Journal of California and Great Basin Anthropology
Vol. 4, No. 2, pp. 23-33 (1982).

Two Historic Aboriginal Game-Drive Enclosures in the Eastern Great Basin

ANAN RAYMOND

WITH the driving of the "Golden Spike" and completion of the first transcontinental railroad in 1869, the wilderness of America's western frontier was finally conquered. In the Great Basin of Nevada and Utah, transcontinental locomotives would now thunder across a land that was once the home of native American Paiutes and Shoshonis. On the heels of the railroad came government surveyors who mapped the countryside as homesteaders and prospectors made their claim upon the land. While working near the transcontinental railroad in northwestern Utah, one of these surveyors, Henry Fitzhugh (1884*a*), recorded the location of two "Indian Corrals" and marked them on his 1884 map (Fig. 1). This map sparked an investigation by the author that has culminated in the present report.

ETHNOGRAPHIC AND ARCHAEOLOGIC BACKGROUND

In the Great Basin, crickets, mud hens, and occasionally mule deer and desert bighorn sheep were the subject of aboriginal communal drives into traps and enclosures during historic times. However, jackrabbits (*Lepus californicus*) and pronghorn antelope (*Antilocapra americana*) were the most regular victims of communal drives (Janetski 1981: 166-176; Annell 1961: 43-55; Steward 1938). The following paragraphs review pertinent ethnographic and archaeologic literature that indicates the "Indian corrals" functioned as either pronghorn or jackrabbit traps.

The archaeologic and ethnographic literature indicates that pronghorn traps and jackrabbit traps were constructed differently, thus reflecting their specific purpose. The differences include: (1) the shape of the trap or enclosure, especially its mouth; and (2) the method of constructing the walls of the enclosure.

The shape of the enclosure partially reflects the size and habits of the game being hunted. A single pronghorn inhabits a much larger area than a single jackrabbit. Thus the region in which a number of these animals can be driven by a group of hunters must be considerably larger for pronghorns than for jackrabbits.

Steward's (1941: 218-220, 272, 328, 1943: 266-267, 293, 359) culture element distribution lists and comments for unmounted Great Basin Shoshoni show consistent references to wings at the entrance of antelope enclosures. In addition, Steward derived a sketch of a pronghorn corral with converging wings from a Shoshoni consultant in Ruby Valley, Nevada (Steward 1941: 221, Fig. 1f). The wings apparently function to direct prey, herded from a large area, into the mouth of the trap.

Ethnographic accounts furnish clues on how pronghorn drives and rabbit drives were operated, as well as how the enclosures to entrap them were constructed. Annell (1961) and Steward (1938, 1941, 1943) provide

Anan Raymond, Dept. of Anthropology, Washington State Univ., Pullman, WA 99163.

exhaustive compilations of historic aboriginal pronghorn and jackrabbit hunting in the Great Basin. More specifically, Howard Egan (1917), who traveled through the Great Basin in the 1880s, supplied an excellent description of a communal pronghorn drive by the Gosiute Shoshoni of eastern Nevada. The trap employed long converging alignments of juniper and sagebrush that directed pronghorn antelope into a corral:

