A RE-EXAMINATION OF THE OCCUPATION SEQUENCE AT CA-INY-134
(“AYERS’ ROCK”), EASTERN CALIFORNIA

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The Ayers Rock site (CA-INY-134) was excavated around 1962 by the Archaeological Survey Association (ASA), and the collection is curated at the Maturango Museum in Ridgecrest, CA. An analysis of the collection was published by Whitley et al. in 2005. We re-analyzed the collection and conclude that the loci have quite different occupation histories, spanning the Paleoindian Period to proto-historic; the west end of Locus 1, near the “monolith” (the huge boulder referred to as Ayers Rock), had a strong Pinto Period occupation, and a physically disjointed area of the locus was used lightly in the Haiwee and Marana Periods. The other two loci do not have a Pinto component but were used in the Newberry through proto-historic periods. We also found the site to have a previously unrecognized Paleoindian component.

The site at CA-INY-134, in southern Inyo County, California, on Bureau of Land Management (BLM) land and is a site with major archaeological significance, having components from the Paleoindian Period to proto-historic times (it is known informally as “Ayers’ Rock”, Figure 1). The site is at an elevation of approximately 5000 feet and is only 15 km to the obsidian sources in the Coso Volcanic Field (CVF). The site appears to have been occupied seasonally for the exploitation of local seasonal resources (yucca, small seeds such as buckwheat and Indian rice grass, rabbits, and likely bighorn sheep as well as mule deer) as well as the production of lithic artifacts, both biface blanks and finished tools.

The site is named for a large, two-storey house-size granitic boulder bearing red, white, and black pictographs and visually dominating the area of the site (Figure 2). The INY-134 site was excavated in 1962 by the Archaeological Survey Association (ASA), directed by the late Dr. Charles Rozaire of the Southwest Museum, and a brief summary was published in 1962 (Redfeldt 1962). The collection was lost for many years but was subsequently located and returned to the BLM. The collection was analyzed by Whitley et al. in 2003–2004, but the effort was hampered by the poor condition of the collection and a lack of field notes; documentation was largely limited to notes written on containers (Whitley et al. 2005).

The artifact collection includes basketry, cordage, ceramics, lithics, human remains, and a few proto-historic artifacts. Chronological analysis was based entirely on temporally sensitive artifacts and 17 obsidian hydration. The collection as delivered did not include an electronic catalog, so in 2015 the collection was recataloged in its entirety by Kirsten Carroll, a museum intern and curation assistant at the Maturango Museum. As recataloged, the collection comprises 14,367 artifacts. The collection is curated at the Maturango Museum for the BLM.

SITE LAYOUT

The site consists of three principal loci, denoted Shelters 1, 2, and 3 (Figure 3); additional smaller loci were identified in the collection tags and site records but are not addressed here. Also, some additional loci were mentioned in the collection tags, but subsequent efforts could not locate them (Whitley et al. 2005). Shelter 1, which is actually not a shelter per se (i.e., not an overhang) but an open-air locus, is located...
Shelter 1 surrounds the monolith in the center. Shelter 2 is in the boulder field at the upper right corner, and Shelter 3 is in the boulder field to the left of the monolith.

*Figure 1. Ayers Rock Site (CA-INY-134), view north.*

Locus map from Whitley et al. 2005.

*Figure 2. CA-INY-134, Site Location and Shelter Loci.*
Based on the ASA map, with errors corrected based on the grid system. Identification of units C-12, D-12, and P-19 conjectural.

Figure 3. Reconstructed Layout of Shelter 1.

in the vicinity of the monolith with the pictographs, while Shelter 2 is a rockshelter in a granitic boulder field to the northeast. Shelter 3 is also a rockshelter, located to the northwest of the monolith, also in a boulder field.

The ASA maps for Shelter 1 are confusing and poorly labeled (as remarked earlier, no field notes are extant). A field examination of the area around the monolith, and a comparison with Figure 14 in Whitley et al. (2005:56) shows that the correct orientation of the test units is probably as shown in Figure 3. Furthermore, there are clearly typographical errors on the ASA map; the units shown as H-10 and H-9 should be A-10 and A-9, to be consistent with the numbering system. Further, there are two units labeled E-8; the western-most should probably be E-6, to be consistent with the numbering system. Although artifacts were recovered from unit P-19, it is not shown on the map and is inconsistent with the grid system. We assume that the eastern unit labeled E-6 by ASA should be P-19, especially since its change in orientation might prompt a break in the grid numbering system. Finally, units C-12 and D-12 are not shown on the map; we suggest they were located approximately as shown, to be consistent with the grid system.

