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Ord Shelter

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THIS paper reports the excavation and analysis of the archaeological deposit in Ord Shelter (CA-SBr-2846), located in the south-central Mojave Desert, California.[1] The site was excavated in October, 1971, by a field party from the University of California, Riverside. It contained a small bed of bunchgrass, adjacent to and under which were found three fragments of basketry, a bone tool, miscellaneous fragments of sinew and cordage, pieces of a carrying net, and a cache containing two bundles of snares. The site is of interest because its well-preserved assemblage was left there perhaps by only a single individual nearly 2000 years ago.

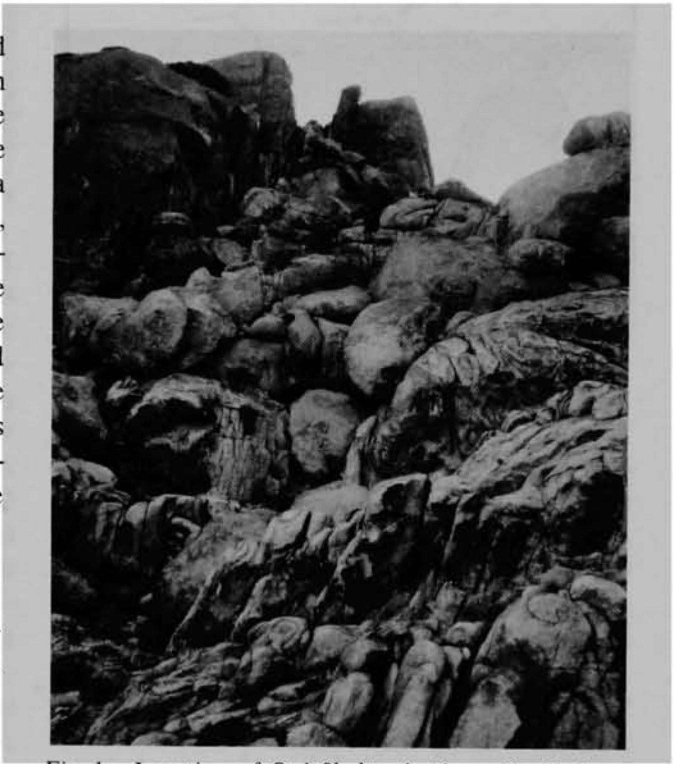

Fig. 1. Location of Ord Shelter in the wall of a box canyon. Two entrances are visible in the center of the photograph. View to the southwest.

THE SETTING

Ord Shelter is located in the Ord Mountains 32 km. southeast of Barstow, San Bernardino County, California (Figs. 1 and 2). The Ord Mountains are the highest range in the south-central part of the Mojave Desert, and are bordered by the Newberry Mountains to the north and the upper portion of Lucerne Valley to the south. Drainage from the Ord Mountains occurs primarily northwestward toward the Mojave River and southwestward toward Lucerne Dry Lake. There are few springs and no perennial streams in the region. The regional geology features complex igneous and metamorphic rocks. The oldest rocks are of Triassic age and include feldspathic quartzite and crystalline limestone. These are intruded by biotite quartz monzonite and granites of younger age (Weber 1963). Elevations range up to 1890 m.

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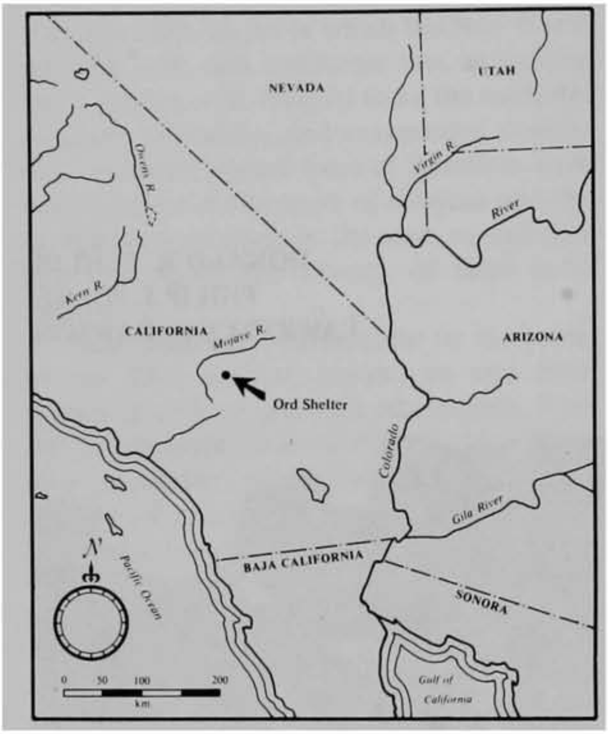

Fig. 2. Location of Ord Shelter.

The uplands of the Ord Mountains are heavily eroded and dissected. Because the Ord Mountains are higher than the surrounding areas, precipitation is also higher, reaching 20 cm. (8 in.) annually. Summer thundershowers are not uncommon, and in the winter snow may remain on the ground for days at a time.

The vegetational environment of the Ord Mountains is characterized by a blending of two distinct plant communities, Creosote Bush-Low Desert Scrub and Sagebrush Scrub (Jaeger and Smith 1971; Munz and Keck 1949, 1950). The lower and more flat terrain in the region displays a Creosote Bush-Low Desert Scrub plant community that includes Creosote Bush (*Larrea divaricata* var. *tridentata*), White Bur-Sage (*Ambrosia dumosa*), Brittle Bush (*Encelia* spp.), Cheese Bush (*Hymenoclea salsola*), Paperbag Bush (*Salazaria mexicana*), Silver Cholla (*Opuntia echinocarpa*), Bladder Stem (*Eriogonum inflatum*), and Crucifixion Thorn (*Castela emoryi*). This plant community occurs in areas up to about 900 or 1000 m. elevation. Mammals common to this environment include White-tailed Antelope Ground Squirrel (*Ammospermophilus leucurus*), Desert Pack Rat (*Neotoma lepida*), Merriam Kangaroo Rat (*Dipodomys merriami*), Black-tailed Jack Rabbit (*Lepus californicus*), Pocket Gopher (*Thomomys bottae*), and various mice (*Peromyscus*, *Perognathus*).

The higher, more rugged terrain of the Ord Mountains is characterized by a somewhat impoverished Sagebrush Scrub plant community. Common species here are Blackbush (*Coleogyne ramosissima*), Cat's Claw (*Acacia greggii*), Mojave Yucca (*Yucca schidigera*), Desert Needlegrass (*Stipa speciosa*), *Melica frutescens*, Chia (*Salvia columbariae*), Pencil Cholla (*O. ramosissima*), and Hedgehog Cactus (*Echinocereus engelmannii*). Great Basin Sagebrush (*Artemisia tridentata*), for which the plant community is named, is present at higher elevations in the Ord Mountains, as is Joshua Tree (*Y. brevifolia*). Common mammals are Black-tailed Jack Rabbit, Desert Cottontail (*Sylvilagus audubonii*), Merriam Kangaroo Rat, Desert Pack Rat, and various mice.

Ord Shelter is situated on the ecotone, or zone of mergence, between these two plant communities, with all of the plants mentioned above occurring within a distance of 1000 m. of the site. Figure 3 is a view to the northeast from the general site vicinity.