> I had sent word to the old chief (White Horse) that I would make him a visit in a few days, and to make it interesting to me he planned an antelope catch. For a few days before I came the [young men and women] were busy repairing and extending the flanking arms of the old corral, or trap pen, which was located near the north end of antelope valley and about twenty miles northwest of Deep Creek. It was pretty cold weather, but no snow on the ground. The Indians thought it was a good time and expected a good catch.
>
> This valley has a good many hills or knolls along the base of the mountains and a few of them scattered more to the center of the level ground in the middle of the valley. An antelope, which started up, will always run directly for one of these, that lay opposite from where he gets his scare from, and they run from hill to hill. They see no one ahead of them but the party behind being constantly increased, and if they undertake to pass around the drivers [one of them] is sure to raise his feet, and that sends them off to the center again.
>
> Thus it goes till they come to the line between the outer ends of the arms, which, there, are about four miles apart, but gradually closing in as they get nearer the pen. The arms or leads are started at the extreme ends by simply prying or pulling up a large sagebrush and standing it roots up on the top of another brush, thus making a tall, black object visible for miles. The standing of these brush were at first some ten to twenty feet apart, but were placed more and more near together the nearer towards the pen, and when the two lines came to about one hundred yards apart they were built so the buts of the brush were as close as the tops would allow them to be joined and by this time both wings had swung to the east side of the valley, where there were many ravines to cross and plenty of cedar and pine to use for fencing.
>
> There were many turns to the lane thus formed, but [it] was getting narrower and stronger till finally, around a sharp turn through a large, thick bunch of cedars, the game were in the corral, which was about two hundred feet in diameter and built strong and high enough to withstand the charges of a herd of buffalo. The pine and cedar trees had not been removed from the inside of the pen, and not many from the runway, for a mile back.
>
> Well, White Horse and myself rode the only two horses in the drive and we went to about half the distance to the ends of the runs and were soon back as fast as possible on the outside to take advantage of the bends and turns and to try and keep abreast of the drivers, who were all on a fast run yelling like a pack of coyotes. The drive came to an end with a rush and everyone working desparately closing up the entrance, a few small children appearing on the wall at different points around the pen . . .
>
> The Indians told me that the last drive, before this one at this place, was nearly 12 years ago and the men never expected to see another at this place, for it would take many years for the animals to increase in sufficient numbers to make it pay to drive. These drives are mostly in the desert valleys where the poor horseless natives live [Egan 1917: 238-241].

The materials and methods used in constructing the walls of antelope traps varied little among the different Great Basin Shoshoni groups. Most groups built a solid fence of sagebrush and juniper or an enclosure of brush stacked at intervals (Steward 1941: 272, 1943: 293). Steward reports the heights of pronghorn enclosures were as low as 18 inches (1943: 359) and as tall as seven feet (1941: 328). The diameter of pronghorn enclosures ranges up to one mile (Steward 1941: 219, 220).