Unfortunately, the maps were drawn without a scale, except for the monolith itself, so the size of the test units cannot be ascertained. A standard size for test units at the time was 5 x 5 feet, but, judging
from the existing disturbed areas, these units appear to be larger. There seems to be no way to reconstruct test unit size at this point, as the test units were backfilled after completion of excavation.

Shelter 2, to the NE of the monolith, is a rockshelter between two large boulders. (Figure 4). The footprint of the boulders leaves space between them, and they meet overhead to create the shelter which faces north. There is a tunnel between the boulders, oriented approximately north-south, with further evidence of occupation outside the shelter to the south, including a boulder with grinding slicks. The rockshelter is approximately four meters east-west, and seven meters north-south. There is a domelike recess in the ceiling of the shelter, and total height from current floor to ceiling is 197 centimeters. The tunnel-like area is narrow and approximately two meters long, connecting the rockshelter to the exterior on the south.

The ASA map of Shelter 2 in Whitley et al. 2005 (p. 61, Figure 15) does not correspond with the geometry of this rockshelter, but the map of Shelter 3 does (Whitley et al. 2005:66, Figures 17, 18). We thus infer that the ASA maps for Shelters 2 and 3 have been interchanged (easy to do, since the original maps are not labeled). We have reconstructed a map of Shelter 2, based on the ASA “Shelter 3” map and our inspection in the field (Figure 5). Test units I-8 and J-8 are in the narrow “tunnel” area, and unit K-8 is outside the shelter to the south. The location of unit K-10 is conjectural, but in-the-field inspection shows that a test unit was located as shown and it is consistent with the grid numbering system. ASA did not backfill the shelter after excavation but did backfill the external units (K-8 and K-10).

The original ASA map (Whitley et al. 2005:65, Figure 17) shows an additional set of test trenches, labeled “A” and “D.” Inspection of the map shows that trench “D” overlaid test unit G-9, and Trench “A” overlaid test units H-8 and H-9. Most likely the excavation began with these trenches, and the later system was imposed once it became clear how extensive the deposit was. In support of this conjecture, all projectile points recovered from trenches “A” and “D” were shallow, less than 30 inches, while those from H-8 and H-9 were deeper than 30 inches. A further unknown is a small set of artifacts whose provenience is notated as “Shelter 2, test unit A21.” There is no test unit A21 on the maps, but it is probable that it was a subset of “trench A” in Shelter 2.

Shelter 3 is located NW of the monolith. It is a shelter created by one large overhanging boulder and faces south-west. The overall dimensions are 750 centimeters north-south, and 840 centimeters east-west. It, too, has a recessed dome in the ceiling, and the shelter also contains a packrat midden, surprisingly not noted on the ASA maps. ASA did not backfill the shelter after excavation. Lack of safety equipment precluded making internal measurements during our visit, but the overall layout conforms to Figure 15 in Whitley et al. 2005, where it is mis-designated “Shelter 2.” Figure 6 shows this locus, without reconstruction except labeling of the shelter.

THE SHELTER 1 PUZZLE

The age and occupation sequence at Shelter 1, as derived from projectile points and obsidian hydration, has been a conundrum. Analysis of the stratigraphy of the projectile point assemblage has shown that there is no statistically significant difference between Rose Spring and Pinto point depth distributions in Shelter 1 (Rogers and Yohe 2014:5–6). This led to speculation that significant bioturbation had occurred at the site, since the two point types should be separated by a significant depth difference, reflecting the difference in time.

However, this analysis was based on the distribution for the Shelter 1 locus as a whole, and examination on a test unit basis provides a different story. Figure 7 shows a schematic layout of the locus by test unit, with the count of projectile points, preforms, bifaces, and debitage. Note that 84% of the Pinto points (27/32) were recovered from four contiguous test units: C-11, D-11, C-12, and D-12, all of which are located west of the monolith. These units also contained three Elko points and two Humboldt points, and nothing younger. Thus, these test units contain a strong Pinto/Newberry component but no evidence of later occupation.

A detailed review of the obsidian hydration ages for the Pinto points shows that the age for units C-11/C-12 is 6526 ± 1457 cal BP (n=13), and the age for units D-11/D-12 is 5567 ± 1269 cal BP (n=14); a
Figure 4. Layout of Shelter 2, north-east of Shelter 1.
Units I-8 and J-8 are in the “tunnel” area. Unit K-8 is outside the tunnel. Location of unit K-10 is conjectural but is consistent with the grid system. This shelter was mis-identified on ASA maps and by Whitley et al. 2005 as Shelter 3.

*Figure 5. Layout of Test Units in Shelter 2.*
This shelter was mis-identified on ASA maps and by Whitley et al. 2005 as Shelter 2.

