

An Unusual Donut-Shaped Artifact from CA-LAN-62

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Abstract

Analysis of an unusual artifact from CA-LAN-62 establishes its inclusion among the sacred donut stones rather than the mundane digging stick weights. Particularly notable is a unique design element of the specimen that bears testimony to a high level of lapidary skill.

Introduction

A fragment of a donut-shaped stone artifact (Figure 1) was recovered from the upper component of CA-LAN-62 (Figure 2), a site located near the Ballona Wetlands. This area is just south of a small portion of the coastward interface of ethnographic Tongva and Chumash territories. The site's upper component served as the funerary plot for Late Prehistoric/Mission period Native Americans. In terms of artifact numbers and type diversity, the burial ground has yielded one of the most significant assemblages of European style artifacts ever documented for an Alta California Indian site. For instance, the glass bead count approaches 60,000, and the metal goods include copper pots, horse tack, scissors, bells, buttons, belt buckles, and keys.

The first purpose of this essay is to describe the specimen (Figure 1). In this, there is the observation of a unique design element that illustrates the high level of craft work that might be achieved by regional lapidaries. The section following also notes the provenience of this object.

Subsequently, our study addresses why we believe the specimen had not been intended as a weight for a digging tool but rather had been intended for ritual/ceremonial employments. Our assessment considers the formal attributes of the two artifact classes (digging stick weight vs. ritual donut stone) and reviews the purported functions that have been suggested for donut-shaped objects. We end the study with a summary and concluding remarks section.

Description

The LAN-62 ground stone specimen (Figure 1) is incomplete. The fragment represents 40 percent of the total mass of the once complete object, whose granite material exhibits a high quartz content. Maximum length of this artifact is 62 mm. At one broken end maximum thickness is 27 mm, but at the broken end opposite, thickness is a mere 20 mm. Obviously then, it is not symmetrical in cross section.

A black substance, almost certainly asphaltum, appears on both faces adjacent to the perforation. Only smaller traces of the substance occur within the perforation, just below the rims of both openings. Presence of this mastic strongly suggests that the artifact had been hafted onto a wooden shaft.

Slight concavities on both faces descend gracefully toward the perforation that is offset somewhat from an imagined radially centered point. These concavities

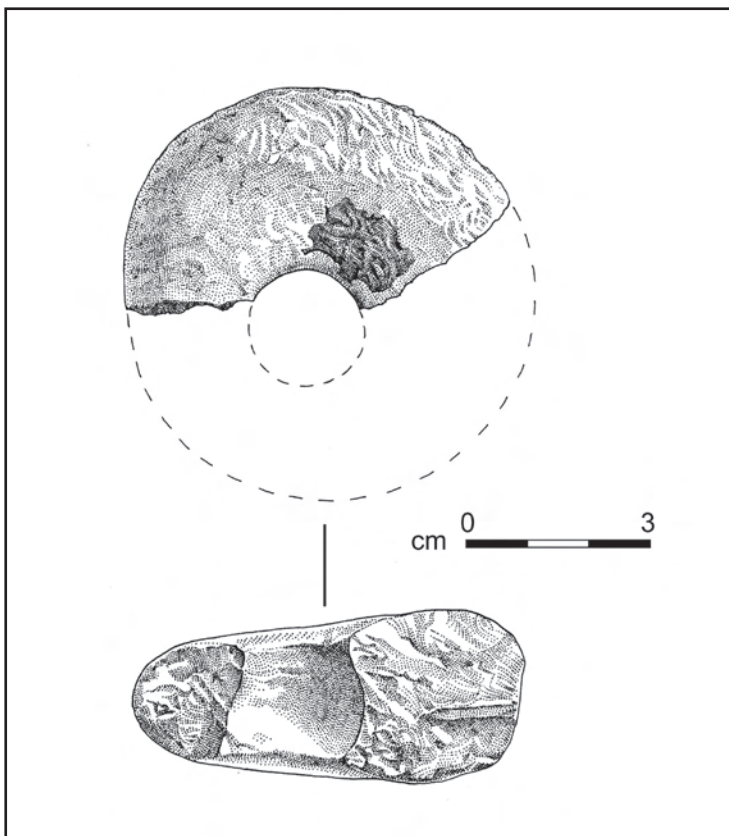


Figure 1. CA-LAN-62 quasi-toroidal donut stone.

were ground smooth, more expertly than other external surfaces. Polish accentuates these concave design features. There are pecking scars at one area of the exterior perimeter.

One feature of the perforation has not been previously published for any donut-like or somewhat similar roundish ground stone artifact recovered in coastal southern California. That is, the interior walls of the perforation are noticeably concave, and symmetrically so; further, they had received a higher degree of polish than any exterior surface of the artifact. No natural agency accounts for the interior concave space. Rather, a very patient artisan had crafted the contours that define a truncated, spherical void. The rugged edges bordering the perforation at the breakages are so sharp as to clearly indicate that the inner polish had been accomplished before the artifact had come apart.

With reference to coastal southern California, the level of lapidary skill reflected in crafting the concave space within the perforation exceeds anything previously familiar to us.

A shallow linear scratch curves along the wall of the perforation just 5 to 6 mm below the margin of that opening where one observes a large dollop of mastic. This damage trail resulted perhaps when a shaft had been rotated to fit snugly into the perforation. There is a smaller scratch nearby. Appearing on the opposite inside rim are additional scratches that are less obtrusive. The several scratches cut through the aforementioned interior polish and are clearly unrelated to whatever action produced the drilled hole. The LAN-62 donut-shaped specimen was recovered from Unit 713, a location well removed from any mortuary or mourning feature. Thus, this provenience offers no

strong support for the idea that the artifact served a sacred purpose.