There is a dearth of archaeological litera-

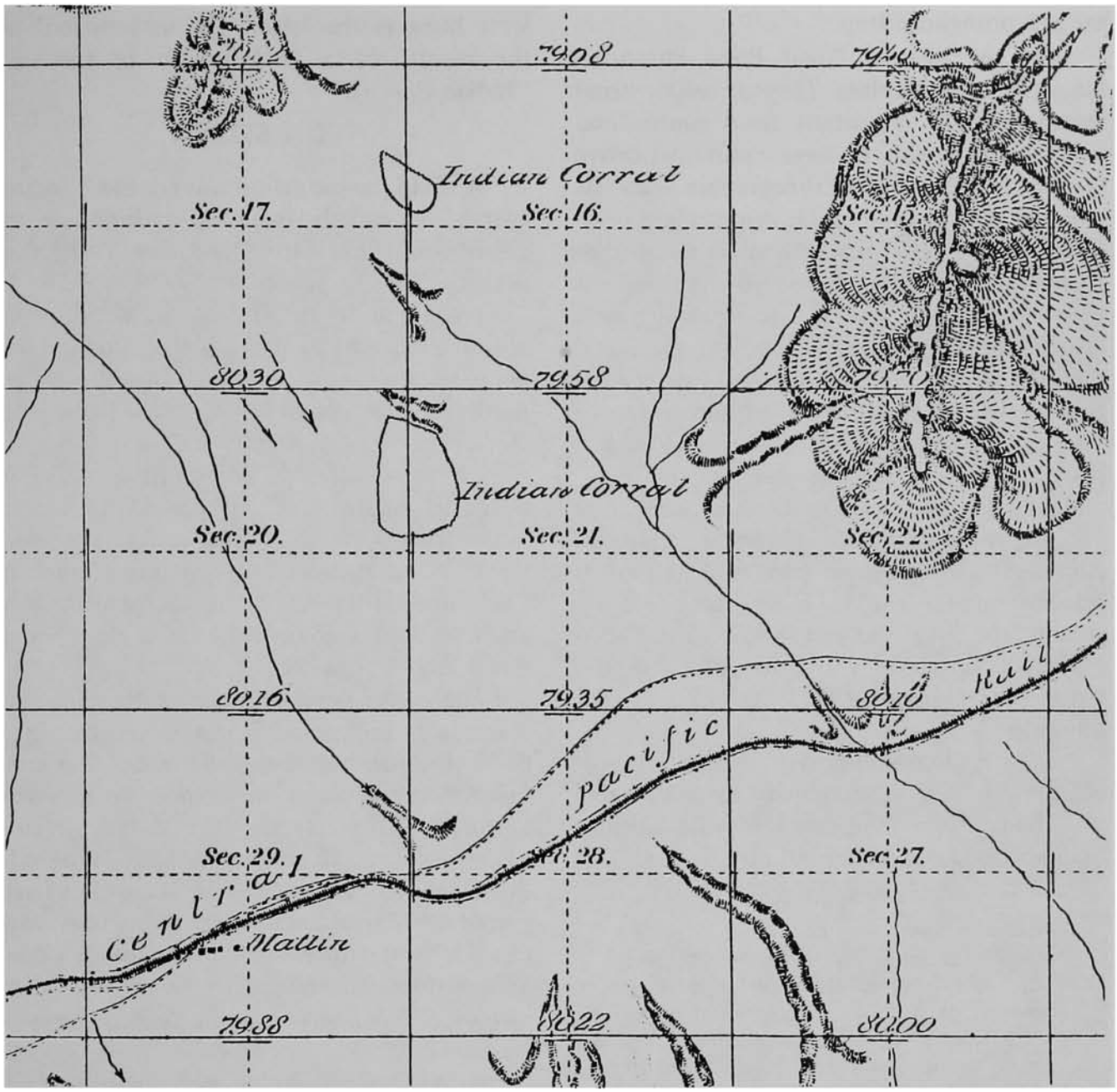

Fig. 1. Map showing two "Indian Corrals" north of Matlin, Box Elder County, Utah. Map by Henry Fitzhugh, 1884.

ture discussing pronghorn drive systems in the West. An exception is Frison (1978: 254-257) who reports on the remains of a few pronghorn enclosures in Wyoming, constructed of juniper branches and sagebrush. Long converging alignments or "wings" of stacked brush funnel toward the traps. The wings apparently served to guide pronghorn into the enclosures. Sweeney and Euler (1963:8) identify a pronghorn trap on the Awapa Plateau in southern Utah. Two basalt cairn alignments form three- to five-mile-long wings which converge on a small trap. Unfortunately, none of the pronghorn traps reported in the archaeological literature contains evidence, such as a kill site, that would verify its

use as a pronghorn trap.

For the historic Great Basin Shoshoni, blacktailed jackrabbits (*Lepus californicus*) represented an important food source and were also amenable to large communal drives (Janetski 1981: 166). Ethnographic accounts indicate that historic rabbit drives might leave remains substantial enough to be recognized today. The usual method of entrapment involved stringing several three-foot-high nets into a straight line or an arc up to several hundred yards long. The nets were suspended from a barrier made of piled brush and/or juniper sticks pressed into the ground. As the rabbits encountered the net, it fell over, entangling them and leaving them easy prey for the hunters' clubs (Steward 1938:38; Annell 1961:45; Wheat 1967:41). Although uncommon, the use of "wings" to direct the jackrabbits into the net barriers has been reported for some Shoshoni groups in the Great Basin (Egan 1917: 235-237; Annell 1961:46).

Captain James Simpson (1869:52) provides the following account of the use of nets in rabbit drives conducted by the Gosiute Shoshoni of Skull Valley, Utah:

> The nets, made of excellent twine fabricated of a species of flax which grows in certain localities in this region, are three feet wide and of very considerable length. With this kind of net they catch the rabbit, as follows. A fence or barrier made of the wild-sage brush plucked up by the roots, or cedar-branches, is laid across the paths of the rabbits, and on this fence the net is hung vertically. The rabbits are then driven from their lairs, and, in running along their usual paths, are intercepted by the net and caught in its meshes.

As the above paragraphs show, pronghorn corrals and jackrabbit traps are generally distinguishable by the presence of wings and a more substantial enclosure barrier made of brush and juniper in the former, with a less elaborate barrier from which portable nets were hung in the latter. Let us now look at the results of a field survey of the two "Indian Corrals."