The shelter is situated in extremely rocky terrain about 70 m. above a valley floor at an elevation of 1200 m. The box canyon in whose south wall it lies drains toward the northeast. The entrance, which is obscure, faces toward the north-northeast and affords a commanding view of East Ord Mountain a few kilometers distant. The shelter is actually a small alcove created as a result of erosional processes hollowing out the underside of an enormous boulder and scouring away the

Fig. 3. Environment in the vicinity of Ord Shelter.

adjoining bedrock. A large granitic boulder some 12 m. in diameter occurs immediately in front of the shelter, all but concealing its entrance. While the shelter is nearly impossible to locate from below, it permits excellent surveillance of the landscape to the northeast. Entry to the shelter is gained by following a narrow ledge from the east and dropping into the opening, or by sliding down a rock chute just to the west. Judging from the remoteness of the refuge, and the ruggedness of the canyon in which it lies, it would seem unlikely that the shelter was a frequently visited stop along a commonly used passage.

THE DEPOSIT

The floor of Ord Shelter slopes up sharply toward the back (south) wall, and there is only a small, narrow level floor about 60 cm. wide and 1.5 m. long near the front (Fig. 4). The cultural deposit occurred on this small area only, and was kept in place by several large rocks. At the time it was found, the entire cultural deposit was concealed below a layer of decomposing granite about 5 cm. deep. Below this sterile overburden was a bed

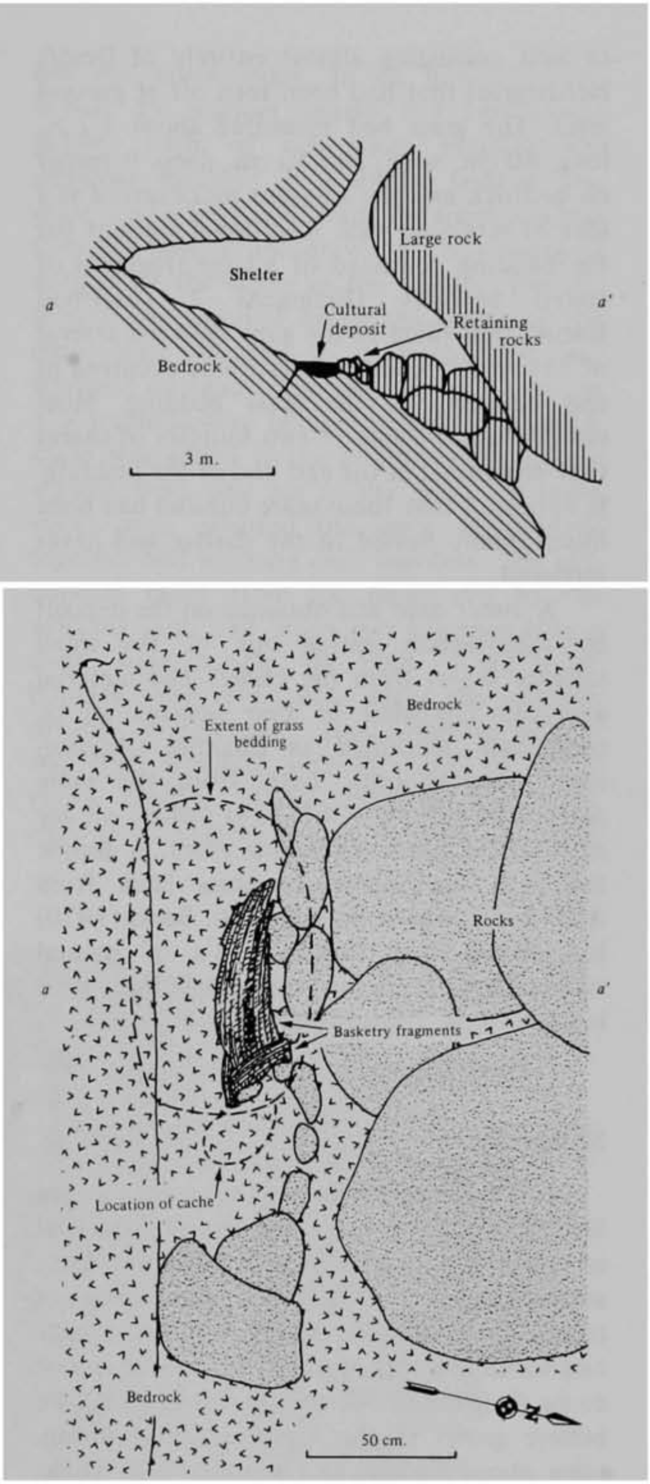

Fig. 4. Elevation and plan views of the archaeological deposit in Ord Shelter.

or nest consisting almost entirely of Desert Needlegrass that had been torn off at ground level. The grass bed measured about 1.2 m. long, 60 cm. wide, and 30 cm. deep. It rested on bedrock and the adjacent rocks served as a sort of retaining wall. Additional support for the bedding consisted of a large fragment of coiled basketry (Fragment 2, described below) that filled in the gaps between several of the rocks. Additional artifacts occurred in and adjacent to the grass bedding. Most notable was a cache of two bundles of snares that was found at the east end of the bedding. It appeared that these snare bundles had been intentionally buried in the shelter and never retrieved.

A direct date was obtained on the deposit by radiocarbon dating one of the small scissors snares from the cache. The material analyzed consisted of two wooden sticks, tentatively identified as Chamise (*Adenostoma fasciculatum*), both from the same snare. The sample (UCR-858) yielded an age of 1770 ± 100 radiocarbon years. A simple B.C./A.D. equivalent, counting back from A.D. 1950, would be A.D. 180. Suess (1970) has shown that similar levels of natural radiocarbon occur in tree rings that grew between A.D. 100 and A.D. 400.

DESCRIPTION OF ARTIFACTS

Scissors Snares

Large Scissors Snares. The cache in Ord Shelter contained two snare bundles, the first of which (Bundle 1) contained three large scissors snares (Fig. 5). These items consist of paired sticks bound loosely together at one end forming a sort of hinge. The sticks appear to be Chamise wood, the nearest of which we believe grows in the San Bernardino Mountains about 30 km. to the south. The sticks average about 35 cm. long and 0.8 cm. in diameter. Some of the bark remains on the sticks. The binding at the hinge end consists of yucca fiber, probably Mojave Yucca, which generally produces longer fibers than does the Joshua Tree. Both species occur near the shelter. It can be seen from Fig. 5 that the binding on the hinge end of these large scissors snares was applied in such a manner

Fig. 5. Snare Bundle 1 containing three large scissors snares (average length, 35 cm.), with a typical example from Bundle 2 for comparison.

that the sticks are kept about 1.5 cm. apart. Scoring of the sticks prevents the binding from slipping off the ends. The other ends of the sticks apparently were originally fitted with slip loops and draw cords in the same manner as the smaller snares described below. However, while the slip loops and their associated wraps are present, the companion stick of each snare lacks a draw cord and trigger. Apparently these cords were removed in antiquity to be used for some other purpose. There is only minimal evidence of scoring on the sticks at this end. When compared to the smaller snares, much less care was exercised in the preparation of the sticks for these specimens. The whole bundle is secured with wraps of bark, possibly of Great Basin Sagebrush.

Small Scissors Snares. The second snare bundle (Bundle 2, Fig. 6) was found to consist of two smaller bundles. Bundle *2a* contained 17 scissors snares and one noose snare; Bundle *2b* contained 38 scissors snares and one noose snare. In all, Bundle 2 contained 55 scissors snares and two noose snares. Each of the lesser bundles was gathered together in a similar fashion: the snare sticks were collapsed, the snare was laid atop the bundle, the draw cord was wrapped around all the sticks in the bundle, and the trigger was inserted under the wraps of the draw cord attached to it. Each snare was wrapped on (and taken off) one at a time, as if a trapline were being dismantled and each snare was added to the bundle as the hunter walked from one set to the next. All snare sticks were oriented the same, hinge ends together and working ends together. The two bundles taper from the hinge end to the working end, and when put together into a single large bundle, the ends of the lesser bundles were reversed to make the package roughly symmetrical. The complete bundle was then wrapped with six turns of heavy yucca cordage. These bindings had been chewed by rodents so that only the six wraps

Fig. 6. Snare Bundle 2 prior to dismantling. Sticks average about 21 cm. in length. Courtesy of the Lowie Museum of Anthropology, University of California, Berkeley.

over the top of the bundle are preserved.