Figure 6. Shelter 3, Located north-west of Shelter 1.
PPT – projectile point; PRF – preform; BIF – biface; DEB –debitage. Location of Pinto points is indicated.

Figure 7. Schematic of Shelter 1, showing Lithic Artifact Counts for Each Test Unit.
t-test shows these to be statistically indistinguishable at the 95% CL (t=1.35, threshold=1.96; Rogers and Yohe 2014) On the other hand, the Pinto points from units C-11/C-12 were at a depth of 13.50 ± 7.73 inches while those in units D-11/D-12 were at 25.54 ± 5.76 inches. These are distinguishable at the 95% CL (t=4.44, threshold=1.96). The depth difference can be explained by the slope of the ground, which was subsequently covered by sheet-wash debris, so the specimens from Units C-11/C-12 and D-11/D-12 probably represent the same or related occupation episodes.

The lesson here is that a locus-level analysis can be deceiving, especially if the locus corresponds to the archaeologist’s convenience and expediency, but it does not necessarily reflect ancient use patterns or other behaviors.

**PALEOINDIAN COMPONENT AT THE SITE**

The recataloging of the collection in 2015 led to the identification of additional artifacts indicating Paleoindian use. Eight basal fragments of Great Basin Stemmed (GBS) points were identified, plus four unfinished preforms for GBS points. These were in addition to previously identified Paleoindian artifacts: five Silver Lake points, one Lake Mojave point, and one drill manufactured from a Silver Lake point. Thus, there are a total of 19 identified Paleoindian artifacts from the site, summarized in Table 1.

Figures 8, 9 and 10 show the artifacts. Examination of the GBS basal fragments under a microscope showed basal and proximal edge grinding, probably in preparation for hafting, a phenomenon noted by other researchers examining Paleoindian projectile points in the Desert West (Woods and Titmus 1985; Yohe and Gardner 2016). Figure 11 shows a photograph of the edge grinding under 20X magnification.

The Paleoindian component at the site is not as clearly demarked as the Pinto component. Examination of Table 1 shows that Shelter 1 in particular has been heavily bioturbated, with Paleoindian artifacts recovered from the surface to depths of 24–30 inches. For Shelters 2 and 3 the recovery levels cluster more closely, and indicate fairly deep levels, as would be expected for an early component. Table 2 summarizes the depth of the Paleoindian components at INY-134.

**SITE NARRATIVE**

All three loci have a Paleoindian component, faint, but definitely present. Shelter 1 exhibits, based on projectile points alone, an intensive Pinto and Newberry component west of the monolith, where units C-11/C-12 and D-11/D-12 are located. The presence of 21 preforms and 120 bifaces and biface fragments (not to mention the massive quantities of obsidian debitage) suggests the occupants, having obtained raw materials from the Coso Volcanic Field, were engaged in lithic blank and preform production, possibly for trade. Subsequently, parts of Shelter 1 to the north and east of the monolith were occupied in the Haiwee and Marana Periods. The presence of eight preforms and 64 bifaces and biface fragments again suggest that lithic tool production took place along with subsistence activities based on presence of faunal remains, anthropogenic deposit, and milling implements and bedrock mortars and “slicks.”

Shelters 2 and 3 do not have evidence of a definite Pinto component. There are scattered Pinto points present, but these may have been scavenged from Locus 1 or elsewhere and curated by later peoples. For these two loci the intensive use came in the Newberry Period, again possibly for biface production (Shelter 2: 33 preforms, 111 bifaces and fragments; Shelter 3: 29 preforms, 208 bifaces and fragments). There was intermittent use of these loci through the Haiwee and Marana Periods, with some proto-historic use (suggested by the pictographs and the presence of a 36-caliber lead pistol ball).

We speculate that one of the site functions may have been for lithic preform production, specifically the manufacture from Coso Volcanic Field obsidian of obsidian bifaces, biface blanks, and preforms for trade or exchange. The occupation may have been in the spring or early summer when water is available in the Sierra canyons to the west, as there is no surface water source near the site today, nor any evidence of extinct springs or other water sources (such as bedrock basins or tenajas that may have held usable water.
Table 1. Paleoindian Artifacts from CA-INY-134.

