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## *A Cache of Vessels from Cottonwood Spring (Riv-937)*

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In the winter of 1975, a rockshelter cache (Riv-937), containing on the surface a whole burden basket, a buffware olla, an iron pan, and three "spirit sticks," was discovered by a Joshua Tree National Monument ranger. The cache was located in the rear of a ca. 2.5 m.-deep rockshelter near Cottonwood Spring in the southeastern part of the monument (Fig. 1). The rockshelter (elevation 1083 m.) is located in a clump of jumbled, weathered granitic outcrops in a Juniper-Yucca-Nolina scrubland area. The rockshelter is elevated ca. 10 m. above the adjacent ravine floor and faces west upon a wide granite shelf that is level with the rockshelter floor. On May 19-20, 1975, an excavation of the cache was carried out, which resulted in the recovery of the basket, olla, iron pan, and "spirit sticks," the discovery of several plant seeds either embedded within the basket weave or adhering to the olla bottom, and the partial removal and screening by 10 cm. levels of the rockshelter fill.

### DESCRIPTION OF THE CACHE

The cache occurred in a low-roofed rockshelter with two entrances. At the rear of the slightly sloping shelter floor was a large, closely-woven basket inverted over a heavily spalling buffware olla, while to the north, but adjacent to these items, were three spirit sticks standing upright against the rear rockshelter wall. These spirit sticks were buttressed by two large, flat rocks at their bases, while the olla was partially embedded in the rockshelter fill (Fig. 2). In addition, several long nolina (*Nolina* sp.) fragments were observed wedged along one side of the rockshelter, while woodrat (*Neotoma* sp.) fecal pellets were seen scattered around the cache and within the olla, which, due to holes caused by spalling, had



Fig. 1. Location of the Cottonwood Spring cache site (Riv-937).

partially filled with soil. Figure 3 shows the undisturbed placement of the cache. As shown, the basket was weighted down with a large, unmodified rock. Figure 3 also illustrates stages in the removal of the cache when an inverted iron pan was revealed between the basket and the olla, and the wide-mouthed olla itself appeared beneath the pan.

### DESCRIPTION OF ARTIFACTS

#### Burden Basket

The unusually well-preserved burden basket (Fig. 4) was submitted to Lawrence E. Dawson of the Lowie Museum, Berkeley, California, for examination. An extract of his comments is presented here *verbatim* in view of the numerous technical and cultural details which he documented in his examination:

The basket diameter is 47.5 cm., it is 29.5 cm. high and has a 7 mm. wall thickness. Coiled construction on grass (probably *Muehlenbergia rigens*) bundle foundation. Work direction rightwards, work face interior. Stitch type predomi-

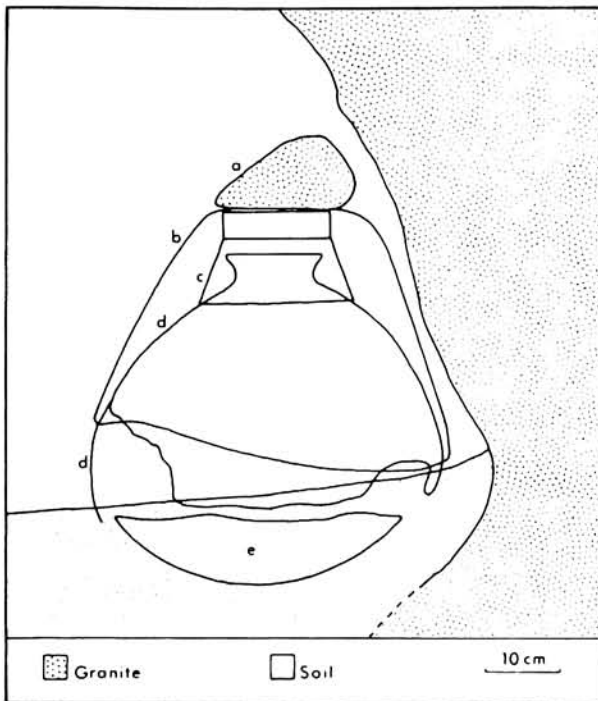


Fig. 2. Cross-section of the vessel cache *in situ*. The cache components include: (a) rock weight; (b) burden basket; (c) inverted iron pan; (d) fragmentary olla; (e) detached olla base.

