

Preliminary Findings on the Bifacial Implements from the Verde Valley National Monuments

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This brief write-up provides a general description of the analyzed flaked stone collection, specific to bifacial implements, recovered from Tuzigoot (TUZI) (including N:4:3 [ASM] [Hatalacva Pueblo]), Montezuma Well (MOWE) (including O:5:93 [ASM] [Swallet Cave], O:5:92 [ASM], O:5:46 [ASM], [O:5:92 [ASM], and NA 4609A), and Montezuma Castle (MOCA) (including sites O:5:95 [ASM] [Castle A], O:5:78 [ASM], O:5:41-42 [ASM], and an isolated find) National Monuments, with more in-depth discussion pulled from Bryce and Bailey (2013). We analyzed 401 bifacial tools, approximately 82 percent of the total collection and include notable variability in both projectile points and bifaces. The 401 tools analyzed include 31 bifaces (bifaces, preforms, knives, and double bitted axes), 11 drills, and 360 projectile points. Most of these are from TUZI (n = 308), followed by MOCA (n = 87), MOWE (n = 5), and unknown (n = 1) contexts.

Thirty-one bifaces, divided into small and large forms, and including knives, have been analyzed. Large bifaces are defined as being at least 75 mm long or 30 mm wide. This measure is based on the size of Early Agricultural preforms used in dart point manufacture (for examples see Bryce 2010; Geib 2011; Lindsay et al. 1968), which microscopic analysis has shown functioned as hafted knives (Phil Geib, personal communication, August 2007). This category also includes preforms and unfinished points. Biface manufacture included soft hammer percussion, pressure, and a combination of both. Interestingly, a few of the well made pieces exhibit breaks followed by poorly executed attempts to rework the breaks.

Large bifaces outnumber the smaller bifaces with manufacture varying from decent to expert. The frequencies suggest larger forms were both preferred and manufactured during the Formative Era occupation. The morphology of the biface assemblage varies greatly from expert to well made and symmetrical to asymmetrical. Many of the asymmetrical forms exhibit rejuvenated edges as well as the straight edge being dulled, or backed, presumably so that the implement could be held in the hand rather than hafted for use. Based on backing and the presence of multiple asymmetrical bifaces, we believe that this form is intentional, being used as an implement held resting against the hand rather than hafted. In addition, three of the bifaces exhibit symmetry in form, finished edges, and thinness indicative of preforms for large points or perhaps knives. Of the expertly crafted bifaces, one in particular has garnered considerable attention. While others have stated that this biface fragment was crafted during the Clovis period, in depth analysis shows that the biface 1. is not Clovis and 2. was most likely the product of a flintknapper living during the occupation of Tuzigoot Pueblo. The bifaces also include at least one double bitted axe made from schist and exhibiting a red pigment, presumably ochre, dispersed over the blade surfaces.

Both dart (n = 38) and arrow (n = 315) projectile points are present and dominate the collection. Of these, 21 of the dart points and 286 of the arrow points are complete or complete enough to be further classified. The dart points range from Paleolithic to Early Agricultural forms (Table 1). The dart point forms are diverse, with a preference for corner notched forms (n= 9) followed by side notched (n=6), stemmed (n=4) and no haft modification (n=1). Five of the dart points were missing the haft element and two were broken at the notches. Two of the dart points show signs of rejuvenation and use in utilitarian functions as a drill and a hafted scraper. The point reworked into a hafted scraper and the Agate Basin point show overall polish (worn flake scars and sheen development) and/or grinding of the edges suggesting symbolic use.

Table 1
Dart Point Types and Affiliation by Count

Typable Projectile Points	Affiliation	Frequency	Percent of Overall Total
Agate Basin	Late Paleolithic	1	4.8
Northern Side Notched	Early Archaic	1	4.8
Pinto	Middle Archaic	2	9.5
San Jose	Middle Archaic	3	14.3
Cortaro	Middle Archaic - Early Agricultural	1	4.8
San Pedro	Early Agricultural	5	23.8
Basketmaker II/San Pedro	Early Agricultural	2	9.5
Basketmaker II	Early Agricultural	3	14.3
Cienega	Early Agricultural	3	14.3
Total		21	5.2

