III. AN ASSESSMENT OF RADIOCARBON DATES FOR THE ROSE SPRING SITE (CA-INY-372), INYO COUNTY, CALIFORNIA

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In 1963, Edward Lanning published his report on the archaeology of the Rose Spring site (CA-Iny-372) Inyo County, California (Lanning, 1963). The site is of considerable importance because it is an unusually deep, stratified deposit producing large numbers of artifacts, particularly projectile points. Many of these projectile points are types which are widely distributed throughout the Great Basin. In 1963 at no other Great Basin site could such a large number of points be sequenced stratigraphically. Lanning's report contained no radiocarbon dates which would firmly anchor in time the important projectile point sequence from the Rose Spring site (cf. Byers, 1964, p. 121). Nonetheless, Lanning had established a sequence of five periods or phases, had assigned guess-dates to the phases, and had designated a number of named projectile point types as general time markers for the phases in which they occurred. The dates were estimates based on thoroughgoing comparisons with other sites in California and the Great Basin. The point types at Rose Spring included several which had been recovered from two stratified sites in 1958 and 1959: Wagon Jack Shelter (NV-Ch-119) at Eastgate, Nevada, and South Fork Shelter (NV-El-11) near Elko, Nevada (Heizer and Baumhoff, 1961). Table I summarizes Lanning's phase chronology and lists the point types.

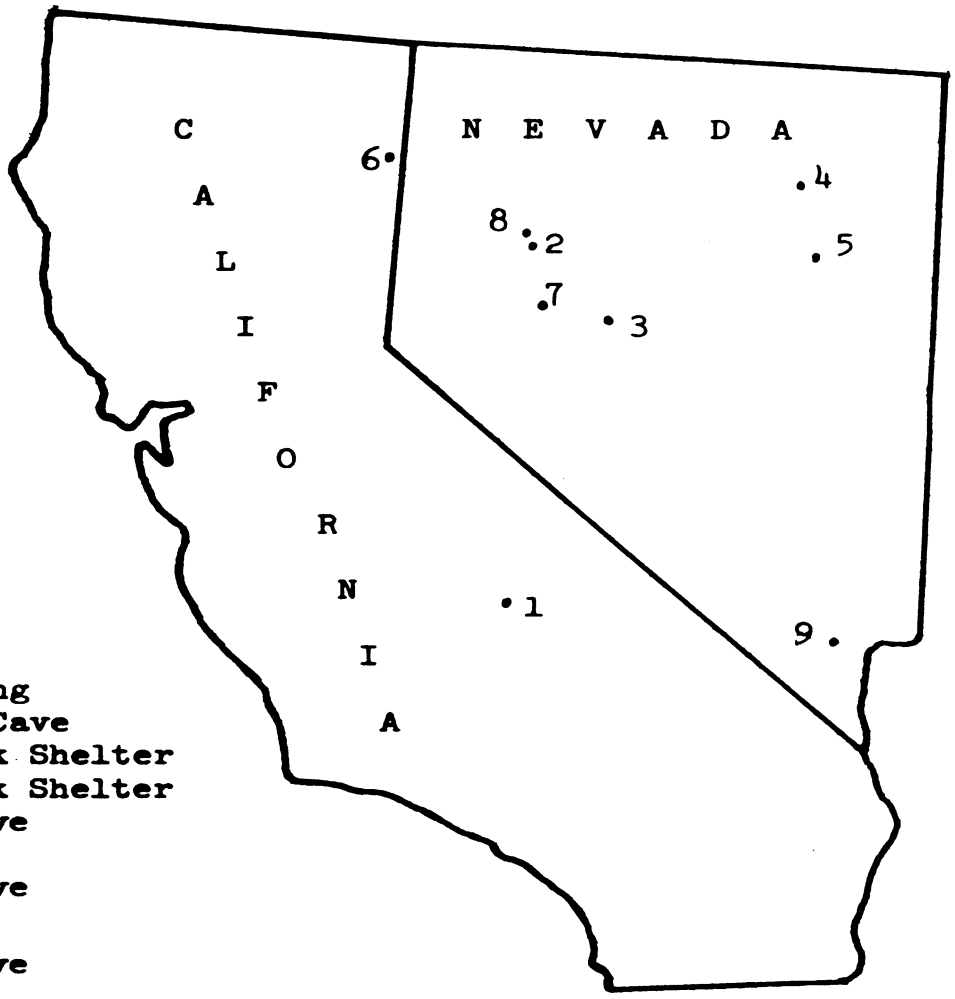
Since the publication of the Rose Spring report in 1963, considerable effort has been directed toward a refinement of Great Basin projectile point sequences. While no site excavated since 1963 has duplicated the long stratified sequence of Rose Spring, a number of other sites for which we now have radiocarbon dates provide the opportunity to secure chronometric dates for particular segments of this sequence. Studies of these sites, or of particular aspects of them, have tended to generally corroborate Lanning's dates as well as affirm the reality of the named point types which he cites.