The individual snares are very consistent in design and construction; uniformity is seen throughout (Fig. 7). The peeled sticks of the scissors snares are 18.1 to 25.0 cm. long (average 21.1 cm.) and 0.4 to 0.6 cm. in diameter (average 0.5 cm.). Again, the wood appears to be Chamise. All sticks were stripped of bark; some exhibit striations in a right-hand helical pattern as if the scraping tool bit too deeply in spots. These marks are also evidence that the craftsman that made the snares was right-handed. Given their uniformity, it is not unlikely that the scissors snares in Bundle 2 were all made by the same individual. At the hinge end, both sticks were scored to receive the cordage that fastens the two together. Because of the way in which they are loosely bound, when the sticks are drawn together with crushing force (in the manner of a nutcracker), the moving parts do not rub or bind.

At the opposite end of each snare assembly, one stick has a small cordage loop bound

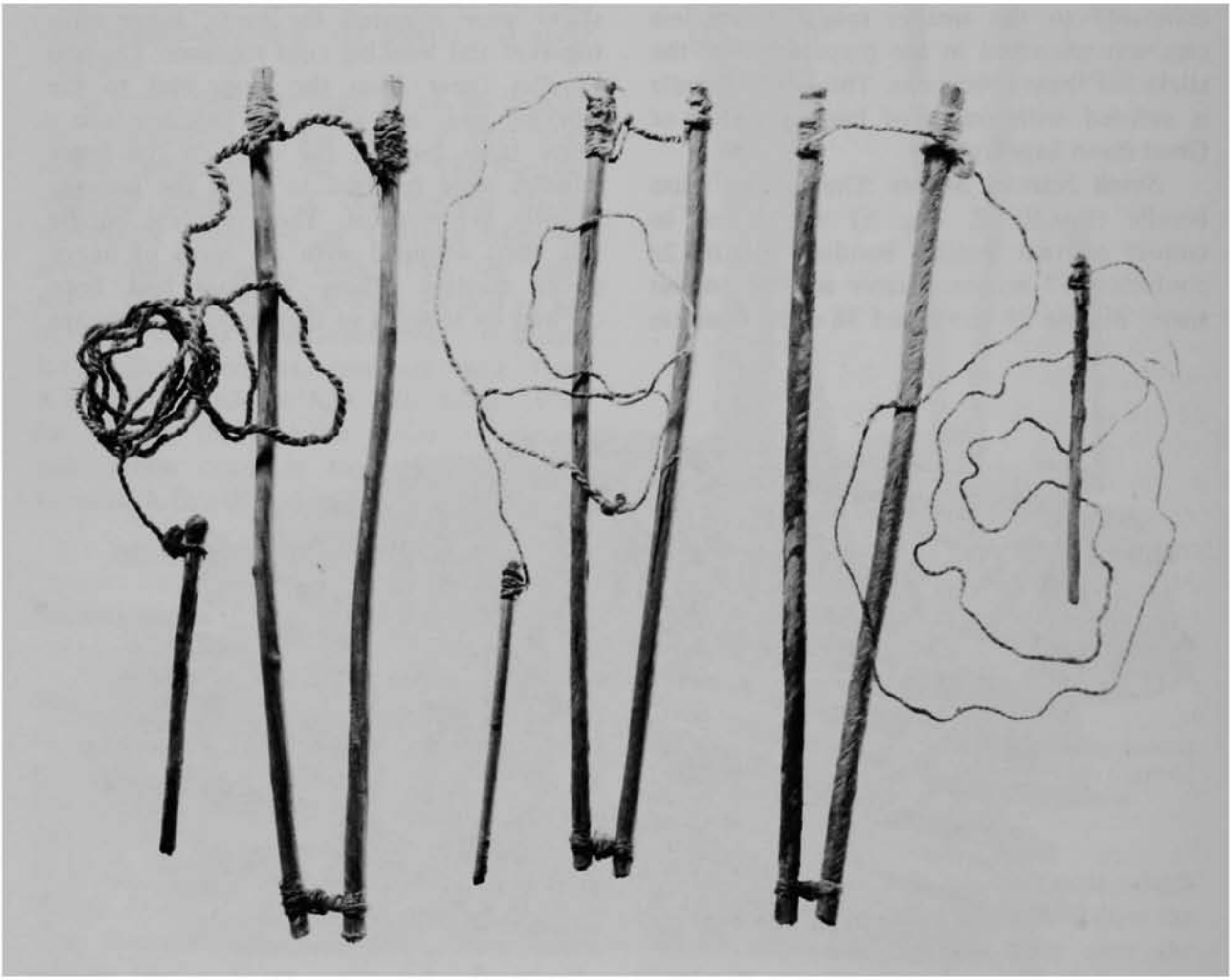

Fig. 7. Three complete scissors snare units from Bundle 2. Note the similarity of construction. Length of sticks in center specimen, 20 cm. Courtesy of the Lowie Museum of Anthropology, University of California, Berkeley.

on near the end. The second stick has the end of the draw cord tied to its end. These ends of the sticks are not scored. Draw cords range from 64 to 112 cm. in length (average 85 cm.).

On each snare, the draw cord is knotted to one stick and passes through the loop tied to the other. The loose end of the draw cord is then tied to a trigger. The person who fashioned the Ord Shelter snares showed no preference in his use of Z- or S-twist cordage. Both occur in about equal number. All cordage from the site appears to have been made from Mojave Yucca or Indian-Hemp (*Apocynum* sp.). Again, no favoritism is displayed: 27 snares have yucca draw cords, 27 have Indian-Hemp, one has no cordage preserved. Some specimens, such as that shown in Fig. 8, have draw cords of one material and slip loops of the other. All the cordage appears to be 2-ply.

The trigger sticks seem to be almost haphazardly prepared when compared to the carefully crafted snare sticks. Length of the triggers varies from 7.4 to 10.1 cm. (average 8.5 cm.), and diameters range from 2.5 to 4.0 mm. (average 3.6 mm.). Unlike the peeled scissors sticks, the trigger sticks often have the bark left on. No scoring is evident on the triggers to help anchor the cord; tying the knot just below a branching node accomplished the same end (and did not weaken the already fragile trigger). Several species of wood, all unidentified, are represented in the triggers.

Of the 55 scissors snares in the bundle, 33 are complete units with sticks, draw cord, and trigger intact and bound together. Many of the draw cords have snapped, presumably during use. When this occurred, a square knot was used to restore the snare to working order. The 33 complete units show that 17 such repairs were made.

One of the snares, the specimen central to Bundle 2*b*, is of interest because of the way in which the draw cord was wrapped (Fig. 8). Instead of being wrapped around the sticks, it was wrapped between them, around the cordage attachments at each end. It is also unique in the collection in that the proximal end of the draw cord consists of a smaller, doubled cord that passes through a very tight loop on the larger diameter portion of the draw cord. The two strands of the larger diameter cord are carefully marlinespiked back upon themselves to form the splice loop.