nantly non-interlocking with a few split on the back face. Splices: fag ends mainly bound under successive stitches on the work face except in the black pattern where most of the fag ends are trimmed close on the work face (to produce a sharper pattern edge); moving ends trimmed close and covered by a successive stitch on the back face. Start is a tight spiral (probably begun in Yokuts manner) on shredded grass bundle for the first two coils. The rim is a self rim, and at the end of the coil there were three back-stitches. Sewing materials: split shoots apparently of *Rhus trilobata* outside the design; in the design are varying gold and buff shades of split *Juncus acutus* or possibly *Juncus textilis*, and the black elements are mud-soaked *Juncus* strands. The shape is a truncated cone rounded near the base. The design is a single wide band a little above the middle height of the basket (11 cm. above base, 7.5 cm. below rim, band width 12 cm.). It is bounded by a row of black checks above and below, and the center portion has (leftward) slanting diagonals in dark *Juncus* on



Fig. 3. Upper: Undisturbed placement of the cache in the rock-shelter. A rock weight is on the inverted burden basket. Scale with 10 cm. increments. Center: Inverted iron pan on olla after removal of the rock weight and burden basket. A repair patch is visible on the base of the pan. Lower: Wide-mouthed buffware olla after removal of the iron pan. The red-painted handprints are on the opposite side of the olla (Fig. 5).

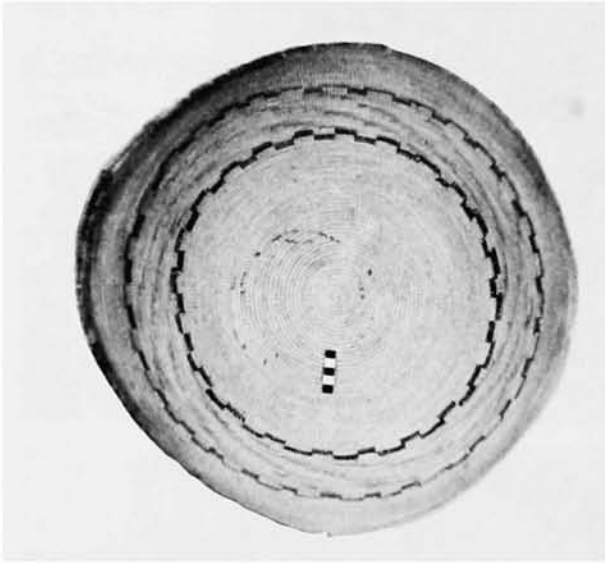


Fig. 4. Interior of the burden basket, showing the well-preserved design band elements. Diameter of basket 47.5 cm.

a ground of pale yellow *Juncus*. The basket was apparently in very good shape and near new when laid away, except that there are a few light burn marks in the interior base. There are abrasions on the pattern base both interior and exterior that may be rodent damage (and also one place on the rim). The basket is of the kind Kroeber [1908] spoke of in his Cahuilla ethnography as "a food stuffs container and burden basket for carrying in a net."

### Iron Pan

The galvanized iron pan, which has the form of a truncated cone, measures 23.5-24.5 cm. across the lip, 15-15.5 cm. across the base, 11.5 cm. deep from lip to base, and 10 cm. deep from lip to interior base (Fig. 3, center). A lower basal ring 3.5 cm. high has been affixed to the lower portion of the pan. The upper and lower lips are outwardly coiled or rolled around a wire ring. The pan consists of six snipped and rolled iron strips, 0.3 mm. thick, soldered together. Most of the strip edges are overlapped and finely soldered, while the convex base portion appears to be lightly form-stamped. One basal ridge seam is deformed and the seal broken, probably from

battering. The gray galvanizing is best preserved on the interior of the pan.