O'Connell (1967) in a detailed study of the Elko series points, asserts that they date between 1500 B.C. and 600 A.D., a period which is consistent with Lanning's estimate for the floruit of these forms at the Rose Spring site. Clewlow (1967) is also in accord with the general Lanning sequence, and cites a radiocarbon date of 1210 $\pm$ 60 B.P. (UCLA-1071F, discussed in more detail in Tubbs and Berger, 1967) for organic materials associated with the Rose Spring Corner-notched point type at site NV-Ch-18 (Lovelock Cave). From South Fork

Shelter (site NV-El-11) in Elko County, Nevada, there are three radiocarbon dates ranging from 2410 B.C. to 1370 B.C. (LJ-212, UCLA-295, UCLA-296) for the lower part of the deposit in which one Pinto, one Humboldt concave Base A, and one Humboldt Basal Notch point were recovered (Heizer, Baumhoff and Clewlow, 1968). The remainder of the Medithermal point types (i.e. Elko Eared, Elko Corner-notched, Eastgate Expanding Stem, Desert Side-notched, and Cottonwood Triangular points) from the South Fork Shelter site were recovered from above the 72" level from which the 1370 B.C. date was secured. The Wagon Jack Shelter (site NV-Ch-119) at Eastgate (Heizer and Baumhoff, 1961) yielded a date of 980 B.C. (LJ-203) for the bottom of the midden, and thus provided a date for the Elko Eared and Elko Corner-notched points which are stratigraphically earliest at the site. Hidden Cave (NV-Ch-16), in the Stillwater Range near Fallon, has a radiocarbon date of 1094 $\pm$ 200 B.C. (L-28988) for the 32 inch midden (Grosscup, 1958, p.19), a stratigraphic unit from which 2 Elko Eared and 3 Humboldt Concave Base A points were recovered (Roust and Clewlow, 1968). The Rodriguez site (CA-Las-194), in Lassen County, California, has a radiocarbon date of 200 B.C. (L-3209) for the level associated with Elko points, and a date of 900 A.D. (I-3208) in association with Rose Spring Corner-notched and Eastgate Expanding Stem points (O'Connell and Ambro, 1968). At the Hesterlee site (NV-Pe-67) on the edge of Humboldt Sink near Lovelock, charcoal from the hearth of house pit E-2 dates at 1630 A.D. (UCLA-1071-D). This gives an approximate date for the Desert Side-notched, Cottonwood Triangular, and, perhaps, Rose Spring Corner-notched points that occur in abundance there (Cowan and Clewlow, 1968). Recent radiocarbon dates of 450 B.C. (UCLA-1069) and 950 B.C. (UCLA-1223) in association with Gypsum Cave points from Gypsum Cave, in southern Nevada, support Lanning's opinion that this point type was roughly contemporary with Elko Eared points (cf. Heizer and Berger, this report). Most recently, Newark Cave site (NV-WP-107) in eastern Nevada yielded C^{14} dates of about 85 B.C. (WSU-538) for the level associated most strongly with Elko Eared points, and of 1110 A.D. (WSU-463) for the level in which the Rose Spring Corner-notched and Eastgate Expanding Stem points occurred (Fowler, 1968, p.30). Thus it is evident that a number of dates from sites widely scattered throughout the Great Basin show a close correspondence with Lanning's estimates of the age of the Rose Spring material.

The best test of the Rose Spring site phase ages would be to date these by radiocarbon. With this intention five charcoal samples were dated in 1966 at the UCLA Institute of Geophysics. These samples provided a suite of dates (UCLA-1093A, B, C, D, E) which do confirm the original estimates. Samples UCLA-1093A, 1093B, and 1093E were collected during the 1956 excavations of R. A. Riddell, while samples UCLA-1093C and 1093D were obtained in 1961 by J. T. Davis. These samples, their ages and stratigraphic position are shown in Table II.