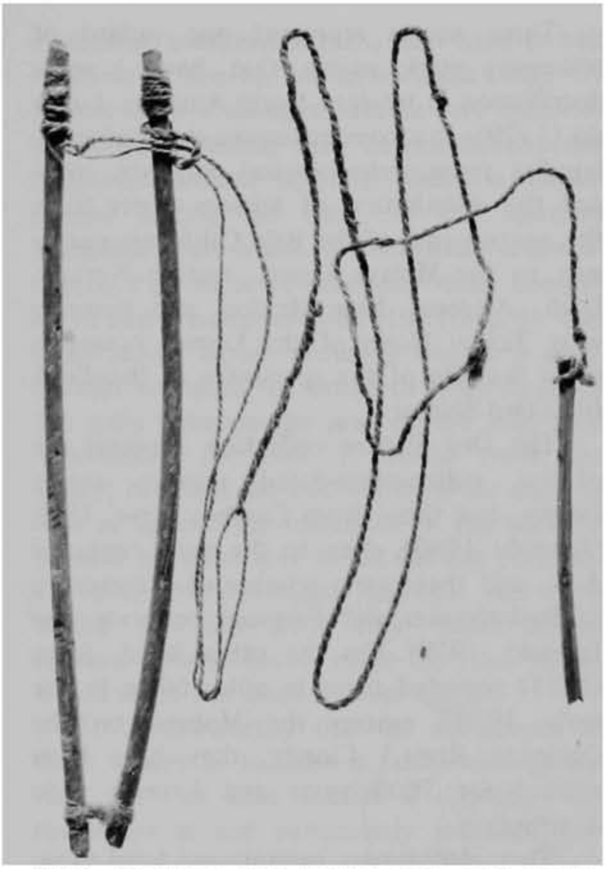

Fig. 8. Specimen with unusual draw cord arrangement. Length of longest stick, 20 cm.

Discussion and Comparisons. The degree of preservation of these snares is remarkable. Despite their age, they appear to have been made only yesterday. The cords, particularly those of Indian-Hemp, are as soft and pliable (and probably as strong) as the day they were made.

These snares represent one variant of collapsing stick snares that have a wide distribution in western North America. Janetski (1979), in a comprehensive study of snare bundles from archaeological contexts, mapped the distribution of scissors snares from the central part of the Baja California peninsula to the Mojave Desert, eastern Nevada, Utah, Arizona, New Mexico, and extreme west Texas. None of the known examples rivals the size of the specimens in Bundle 1 from Ord Shelter.

The Ord Shelter collection contains the oldest radiocarbon-dated scissors snares known, but those from Cowboy Cave, Utah (Janetski 1980), date to the early centuries A.D., and there are a number of occurrences in Basketmaker and Fremont contexts (see Janetski 1979). On the other hand, Spier (1955) reported them in notes taken in the early 1930's among the Mohave on the Colorado River.[2] Clearly, they have been around for 2000 years and have a wide distribution.

They also display pronounced local variation with regard to details of trigger design and placement, nature of the slip loop, and overall size. The Old Shelter specimens and one in the Castaldí collection from central Baja California (Massey 1966) have triggers attached to the distal end of the draw cord and the triggers are blunt, rather than pointed. Most other examples have pointed triggers, possibly for impaling some form of bait. The collection from Moki Canyon, Utah (Judd 1970), has pointed triggers attached to the distal end of the draw cord. Snares from Sawmill Shelter, Nevada (Schellbach 1927), have both the trigger, which is pointed, and the slip loop positioned midway between the working ends of the sticks. A specimen from White Dog Cave, Arizona (Guernsey and Kidder 1921), has a hole bored through the working end of one of the sticks and this hole serves as the slip loop. The Mohave scissors snare reported by Spier has the trigger located about midway along the draw cord. Whether it is pointed or not cannot be determined.

A closely related snare type, referred to as a hinged-stick snare, is made of a single stick with two greenstick kinks forming the hinge. The slip loop on these specimens consists of a simple loose overhand knot tied in one end of the stick itself. Such specimens were found at Eastgate Cave, central Nevada (Elsasser and Prince 1961), and at Lovelock Cave, west-central Nevada (Loud and Harrington 1929). The latter specimens are only about 9.5 cm. long and were obviously intended for use on very small animals. Another variant in the matter of slip loop design is evident on specimens from the Granite Mountain area of Nevada (not formally reported, but illustrated by Elsasser and Prince 1961:Pl. 25*i*) and from Lovelock Cave, Nevada (Loud and Harrington 1929:102, Pl. 44*a*). The latter are only 9 cm. long and could have been used only on very small animals such as mice. The slip loop on these specimens is made by bending one end of the stick back over on itself and tying it down. Some specimens with this type of loop show that the twig was first thinned to facilitate bending. Hinged-stick snares have a distribution that is more northwesterly than that of any known scissors snares. The reported occurrences are all in Nevada (Janetski 1979:307; Elsasser and Prince 1961:143, 148).

Thus, while each collection is generally similar to most or all others, there are nearly as many variants as there are collections of collapsing stick snares.

Even as there is extreme morphological variation among the various collections of collapsing stick snares, there is also considerable speculation on exactly how they worked. For purposes of our discussion, we use the term *snare* to refer to the individual artifact of stick and cord as a self-contained unit. None of the snares discussed here is capable of operating by itself, however. In addition to some device to engage the trigger, and perhaps some form of bait, brush or sticks placed so as to direct the prey to the desired spot, additional sticks to trip the mechanism, etc., an energy source is needed to make the snare do its job. The entire assemblage, the snare and all the additional paraphernalia needed to make it work, we call a *trap*. One trap might involve the use of several snares. The energy source might be a spring pole, or a weight (such as a rock) tied to a line and slung over a branch, for instance. Various reconstructions have appeared in the literature (Schellbach 1927; Spier 1955; Elsasser and Prince 1961; Janetski 1979). Such reconstructions are sometimes more ingenious than practical, we believe, and experiments conducted by one of us (DRE) have shown that making the traps work is one thing; making them catch animals is another (Echlin 1981).

We are not particularly bothered by the fact that some of the sets require in addition to the snare quite a number of additional twigs; twigs are easy to find. We do not particularly favor set-ups that require placement over a rodent hole. Such set-ups require the availability overhead of a suitable branch to use for an energy source or require the construction of one with a spring pole or suspended weight. We favor the idea of bringing the animal to the trap rather than taking the trap to the animal's burrow. This could be accomplished through the use of available branches for energy sources, the use of fences of brush and sticks, and the use of bait such as an acorn. The use of both fences and bait is amply documented in ethnographic literature on traps in western North America.

Figure 9 shows two suggested sets using scissors snares. Figure *9a* is derived from Janetski (1979:Fig. 8) (apparently based on Schellbach 1927) and shows a very simple device requiring, in addition to the snare, only a resilient overhead branch, some kind of bait (such as an acorn), and three small twigs. We believe such a set-up would be very effective on small mammals such as the White-tailed Antelope Ground Squirrel, which is diurnal (active during the day), or the Merriam Kangaroo Rat, which is nocturnal (active at night). Fig. *9b* is considerably more complicated and is based on Spier (1955:Fig. 1). The latter set-up would probably require a semicircular enclosure of brush or twigs to guide the prey between the jaws of the trap as it approached the bait. It would crush the animal between the two sticks of the snare as well as against the underside of the wickets. Neither of these sets would lift the prey out of reach of scavenging animals, but both would function with very weak energy sources. Every move made by the victim would cause the snare to close tighter.

It is noteworthy that the occurrence of these snares in bundles is fairly widespread. And the fact that Bundle 2 contained 55 specimens is not particularly unusual. Evidently they were set out in traplines. What *is* unusual is the fact that bundles of spring poles have not been reported (to our knowledge) in the archaeological literature.

