43. THE ARCHAEOLOGY OF THE CARSON SINK AREA

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During the summer of 1951, Norman L. Roust and the writer undertook a program of archaeological survey and excavations in the Carson Sink area of central Nevada. The work was sponsored jointly by the University of California and the United States Geological Survey, and directed by Dr. Robert F. Heizer of the University of California and Roger B. Morrison of the U.S. Geological Survey.

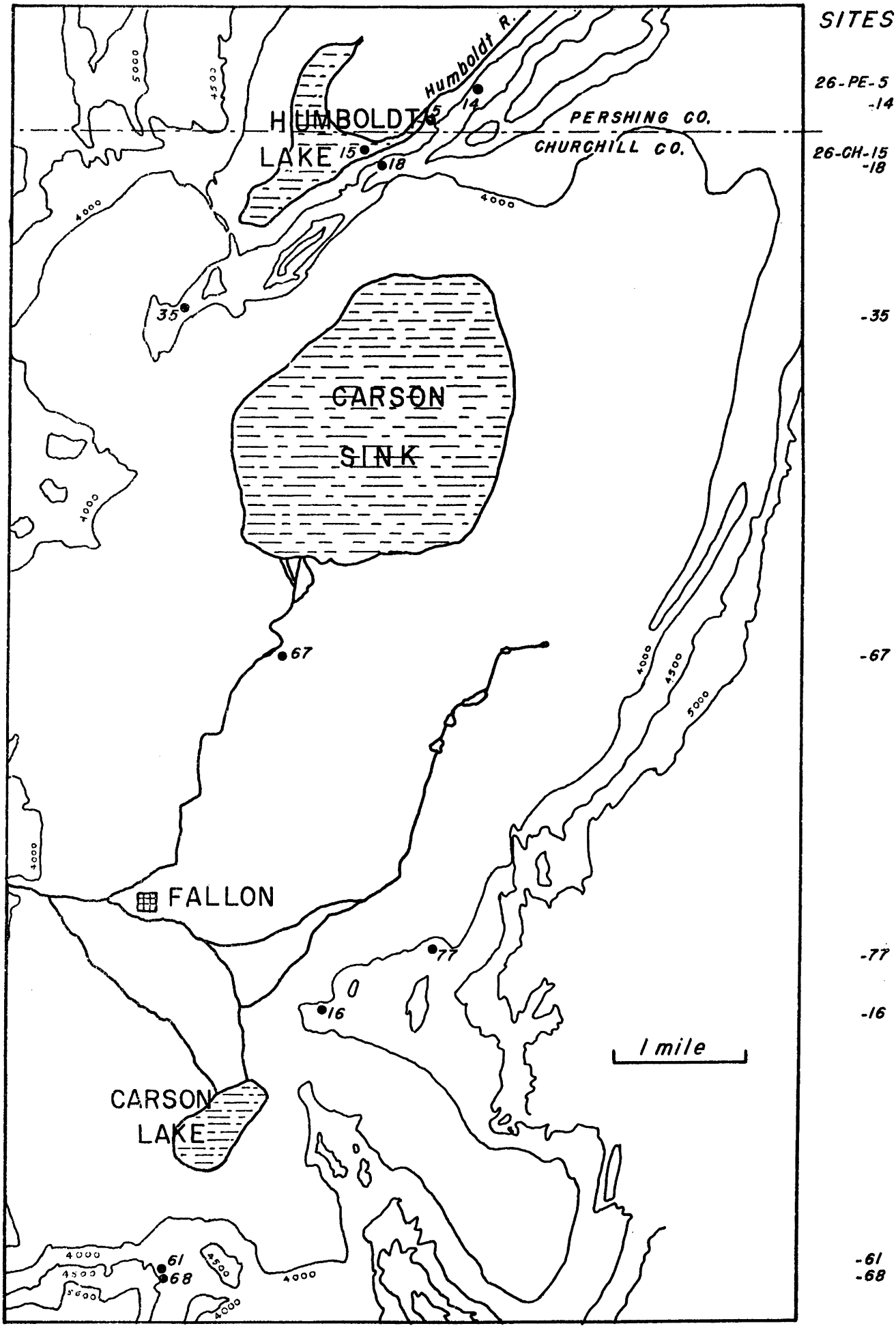
Forty-three new sites were recorded in this area as a result of our survey, and small surface collections were made from them. The bulk of the summer, however, was devoted to the excavation of a portion of Hidden Cave (26-Ch-16). (See Map 1.)