THE SITES

A field investigation found the "Indian corrals" in exactly the location indicated by Fitzhugh's 1884 map. The larger of the two sites (42Bo447) occurs in T.10N, R.13W, S. 21 NW¼ and S. 20 NE¼ at an elevation of 1,469 m. (4,820 ft.). Site 42Bo448 lies approximately 1.6 km. north of 42Bo447 in T.10N, R.13W, S. 16 NW¼ and S. 17 NE¼ at an elevation of 1,524 m. (5,000 ft.).

Both sites lie in the Matlin Basin, which is bordered on the north by mountains of the same name. Matlin Basin contains several terraces and strandlines, remnants of ancient Lake Bonneville, that punctuate a shallow gradient sloping toward the Great Salt Desert nine kilometers to the south.

The native flora dominating the shadscale desert (cf. Billings 1951) in which the sites occur includes: shadscale (*Atriplex confertifolia*), horsebrush (*Tetradymia* sp.), small sagebrush (*artemisia nova*), budsage (*Artemisia spinescens),* Mormon tea *(Ephedra nevadensis*), galleta grass (*Hilaria jamesii*), wheat grass (*Agropyron spicatum*), and a few scattered juniper (*Juniperus osteosperma*). Common introduced species found at both sites include *Bromus tectorum* and *Halogeton glomeratus.*

Both sites exhibit a continuous surface scattering of juniper trunks, branches and fragments (Figs. 2 and 3), outlining an irregular ellipse with a gap in one end. Short alignments of juniper branches radiate out from the margins of the openings, forming "wings." The branches range up to 1.5 m. in length, with a maximum width of 25 cm. However, many are less than half that size. Although most of the juniper branches lay flat, several of them rise vertically from the ground, their bases having been buried (Figs.

Fig. 2. Alignment of juniper branch fragments at 42Bo447. View is southward with Newfoundland Island in the Great Salt Desert in the distance.

4 and 5). Many of the ends of the branches and trunks are frayed due to weathering and, therefore, the method employed to cut them remains obscured. However, some better preserved juniper branches and trunks bear marks of having been cut with an axe.

The sites were mapped with a Brunton Pocket Transit, and dimensions were calculated by pacing. The elliptical enclosure at 42Bo447 measures 280-300 m. in diameter, circumscribing an area of 65,840 m.^{2} (Fig. 6). An 80 m.-wide gap in the enclosure opens to the south. Two alignments of juniper branches radiate southward from the opening a

Fig. 3. Alignment of juniper branch fragments and trunks at 42Bo448. View is to the southeast with the Hogup Mountains in the distance.

Fig. 4. Juniper branch buried upright in the ground at 42Bo447.

distance of 40 and 115 m. The northern perimeter of 42Bo447 lies midway up the slope of a Lake Bonneville strandline. A dry wash cuts through the strandline and flows

Fig. 5. Two juniper branches buried upright in the ground at 42Bo448.

south, bisecting the enclosure. An intensive reconnaissance located only a single projectile point fragment and two stone flakes. Glass and metal scraps, plus the bones of domestic sheep found near the site, indicate use of the region in historic and contemporary times.

Site 42Bo448 measures 140 by 170 m., circumscribing 18,683 m.^{2}. Two 20-m.-long juniper alignments funnel to the 30-m.-wide gap at the north end of the enclosure. An intensive survey revealed only one large chert flake.

Reconnaissance around both sites failed to discover any evidence of aboriginal occupation. However, in an open juniper grove 100 m. east of 42Bo447, many old and weathered cut stumps of juniper trees may represent the area where the branches and trunks were procured to construct the enclosure (Fig. 7). In addition to a few living junipers, some chopped juniper stumps occur within both corrals; all these stumps bear the marks of having been cut by a steel axe. However, no artifacts suggesting this or any other activity were found.