Noose Snares

The two noose snares are of similar design and construction. They each consist of a length of 2-ply yucca cord. One of them is about 115 cm. long when stretched out; the other is shorter. Both specimens are shown in the same attitude in Fig. 10. It can be seen that each has a running loop or noose in one end. The lower specimen has a fixed loop in the other end; this end appears to be chewed off in the upper specimen. The slip loops were both formed the same way: an overhand knot pulled tight is secured behind another overhand knot pulled tight. This is the business end of each snare, that is, the end where the prey was caught. Midway the length of the

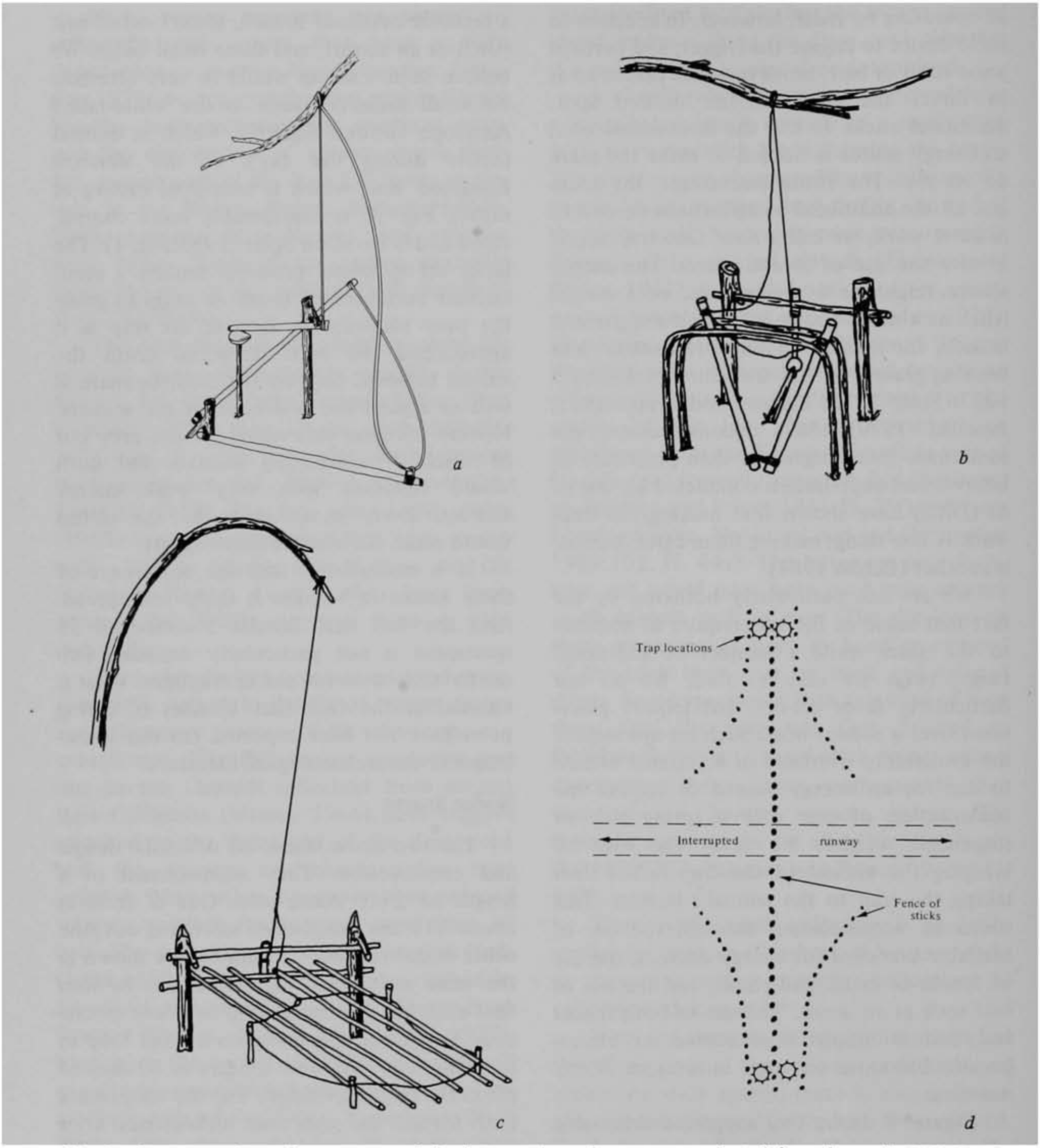

Fig. 9. Reconstruction of trap sets. *a*, baited trap using scissors snare, adapted from Janetski 1979:Fig. 8; *b*, baited trap with scissors snare, after Spier 1955:Fig. 1; *c*, trap made with noose snare and treadle, after Spier 1955:Fig. 1; *d*, schematic arrangement of noose snares in interrupted game trail or runway, after Spier 1955.

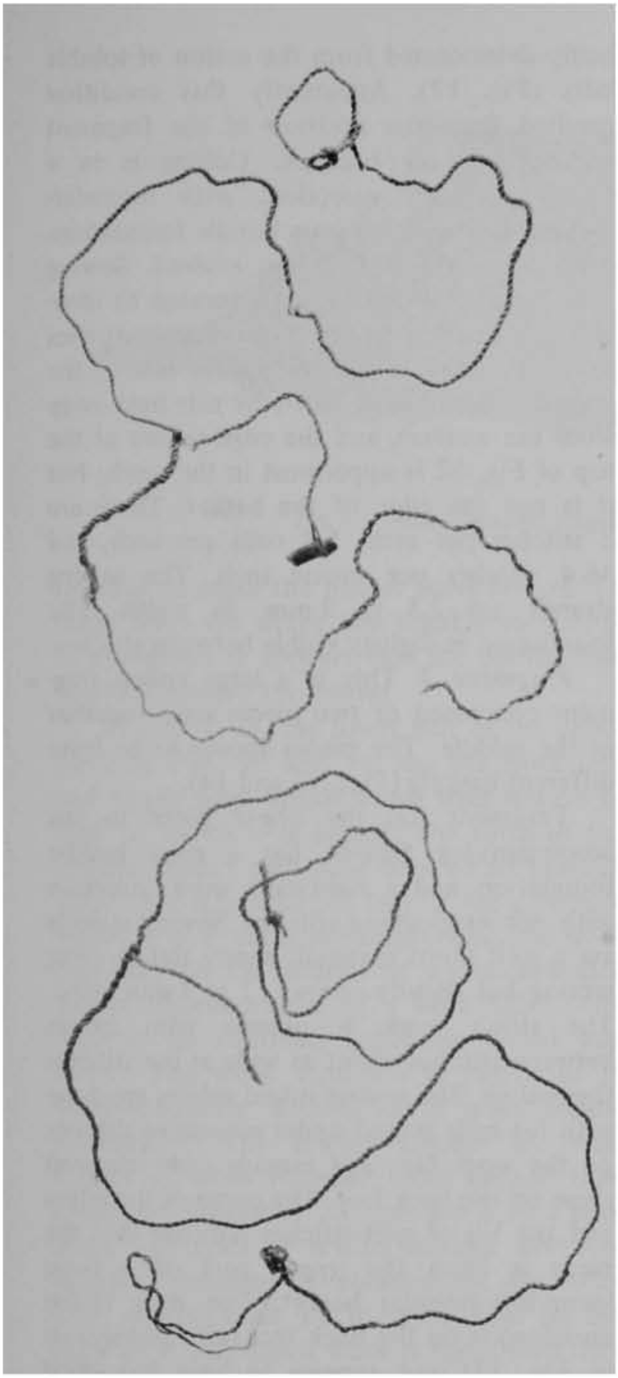

Fig. 10. Noose snares from Ord Shelter. The upper specimen retains the trigger.

main cord is a short, second cord attached by looping it tightly around the main cord and then marlinespiking it back under the plies of the latter. The upper specimen still has a short toggle or trigger stick measuring 6 x 17 mm. attached to its distal end. This short stick is not tied to the end of the short cord. Rather, the short cord was made from a single ply that was wrapped once about the short stick in a groove scored in its surface. The ply was then secured with a simple overhand knot and twisted to build up the cord, which was secured to the long cord by marlinespiking. The distance from the trigger stick to the long cord is about 11.5 cm.

