

INVESTIGATION OF AN HORNO  
ON A PREHISTORIC SITE IN WESTWOOD VALLEY

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ABSTRACT

An archaeological survey in Rancho Bernardo, a suburb of San Diego, revealed the presence of a circular rock structure on a Late Prehistoric site associated with a village complex in the Westwood Valley. Investigation of the feature reveals that it is an *horno*, or oven, similar to those introduced through Spanish settlement in the late 1700s. Several historic artifacts, associated with subsurface charcoal, ash and remains of prehistoric occupation, prompted a study of early land use in the area, that indicates potential construction and use by either indigent or intrusive cultures.

INTRODUCTION

During an archaeological survey of Westwood Valley in 1978, an unusual circular rock structure was found on a site in Rancho Bernardo, a community within the boundaries of the City of San Diego, California. The site on which the feature is located was identified at that time as an important cultural resource associated with the Late Prehistoric period. The presence of a variety of other dissimilar rock features, a pictograph, and an apparent midden deposit were also noted on the site, that is designated as SDi-5938, Locus 1.

When first observed, the subject feature was tentatively identified as a historic *horno*, or oven, and described as a dome-shaped, circular rock structure. The presence of rock structures of a similar nature has not been reported on other archaeological sites in the region. Historic accounts, however, provide a record for the presence of beehive-shaped ovens nearby in San Pasqual (Peet 1949) and on the Pala Indian Reservation (Beemer 1980). Few historic artifacts have been recovered from sites within the project area. Square-nails and glass fragments of late nineteenth-century origin were retrieved during previous subsurface tests on adjacent sites, and a historic trade bead was recently recovered from SDi-5938, Locus 2.

In 1985, a program was initiated to conduct data recovery activities at certain sites within the Westwood Valley and to define boundaries for open-space easements within SDi-5938 for the preservation of select archaeological features. The program included an investigation of the circular feature, designated as Feature A, for the purpose of

establishing the function of the structure and answering basic questions concerning the time of construction and cultural association. The primary question focused on determining if construction of the oven could be attributed to Native Americans or to later arrivals of European origin. Research on the origin and use of beehive-shaped ovens in California indicates that either alternative is plausible.

### Historic Background

The structure is similar in form to those constructed of adobe that are associated with Spanish occupation in the New World. Introduction of this particular type of oven took place in California as early as 1769 with establishment of the first Franciscan mission and Spanish presidio at San Diego. As additional missions were founded, use of the horno spread geographically throughout most of California. Following the demise of the mission system, and the advent of the Rancho era in the Mexican period, hornos continued to be used by early settlers. Around the middle of the nineteenth century, use of this type of oven may have briefly intensified because of the arrival in California of peoples from the Mediterranean area who were familiar with hornos.

### Setting and Description

The structure is situated on a slight slope below a large bedrock outcrop approximately 15 m north of a seasonal drainage. It is closely associated with four rock enclosures, three bedrock milling features and a pictograph. Less than 80 m to the north there is a complex of rock enclosures and an additional small pictograph.

Over the last eight years, disturbance of the oven has resulted in removal of the upper one-third of the structure. The remaining portion consists of roughly five layers of stacked rock (Figure 1). The structure was studied in detail after removing two layers of rocks, as well as accumulated soil, to facilitate observation of construction methods. The feature covers an area of approximately 3 sq m, based on the extent of adjacent rocks on the surface. Because the rocks present on the south and east side of the structure do not contribute to its overall stability or form, it is assumed that many of them came from the upper level when it was disturbed. The existing structure measures approximately 2 m in diameter and 90 cm in height.