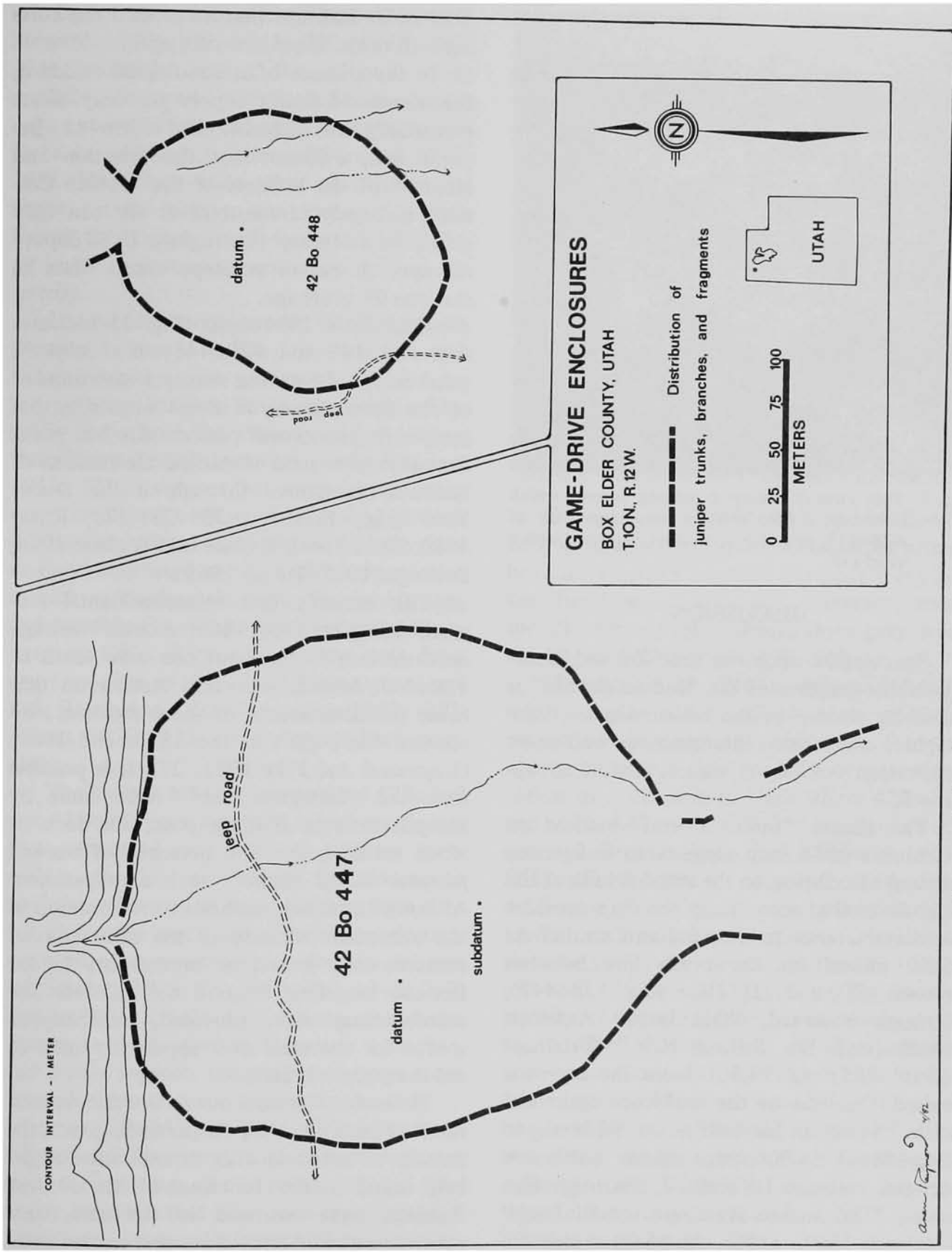

Fig. 6. Game drive enclosures first recorded in 1884 by Henry Fitzhugh in Box Elder County, Utah. Mapped by the author.

Fig. 7. This juniper stump is among several which occur in a thin juniper grove just west of 42Bo447, and appear to have been cut with a steel axe.

DISCUSSION

Speculation upon the function and identity of the builders of the "Indian Corrals" is aided by review of the archaeologic, ethnographic, and historic literature, as well as by application of the "direct historical approach."