Noose snares of various design occur widely in the western states, as indicated by Janetski (1979). A specimen nearly identical to the Ord Shelter snares is reported from a Basketmaker II context in northeastern Arizona (Guernsey 1931:Pl. 31*d*). Spier (1955: 3-4) illustrates and describes one as part of a trap used by the Mohave.[3] It differs slightly in that the trigger is longer than that on the more complete of the two examples from Ord Shelter. Spier indicates that a complicated arrangement of sticks was needed to set such a trap and that fences of sticks were used to guide animals into them as they moved along game trails. The intended prey was said to be rabbits, quail, raccoons, and beaver. The set was not baited, but relied on foot pressure of the quarry on a treadle of sticks to trip the mechanism. Figures 9*c* and *d* are adapted from Spier (1955) and show the trap as it would have appeared when set. Barrett (1952[I]:Pl. 17) shows a similar trap set for quail among the Pomo. He also illustrates the same type of snare rigged in a different trap device set among tules for mudhens (p. 141).

Wrapped Rodent Jaw

A fragmentary lower jaw (mandible) of a Black-tailed Jack Rabbit, around which is wrapped a number of turns of sinew and yucca fiber, was found in the course of screening the grass bedding (Fig. 11). Most of the right half of the jaw is missing, as is the

Fig. 11. Wrapped rodent jaw, actual size.

left ascending ramus. Both incisors are present, and the left one is chipped on the inside surface of the cutting edge at the left side of the tooth. The sinew wraps are just behind the incisors as if to reinforce the jaw and keep it from splitting down the center when subjected to heavy use. These tight sinew wraps are overlain and partially obscured by loose wraps of yucca fiber. Nearly identical specimens were found in late contexts in Ventana Cave, Arizona (Haury 1950: 382-383). In three of the Ventana Cave specimens, the incisors are broken out of their sockets, suggesting rough treatment. Haury cites Pond (1930) for an illustration of such an item used in flaking arrow points. This seems an entirely reasonable explanation of the function of these objects. The Ord Shelter specimen may have been hafted to facilitate use, to judge from the presence of the yucca fiber. Our examination of the specimen suggests that the minute interstice between the incisors would have engaged the cutting edge of a flaked stone implement for retouch flaking. If the individual were right-handed, damage of the sort seen on the Ord Shelter specimen would be expected to occur from such use.

Coiled Basketry Fragments

Fragment 1. Fragment 1 is a piece of basketry 25 cm. long and 7.5 cm. wide, and is badly deteriorated from the action of soluble salts (Fig. 12). Apparently this condition resulted from the position of the fragment immediately on bedrock. Coiling is in a rightward work direction, with noninterlocking stitches on a grass bundle foundation. No recognizable splices are evident. Sewing strand materials are too deteriorated to identify. The configuration of expansion stitches shows that the curled-up concave side of the fragment is the back face (the side held away from the weaver), and the edge shown at the top of Fig. 12 is uppermost in the work, but it is not the edge of the basket. There are 8 stitches per inch, 5.8 coils per inch, and 46.4 stitches per square inch. The sewing strands are 2.5 to 3 mm. in width. The foundation is slightly visible between stitches.

Fragment 2. This is a large coiled fragment composed of two pieces sewn together in the middle. The pieces appear to be from different baskets (Figs. 13 and 14).

Fragment *2a*, the upper piece in the accompanying figures, has a grass bundle foundation and a rightward work direction with noninterlocking stitches. Sewing strands are a split shoot material, nearly flat in cross section but slightly convex, 2 to 3 mm. wide. The stitch work is uneven with spaces between stitches about as wide as the stitches themselves. The sewing strand splices are done with fag ends bound under successive stitches on the work face and moving ends trimmed close on the back face. The curve of the edges and the V's of split stitches indicate that the piece is from the upper part of a large incurving globular basket. The wear (from abrasion) is on the back face (that not shown in Fig. 13) and appears to have happened after the two pieces were joined since it coincides on the two fragments. There are 6 coils per inch, 5.3 stitches per inch, and 32 stitches per square inch. There are many double stitches where none seems required, unless the stitch count of successive rows was

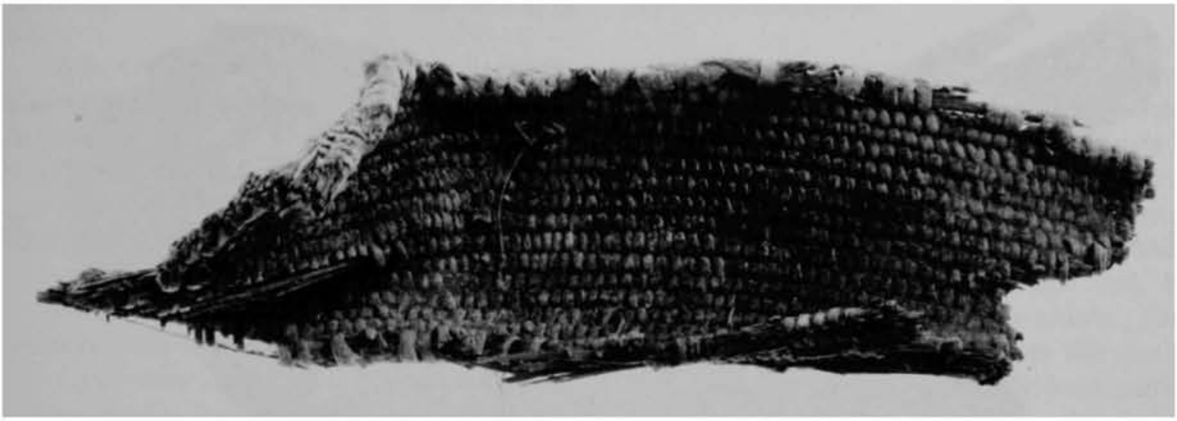

Fig. 12. Coiled basketry fragment (Fragment 1). Length, 25 cm.

reduced to make the basket curve inward. To judge from the shape and slight preservation of curvature, it appears that the convex side was held toward the weaver.

Fragment 2*b*, the lower half of the upper piece in Figs. 13 and 14, has the work face and upper edge upside down with respect to that to which it is joined. The form of the original basket may have been either conical-sided or a very large flat tray. If the curvature which it now has is not a distortion, the work face was on the interior of a conical-walled basket, representative of a work habit common in all southern California coiled basketry. The work direction is rightward in noninterlocking stitches on a grass bundle foundation. The sewing strands are split shoots of more rounded cross section than those on Fragment 2*a*, and are 2 to 3 mm. wide. Fag ends of sewing strands were not observed because of abrasion on the work face; moving ends are trimmed close on the back face. The stitch work is fairly even with little of the foundation showing through. There are 6 coils per inch, 7.8 stitches per inch, and 47 stitches per square inch.