UCLA-1093A is stratigraphically from the Middle Rose Spring phase and the radiocarbon and estimated ages do not conflict: UCLA-1093B is stratigraphically Early Rose Spring, and again estimated and radiocarbon ages harmonize. Samples UCLA-1093C-E come from levels of the site below Early Rose Spring. These deeper layers were deficient in cultural materials such as projectile points, finds being limited to a small amount of obsidian debitage, 1 scraper, 1 blade, 1 drill, 1 core tool, and a few bits of charcoal. No projectile points were found below 84 inches from the surface, the level which marks, culturally, the bottom of the Early Rose Spring deposit. Lanning (1963, p. 268) believes the culture preceding Early Rose Spring to be the Pinto, known primarily from the Little Lake site 13.5 miles to the south (Harrington, 1957). UCLA-1093C-E may refer to this supposedly pre-Early Rose Spring cultural manifestation. Direct age comparison is not possible since the Little Lake site has not been radiocarbon dated. On the other hand, samples UCLA-1093C-E could refer to the earliest expression of the Early Rose Spring phase. A final decision cannot now be made due to lack of classifiable cultural material from below the 84 inch level. If 1093E does mark the earliest occupation of the site, this would agree with other evidence indicating either re-occupation or expanding settlement in the Great Basin at the end of the Altithermal temperature age (Baumhoff and Heizer, 1965). Whatever the case, the suite of dates contributes importantly to the chronometric foundation for the Early and Middle Rose Spring phases of the Rose Spring site, and are important as "anchor" dates for the Medithermal projectile point sequence in the Great Basin.



Key:
1. Rose Spring
2. Lovelock Cave
3. Wagon Jack Shelter
4. South Fork Shelter
5. Newark Cave
6. Rodriguez
7. Hidden Cave
8. NV-Pe-67
9. Gypsum Cave

Map 1. Great Basin Sites with Radiocarbon dates for projectile points.

Table I.

The Rose Spring Sequence

Proposed by Lanning, 1963

Phase	Depth (level)	Date	Point Types
Cottonwood	0"-24"	1300 A.D. -?	Cottonwood Triangular
Late Rose Spring	24"-36"	500-1300 A.D.	Cottonwood Triangular Rose Spring Corner-notched Eastgate Expanding Stem
Middle Rose Spring	36"-60" part of 60"-72"	500 B.C.-500 A.D.	Elko Eared Elko Corner-notched Gypsum Cave
Early Rose Spring	part of 60"-72" 72"-120"	1500-500 B.C.	Elko Eared Elko Corner-notched Gypsum Cave Humboldt Concave Base A
Little Lake	84"-120"	3000-1500 B.C.	Pinto Lake Mohave

Table II.

The Rose Spring Radiocarbon Dates

Sample	Depth	Age	B.C. date
UCLA-1093A	60-64"	2240 ± 145	290
UCLA-1093B	72-84"	2900 ± 80	950
UCLA-1093C	84-92"	3520 ± 80	1570
UCLA-1093D	96-100"	3580 ± 80	1630
UCLA-1093E	108-120"	3900 ± 180	1950

Table III.

C^{14} Dates for some Great Basin Projectile Point Types

Site	Sample	Age	Date	Associated Point Type
Hesterlee Site (NV-Pe-67)	UCLA-1071D	320 ± 50	1630 A.D.	Cottonwood Triangular, Desert Side-notched
Lovelock Cave (NV-Ch-18)	UCLA-1071F	1210 ± 60	740 A.D.	Rose Spring Corner-notched
Rodriguez (CA-Las-194)	I-3208	1050 ± 100	900 A.D.	Rose Spring Corner-notched, Eastgate Expanding Stem
	I-3209	2150 ± 100	200 B.C.	Elko Eared
Newark Cave (NV-WP-107)	WSU-463	840 ± 340	110 A.D.	Rose Spring Corner-notched, Eastgate Expanding Stem
	WSU-538	2035 ± 315	85 B.C.	Elko Eared
Gypsum Cave	UCLA-1069	2400 ± 60	450 B.C.	Gypsum Cave
	UCLA-1223	2900 ± 80	950 B.C.	Gypsum Cave
Wagon Jack Shelter (NV-Ch-119)	LJ-203	2930 ± 200	980 B.C.	Elko Eared, Elko Corner-notched
Hidden Cave (NV-Ch-16)	L-289BB	3044 ± 200	1094 B.C.	Elko Eared, Humboldt Concave Base A
South Fork Shelter (NV-El-11)	LJ-212	3320 ± 200	1370 B.C.	Humboldt Concave Base A, Humboldt Basal Notch
	UCLA-295	4310 ± 400	2360 B.C.	" " " " " "
	UCLA-296	4360 ± 300	2410 B.C.	" " " " " "

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