The CA-LAN-62 Artifact: Digging Stick Weight or Ritual Donut Stone?

Considerations of Formal Attributes

In Native coastal southern California, there are several kinds of magico-religious artifacts that are smoothly finished, generally symmetrical, centrally perforated, and with basic roundish morphologies that range from globular to disc-like. Among these are the Middle Holocene Newport perforated stones (Figures 3a, b) (Koerper and Singer 1988; Macko et al. 2005:98, Figure 5; Koerper 2006:92, Figure 5, 111, Figure 15b), the Late Holocene sun-stick discs (Figures 3d, e) (Bowers 1885:45-47; Henshaw 1887:28-30; Elsasser and

Heizer 1963:24-28; Hudson et al. 1977:55-57; Hudson and Blackburn 1986:235; Benson 1997:32; Koerper 2006:93, Figures 6, 7), certain relatively large, Middle and/or Late Holocene barrel-shaped objects (Figure 3c) (Koerper 2006:90, Figure 3a), and Late Holocene donut stones (Figures 1, 4, 5) (e.g., Koerper 2006: passim). Of these varied artifacts, only the ritual donut stones might bear strong resemblances to the shape of the common, centrally holed bakery good. The mundane digging stick weight offers lesser approximation of a toroid.

For donut stones, the design factor of greatest significance is, we believe, that witnessed for the hole. Some donuts more closely resemble a toroidal shape than others. In plan view, with the more toroid-like donuts the convexity defining the lateral surfaces is mirrored by the inner walls of the hole, whether the hole is

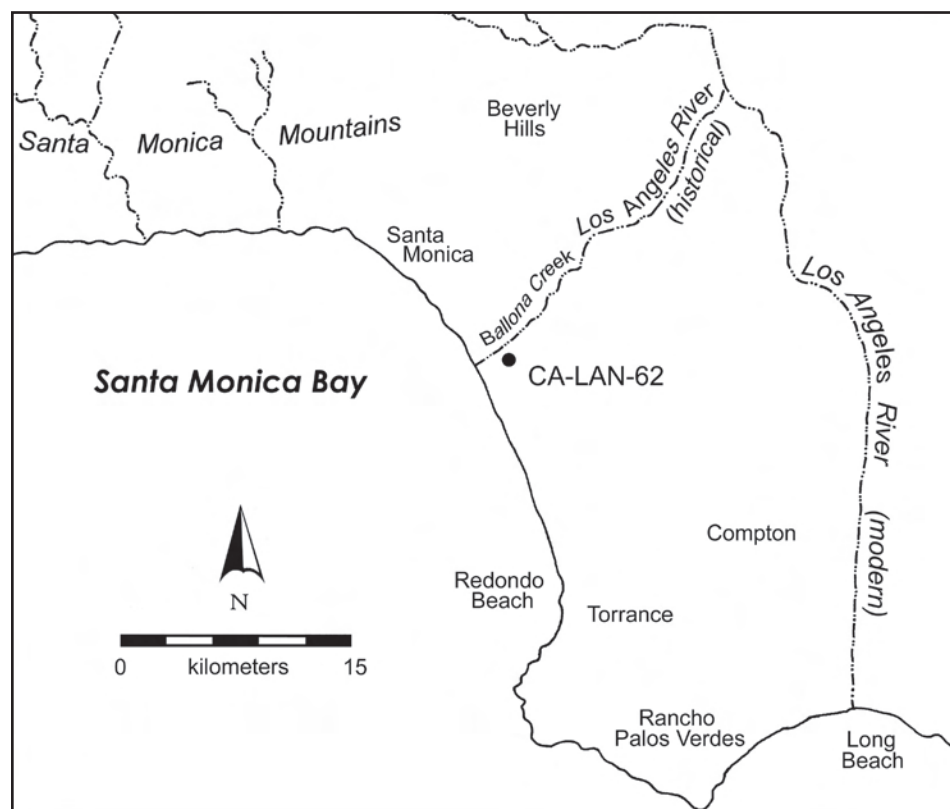


Figure 2. Location map showing CA-LAN-62.