Angular, unshaped rocks make up the primary construction material. Edges of the rocks are rounded by weathering in the same manner as those present at the base of the bedrock outcrop. Rocks from the upper layers were of greater length than those on the lower layers. They were also placed at an angle; sloping downward toward the interior, in contrast to

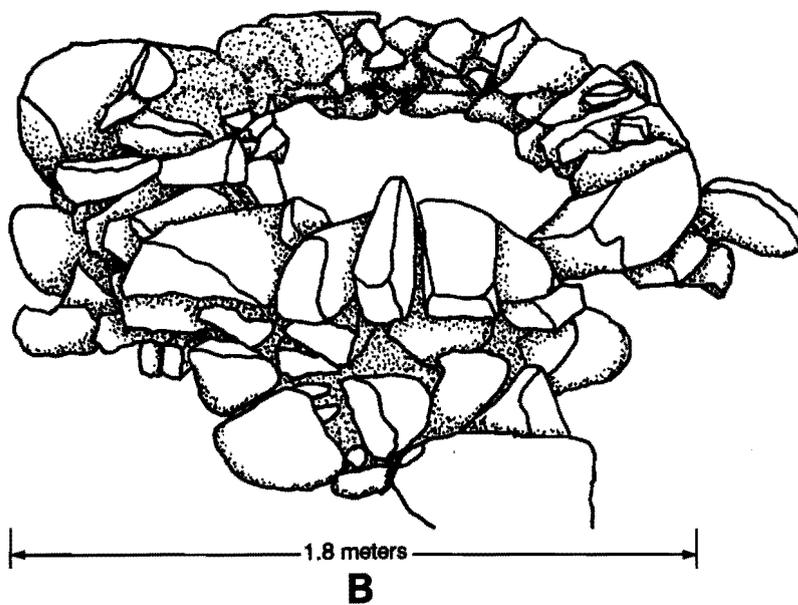
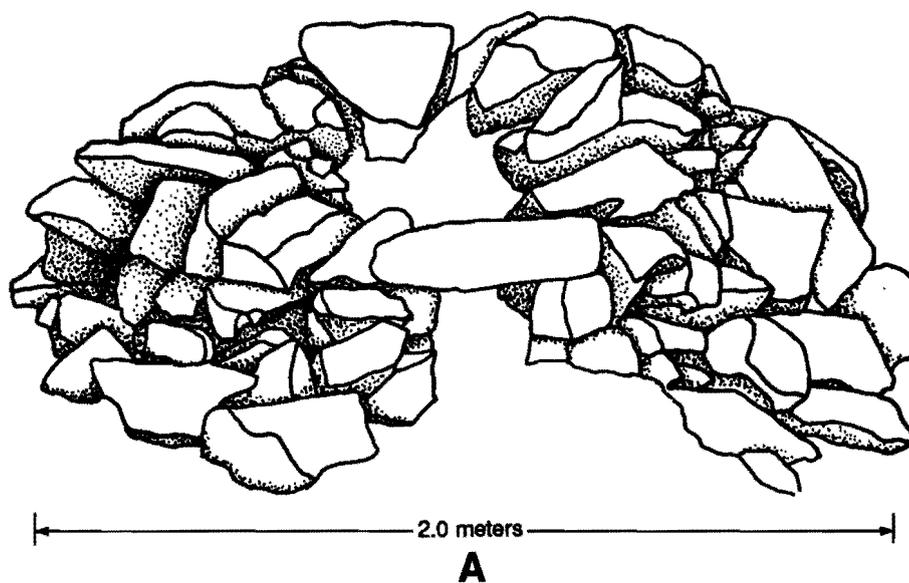


Figure 1. A) Overview of oven prior to excavation of interior; looking north.  
B) Oblique view of oven after removal of top tier of rocks; looking northeast.

relatively level positioning of the lower layers. Most of the rocks were roughly triangular, or wedge-shaped, with the smaller rounded ends facing inward. A number of small (4 to 10 cm in length), predominantly flat, chinks of granite were used as wedges to stabilize the rocks or to aid in controlling the desired angle.

Mud mortar was used to join and secure the layers of rock and the associated wedges. Some of the rocks on the interior walls have fire-blackened surfaces and the mortar, in places, exhibits a heat-induced color change. The existing floor, composed of large flat rocks, is also fire-blackened, and, to a greater degree. The floor represents the initial stage of construction as it extends under the walls of the structure.

#### Surface Collection and Subsurface Excavation

The recovery of data was accomplished on two levels: investigation of surface components and subsurface excavation. Initial field work focused on confirming the functional nature of the structure. This goal was considered to be of primary importance because knowledge of the use could influence subsequent methods of field inquiry.