The arrow points consist of Sinagua, Hohokam, Cohonina, Yavapai, and Ancestral Puebloan types, listed by decreasing frequency (Table 2). The points were manufactured through pressure flaking employing flake blanks. The manufacturing method, however, greatly varied by affiliation, as indicated by flake blank size, orientation, flake scar orientation and sequence, and the resulting form and thickness. As Table 2 shows, Sinagua points, 70.5 percent, vastly outnumber the other types. Based on the similarity of the majority of the Verde Valley Monuments collection points with Northern Sinagua forms, I compared the collection with data from Northern Sinagua sites, focusing on the three most common forms of high side notched, low side notched, and unnotched triangular (Bryce and Bailey 2013).

Comparisons of the three most common forms with points from Northern Sinagua sites indicate that the side notched morphologies are similar, but overall notch placement tends to differ relative to size. Verde Valley points exhibit lower notch placement on both high and low notched forms. Assuming that the stylistic attributes of the point forms serve the purpose of identifying group affiliation (Carr 1995; Wiessner 1983), the commonality of the same three forms is interpreted as a marker of consolidated identity between the two regions. While overall

form is viewed as a stylistic choice, statistical differences in notch height is interpreted as functional and may reflect slightly differing hafting techniques or a preference for a longer blade.

Table 2
Arrow Point Types and Affiliation by Count

Affiliation	Type	Count	Percent
Ancestral Puebloan	Anasazi Side Notched	7	2.2
	Early Pueblo	10	3.2
	sub-total	17	5.4
Cohonina	Red Lake	4	1.3
	Red Lake Serrated	3	1.0
	Red Lake Serrated Notched	3	1.0
	Sitgreaves Serrated	2	0.6
	sub-total	12	3.8
Hohokam	Citrus Side Notched	2	0.6
	Estrella Side Notched	10	3.2
	Hodges Contracting Stem	4	1.3
	Sauceda Side Notched	1	0.3
	Snaketown Barbed	2	0.6
	Snaketown Stemmed	6	1.9
	sub-total	25	7.9
Sinagua	Elden Side Notched	49	15.6
	Fish Tailed Side Notched	2	0.6
	Long Triangle	5	1.6
	Long Triangle Serrated	4	1.3
	Other Side Notched	1	0.3
	Short Serrated	7	2.2
	Sinagua Corner Notched	2	0.6
	Sinagua Side Notched	62	19.7
	Sinagua Triangular	90	28.6
	sub-total	222	70.5
Yavapai	Yavapai Triangular	4	1.3
	Yavapai Tri-notched	6	1.9
	sub-total	10	3.2
Indeterminate	sub-total	29	9.2
Total		315	100.0

Materials include various microcrystalline (chert and jasper) and cryptocrystalline (chalcedony and petrified wood) silicates, igneous toolstone (fgv and obsidian), metamorphic (halleflinta, quartzite, and schist), and manufactured (glass) materials (Table 3). In general, silicates were used more often in the production of bifaces and large points while most of the small points were made of igneous toolstone. Igneous toolstone, particularly obsidian, was preferred for arrow point manufacture. Megascopic identification of the materials, in concert with a comparative collection, shows that the vast majority of the igneous toolstone originates from the Flagstaff region. In particular, Government Mountain and Sitgreaves/RS Hill sources comprise the vast majority of the obsidian while the fine grained volcanics were procured from the Presley Wash source. Only a small amount of obsidian was procured from the Verde Valley source of Topaz Basin. Silicates, particularly chert, comprise a much larger proportion of the Hohokam assemblage than any of the other assemblages. Microcrystalline silicates are primarily from locally available bedrock and alluvial sources.

Table 3
Material Type by Flaked Stone Tool Category

Material	Biface	Double Bit Axe	Drill	Indeter- minate	Knife	Large Point	Preform	Small Point	Total
Chalcedony	1		3	1	1	2	1	1	10
Chert	17		2			25		16	60
FGV	4					9		19	32
Jasper	1		2					1	4
Obsidian	3		4	2	3	2		273	287
Glass								4	4
Halleflinta						1		1	2
Petrified Wood						1			1
Quartzite		1							1
Schist	1								1
Total	27	1	11	3	4	40	1	315	402