<table>
<thead>
<tr>
<th>CAT. NO.</th>
<th>DESCRIPTION</th>
<th>SHELTER</th>
<th>UNIT</th>
<th>LEVEL</th>
<th>MAT'L</th>
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<tr>
<td>304</td>
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<td>1</td>
<td>C11</td>
<td>6–12</td>
<td>obs</td>
</tr>
<tr>
<td>313</td>
<td>Silver Lake</td>
<td>1</td>
<td>C11</td>
<td>24–30</td>
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<tr>
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<td>GBS preform, unfinished</td>
<td>1</td>
<td>E10</td>
<td>6–12</td>
<td>obs</td>
</tr>
<tr>
<td>363</td>
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<td>Unk</td>
<td>Surf' fgv</td>
<td></td>
</tr>
<tr>
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<td>Silver Lake</td>
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<td>Unk</td>
<td>Surf' ecs</td>
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<td>36–42</td>
<td>obs</td>
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<tr>
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<td>I8</td>
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<td>30–36</td>
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<tr>
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<tr>
<td>679</td>
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<td>12–18</td>
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<td>1291</td>
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<td>E. of quarry</td>
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Table 2. Paleoindian Components at CA-INY-134.

<table>
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<th>SHELTER</th>
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<th>DEPTH STD. DEV, M</th>
<th>REMARKS</th>
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</thead>
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<td>6</td>
<td>0.50</td>
<td>0.27</td>
<td>Heavily disturbed</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>1.20</td>
<td>0.51</td>
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</tr>
<tr>
<td>3</td>
<td>8</td>
<td>0.94</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>unk</td>
<td>unk</td>
<td>Location unknown</td>
</tr>
</tbody>
</table>

year-round). The spring and early summer occupation would further correlate with the availability of various grass seeds and yucca products indigenous to the area. The site also might have been used intermittently as a hunting camp over a long period of time given the types of projectile points recovered, including thrusting spear points, dart points and arrow points. Unfortunately, there have been no faunal or archaeobotanical analyses of materials recovered from the INY-134, but hopefully such studies can be undertaken in the near future to better define the seasonality and specific resource foci by the temporary inhabitants of this intriguing and complex archaeological site.

It is possible that at various points in time, the occupants were possibly from some areas north or west of Coso. Although the site is near the Coso obsidian sources, it is not very convenient for access to the Coso obsidian sources, being approximately 15 km distant. It is also likely that local groups probably dominated the immediate locality of obsidian flows and defended them (Stewart 1938:83), so groups from
Figure 8. Unfinished Preforms for Great Basin Stemmed Points.

Figure 9. Great Basin Stemmed Point Bases.
The drill in the center is remanufactured from a Silver Lake point.

*Figure 10. Great Basin Stemmed Points and Fragments.*

*Figure 11. Edge Grinding on a Great Basin Stemmed Point Base, at 20X Magnification.*
distant regions probably had to camp farther away. Local inhabitants controlling the quarries even may have had “trading stations” in places like Rose Valley; for example, the Rose Spring site (INY-372), at the extreme north end of Rose Valley, that could have served as such a trading station for large bifacial blanks, made available to non-local peoples, since there is strong evidence for the production of such blanks at Rose Spring for 6,000 years (Yohe 1992, 1998). Such a locality had both ample water and local obsidian, the former an additional and significant consideration for the inhabitants of Ayers Rock. In fact, the absence of a perennial water source anywhere near Ayers Rock would have been a limiting factor to long-term occupation. Further, any group from the south would most likely camp to the south, possibly near Little Lake, a perennial water source. They would most likely not walk past Coso to camp to the north, especially given the lack of surface water at Ayers Rock. It is noted that the easiest route from Ayers Rock to the floor of Rose Valley to the west, with access to the obsidian trade routes over the Sierra Nevada, passes by the location where the Hay Ranch biface cache was recovered (Primary Number P-14-010354; FWARG 2010; Gilreath and Hildebrandt 2017).

CONCLUSIONS

The Ayers Rock site (INY-134) shows great time-depth, from Paleoindian through proto-historic. The different loci were used at different times, and there is no indication that they were used simultaneously. The main purpose seems to have been manufacture of bifaces or blanks for trade or exchange, but the lack of specialized studies, including obsidian specific subsources sourcing, additional obsidian hydration studies, radiocarbon dating, vertebrate faunal analysis and archaeobotanical studies limits interpretations. Until such studies can be undertaken, many of our conclusions will remain preliminary. Furthermore, performing analysis at a locus level, as was done by Rogers and Yohe (2014), requires great care to ensure that the archaeologically defined “locus” actually corresponds to distinct areas of usage. If it does not, serious misunderstandings can occur.

ACKNOWLEDGMENTS

We extend our thanks to Don Storm, Ridgecrest BLM archaeologist, for encouraging this research. Kirsten Carrol, Emma Dauplaise, and Daisy Zajicek crawled around in Shelter 2 to make measurements. David Fujii of Epsilon Systems Solutions prepared the figures. Any remaining problems or issues are our responsibility.

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