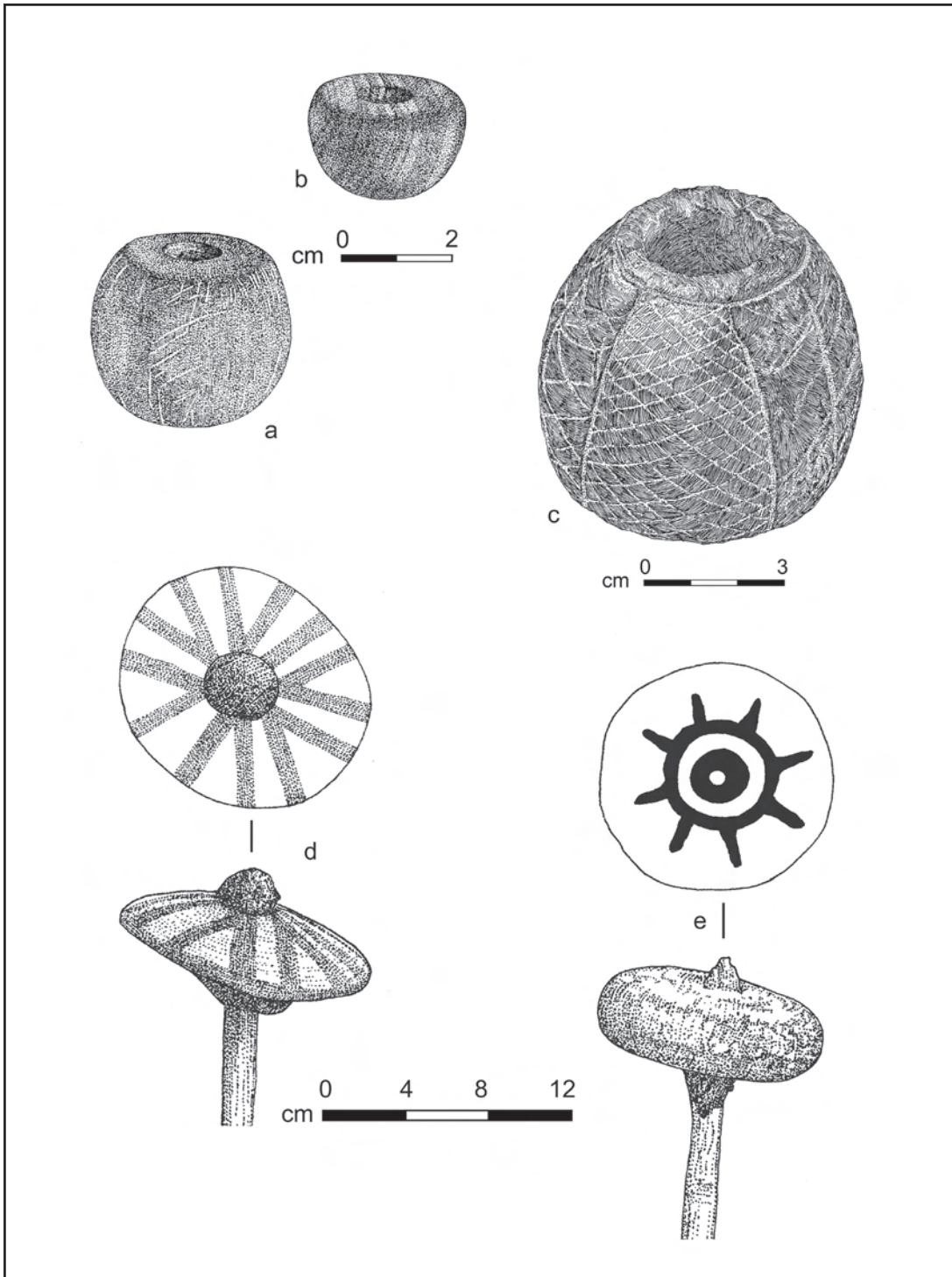


Figure 3. Globular to disc-like magico-religious stone artifacts. (a) Middle Holocene Newport Bay perforated stone from CA-ORA-378; (b) Newport Bay perforated stone from CA-ORA-64; (c) Barrel shaped object, CA-ORA-160; (d-e) Sun discs from Bowers Cave, Los Angeles County. After Henshaw (1887:29, 30) and Hudson and Underhay (1978:64, Figure 8). Both sun discs are housed at the Peabody Museum, Harvard University.