Examination of the weave of these fragments revealed that there were a number of grass seeds embedded within it. A sample of these was removed and identified as Six-weeks Grama (*Bouteloua barbata*) and Desert Needlegrass. These seeds probably derive from the grass bedding and do not represent food items contained in the baskets when they were complete.[4] Seeds occur on both surfaces. Both species are native to the area.

Fragment *3.* This piece is 19 cm. long and 2.5 cm. wide in the middle. The work direction is rightward in noninterlocking stitch on a grass bundle foundation. The sewing strands are a peeled shoot material 1.5 to 3 mm. wide. The working edge of the basket is at the bottom as the specimen is shown in Fig. 13, and the curvature of the piece suggests that the work face was on the concave side of a conical-walled basket. The splices are done with the fag ends bound under successive stitches on the work face and the moving ends trimmed close on the back face. There are 6 coils per inch, 8 stitches per inch, and 48 stitches per square inch. The stitch work is fairly regular with only a little of the foundation showing through between stitches. There is extensive abrasion wear on the work face. The piece fits well in outline and conforms in respect to work face and stitch work with the lower edge (see Figs. 13 and 14) of fragment 2*b*, and may have been broken from it. No less than eight grass seeds (Desert Needlegrass) are embedded in the

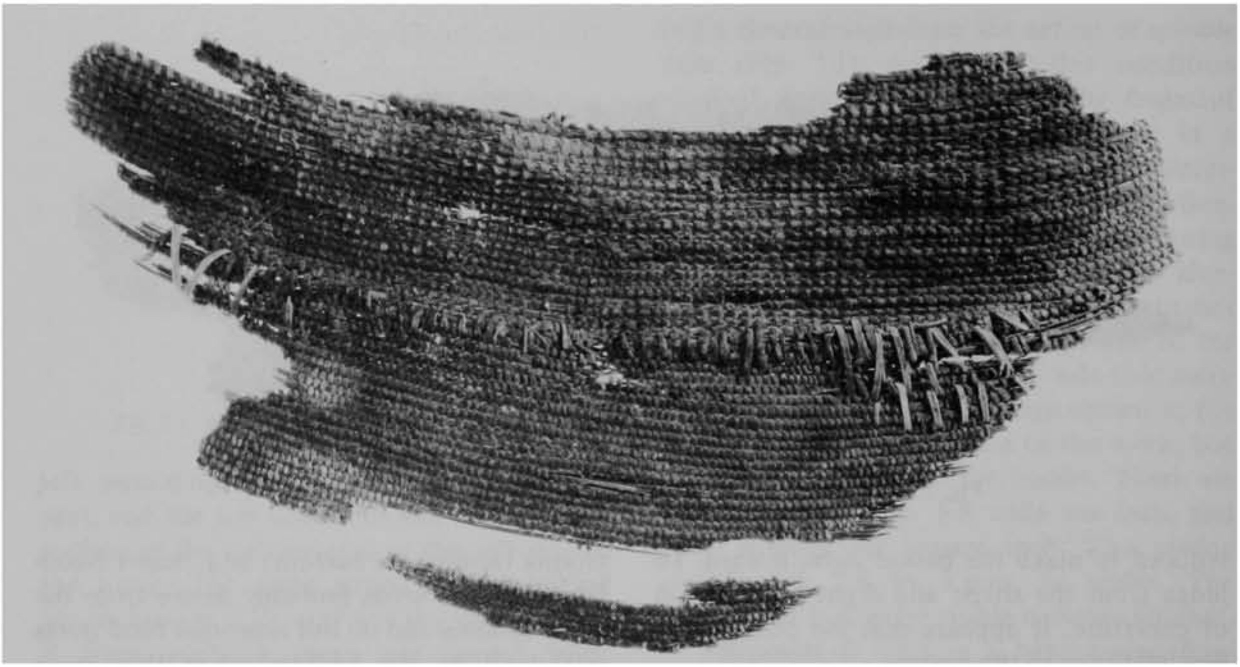

Fig. 13. Coiled basket fragments. Upper: Fragment 2; Fragment *2a* (upper half of specimen) is sewed onto Fragment *2b* (lower half of specimen); length, 48 cm. View shows work face of Fragment *2a*, back face of Fragment *2b*. Lower: Fragment 3; back face is shown.

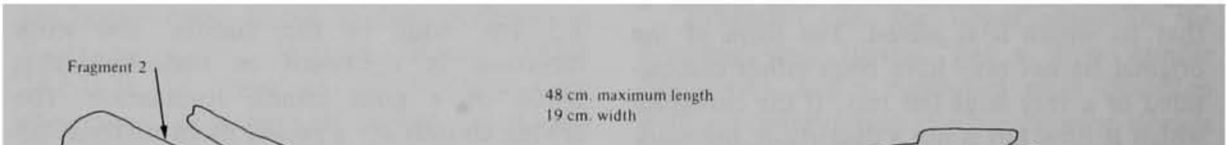

Fig. 14. Schematic drawing showing the arrangement of Fragments *2a*, *2b*, and 3.

stitching of this small basket fragment (Fig. 15).

All of the fragments resemble in detail the coiled basketry made in ethnographic times throughout southwestern California south of Gabrielino territory.

Carrying Net

Several fragments are parts of a large, coarsely woven carrying net or bag (Fig. 16). The specimens consist of twisted bark of unknown identity and yucca fiber. The net is woven by the method of knotless netting referred to as *loop-and-twist*, crossed left-over-right (Emery 1966:31) (Fig. 17). There is no way of knowing how large the net originally was, but it is apparent from the size of the material used in construction that it was very strong.

Fig. 15. Seed of Desert Needlegrass embedded in the stitching of Basket Fragment 3.

Miscellaneous Items

The collection includes a few isolated examples of cordage of yucca fiber, miscellaneous knots, twists of fiber, and twists of rawhide. These could not be related to any of the other specimens, and none of them is particularly noteworthy. Several badly decomposed sticks, scored on one end, are parts of two or more scissors snares. They were recovered from a crevice in the rear of the shelter and had presumably been carried there from Bundle 2 by pack rats. A few pieces of firewood, including an entire small tree trunk, lay on the rocks adjoining the bedding and gave evidence from their charred ends that a former occupant of the site had kindled a fire. The wood was identified in the field as Cat's Claw, which grows in the canyon immediately below the shelter.

INTERPRETATIONS AND SPECULATIONS

Ord Shelter and its contents, as described here, present evidence of one aspect of subsistence activities in the south-central Mojave Desert in the early centuries A.D. (assuming the single radiocarbon assay accurately dates the assemblage). The assemblage includes debris and implements left by perhaps only one person, probably a male. We say this with some certainty because of the male attribution usually given to hunting gear, and because the flat area in the shelter is so confined that it is all but impossible for more than one person to occupy it at a time, particularly while sleeping. The grass bed or nest was so small that even a single person could occupy it only in a fetal position. We think the shelter may have been an overnight camping place for a hunter who was part of a group foraging in the area, or at least within walking distance of the site.

It is possible to consider the artifacts in two groups, those that were actively used at the time of deposition in the shelter, and

Fig. 16. Fragments of coarse carrying net or bag. Centimeter scale.