Four pitch (possibly *Larrea tridentata*) patches have been applied to the base plate of the pan. Three patches are on the inner surface, while the fourth is on the outer circular strip base. One of the holes had been patched earlier with lead solder, and the subsequent application of pitch repair partially obscures this western-style repair. The Cahuilla are known to have used pitch for repair and adhesive purposes (Bean 1974:40). No maker's mark or foundry stamp is visible. The pan gives the appearance of having been heavily used, dented, and indifferently subjected to a weathering environment.

The function of the pan is unclear. Its association with artifacts used by the Cahuilla in gathering and storing plant seeds suggests that it may have functioned in the processing of such plant foods, but this is uncertain.

The historic age of the iron pan can only be approximated. The 1894-95 Ward's catalogue (Schroeder 1970:419) lists a galvanized iron wash bowl of 10-inch diameter and truncated cone shape (#44740) which is similar to the cached pan but lacks the supporting basal ring. The 1897 and 1908 Sears, Roebuck and Co. catalogues (Israel 1968:148; Schroeder 1969:471) show a milk can strainer top similar in shape to the pan but having a screened bottom. The cached pan is also similar in form to some colanders shown in the 1897 Sears catalogue (Israel 1968:132), but the body of the catalogue specimen is curved instead of straight-sided like the cached pan. Despite this uncertainty, the pan appears to belong to a class of galvanized iron wash bowls or colanders produced during the period from 1895 to 1910.

### Buffware Olla

The buffware olla measures 39 cm. at the equator, ca. 40 cm. high from lip to base, 14.5 cm. wide at the mouth, and 3-6 mm. thick (Fig. 5). The exterior surface of the olla is gene-



Fig. 5. Upper portion of olla, showing two faint handprints in red paint below the neck. Diameter of mouth 14.5 cm.

rally reddish-buff with erratic fireclouding visible. Two handprints in red paint (right and left) of near-adult size (8 cm. wide by 12 cm. long) occur near the neck of the olla. The interior surface is anvil marked, smoothed, and reddish-brown in color. The interior of the olla base has a whitish-gray surface appearing over the red paste core, which may be either a thick wash or an exfoliating salt scum surface. This surface is crinkled and appears to be flaking off from the underlying core. The clay body of the olla is also spalling heavily where it rested on the rockshelter floor, probably due to salt crystallization within the clay. The core of the olla is a reddish-brown sedimentary clay paste containing fine to medium inclusions of granitic sands. Adhering to the interior of the olla bottom were several patches of gray-black vegetal material, which upon analysis yielded 1 goldfield (*Lasthenia* sp.) and 10 possible sage (*Salvia* sp.) seeds within an unidentified fibrous matting.

Hooper (1920:359) described the Cahuilla production of buffware vessels in which some residual clay was mixed into sedimentary clay before vessel forming. In addition, the Kamia also made red-burning buffware vessels, but their firing technique was much more controlled with very little fireclouding (Gifford 1931; Rogers 1936:27-28). On the whole, the

firing mode, paste composition and inclusions, and geographic location suggest a Cahuilla origin for the olla. The aboriginal function of an olla of this size was either that of a water storage vessel with stopper, or a seed storage vessel (Bean 1974:54). The presence of aboriginally used seeds adhering to the olla bottom strongly indicates that the cached vessel was used for the storage of seeds collected in the local area with the associated burden basket. The age of the olla is uncertain, but it undoubtedly dates to the historic period in view of its association with the iron pan and the burden basket.