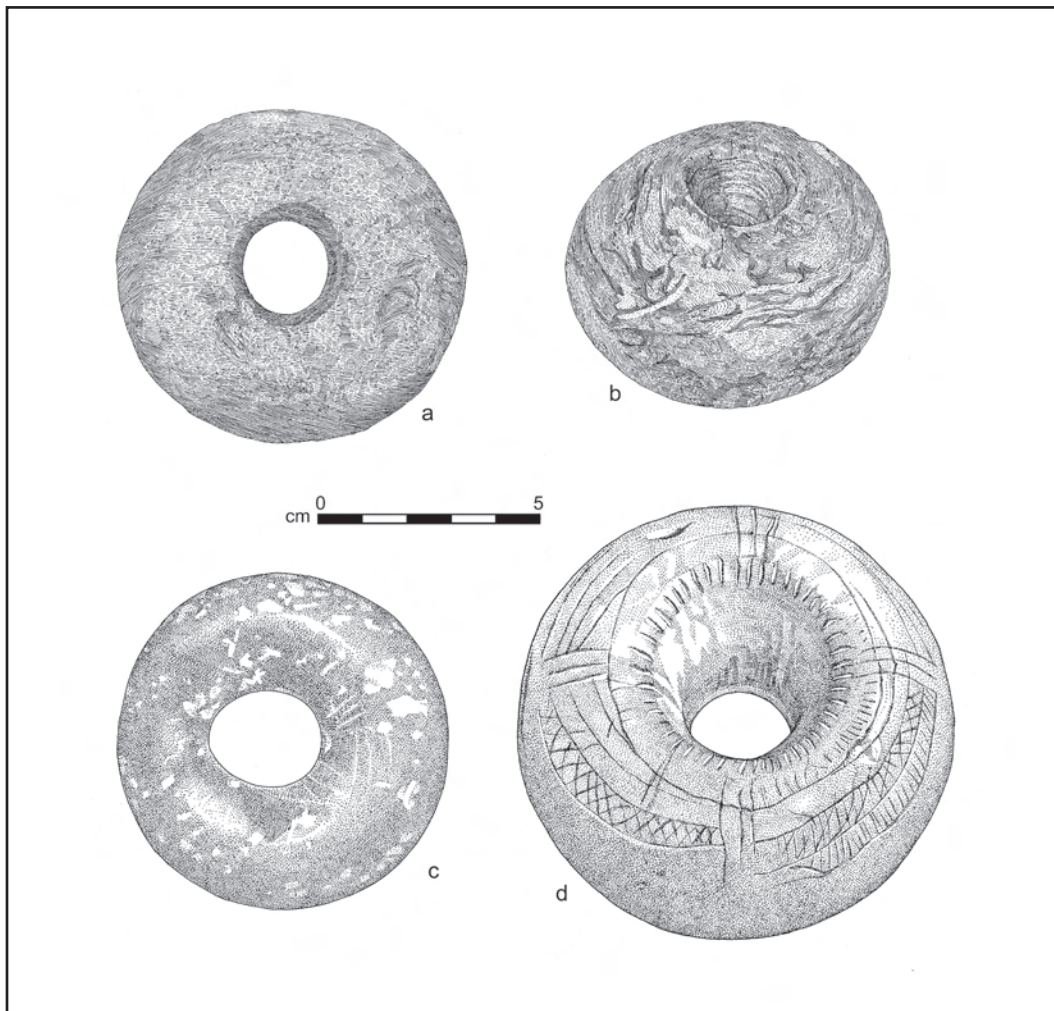


Figure 4. Donut stones. (a) Quasi-toroidal donut stone from CA-ORA-104; (b) Quasi-toroidal donut stone from Orange County. Bowers Museum of Cultural Art ; (c) Toroidal donut stone from Goff's Island, CA-ORA-8, (a.k.a.-108); (d) Toroidal donut stone from the City of Los Angeles; Bowers Museum of Cultural Art.

centered (Figure 4d) (Koerper 2006:90, Figure 3b) or somewhat off-center (Figure 4c) (Koerper 2006:94, Figure 8c). If descriptive license be permitted, we might label as “quasi-toroidal” those donut stones lacking convex curvature for the inner wall encircling the hole, as when, for instance, the perforation is more or less straight drilled, either without a marked concave depression leading toward the perforation (Figures 4a, b) (see also Koerper 2006:89, Figures 2a, b) or with such a depression (Figures 1, 5) (also Anonymous 1937). One might reasonably speculate

whether the quasi-toroidal artifacts were intended to be hafted while the toroids were not, or whether the differences reflect no more than an aesthetic or other preference.

Another large centrally holed artifact, a tool and not a talisman, with which the donut stone is often confused, is the digging stick weight. Digging stick weights and donut stones have long been commingled under a single rubric. Beyond some similarities of shape, this is understandable for the fact that the two

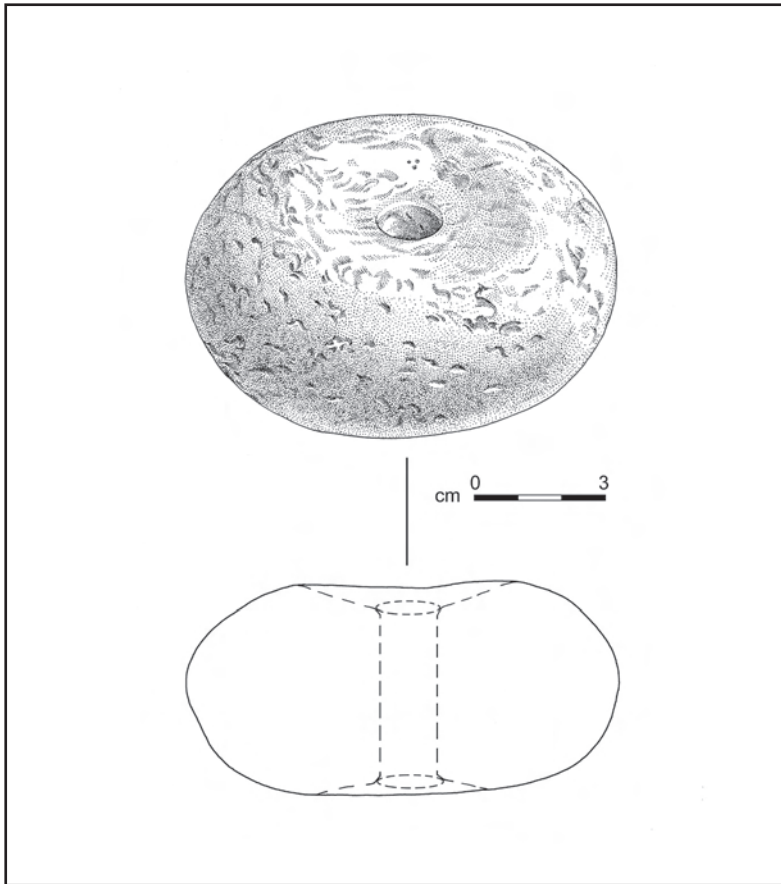


Figure 5. Quasi-toroidal donut stone from the Newport Bay region.

artifact types, one utilitarian and the other magico-religious, are probably historically and symbolically connected (see Koerper 2006).

As first explained in Koerper (2006:89), differentiation between stick weights and donut stones relies more on assessments of qualitative factors than on observations of presence/absence regarding discrete design elements. The ritual/ceremonial artifact (donut) generally exhibits greater attention to symmetry and finish and tends to be made of better quality stone. The mundane tool shows comparatively imperfect circularity when seen in plan view, and upper and lower surfaces are generally uneven compared to donut stones whose surfaces may even be well polished. The height-diameter ratio of a donut stone seems to be greater on average in comparison to digging stick

weights. Especially telling are the holes of digging stick weights, for they had received less investment of craftsmanship compared to donuts. Specifically, the biconical nature of the drilling is more apparent, and the perforation had not been given the degree of smoothing that qualifies as polish.

The LAN-62 artifact (Figure 1) could not reasonably be confused with certain other previously noted magico-religious objects (Figure 3) such as Middle Holocene Newport perforated stones, the “barrels,” and the Late Holocene sun-stick discs. Clearly, its morphology overall reflects the model for a donut stone, although it possesses some attributes that taken alone might recommend its assignment to the status of digging stick weight. Any ambiguity in assignment to type is a subject visited next.

