Edwards Plateau chert.

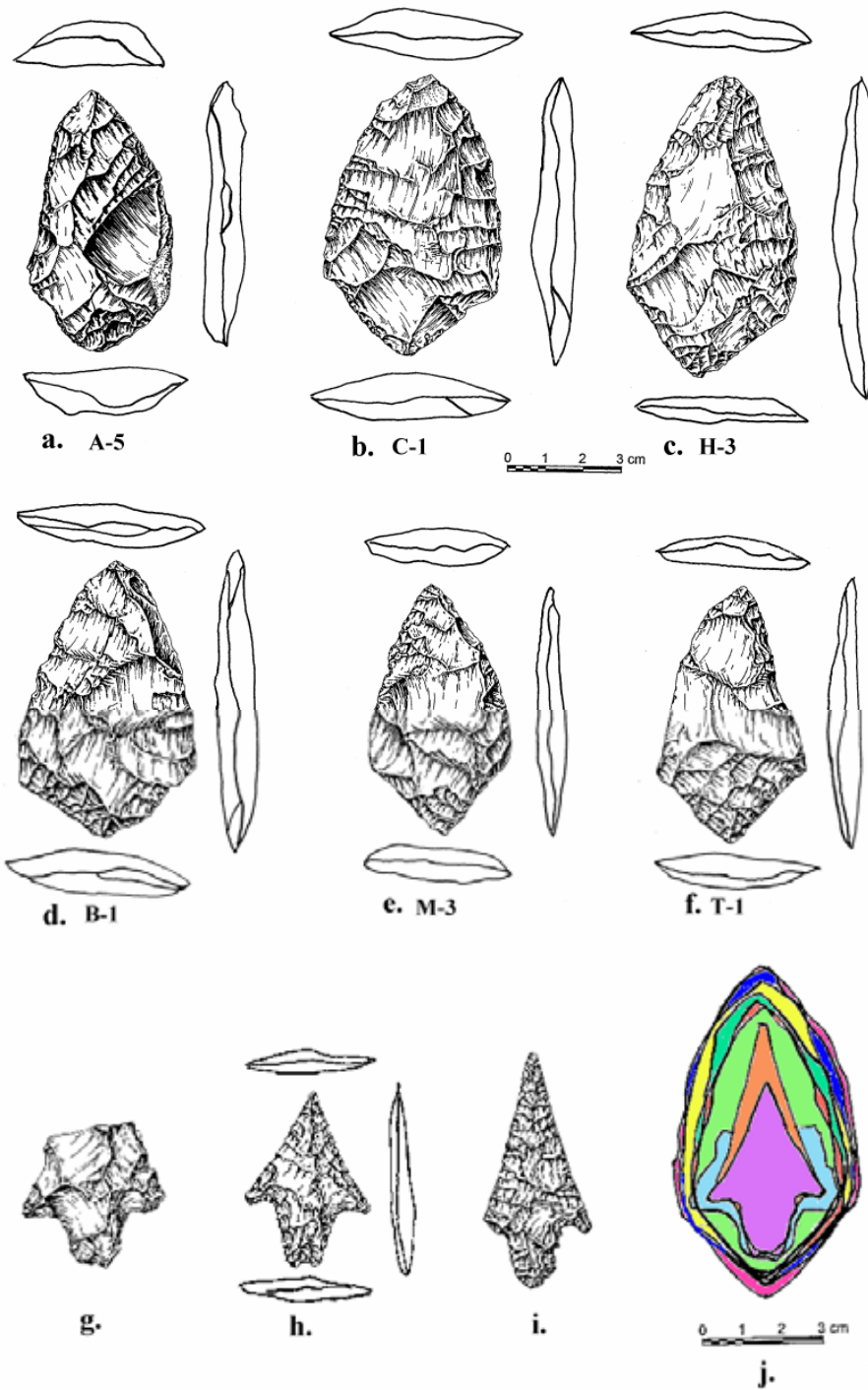


Figure 3. Staged lithic reduction sequence as evidenced in the Pilote cache.

Next in the sequence is H-3, a sharply contracting stemmed preform (Fig. 3c). The stem has been greatly thinned by long flakes struck from the right side of each surface. Short flakes initiated from opposing edges were used to re-establish the beveled edge platforms required for further thinning of the opposite surface. The resulting stem is thin with very regular edges and slightly alternately beveled cross section. In contrast, the body is thick. Long thinning flakes initiate along the right edges of each surface, although some left edge flaking is seen. A remnant of the ventral surface of the original flake blank or possibly a large flake scar from an earlier stage biface is retained on one surface. Platforms are ground. This specimen is 78.3 mm long, 43.4 mm wide and 8.8 mm thick. The stem makes up 24.1% (18.9 mm) of the overall length and is 6 mm thick. The body accounts for 75.9% (59.4 mm) of the overall length. The raw material is a reddish brown to gray tan chert with minute crystalline inclusions.