### Spirit Sticks

The three curving branches, so-called "spirit sticks," adjacent to the cached vessels showed no cultural modification or attachments such as have been described for some spirit sticks by Bean (1974:54). Two of the branches are forked. One forked branch (forked end up) was inclined toward the cache, while the other two branches extended into a crevice. The branches are 50-70 cm. high and 4-6 cm. thick. The wood is probably juniper (*Juniperus californica*). The branches were located ca. 40 cm. north from the remainder of the cache, standing upright, but leaning against the rockshelter wall. Two large rocks, unmodified and without fireblackening, served as an outer support or buttress which pressed the branches up against the east wall of the rockshelter. No subsurface cultural deposit was found beneath the rocks and branches.

The arrangement of the spirit sticks, with supporting rocks, and in association with the vessel cache, closely matches Campbell's (1931:24-39) description of the way these items are often found. Campbell (1931:24, 26), writing of caches from a similar region in Joshua Tree National Monument, specifically documents as characteristic the use of rocks to brace the spirit sticks against a cave wall, the frequent occurrence of two or three sticks, and the placing of the sticks with forked ends up.

## FLORAL REMAINS

### In the Basket Weave

Close examination of the interior of the basket revealed three types of seeds embedded within the weave. One brittle-bush (*Encelia farinosa*), 1 needlegrass (*Stipa* sp.), and 15 sweetbush (*Bebbia juncea*) seeds were recovered from the basket weave. None of the seeds was charred, and only brittle-bush is documented ethnobotanically for the Cahuilla (Bean and Saubel 1972:69). The large number of sweetbush seeds recovered suggests that they were also used by the Cahuilla, but these minute seeds also could have gotten into the basket by natural means. Needlegrass is known to have been eaten by certain Great Basin groups, including the Owens Valley Paiute (Steward 1933:243).

### In the Olla

Careful removal of the 10 cm. of soil in the detached olla bottom revealed an intact surface upon which adhered gray-black masses of fibrous material. Microscopic examination of the fibrous matting revealed 1 goldfield (*Lasthenia* sp.) and 10 possible sage (*Salvia* sp.) seeds. Separate screening of the olla fill itself revealed juniper (*Juniperus* sp.) seeds and bark, nolina (*Nolina* sp.) seeds and leaves, grape (*Vitis* sp.) seeds, and goat-nut (*Simmondsia chinensis*) leaves.

Both goldfield and sage were important to the Cahuilla, and there are records of two types of the former in use by the Cahuilla (Bean and Saubel 1972:84; Bean 1974:45-46). Three different sage seeds, including *Salvia carduacea* and *S. columbariae*, were used by the Cahuilla, and the possible sage seeds from the olla bottom may belong to one of these species (Bean and Saubel 1972:136; Bean 1974:46). Of interest is the fact that chia (*Salvia columbariae*) was aboriginally known as a high-energy food and often carried on trips (Bean 1974:53-54).

The four plant species recorded from the

olla fill are also known to have been used by the Cahuilla (Bean and Saubel 1972; Bean 1974; Barrows 1900), but their presence may well be due to being blown in by the wind (a nolina plant is only 2 m. from the rockshelter) or to their introduction by woodrats.

### In the Rockshelter

In the vicinity of the cache on the rockshelter floor were found a few basketry fragments of rush (*Juncus* sp.) and several pieces of nolina. Screening of the upper 5 cm. of a nearby excavation unit revealed a few possible silk-tassel bush (*Garrya* sp.) seeds and a few additional basketry fragments of rush. Considering the presence of woodrat fecal pellets around the cache, these plant remains are most probably due to the collecting activities of the woodrat or to nibbled-off basketry fragments. Other than these plant remains and a few very small olla spalls, the soil of the rockshelter was sterile and contained no other recognizable cultural or botanical remains.

## INTERPRETATIONS

The description and analysis of the cache contents suggests, in view of the negligible remains from the partially screened fill, that the rockshelter was only lightly used by the aboriginal owners. In addition, the cache components and contents strongly suggest that the cache was a food-carrying utensil and seed-storage locale, probably kept secret from other tribal members. Bean (1974:54) provides a concise explanation for this cache when he observes that among the Cahuilla:

... families or individuals characteristically kept caches of food secretly hidden from everyone—sometimes in distant or remote places, sometimes buried in ollas under the ground, or placed in small caves. The openings to these small caves were carefully covered with brush to keep their presence unknown to others. Ritual protection was also employed whereby the owner made "spirit sticks" from which he

dangled feathers or other magical items so that poachers who discovered the cave would be harmed if they stole the contents of the cache.