Design Criteria and the Interpretation of the LAN-62 Quasi-Toroidal Artifact

Again, provenience information lends no firm support to the hypothesis that the LAN-62 quasi-toroidal object was embedded in the ritual landscapes of the Ballona Gabrielino/Tongva. There is marked spatial separation between the donut-like find and the concentrations of burials in the site. Had the artifact instead turned up within the mortuary/mourning area, whether directly associated or not with a burial feature, there would be a very strong presumption of magico-religious function, particularly when considered against interpretation of the donut stone type as a life-force symbol and its demonstrated appropriateness for celebrations of death (see Koerper 2006).

Certain observations of morphology recommend the LAN-62 artifact for taxonomic inclusion among those donut-shaped artifacts documented from ritual caches and funerary settings. Extrapolating from the shape of the circumferential outline, one envisions the complete specimen as having some imperfection of symmetry in plan view but with a general circularity (Figure 1). The artisan had effected uneven to smooth exterior surfaces, which in places carry an understated degree of polish.

At variance with a donut-like template is the previously noted unevenness for the artifact in cross-section view. Such lack of symmetry is more in keeping with the nature of digging stick weights. Another affront to balanced design, but far less consequential, is the offset of the perforation (Figure 1). There are, after all, certain donut stones exhibiting similar offsets, such as the specimen of Figure 4c, found in a Goff's Island (Orange County) cache that included a sucking tube and smoking pipe (Winterbourne 1967:132, 155; Koerper 2006:94, Figure 8).

On both faces of the LAN-62 specimen, encircling concavities were carefully crafted to slope gradually

towards the openings to the perforation. More notable polish appears on these depressions compared to other exterior surfaces. The polishing effort far exceeded the practical requirements for digging stick weights.

As noted previously, the design of the perforation has not been previously documented. Specifically, the interior walls are fairly symmetrically concave (Figure 1) and very highly polished. This indicates accomplished lapidary work.

We suppose that the maker of the donut might have, as a first step, biconically drilled a perforation. The next step may or may not have been straight drilling. The final step had perhaps involved grinding out the interior perforation, probably using a shaft set at the diagonal and then rotated around the axis of the artifact. Progressively finer abrasives would have been used to reduce the walls of an expanding void. The final effort, perhaps employing ash (containing fine silica [phytoliths]) from a fire pit, effected the glossy polish. Despite the asymmetries noted above, overall, there was an investment of manufacturing skill and effort more in keeping with the production of a sacred effigy rather than a profane digging stick weight.

Comparison of the LAN-62 specimen with a similar object, a relic collector's find from the Newport Bay region (Figure 5) is instructive. Looking beyond the symmetry of the LAN-62 specimen, one identifies shared features such as the following: generally quasi-toroidal form; generally smooth finish; varied degrees of polishing over much of the external surfaces; concavities gravitating gradually toward the perforation; greatest external surface polish at concavities on both faces; and very special effort in production of the perforation. To elaborate on the last point, the Orange County artifact, while it has a near absolute straight drilled perforation, has interior walls that are likewise highly polished.¹ The two artifacts are clearly of the same genre. Also, with the Newport Bay artifact's perforation exhibiting such a small diameter, about 13 mm, any penetrating

shaft, had one existed, would have been substandard to the requirements of unearthing roots and tubers.

Likewise, the LAN-62 artifact probably had no applications to rigorous work. Furthermore, the size of the LAN-62 specimen indicates that the artifact lacked sufficient mass to have been an effective multiplier of kinetic energy, that is, for the purpose of digging into the ground. The estimated diameter of the perforation is no more than 22 mm, and consequently, any corresponding wooden shaft would have been undersized for breaking up soil. Breakage of the artifact had occurred perhaps as a result of ritual “killing.”

An anonymous Chumash informant of J. P. Harrington described the vegetal procurement digging stick as about 45 mm in diameter (Hudson and Blackburn 1982:242). Digging sticks with given diameters illustrated in Hudson and Blackburn (1982:243-244, Figures 56-1, -2, -4), and which are definitely of the procurement variety, have the following diameters: 45 mm, 40 mm, and 48 mm. One weighted stick shown in Hudson and Blackburn’s “Food Procurement and Transportation” volume (1982:244, Figure 56-7) has a diameter of only 17 mm, but it was almost certainly not a tool (see Koerper 2006:98, 100, Figure 10) but rather a ritual object; it was discovered in a Santa Rosa Island cave (see also Irwin 1975:22, Figures 7a, b). Caves served as repositories for sacred artifacts (e.g., Bowers 1885).

On a heuristic note, perhaps digging stick weights not only had to do with force input to dislodge soil but also acted as counterweights to dampen the arc of the wedge-shaped or pointed tips. This may have allowed more accurate guidance of the distal end toward an intended target, particularly when the gatherer stood as she or he worked.

On Function

Both secular and ceremonial/ritual employments have been proposed for donut-shaped objects. Interpreta-

tions of use have generally favored the profane over the sacred. Under the nonsacred category, one finds the following: digging stick weight; club head; net weight sinker; fish line sinker; toy; counterweight; hammer-stone; spindle whorl; sling stone, or some other kind of missile; bola; gaming artifact (e.g., hoop-and-pole); die for fashioning stone tubes, pipes and other cylindrical objects; rope smoother; gauge for working and polishing wooden shafts; and maul (e.g., Putnam 1879a:22, 28, 1879b:159, 161, 163; Henshaw 1887:7, 18-19, 20-22, 28; Davis 1887:168; Olson 1930:18; Bryan 1930:156; Anonymous 1937; Heizer 1955:103; Landberg 1965:109; Strandt 1965:25; Powers 1976:53, Figure 1; Hudson and Blackburn 1982:241-251, 1987:64; Benson 1997:244; Latta 1999:469-470; see also Heizer 1955:103,154). Digging sticks, incidentally, are said to be more than just procurement tools. They were used for digging house postholes and for digging graves (Hudson and Blackburn 1982:243; Campbell 1999:71; see also Hollimon 2000:192-193).