Hidden Cave is located at an elevation of 4104 feet above sea level in an outlier of the Stillwater Range about fifteen miles southeast of the town of Fallon. The cave is formed in the east side of a small valley, facing west, and in a geological formation of large cemented basalt gravels believed to have been laid down by the earliest Lahonton Lake stage (Morrison's Eetza formation)[1]. The cave, which was first discovered by guano miners about twenty-five years ago, has a maximum width of 120 feet, a maximum length of 160 feet, and a maximum height of 16 feet. It was formed by lake action washing out unconsolidated gravels from beneath the cemented gravels, probably by the initial rise of the Lahonton stage (see Table 1) which Morrison has equated in time with the Cary glaciation. Later this lake deposited a layer of clay on the rock floor of the cave (see Table 2). After the decline of the lake to below the elevation of the cave a thin layer of sand and rock "mud flow" was laid down. The lake rose again (correlated in time with the Mankato advance) and a second layer of clay was deposited. Above the clay is a thin layer of sand which is capped by a layer of limey material. Morrison believes this lime to correlate with the formation of Dendritic tufa outside of the cave and attributes both to the regressive phase of Lake Lahonton, which he equates in time with the Mankato glaciation. This limey layer covers the floor of the entire cave and is exposed on the surface in the rear portions.

Above the lime is a layer of fine, clean, lake gravel attributed to the last major fluctuation of Lake Lahontan. It contains a high proportion of mammal and bird bone, but no definite artifacts or evidence of man.

Above this gravel, and partially mixed with it, is a layer of variable thickness which is composed of mud-flow material and bat guano. Included in this stratum were a quantity of small mammal and bird bones and four whole or fragmentary points. This stratum is considered by both Morrison and Antevs[2] to date from the Anathermal interval.

Above the Anathermal deposit is a layer of fine sand and silt, which is believed to be aeolian in origin and is deposited in striations or layers. In the deeper portions of the cave it is as much as three feet in thickness,



MAP I. Archeological Sites in Humboldt and Carson Sink Areas

Glacial or Climatic Period	Geological Formation	Lake Stage	Hidden Cave History
Moditherma1	(Newlands)* Grimes*	Moditherma1 lake series	Aeolian silts and occupation debris. Lovelock Phase.
Altithermal	Turupah	Long drought	Aeolian silts. Carson Phase.
Anathermal	Hazen	Anathermal high lake	Mud flow. Hidden Cave Phase.
	Upsal		?
Mankato	Pahninid 2	Lahontan III	Deposition of second clay layer and sand. Deposition of lime and gravel on decline.
	Intra Pahninid		Deposition of intra-clay sand and mud flow layer.
Cary	Pahninid 1	Lahontan II	Outwashing of gravels to form cave. On decline, deposition of clay layer.
	Churchill*		
Tazewell / Iowan	Eetza	Lahontan I (May be double)	Formation and partial cementing of gravels in which Hidden Cave is located.

*Tentative names for these formations.

Table 1
Correlation of Pleistocene and Recent Geology
With the History of Hidden Cave

but is absent towards the rear of the cave. Two obsidian points were recovered from the upper portions of this deposit. This stratum has been correlated with the Altithermal period.

Near the base of these silts is a thin layer of volcanic ash, which has been analysed by Dr. Howell Williams of the University of California's Department of Geological Sciences, and compared to the volcanic ash layer which occurred in a stratigraphically similar position in Leonard Rockshelter. In Dr. Williams' opinion the Hidden Cave ash layer derived from the same source (Mono Craters) as the Leonard Rockshelter layer, but was from a different eruption.[3] The two eruptions probably were not widely separated in time, however.