The next preform, B-1, has a stem that contracts sharply to a point (Fig. 3d). Stem edges are beveled to the same surface, primarily due to an extremely steep flake scar along one edge. The resultant cross section is plano-convex or sub-lenticular. Flake scars extend beyond the midline. The body is alternately beveled with flake scars initiating along the same side of each face. A few flakes initiated along the opposing edge of each face near the shoulders create a lenticular cross section across the shoulders. All edges are lightly ground in preparation for the next series of flake removals. This specimen is 73.3 mm long, 46.6 mm wide and 9 mm thick. The stem accounts for 19.8% (14.5 mm) of the total length and the body the remaining 80.2% (58.8 mm). The stem is 7 mm thick. A locally available dark grey/black chert with white streaks was used for this preform.

Specimen M-3 has a pointed, contracting stem that is well thinned compared to the body (Fig. 3e). The stem is lenticular in cross section and has slightly sinuous edges. The shoulders are well defined. The body is slightly twisted from alternate beveling. Flake scars traverse beyond the midline. Platforms were prepared by grinding and most long flakes initiate from the right edge. The edge is sinuous. This specimen is 65 mm long, 37.2 mm wide and 7.7 mm thick. The stem accounts for 32% (20.6 mm) of overall length; the remaining 68% (44.4 mm) is blade. The stem thickness of 5 mm falls within the range of finished Langtry points. The raw material is mottled brown Edwards Plateau chert.

The final preform, T-1, has a contracting stem with straight edges, sharp point, and lenticular cross section (Fig. 3f). Edges are ground, possibly in preparation for pressure flaking. Shoulders are well defined and demarcate the juncture of well-thinned stem and thicker body. The body is asymmetrical in outline yet has a lenticular cross section. An

impurity in the stone caused a fracture plane near one edge. The opposing edge is irregular and sinuous. Specimen length, width, and thickness are 67.5 mm, 39 mm, and 7.6 mm, respectively. The stem accounts for 26.2% (17.7 mm) total length, leaving 73.8% (49.8 mm) for the body. Both stem and body are within the thickness range of complete Langtry points. This preform was made from speckled gray Edwards Plateau chert.

Late Stage Preform

A single specimen illustrates the stage intermediate between the preforms and the finished Langtry point (Fig. 3g). This specimen was broken mid-blade during the reduction process, probably when the knapper attempted to remove the stack of incomplete or premature flake terminations on one surface. The body has a slightly beveled cross section. The stem cross section is lenticular. This broken specimen is 38.8 mm wide and 6.6 mm thick. It is made of local dark chert.

Finished Projectile Points

A complete Langtry point has finely chipped edges, resulting from the meticulous removal of pressure flakes from the stem and body edges (Fig. 3h). The blade is lenticular in cross section. The stem is alternately beveled. The base is slightly concave and beveled to one surface. The shoulders are slightly asymmetrically placed with short barbs. This specimen is 43.0 mm long, 29.4 mm wide, and 4.8 mm thick and made of gray Edwards Plateau chert.

The other finished specimen is a Jora point (Fig. 3i) that is missing its distal tip and one barb. The edges of the body are slightly concave. The shoulders are symmetrically placed and form short barbs. The contracting stem joins a round base. The body of the point is lenticular in cross section as is the stem. This specimen is 56.4 mm long, 26.8 mm wide, and 5.2 mm thick. It is made of local black chert.

Discussion

The nine bifaces recovered from Cueva Pilote describe the reduction sequence from early stage preform, middle stage preform, late stage preform, to completed projectile point. Overlapping the outline of the nine bifaces illustrates the reduction sequence of this lithic tradition (Fig. 3j). It is assumed that the sequence begins with a large flake blank obtained from cobble sources. This is supported by the retention of a small patch of cortex on the earliest stage preform (A-5) and a possible remnant of the ventral surface of the original flake on specimen H-3.

The bifaces at different stages in the reduction sequence display characteristics from an earlier stage, while new attributes are formed. In general, the preforms transform subtriangular or teardrop bifaces into bipointed forms with distinct shoulder and stem attributes. During the reduction trajectory, stems are fashioned first, while the bodies are mostly ignored until final shaping. Soft hammer percussion dominates this stage. Final shaping of the stem and body through pressure flaking ensures lenticular cross sections with only a hint of the alternate beveling seen in the earlier stage preforms. Only the Langtry type retains alternately beveled stems.

The finished projectile points are of the Langtry and Jora (Arenosa) types, indicating the reduction sequence is identical for both. Characteristics discriminating the two types result during the final shaping of the stem and base. A similar reduction sequence is postulated for the Val Verde type. The only difference is the need for a wider stem to afford the width for the flaring base of the Val Verde type.

Although very little information from excavated contexts has come out of Coahuila, the tentative distribution of the various types shows a correlation between Langtry and Val Verde dart points and the Pecos River style pictographs, thus underscoring the regionalization that defines the Middle Archaic San Felipe subperiod. The mixture of lithic raw materials in the cache reflects some form of connection between Pilote and the Edwards Plateau. Jora dart points have a much wider distribution in Mexico, extending as far south as Torreón, east into Nuevo León and Tamaulipas, and west into Chihuahua and the Big Bend area of Texas (Zubieta 1999). The distributions overlap somewhere between the Sierra de la Encantada and the Rio Grande and may reflect a transitional contact zone between ethnic groups who shared a lithic tradition but developed their own concept of style.

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