Some donut-shaped artifacts were clearly utilized in ritual/ceremonial contexts—in death rites, in sacred caches, and in shaman’s kits. They have been recovered archaeologically from or near burials and cremations (e.g., Putnam 1879a:23, 1879b:131-132, 135; Olson 1930:28; Winterbourne 1967:132, 155; Hudson 1969; Benson 1997:155). They are found in both male and female burials (Molitor 2000:58). An informant of Henshaw (1887:8) reported, “We used to bury them with the dead.”

Hollimon (2000:192-193) proposed a hypothesis that co-mingles digging stick weight function with mortuary practice. She suggested that perhaps donut-shaped artifacts found in Chumash interments had served more than as digging stick weights for food procurement but were also used to excavate graves. These artifacts would not be returned to function in subsistence activities because of their “contact with the potentially harmful power of the corpse” (Hollimon 2000:192-193). Alternatively, one might imagine

that these objects from burials had never been applied to harvesting roots and bulbs at all, but rather they were manufactured as weights specifically to excavate graves and subsequently became burial goods.

Donut stones were sometimes placed in caches containing other kinds of ritual objects, some of which carried direct sex-based imagery communicating fertility/fecundity/increase or related themes (see Koerper 2006). Such artifact aggregations occur not only in or near mortuary settings (e.g., Winterbourne 1967:132, 155; Hudson 1969:5, 8, 34, 39; Benson 1997:155), but also in buried caches seemingly independent of death rites (e.g., Anonymous 1938:72-75, 77; Winterbourne 1967:20-21; Molitor 2000:53; Wallace 2000:188; Koerper 2006:88, Figure 1, 89, Figure 2). Also, such aggregations might occur in shaman's bundles that either ended up in graves (e.g., Winterbourne 1967:155) or were buried independently of graves (e.g., Olson 1930:19).

There is at least one ethnographically recorded example of a shaman's kit that included a donut stone (e.g., Latta 1999:691, 694). It was described to Latta (1999:691, 694) by Yoimut, the last survivor of the Chunut (Tulare Lake) Yokuts in the San Joaquin Valley. The artifact grouping also included a plummet-shaped charmstone, a woven string bag, eagle down, and a sacred string made partially of eagle down. The plummet-shaped charmstone probably had a phallic referent. There may also have been a large, curved vulvar stone (Koerper 2007; see also Wood 2000:61), but lack of clarity in Latta (1999) makes this uncertain. The donut stone, called *Cuh-moon-wum we-ah*, was identified as a talisman for making thunder, lightning, whirlwinds, and cool breezes (Latta 1999:681).

In two archaeological finds there are suggestions of possible weather kits. First, Olson (1930:19) reported a shaman's fetish bundle that included two donut stones and "five awl or spatula-like batons with quartz

crystals set into the open ends." Also within this fabric or basketry container there were steatite items (an incised dish and two pipes), "curious shells," beads, and pendants. Crystals are documented for use in weather control (e.g., Voegelin 1938:64; Driver 1937:104). Second, WPA crews recorded a highly polished steatite, toroidal donut stone (Figure 4c) with a burial at CA-ORA-8 (a.k.a. CA-ORA-108), or the Goff's Island site (Winterbourne 1967:132, 155, Koerper 2006:94, Figure 8). Associated mortuary goods included a soapstone sucking tube, an elbow (right angle) pipe, and a quartz crystal. This is shaman's paraphernalia, and perhaps all had been contained in one sacred bundle (Winterbourne 1967:155). Perhaps there had been some application to weather control.

Another Orange County cache containing a donut stone, but quasi-toroid, and other ritual objects having sex-based symbology was unearthed at CA-ORA-104, or the Corona del Mar site, also by WPA crews (Anonymous 1938:72-75, 77, Winterbourne 1967:20-21, Koerper 2006:88, Figure 1, 89, Figure 2b, 97, Figure 9b), but not in association with a burial or cremation. In addition to the well polished donut stone, there were also a birdstone (dimorphic sexual symbol) (see Koerper and Labbé 1987, 1989) and two spikes (phallic symbols) (see Lee 1981:50).

One of the most noteworthy concentrations of donut stones was revealed in 1983 at the Ledge Site on San Clemente Island:

The majority (21) [of the 25 donut-shaped stones] were found in the small offertory pits associated with other artifacts...including *Haliotis cracherodii* shells, *Haliotis* dishes, *Olivella* shells and beads, steatite plaques, burned seeds, asphaltum, and other items. This context indicates the perforated stones were part of the assemblage of domestic possessions regularly buried in the offertory pits [Molitor 2000:55].

“Domestic possessions” is an unfortunate choice of terms. The above quote implies that it is through inclusion into caches that the listed items achieve a sacred status. Rather, their sacred status had predisposed donut stones, seeds, etc. as possible offertory items. Parenthetically, seeds were natural talismans that carried a message of fertility/fecundity/increase (see Rust 1906:29-30; DuBois 1908:82-83, 89-92, 96; Strong 1929:299, 316-317; Voegelin 1938:35, 64; Driver 1941:36; Beeler 1967:35; Heizer 1968:25-26; Geiger and Meighan 1976:48-49).