Geological Period	Schematic Stratigraphic Section in Hidden Cave
Medithermal	Surface Silt Top Midden (Lovelock Phase) Silts 32" Midden (Lovelock Phase)
Altithermal	Silts (Carson Phase) Volcanic Ash
Anathermal and Upsal?	Mud flow, bat guano, etc. (Hidden Cave Phase)
Lahontan III	Lake Gravel Lime Sand Clay Sand and mud flow
Lahontan II	Clay
Lahontan I	Bedrock (Cemented gravels)

Table 2
Correlation of Geological Periods
And Stratigraphy in Hidden Cave

Above the Altithermal silts is a deposit of midden composed largely of bat guano, tule, cane, cattail, etc. In most of the cave this deposit is badly decomposed, probably having been wet at one time. A water seep occurs at this level in the south wall of the cave. Towards the rear of this deposit the midden was burned. This layer varies from two to five inches in thickness and occurs throughout the front portion of the cave at an average depth of 32 inches, hence will be referred to as the '32" midden'.

Above the 32" midden there is a layer of mud flow and silts about 16" thick with striations of mud flow and aeolian partings. Very few artifacts were recovered from this layer.

Covering the latter layer is a deposit of well preserved organic material. Over 85% of the 502 artifacts recovered in the cave came from this layer, which will be referred to as the "Top Midden."

In the front part of the cave the Top Midden is covered by a layer of fine silt of presumably aeolian origin. It varies in thickness from 0 to 12". This layer is presumed to be the original surface of the cave at the time of discovery, although the amount of material removed by the guano miners and the area in which they worked is not precisely known. Mr. S. M. Wheeler, who excavated a portion of the cave in 1941 for the Nevada Park Commission, dug in an area which was evidently not covered by these silts.[4]

On the basis of the artifacts recovered from the Top and 32" midden layers in Hidden Cave, these deposits have been assigned to the Lovelock Phase. Specific resemblances to the materials recovered from Lovelock Cave (Loud and Harrington, 1929) occur for example in point types, coiled basketry, twined tule bags, mats and basketry, netting, sandals, cane dart and arrow shafts and greasewood foreshafts. Missing from our excavations, but present in Wheeler's excavations is Lovelock wicker basketry. 'L'-shaped scapula awls were missing from both excavations.

C14 dates obtained by Dr. Cressman on specimens from Harrington's stratigraphic pit in Lovelock Cave range from 1219 BC to 267 AD and suggest a time span of from 1500 BC to 500 to 1000 AD (Arnold and Libby, 1951, p. 117; Heizer, 1951a, pp. 23-25; Libby, 1954, p. 739).

The two points recovered from the Altithermal silts are of different types than those known in the Lovelock Phase, but may be related. For convenience they have been set up as representing a tentative phase called the "Carson Phase" after the Carson River and Sink.

The four points recovered from the Anathermal layer are of a different type than those from the more recent deposits and have been set up as representing a tentative phase called the Hidden Cave Phase. There are points similar to the Hidden Cave Phase type from northeastern California and from Dixie Valley, in Nevada, to the northeast of the Carson Sink.[5]

While surveying for new sites in the Carson Sink area, we visited a site discovered by Mr. George Hathaway of Carmichael, California, and named Hathaway Beach in his honor.* The site is located on the south side of the Carson Sink near the pass from the Carson Sink to Walker Lake on a terrace formed by Lake Lahonton. The artifacts recovered consist largely of crudely

* Site 26-Ch-61.

flaked andesite blades. Obsidian, rhyolite and chert are also used, however, especially for scrapers and crescents.

The artifacts occur on the surface of Pahninid II rhyolite gravel which overlies Pahninid I andesite gravel. In places the rhyolite gravel is eroded away exposing the older gravels. Artifacts are somewhat more frequent in these exposed areas, but in no case were artifacts found beneath Pahninid II rhyolite gravels. Further, no water worn artifacts were found, although a few show a slight deposit of tufa or caliche which might indicate that they had been covered by water at one time.

Morrison equates the Pahninid I formation with the time of the Cary glaciation and the Pahninid II formation with the time of the Mankato glaciation. The evidence mentioned above strongly suggests that the artifacts in question could not be older than the maximum lake rise of Pahninid II times and, in extension, of the Mankato maximum. The Pahninid II terrace lies about 200 feet higher than the height of the Anathermal lake, which was about half a mile from the site.