The phrase "Indian Corral" marked on Fitzhugh's 1884 map suggests an indigenous cultural association to the sites. A look at the field notes that accompany the map provides further reference to the "Indian Corrals." At 43.50 chains on the north line between sections 20 and 21 (bisecting 42Bo447), Fitzhugh observed, "Old Indian Antelope corrall [sic] brs. S.E. & N.W." (Fitzhugh 1884*b*: 355). At 73.50 chains the surveyor crossed the wall of the enclosure again and wrote "Same" in his field notes. Referring to 42Bo448, at 64.00 chains on the north line between sections 16 and 17, Fitzhugh also writes, "Old Indian Antelope corrall [sic]" (Fitzhugh 1884*b*: 358). At 55.00 chains the field notes indicate that he crossed the curving wall of the same structure again.

In the absence of archaeological evidence, the above references supply the only direct explanation of 42Bo447 and 42Bo448. Beyond this, evidence for the function and identity of the builders of the "Indian Corrals" is largely circumstantial. We can only assume that Henry Fitzhugh, a U. S. deputy surveyor, knew an antelope corral when he saw one 98 years ago.

Fitzhugh's 1884 map (Fig. 1) indicates that 42Bo447 and 42Bo448 are at least 98 years in age. Given the semiarid environment of the Great Basin, it is not surprising that juniper fragments will preserve for 100 years. Archaeologists have identified the remains of timbered structures throughout the Desert West (e.g., Frison 1978: 251-270; Ritter 1980; Hunt 1960; Wallace and Wallace 1978; Bettinger 1975; Tuohy 1969).

The nation's first transcontinental railroad, completed in 1869, crossed through northwestern Utah about one mile south of 42Bo447. Matlin, a section station on that route provided access for sheep ranchers who entered the region in the 1870s and 1880s (Raymond and Fike 1981: 27). It is possible that the "Indian corrals" were built by sheepherders as holding pens; the lack of stone artifacts and the presence of axe-cut junipers might support such a proposition. Although livestock facilities were common in the immediate vicinity of the early railroad stations, they would be unnecessary in the free-use rangeland beyond the railroad. The railroad may have provided, indirectly, a source for the steel axes apparently used to cut the juniper branches.

However, if it does not reflect the replacement of such items by Anglo trade goods, the paucity of artifacts at both enclosures might help explain the function of these sites. Rabbits, once ensnared in the nets, were easily dispatched with clubs and carried away

(cf. Egan 1917: 235, 179; Wheat 1967: 14; Steward 1938: 179, 1941: 222, 1943: 267, 294), probably leaving few, if any, stone artifacts. However, Great Basin Shoshoni have been known to kill exhausted pronghorn with clubs in addition to arrows (Steward 1943: 293). Moreover, when shot at short range inside corrals or traps the arrows may have found their mark—with the result that the projectile points were not deposited on the ground.

Jackrabbit hunting among the Great Basin aboriginal groups often occurred in the autumn when many people congregated for the pine-nut harvest. These communal rabbit drives were held for several days at a time, some hunts lasting up to six weeks (Steward 1941: 222). I suspect that when several drives were conducted within a short period of time, the hunters shifted the location of each drive as they decimated the jackrabbit population in each particular drive area. The rabbit nets, and possibly the sticks used to suspend them, were portable. Recovery of long nets from dry cave sites in the Great Basin (e.g., Loud and Harrington 1929; Jennings 1957: 227; Aikens 1970: 125) also suggests their portability.

The juniper branch fragments at 42Bo447 and 42Bo448 may represent a barrier of posts that supported nets used to ensnare jackrabbits, the juniper "wings" functioning to herd the rabbits into the enclosure. Both sites fall within the size range of rabbit enclosures reported ethnographically in the Great Basin (cf. Steward 1938: 38, 1941: 222, 1943: 267; Egan 1917: 235-237). However, the dense arrangement of juniper fragments, branches, and trunks suggests the enclosures were more than adequate to suspend rabbit nets.