Excavations on San Clemente Island in 1984 yielded 20 additional perforated stones, eight from the Ledge site (Wood 2000). Also, it should be noted that Molitor (2000:53) reported that these artifacts were concentrated late in time, extending into historic times. Wood (2000:60), however, implicated one donut stone in middle Holocene ritual behavior; given San Clemente donut stones’ frequent placement in excavated offertory pits, certain interpretations of temporal associations might be highly problematic.

Summary and Concluding Remarks

Had the LAN-62 quasi-toroidal artifact been discovered directly among manifestations of funerary or mourning behaviors, the question of function (donut stone versus mundane stick weight) would summarily have been answered. It is largely on the basis of physical attributes that the hypothesis of sacred applications is supported over profane employments. Comparison of this artifact with the donut found near Newport Bay (Figure 5) has helped make the case, particularly since the two objects seemingly belong to the same genre. The perforation of the Newport Bay donut appears too small for any procurement or other work function, and the perforation of the Ballona specimen had probably not received an ordinary digging stick as its diameter is also undersized, but less so.

The most telling design element of the LAN-62 specimen is the shape of its perforation, a feature crafted with such care as to belie any notion that a common, utilitarian wooden shaft had been intended for insertion. The effort expended in manufacture of the two artifacts’ perforations with their corresponding surface concavities stands in stark contrast to the lesser craftsmanship indicated for the great majority of the objects’ exterior surfaces. This suggests that the perforations bore the primary symbolic focus of at least these donut stones. The reader is encouraged to consult Koerper (2006) for an extended exposition on the purported imagery/symbology attaching to donut stones.

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End Note

1. Another Orange County artifact, similar to the just described Newport Bay specimen of Figure 5, is illustrated in a WPA report entitled “Drawings of Indian Artifacts” (Anonymous 1937). It too was carved of hard green granite. Described as highly polished, “the perforated hole through the center is extra smooth.” To call the WPA artwork for this specimen amateurish is charitable. Nonetheless, the hole shown seems straight

drilled. Arguably, the Depression era illustrator was trying to indicate concave depressions on both faces leading into the perforation.

References Cited

Anonymous

1937 *Drawings of Indian Artifacts: Ceremonial-Hunting, Household and Decorative Indian Art.* WPA Anthropological Project #4465. Report on file at UCI Langson Library, Special Collections.

1938 *Report of Excavation of Three Coastal Rancherias.* WPA Anthropological Project #7680. Report on file at UCI Langson Library, Special Collections.

Beeler, Madison S.

1967 *The Ventureño Confesionario of José Señan, O.F.M.* University of California Publications in Linguistics 47. Berkeley.

Benson, Arlene

1997 *The Noontide Sun: The Field Journals of the Reverend Stephen Bowers, Pioneer California Archaeologist.* Ballena Press Anthropological Papers No.44. Ballena Press, Menlo Park, California.

Bowers, Stephen

1885 Relics in a Cave. *Pacific Science Monthly* 1(June):45-47. [Reprinted 1963, Reports of the University of California Archaeological Survey, No. 59, pp.33-35. Berkeley]

Bryan, Bruce

1930 San Nicolas Island, Treasure House of the Ancients: Part 1. *Art and Archaeology* 29(4):147-156.

Campbell, Paul D.

1999 *Survival Skills of Native California.* Gibbs Smith, Salt Lake City.

Davis, Andrew McFarland

1887 A Few Additional Notes Concerning Indian Games. *Bulletin of the Essex Institute* 18:168. The Salem Press, Massachusetts. [Reprinted n.d., A Facsimile Reprint by Coyote Press. Salinas, California]

Driver, Harold E.

1937 *Culture Element Distributions, VI: Southern Sierra Nevada.* University of California Anthropological Records Vol. 1, No. 2. Berkeley.

1941 *Culture Element Distributions, XVI: Girls Puberty Rites in Western North America.* University of California Anthropological Records Vol. 6, No. 2. Berkeley.

DuBois, Constance Goddard

1908 *The Religion of the Luiseño Indians of Southern California.* University of California Publications in American Archaeology and Ethnology Vol. 8, No. 3. Berkeley.

Elsasser, Albert B., and Robert F. Heizer

1963 The Archaeology of Bowers Cave, Los Angeles, California. *Reports of the University of California Archeological Survey Report* No. 59, pp. 1-60. Berkeley.

Geiger, Maynard, and Clement Meighan

1976 *As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813-1815.* Santa Barbara Mission Archive Library, Santa Barbara.