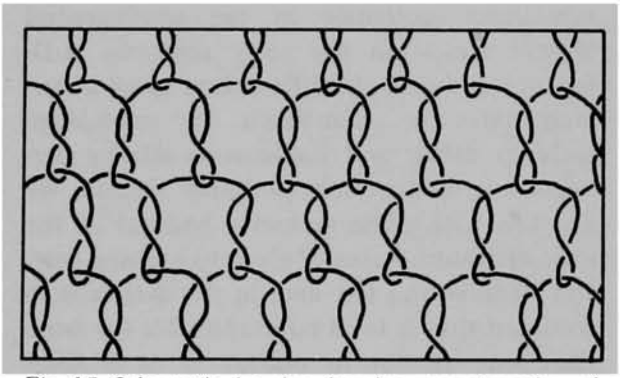

Fig. 17. Schematic drawing showing reconstruction of the method of weaving employed in the carrying net represented by the fragments shown in Fig. 16.

those that had ceased to function in the manner for which they were made. The former group includes the complete snare bundles (and the firewood, which constitutes a rather casual form of artifact). The latter includes what appear to be worn-out discards (the carrying net and possibly the sinew-bound rodent jaw). The presence of yucca fiber on the rodent jaw suggests that the item had once been hafted but that it had been broken and lost or discarded. If our suggestion that it was used for pressure flaking of stone has merit, such activity took place elsewhere because there was no flaking waste in the shelter. The latter group of artifacts includes also items that no longer served their original function. Basket Fragment 2 clearly served, in the context in which it was found, to help provide a foundation against the adjoining rocks for the grass bedding. Its function had changed, and from the contorted nature of Fragment 1, and the way it lay immediately on underlying rocks, we believe the latter specimen was intentionally placed on the rocks to perform the same function, despite its small size. Perhaps these items originally were the only bedding or matting of any sort in the shelter, the bunchgrass having been added later. Prior to emplacement in the shelter, Fragment 2 appears to have served as a mat, pieced together from lesser fragments.

It is not clear why there were only two noose snares when so many scissors snares are represented. The noose snares would likely have had a function quite different from that of the scissors snares, and whatever game was sought in the Ord Mountains was probably more easily taken with the latter.

The fact that at least 55 small scissors snares were in the bundle when it was cached suggests that the occupant of the shelter ran an extensive trapline. Given the kinds of animals present within a few kilometers of the site, and in consideration of the size of the individual snares, we would suggest that the intended prey may have been the White-tailed Antelope Ground Squirrel if trapping occurred during the day, or the Merriam Kangaroo Rat or possibly even the Desert Pack Rat if trapping occurred during the night. The first two of these might have been taken in traps baited with such foods as acorns or pieces of mesquite pods in the manner shown in Fig. 9*a*. If, however, the prey was the larger Desert Pack Rat, the bait may have been cactus tissue. Vorhies and Taylor (1940) have shown that the White-throated Wood Rat (*Neotoma albigula*) of southern Arizona relies heavily on cactus tissue for food, as well as for all of its water. In certain seasons as much as 90 percent of its food consists of cactus tissue. Several species of cactus, including Silver Cholla, Hedgehog Cactus, and Beavertail (*Opuntia basilaris*) are well represented in the local environment. If cactus tissue was used for bait, we should expect the triggers to be pointed, and the food skewered on them, as for example the so-called Promontory pegs from western Utah which are sometimes found skewering prickly-pear pads (cf. Dalley 1976:60, Fig. 29). Since the triggers are not pointed, we favor use of some dry bait, such as nuts or seeds, and also favor the notion of use of these snares to take such species as ground squirrels or kangaroo rats.

Examination of the hinge end of the snares with a binocular microscope did not reveal the presence of any blood or animal hairs. It was thought that hairs, if present, might be identifiable and provide some insight into the identity of the intended prey.

Janetski (1979) argued at some length that use of snares for taking small rodents would have been of particular importance in the early spring when stored food supplies had run out and fresh plant foods, such as seeds, were not yet available. He also based his statements in part on the fact that some of the rodents he considered aestivate (become dormant) during the summer months. The White-tailed Antelope Ground Squirrel does not aestivate.

We therefore cannot say at what time of the year the snares from Ord Shelter were used. Examination of the bedding revealed that the grass plants were fully mature, but the inflorescences were almost all missing, and it is not possible to say at what time of the year they were collected. The presence of firewood might suggest that use of the shelter occurred at some time of the year when a fire was desirable for warmth, i.e., other than mid-summer. What we can say is that the site seems to represent the activities of a hunter who set out traplines, probably in quest of small animals such as ground squirrels or kangaroo rats. That he also went after larger species such as, perhaps, the Desert Cottontail, is indicated by the larger snares in Bundle 1.

Why the snares were left in Ord Shelter and never retrieved is a mystery. There is certainly nothing to indicate that they could not be taken out today and put to work. The fact that no food refuse was found in the shelter and no other tools that were obviously usable at the time of deposition were found there leads us to believe that it was used for short periods at a time, perhaps only a few hours. The bedding suggests that use may have occurred in the heat of the day or at night. Day use would likely have left more refuse in the shelter than night use, and, except for yucca fiber, refuse of any kind is all but lacking in the assemblage. Moreover, most desert mammals, with the exception of ground squirrels, are active at night in all but the coldest months of the year, and for this reason we favor night use. If this line of conjecture is not completely unreasonable, we would suggest that the hunter might have gone to the area and set his traps toward sundown, spent the night in the shelter as he may have many times before, and run the trapline the following morning. If he had a successful night, the trapline might have been dismantled and the snares cached until the next time he felt like going to all the effort to set it out again.

The implications are: that the occurrence of food refuse in the shelter would not be particularly likely since the site would be occupied only overnight (and there is no food refuse); that there should be some form of matting or bedding in the shelter (which there is); that the tool inventory in the shelter need include few or no items except for snare parts including cordage (which it does); that the snares were used at night (which they may have been; two species mentioned above are active at night); that the snares might be cached in the shelter until the next time (which they apparently were); and that the location might be known to only one person, and if he died, moved away, or otherwise never returned, the snares would be left there (which they were).

If all of this holds true, the most likely prey taken with the small scissors snares from Ord Shelter would probably have been the Merriam Kangaroo Rat.

While we have no way of knowing whether the scenario given above has any merit, it may be that snares are so often found in bundles because of situations such as that described. It might be revealing to examine, insofar as that might be possible at this late date, the functional contexts in which the snare bundles listed by Janetski (1979) were found. Such an examination might provide information that could support or refute the suggestions given above regarding what might have gone on at Ord Shelter. It might also be worthwhile to look more closely into the environmental context of each of the sites that has yielded bundles of snares. Such an examination might show that these sites tend to occur in ecotonal settings that presumably offer a greater diversity of animal species.

NOTES

1. Robert Bettinger and James O'Connell assisted with the excavation; Eugene Prince and Robert Hicks prepared the photographs; Carolyn Osborne identified samples of cordage; Oscar Clarke identified samples of wood; Sharon Dobbins identified seeds; Andrew Sanders identified plants; R. E. Taylor provided radiocarbon analysis; Peter Slota, Louis Payen, Barbara Gorrell, and Carol Rector assisted with analysis. We acknowledge the good offices of Frank Norick and the Lowie Museum of Anthropology, and of the Museum of Vertebrate Paleontology, University of California, Berkeley, and express our appreciation to all. We are especially grateful to Carol Rector and James Swenson for their helpful suggestions. Donald Grayson provided helpful information on the habits of small mammals. He should not be blamed for the speculations presented here.

2. The Mohave called them *cökta'vam* 'to pinch them'. The intended prey was said to be "big mice, rats, or the swift (kit-fox) [sic]."

3. According to Spier (1955:4), they were called *itcuró* 'twitch-up trap'.

4. We suggest that caution be exercised when cleaning basketry fragments in the field. Particularly on the interior surfaces, any seeds that might be embedded in the stitching can easily be lost through

careless brushing. Such seeds might provide insight into the former contents of baskets.

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