Items recovered from the surface area surrounding the structure included 3 flakes, 1 projectile point fragment, 1 Tizon Brown Ware pottery sherd, a fragment of *Haliotis* sp. shell, and a metal spade. The spade was found at the rear of the feature leaning against a large boulder that served as the base for the northern end of the structure.

Investigation of the feature also included the controlled excavation of two trenches and three 1x1 m units, to gain information on: potential variation in soil and stratigraphy; activity areas; the degree to which the existing southeasterly slope affected the deposition of cultural materials; and presence of diagnostic artifacts.

#### Function

The initial goal of the investigation was to determine if the feature was actually an oven, as initially proposed. Information obtained through visual examination of the structure and related subsurface excavations confirm the projected function. Briefly summarized, evidence indicating use as an oven includes: fire-blackened surfaces on portions of the interior walls and on the rock-lined floor; heat-induced change in the color of interior mortar; and charcoal present under the floor of the structure and in the subsurface deposit adjacent to the exterior opening.

Cultural materials, recovered through unit excavation, include Tizon Brown Ware pottery, flaked lithic tools and debris, manos and faunal remains. The bone fragments, that represent species of native animals include unburned, burned and calcined specimens: not unlike those retrieved from other areas of the site. The condition of the bone suggests alteration through contact with coals rather than as a result of baking. Several olive (*Oleo europaea*) pits were recovered from the mortar used in construction of the oven. They are of the olive species introduced by the Spanish colonists.

### Time Period

Evidence gathered during the investigation, combined with research on historic land use in the region, indicates that the oven was most likely built after 1830. A major indicator is the presence of square cut nails found in a unit excavated next to the oven. This type of machine-cut nail did not come into production until the early 1800s, and was not widespread on the west coast until after 1830. Although such nails continue to be used to the present day, they are not as common as they were before being replaced in popularity by the wire nails. The presence of olive seeds can actually be attributed to an earlier time, particularly as those found are of the species introduced by the mission padres. The spade found in a crevice behind the oven provides minimal information, because it is of a common type, of a style that has varied little over the years, not unlike some spades found in association with mining camps in northern California.

Ovens of a similar form, built of rock, have also been reported as present on mining sites in northern California (Julia Costello, personal communication 1986). Costello has established construction of the ovens by miners, indicating that they were built after the beginning of the Gold Rush days in 1848.

### Cultural Association

Evidence concerning which cultural group was responsible for construction of the oven is not so conclusive as the determination of function. Because the oven is in proximity to other rock features, and artifacts that appear to represent Late Prehistoric occupation, an obvious assumption is that the oven was built and used by the people most readily identified with these features. The association between charcoal from the oven and cultural remains such as flaked-lithic artifacts and groundstone implements, strengthens the relationship. The presence of late nineteenth-century artifacts in association with the oven does not remove the possibility that members of the Indian population built and used the oven, but merely indicates that

construction took place following contact between indigent and intrusive cultures. The reader is referred to various sources relating to Native American and Anglo land use in California (Bancroft 1885; Kroeber 1976; Robinson 1948; Webb 1952; Rush 1965; and Crouch 1915).

An equally reasonable argument can be made for construction of the oven by members of the intrusive European population that emigrated from the Mediterranean area and settled in San Diego County. Mediterranean-based peoples have a centuries-old tradition of horno use. The problem of establishing cultural association required a study of regional land use to assess the potential for construction of the oven by different groups.

### Native American Background

Today, members of the Indian population are referred to as Native Americans. During the Mission Period (1769-c.1834) in San Diego, those associated with the Franciscan missions were commonly referred to as neophytes: potential or new converts to Catholicism under mission standards. The neophytes were sought for conversion to Christianity and in the process served as the major labor force for establishment and maintenance of the missions. Directed and taught by the padres, the neophytes became involved in most aspects of everyday operations of the mission. They cooked, planted, harvested, and handled any required tasks. Their labors included construction of buildings, dams, and ovens, although the latter were usually built of adobe blocks, as were most structures at that time. In San Diego county the Luiseño and Diegueño Indians were closely associated with the activities of the local San Luis Rey and San Diego missions.