- Heizer, Robert F.
 1955 *California Indian Linguistic Records: The Mission Indian Vocabularies of H. W. Henshaw*. University of California Anthropological Records Vol. 15, No. 2. Berkeley.
- 1968 *The Indians of Los Angeles County: Hugo Reid's Letters of 1852*. Southwest Museum Paper No. 21. Highland Park, Los Angeles.
- Henshaw, H. W.
 1887 Perforated Stones from California. *Bureau of American Ethnology Bulletin* No. 2, pp.1-34. Smithsonian Institution, Washington, D.C.
- Hollimon, Sandra E.
 2000 Archaeology of the 'Aqui: Gender and Sexuality in Prehistoric Chumash Society. In *Archaeologies of Sexuality*, edited by Robert A. Schmidt and Barbara L. Noss, pp.179-196. Routledge, New York.
- Hudson, Travis
 1969 The Archaeological Investigations During 1935 and 1937 at Ora-237, Ora-238, and Ora-239, Santiago Canyon, Orange County, California. *Pacific Coast Archaeological Society Quarterly* 5(1).
- Hudson, Travis, and Thomas C. Blackburn
 1982 *The Material Culture of the Chumash Interaction Sphere, Vol. 1: Food Procurement and Transportation*. Ballena Press Anthropological Papers No. 25. Los Altos, California.
- 1986 *The Material Culture of the Chumash Interaction Sphere, Vol. IV: Ceremonial Paraphernalia, Games and Amusements*. Ballena Press Anthropological Papers No. 30. Menlo Park, California.
- 1987 *The Material Culture of the Chumash Interaction Sphere, Vol. V: Manufacturing Processes, Metrology, and Trade*. Ballena Press Anthropological Papers No. 31. Menlo Park, California.
- Hudson, Travis, Thomas Blackburn, Rosario Curletti, and Janice Timbrook
 1977 *The Eye of the Flute: Chumash Traditional History and Ritual as Told by Fernando Librado Kitsepawit to John P. Harrington*. Santa Barbara Museum of Natural History, Santa Barbara.
- Hudson, Travis, and Ernest Underhay
 1978 *Crystals in the Sky: An Intellectual Odyssey Involving Chumash Astronomy, Cosmology and Rock Art*. Ballena Press Anthropological Papers No. 10. Socorro, New Mexico.
- Irwin, Charles N.
 1975 Problems in Chumash Technology and Interpretations of Artifacts. *Pacific Coast Archaeological Society Quarterly* 11(2):13-26.
- Koerper, Henry C.
 2006 The Aetiology of the Donut Stone and Its Symbolology: A Case Study of "Sexualization-Sacralization." In *Contributions from Orange County Presented in Remembrance of John Peabody Harrington*, edited by Henry C. Koerper, pp.87-125, Coyote Press Archives of California Prehistory No. 53. Salinas, California.
- 2007 On the Aetiology of the Atulku.. *Proceedings of the Society for California Archaeology* 20:84-97. Chico.
- Koerper, Henry C., and Armand J. Labbé
 1987 A Birdstone from San Diego County, California: A Possible Example of Dimorphic Sexual Symbolism in Luiseño Iconography. *Journal of California and Great Basin Anthropology* 9(1):110-120.

- 1989 "Libidinal Symbolism," Etcetera...Rejoinder to Cameron (1988). *Pacific Coast Archaeological Society Quarterly* 25(3):46-52.
- Koerper, Henry C., and Clay A. Singer
1988 Two Unusual Perforated Stones from the Newport Bay Area. *Pacific Coast Archaeological Society Quarterly* 24(4):63-70.
- Landberg, Lief C. W.
1965 *The Chumash Indians of Southern California*. Southwest Museum Papers 19. Highland Park, Los Angeles.
- Latta, Frank
1999 *Handbook of Yokuts Indians*. Brewers Historical Press, Exeter, California and Coyote Press, Salinas, California.
- Lee, Georgia
1981 *The Portable Cosmos: Effigies, Ornaments, and Incised Stone from the Chumash Area*. Ballena Press Anthropological Papers No. 21. Socorro, New Mexico.
- Macko, Michael E., Jeffrey S. Couch, and Henry C. Koerper
2005 Two Ceremonial Biface Caches from the Irvine Site: Evidence for Orange County and Northwestern Great Basin Cultural Connections. *Journal of California and Great Basin Anthropology* 25(1):93-107.
- Molitor, Martha
2000 Perforated Stones from the Ledge Site. *Pacific Coast Archaeological Society Quarterly* 36(2):53-59.
- Olson, Ronald L.
1930 *Chumash Prehistory*. University of California Publications in American Archaeology and Ethnology Vol. 28, No. 1. Berkeley.
- Powers, Stephen
1976 *Tribes of California*. University of California Press, Berkeley.
- Putnam, Frederick W.
1879a Introduction. In *Reports Upon Archaeological and Ethnological Collections from Vicinity of Santa Barbara, California, and from Ruined Pueblos of Arizona and New Mexico, and Certain Interior Tribes*, edited by F. W. Putnam, pp.1-31. Report Upon United States Geographical Surveys West of the One Hundredth Meridian VII – Archaeology, George W. Wheeler, general editor, Government Printing Office, Washington, D.C.
1879b Perforated Stones. In *Reports Upon Archaeological and Ethnological Collections from Vicinity of Santa Barbara, California, and from Ruined Pueblos of Arizona and New Mexico, and Certain Interior Tribes*, edited by F. W. Putnam, pp.135-189. Report Upon United States Geographical Surveys West of the One Hundredth Meridian VII – Archaeology, George W. Wheeler, general editor, Government Printing Office, Washington, D.C.
- Rust, Horatio N.
1906 A Puberty Ceremony of the Mission Indians. *American Anthropologist* 8(1): 28-31.
- Strandt, Herman F.
1965 Life and Customs of the Southwestern Coast Indians in Prehistoric Times: Burial Customs of the Orange County Indian. *Pacific Coast Archaeological Society Quarterly* 1(3):27-32.
- Strong, William Duncan
1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology Vol. 26, No. 1. Berkeley.

Voegelin, Erminie W.

- 1938 *Tübatulabal Ethnography*. University of California Anthropological Records Vol. 2, No. 1. Berkeley.

Wallace, William J.

- 2000 A Late Prehistoric Site on the Palos Verdes Peninsula, Los Angeles County, California. In *Archaeological Passages: A Volume in Honor of Claude Nelson Warren*, edited by J. Schneider, R. Yohe, and J. Gardner, pp. 182-197. Western Center for Archaeology and Paleontology Publications in Archaeology No. 1. Hemet, California.

Winterbourne, John W.

- 1967 Report of the Goff's Island Site Excavation, May 1, 1939 to January 22, 1940 (WPA). *Pacific Coast Archaeological Society Quarterly* 3(2 & 3).

Wood, Frank

- 2000 Addendum: Large Perforated Stones from San Clemente Island, 1984 Excavations. *Pacific Coast Archaeological Society Quarterly* 36(2):60-62.