Both 42Bo447 and 42Bo448 exhibit short "wings" of juniper branches radiating out from the openings of the enclosures and thus might indicate that the sites functioned as pronghorn traps. Unfortunately, intensive reconnaissance of the tangents projected by the wings failed to reveal any evidence of juniper branches, sagebrush piles, or rock cairns that encompass a large area in which pronghorn might be herded. Although a successful pronghorn trap probably requires control over a large region, pronghorn antelope traps in eastern California did function without wings (Steward 1938: 82). However, the presence of wings and of a continuous arrangement of juniper branches, fragments, and trunks outlining an ellipse at both 42Bo447 and 42Bo448 compares favorably with the archaeologic and ethnographic records and suggests that the sites did function as pronghorn antelope drive enclosures.

DIRECT ETHNOGRAPHIC REFERENCES

Comparison of 42Bo447 and 42Bo448 with general ethnographic accounts of pronghorn drive corrals seems to adequately explain the function of the sites. However, some specific ethnographic descriptions may refer directly to 42Bo447 and 42Bo448.

Steward (1938, 1943) supplies the locations of communal animal drives and the associated procurement strategies for the aboriginal group who recently occupied the region in northwestern Utah where 42Bo447 and 42Bo448 occur. His consultant, 105-year-old Grouse Creek Jack (Steward 1943: 264) indicated that his people, the Tuba-duka or Grouse Creek Shoshoni, conducted communal antelope drives near Terrace, a railroad station ten miles west of the two sites (Steward 1938: 175). The region in the vicinity of Terrace, Utah, has not been investigated for the remains of this reported antelope enclosure. Grouse Creek Jack further related that rabbit drives were held "at a place north of Matlin" (Steward 1938: 176). This statement might explain the function of 42Bo447 and 42Bo448, because they do occur just north of Matlin. However, I suspect Steward or Grouse Creek Jack may have

confused the two drive locations.

Grouse Creek Jack, via Steward, detailed a method of rabbit entrapment among the Grouse Creek Shoshoni. They

> . . . used nets about a hundred yards long and placed several to form an arc but left short spaces between the ends of the nets instead of making them meet. Pits occupied these spaces. They were used in the snow, an old man caring for each net while boys and girls drove the rabbits [Steward 1943: 267].

The archaeological implications of this method for driving rabbits, depressions occurring at intervals along the enclosure's periphery, were not seen.

Grouse Creek Jack further explained through Steward (1938: 175) that communal pronghorn "hunts were held when antelope went south in the fall and in early spring" (when the animals went north?). The northward orientation of the juniper wings at 42Bo448 and the southward orientation of the juniper wings at 42Bo447 may reflect this movement of pronghorn, hinted at by Grouse Creek Jack. This apparent seasonal nature of pronghorn hunts by the Grouse Creek Shoshoni contrasts with Egan's (1917: 239-241) impression of Gosiute communal pronghorn hunts cited earlier in this paper.

Steward (1943: 293, 359) especially notes that the Grouse Creek Shoshoni built their pronghorn enclosures with solid juniper fencing. This statement finds evidence in the abundant and continuous arrangement of juniper branch fragments at both sites. Finally, Grouse Creek Shoshoni pronghorn enclosures did function as "corrals" and, therefore, may have influenced the name "Indian corral" inscribed on Fitzhugh's 1884 map. According to Grouse Creek Jack:

> The shaman began smoking in the evening. Drivers went for the antelope early the next morning. If they [Grouse Creek Shoshoni] brought the animals in by evening, one or two might be killed and the remainder kept in the corral that night by building fires around it. They were killed the next day [Steward 1943: 359].

Although the above references support Fitzhugh's observation that 42Bo447 and 42Bo448 functioned as pronghorn drive corrals, one must exercise caution when applying these ethnographic descriptions to specific archaeological sites, namely 42Bo447 and 42Bo448. Pronghorn drives and jackrabbit drives were held by the Grouse Creek Shoshoni at many locations in northwestern Utah (Steward 1938: 148, Fig. 12). If they are site specific, Grouse Creek Jack's descriptions of such hunts could refer to different locations than 42Bo447 and 42Bo448.