Following secularization of the missions (c. 1833), land formerly under control of the missions became available for distribution. In San Diego County, as well as in other counties in California, vast tracts of land were granted by authorities of the governing Mexican regime that culminated in the development of the Rancho Period. Breakup of the mission system and the subsequent dispersal of mission lands affected the lifestyle and economics of the native peoples involved in the missionization process. The neophytes scattered. Some returned to their earlier lifestyle, others continued their newly accustomed contact with the Anglo population, and many worked on ranchos located throughout the county.

A discussion of the cooking methods used by members of the Indian population is relevant in determining whether the oven was constructed by these peoples. Frequent use of the term "earth oven" by early ethnographers presents some difficulty, because this term is not well-defined.

In reference to the Luiseño, Kroeber (1976:652) reports that "Small game was broiled on coals; sometimes, too, venison and rabbits. The two latter were also cooked in an earth oven, whatever was not immediately eaten being crushed in a mortar--boned included in the case of rabbits--dried, and stored." Further reference to Luiseño meal preparation is provided by Bean and Shipek (1978:553), who report that "Food was cooked in wide-mouthed clay jars over fireplaces or in earth ovens wrapped with clay or leaves."

Webb (1952) also notes Indian use of ovens. "Just as they had done in pre-mission days, the neophytes stored their nuts, seeds, and other edibles in large ollas or baskets set in the corners of their houses, or in large 'basket' granaries set up outside. In some of the villages there were little adobe cooking places and outdoor ovens for baking bread. Here and there in California one may still find this type of oven" (Webb 1952:41).

In 1850, Judge Benjamin Hayes visited several large Indian villages in San Jose Valley near Warner's Springs. At one of the villages, he noted that "On a little hillock overlooking the bathing pool are a dozen or so of small furnaces...(Hayes 1929:57)." Lacking a description of "furnaces", it can only be assumed that Hayes referred to an enclosed structures such as an horno.

### Nineteenth Century Land Use

The advent of American rule in 1848 brought about new challenges and opportunities for the intrusive Anglos. The discovery of gold in California brought an influx of people from all over the world. Within a short period of time, many became disillusioned with the prospects of mining and turned their efforts to securing land. Small settlements developed throughout San Diego county as new settlers pursued such activities as raising cattle and sheep, planting crops and later, fruit orchards. Although few Indians were able to claim land for settlement, they continued to work in the area in much the same capacity as they had during the Mission Period, including work as "vaqueros" and sheepherders. Bancroft (1885) and Englehardt (1920), among others, note the presence of Indians in this area in a variety of accounts.

The raising of sheep played an important part in the settlement of northern San Diego county in the last half of the nineteenth century. Several large sheep ranches were established in the local areas of San Luis Rey, San Pasqual and Rancho Bernardo. The Westwood Valley is located within the boundaries of San Bernardo Rancho. Following the drough of 1860, when vast cattle herds were destroyed, sheep raising became more prominent. In 1867, James McCoy purchased the

rancho where he established a sheep ranch (Brackett 1939). Former Basques and Italians also settled in the area: people familiar with use of the horno on an everyday basis. Before 1867, a sheep ranch near the southwest boundary of the rancho was already well-established by Peter Lusardi, who emigrated from Italy (Lusardi 1958). Over the years, Lusardi accumulated 3000 acres of land in the region and a large number of sheep that were reportedly herded by Basques (Lusardi 1958).

#### SUMMARY

Examination of the feature confirmed that the structure is an horno, similar in form to those introduced by the Spanish missionaries, and still used in some areas of the southwest today. Artifacts recovered from the surface and through subsurface excavation do not provide conclusive evidence regarding cultural association. The presence of several machine-cut, square nails, provides a temporal guide indicating use of the oven after 1830.

Research on historic land use in the area reveals a potential for construction either by Native Americans or by people of European origin, especially those that emigrated from the Mediterranean area where this type of oven was traditional. The argument for use by miners in the area, suggested by the presence of similar spades and ovens in mining camps in northern California, is not supported by available data. Gold mining activities were conducted in the region, however, no record could be found of mines within miles of the site, nor has mining debris been located on, or in proximity to other sites in the area. It is suggested that Native Americans are responsible for construction of the feature. This suggestion is partially based on the absence of artifacts associated with mining and shepherding activities.

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