A second site* producing the same kind of material was discovered on a ridge running north from Rainbow Mountain, on a terrace at approximately the same elevation as Hathaway Beach. On the next lower terrace there are artifacts of the Lovelock Phase. Both of these terraces are above the Anathermal Lake level.

Near the Hathaway Beach site, at the same or at slightly higher elevation, the andesite quarries probably used by the occupants of the Hathaway Beach site were located. (Site designated 26-Ch-68.)

The artifacts from these three sites have been assigned to a phase named the "Fallon Phase" after the nearby town of that name.

The Lovelock Phase, on the basis of geology, may be considered as primarily Medithermal in time period; however, C14 dates suggest that this occupation began early in the Medithermal. Further, we now have a continuous sequence in this area from the Lovelock Phase to the present. All of this suggests that the Fallon material is post-Mankato and pre-Medithermal--an Anathermal date is suggested as the most probable one.

There are typological resemblances between Fallon material and that of Lake Mohave (Campbell et al, 1937) and Lind Coulee,[6] but the closest resemblances are to specimens found by Dr. Crossman near Big Springs in Guano Valley, southeastern Oregon (Crossman, 1936).

At the other end of the time scale, a number of historic Northern Paiute sites were located in the Carson Sink area, which yielded quite small arrowpoints of the same shape as earlier types and "Shoshoni" points, as well as other artifact types common to both the Northern Paiute and the Lovelock Phase. A few sites were discovered which lacked historic material, but which were otherwise indistinguishable from historic sites. These latter sites are believed to represent a late pre-historic phase which has been named the Dune Springs Phase after one of the sites of this kind.+ A guess date for the beginning of this phase of about 1000 AD may be given on the basis of dates for the Lovelock Phase, and an end date could be given of about 1840 AD, which is post-Jedediah Smith and pre-Fremont.

* 26-Ch-77.
+ i.e., site 26-Ch-67.

Much work remains to be done on the late prehistoric archaeology of central Nevada. Undoubtedly the Lovelock Phase could be subdivided temporally much as Loud and Harrington suggested in 1929. Some differences are noticeable between the Top and 32" middens in Hidden Cave.

The geographical distribution of the Lovelock Phase still needs to be worked out. It is now known to have extended from Pyramid Lake to the Carson Sink, but there are suggestions that it may also have occurred farther east and west. Its north-to-south distribution is very poorly known. The relationship of the Lovelock Phase to other contemporary phases needs to be worked out. A comparison of Lovelock with Pinto may prove to be very fruitful.

In regard to earlier cultural manifestations we now have evidence for some occupation of the area in the Altithermal period with the Leonard Phase in the Humboldt Sink and the Carson Phase in the Carson Sink. Both phases are too poorly known to be useful for comparative purposes and may, in fact, represent a single phase.

Similarly for the Anathermal period, there are the Fallon and Hidden Cave Phases in the Carson Sink area and the Humboldt Phase and possibly the Granite Point Phase in the Humboldt Sink (Heizer 1951b, pp. 89-98). It is clear that the Fallon Phase is different from anything found at Granite Point sites, and no examples of Hidden Cave points or of blades like the one from the Humboldt Phase have been found in either Fallon or Granite Point sites. There could be a relationship between the Humboldt Phase and Hidden Cave Phase, but it is not possible to make comparisons at the present time.

To summarize, five archaeological phases are proposed for the Carson Sink area. Probably the oldest is the Fallon Phase, which is known from two high level occupation sites and a quarry site, and which may date from Anathermal times.

Possibly from later in the Anathermal, we have evidence of something different, the Hidden Cave Phase. Late in the Altithermal there is a little evidence for an occupation, which is called the Carson Phase. In the Medithermal, evidence for the Lovelock Phase has been found. Finally, a definable phase, which probably represents the remains of the prehistoric Northern Paiute, has been noted which marks the transition or bridges the gap between Lovelock and the historic Northern Paiute.

NOTES

1. The interpretations of the geology of Lake Lahonton used in this paper were received in personal communication with Mr. Morrison.

2. Personal communication with both Mr. Morrison and Dr. E. Antevs.

3. Personal communication with Dr. Williams.

4. Records of the Nevada State Museum.

5. Specimens in the University of California Museum of Anthropology.

6. Personal communication with Dr. Richard Daugherty.

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