CONCLUSIONS

With the aid of an 1884 map, two elliptical arrangements of juniper fragments, branches, and trunks were located north of the Great Salt Desert in northwestern Utah. General ethnographic accounts and field notes from the 1884 township survey lead me to believe that the sites, 42Bo447 and 42Bo448, are Grouse Creek Shoshoni pronghorn antelope corrals. Specific ethnographic references indicate that the corrals were constructed for communal pronghorn drives by these people who called themselves Tuba-duka.

ACKNOWLEDGMENTS

I extend my sincere appreciation to Peter J. Mehringer, Jr., for his encouragement and valuable editorial suggestions incorporated in this paper. I also express my thanks to Julie Brunsman who helped map and record the sites.

REFERENCES

Aikens, C. Melvin
1970 Hogup Cave. University of Utah Anthropological Papers No. 93.

Annell, Bengt
1969 Running Down and Driving of Game in

North America. Lund, Sweden: Studia Ethnographica Upsaliensia xxx Berlingska Boktrychkeriet.

Bettinger, Robert L.
1975 Late Prehistoric and Historic Structures in Owens Valley, Eastern California. Journal of California Anthropology 2:197-205.

Billings, W. D.
1951 Vegetational Zonation in the Great Basin of Western North America, pp. 101-122. In: Compt. Rend. du Colloque sur les Bases Ecologiques de la Vegetation des Zones Arides Union Internat. Soc. Biol.

Egan, Major Howard
1917 Pioneering the West 1846-1878. William M. Egan, ed. Salt Lake City.

Fitzhugh, Henry
1884*a* Township 10 North, Range 13 West of the Salt Lake Meridian. Surveyor General's Office, Salt Lake City, Utah. On file, Utah Bureau of Land Management, Plate 142.

1884*b* Field notes of the survey of the subdivisions, T.10N., R.13W. of the Salt Lake Meridian in Utah Territory. U. S. Surveyor General's Office, Salt Lake City, Utah, pp. 303-383. On file, Utah Bureau of Land Management, Book-A-203.

Frison, George C.
1978 Prehistoric Hunters of the High Plains. New York: Academic Press.

Hunt, Alice
1960 Archeology of the Death Valley Salt Pan, California. University of Utah Anthropological Papers No. 47.

Janetski, Joel C.
1981 Ethnography and Ethnohistory of the Elko and Ely Districts. In: Prehistory, Ethnohistory, and History of Eastern Nevada: a Cultural Resources Summary of the Elko and Ely Districts. University of Utah Archaeological Center Reports of Investigations No. 81-5.

Jennings, Jesse D.
1957 Danger Cave. University of Utah Anthropological Paper No. 27.

Loud, L. L., and M. R. Harrington
1929 Lovelock Cave. University of California Publications in American Archaeology and Ethnology 25(1).

Raymond, Anan S., and Richard E. Fike
1981 Rails East to Promontory: The Utah Stations. Utah Bureau of Land Management Cultural Resource Series No. 8.

Ritter, Eric W.
1980 A Historic Aboriginal Structure and Its Associations, Panamint Mountains, California. Journal of California and Great Basin Anthropology 2(1):97-113.

Simpson, Brevet Brig-General J. H.
1869 The Shortest Route to California. Philadelphia: J. B. Lippincott and Co.

Steward, Julian H.
1938 Basin Plateau Aboriginal Sociopolitical Groups. Smithsonian Institution Bureau of American Ethnology Bulletin No. 120.

1941 Culture Element Distributions XIII: Nevada Shoshoni. University of California Anthropological Records 4(2).

1943 Culture Element Distributions XXIII: Northern and Gosiute Shoshoni. University of California Anthropological Records 8(3).

Sweeney, Catherine L., and Robert C. Euler
1963 Southern Paiute Archaeology in the Glen Canyon Drainage: A Preliminary Report. Nevada State Museum Anthropological Papers No. 8.

Tuohy, Donald R.
1966 Two Conical Wood Houses near Masonic, Mono County, California. The Nevada Archaeological Survey Reporter 3(3):5-12.

Wallace, William J., and Edith Wallace
1978 Ancient Peoples and Cultures of Death Valley National Monument. Ramona, California: Acoma Books.

Wheat, Margaret M.
1967 Survival Arts of the Primitive Paiutes. Reno: University of Nevada Press.