In addition, it is probable that the seeds found embedded within the basket weave and stuck to the interior of the olla bottom—brittle-bush (*Encelia farinosa*), sweetbush (*Bebbia juncea*), needlegrass (*Stipa* sp.), sage (*Salvia* sp.), and goldfield (*Lasthenia* sp.)—were used by the owners of the cache. All other plant remains found in the olla fill and the surrounding area are likely the result of woodrat activity, despite their documented use by the Cahuilla. Finally, the cache was probably used and placed in the rockshelter between March and July, since this is the period when the plants associated with the vessels are generally available for collecting (Jaeger 1972).

The data indicate the Cottonwood Spring cache was stored away ca. A.D. 1895 to 1910 by a Cahuilla family group, group of women, or women and children (Bean 1974:157) who were engaged in the collecting and storing of nearby plant foods. An important aspect of this cache is the documentation it provides of the survival of certain ceremonial, technological, and subsistence activities well into the period of heavy contact with whites. Such documentation is vital to studies of culture processes and the assessment of European impact upon aboriginal cultures.

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were provided by Dan McCarthy, Monument ranger. A more extensive report on the cache is on file with Joshua Tree National Monument, Twentynine Palms, under the title "A Cache From Cottonwood Spring (Riv-937)."

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## *A Case of Heat Treatment of Lithic Materials in Aboriginal Northwestern California*

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Excavations in 1964 at Point St. George, California, brought to light a two-phase stratigraphic and cultural sequence in which stone chipping was shown to have been a major activity at all times during the prehistoric occupation there (Gould 1966, 1972). Although black obsidian of non-local origin was present in both phases at the site, the predominant raw materials throughout the sequence were red and green jaspers and varied agates obtained locally from cobbles and deposits on the nearby beaches. Artifacts made from local, beach-collected agates and jaspers have also been found in surface collections from coastal sites extending from the mouth of the Klamath River, California, to Gold Beach,

Oregon. In 1972, I revisited the Point St. George Site (DNo-11) and other nearby sites, accompanied by Mr. Don E. Crabtree, in order to examine several anomalous characteristics of northwest coastal California lithic technology that were not fully reported following the work in 1964. These anomalies were:

(1) In both phases I and II at Point St. George, one finds numerous discoidal cortex flakes of jasper and agate. These always lack retouch, and they also lack bulbs of percussion. These items occur on surface sites and in stratigraphically confirmed associations with hearths, butchered bones, finished artifacts, and other cultural debris, and recovered examples range in size from 2.1 cm. to 8.89 cm. in diameter. These are, in fact, "pot lid" flakes arising from heating of the stone. Many of these pieces, when tested by chipping off a portion, show definite signs of heat alteration. Following Crabtree and Butler's (1964) and Purdy's (1975) discovery and descriptions of heat treatment under controlled conditions, we are now able to recognize these items as by-products of some kind of heating applied to the stone. Crabtree has confirmed this interpretation through his on-site inspection of these items. They conform to his definition of a pot lid:

A plano-convex flake leaving a concave scar. Pot lids are the result of differential expansion and contraction of isotropic material but are minus the compression rings of force lines usually associated with these conditions [Crabtree 1972:84].

(2) In addition to well-formed cores and flakes, Point St. George and other coastal sites of northwestern California contain large amounts of crazed and shattered agate and jasper. The breakage characteristics of these pieces are comparable to those of experimental samples subjected to rapid elevation of temperature by Purdy (1975:Plate 2a).

(3) Many of the finished arrowheads, harpoon tips, and other archaeological implements from this area show diagnostic signs of