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Perforated Stones from the Ledge Site

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A widely-distributed artifact on San Clemente and other Channel Islands is a carefully shaped, round, perforated stone. The jargon term for these is “doughnut stone,” but since they have nothing to do with doughnuts they are designated here as perforated stones. They are often referred to as digging stick weights, but this is only one of their identified functions.

These stones are commonly found within a variety of contexts, on all parts of the island, and in many time periods. They are not noted for the very earliest occupations, prior to 8000 years ago, and seem to be concentrated in the later time periods. That they extended into historic times is well documented in the assemblage described here from the Ledge Site.

There are 25 perforated stones in the 1983 collection from Ledge (Table 13.1). Some are intact, but most are broken. The majority (21) were found in the small offertory pits associated with other artifacts (Fig. 13.1), including *Haliotis cracherodii* shells, *Haliotis* dishes, *Olivella* shells and beads, steatite plaques, burned seeds, asphaltum, pestles, and other items. This context indicates the perforated stones were part of the assemblage of domestic possessions regularly buried in the offertory pits. The remaining specimens at Ledge are broken examples found in the midden at all levels and down to 60 cm, the bottom of the site.

The perforations are bi-conical or tapered. They were probably all biconical initially but some have been reamed out to produce a tapered perforation. Pieces are always broken across the hole, which has led to speculation that they broke in use with a central digging stick through the perforation. This, of course, is the weakest part and breakage from any cause will lead to the half or quarter fragments seen. Those in the offering pits may well have been deliberately broken (or “killed”) since many other artifacts in these caches show intentional breakage at the time of deposition.

The stones found at Ledge include eight manufactured from volcanic rocks, nine of serpentine, and nine of chlorite schist. The latter two types are not native to San Clemente and come from either the mainland or, more likely, Santa Catalina Island. Heye (1921) reported that 90 per cent of the perforated stones recovered from the northernmost island of San Miguel were steatite. Putnam (1879) described the finds from Santa Catalina as being equal in distribution between steatite and basalt. I did not identify any of the Ledge specimens as steatite, although this has been a generic term used by different authors in different ways, hence subject to some confusion in identifying artifact materials. What is significant in these observations is the apparent need for stone that was reasonably hard and compact and that, for most of these artifacts, very soft stone was unsuitable. The use of basalt and lava is significant and argues for a functional (rather than symbolic or decorative) use for many of them.

Table 13.1. Perforated stones from the Ledge Site, San Clemente Island.

Unit	Level (cm.)	Material	Size (cm)* Diameter	Thickness	Perforation	Weight (gm)*		
A	Disturbed	Chlorite schist	5.7	3.4	1.4	41.2	quarter	
K-28	0-15	Volcanic	5.4	4.8	2.5	80	half	
P-32	30-40	Serpentine	9.3	5.2	3.2	562.5	whole	
U-30	45-60	Chlorite schist	5.4	4.9	2.5	130	quarter	
P-29	Surface	Volcanic	10.7	9.7	3.2	540	quarter	
P-30	Surface	Volcanic	6.2	4.8	2	101.5	quarter	
P-30	Surface	Volcanic	10.9	8.2	3.1	638	half	
P-31	15-30	Serpentine	[Very small fragment of surface]					
P-27	30-45	Volcanic	8.2	5.3	2.5	180.5	quarter	
O-29	0-20		[Questionable round, perforated stone?]					
O-29	0-20	Chlorite schist	7.2	4.5	2.3	146	quarter	
Q-29	0-15/30-45	Serpentine	10.8	6.3	3.2	398	half	
Q-29	15-30		[Very small fragment of surface]					
O-30	30-45	Chlorite schist	9.4	7	3.8	387.5	half	
N-30	0-15	Volcanic	[Very small fragment of surface]					
N-31	0-15	Volcanic	5.5	3.5	**	61.5	half	
Q-27	0-15	Serpentine	10.1	3.8	3	160	quarter	
N-30	45-60	Chlorite schist	9	6.3	3.8	299	half	
N-31	15-30	Chlorite schist	9.5	6.2	4.2	443.5	half	
N-31	30-45	Serpentine	[Very small fragment of surface]					
P-32	15-30	Serpentine	9	6	3.5	294	half	
Q-30	45-60	Volcanic	9.9	5.9	2.8	318.5	half	
N-30	40	Chlorite schist	10.2	7.5	3.6	954.5	whole	
N-30	40	Chlorite schist	10.2	6.5	4.4	830	whole	
O-31	0-15	Serpentine	5.5	5.3	3	116	quarter	

* Measurements and weights are for the piece (fragmentary or whole).

** Perforation not definable on this fragment.

There is not only variation in material, but substantial variation in size and shape. In overall shape, the perforated stones are conical, globular, or disc-shaped. In size, the diameters range from about 5 to 11 cm (projecting the dimensions of the fragments), and weigh from 160 to 960 grams. While the general term "perforated stones" can apply to all sizes, shapes, and materials, it is apparent that use of the term here does

not apply to ordinary ornaments such as pendants nor to flat stones bearing small perforations, such as "comales" or griddles.

A detailed distribution is not given here, but perforated stones have been reported from all coastal counties of California from San Diego to Santa Barbara, and from all of the Channel Islands (except



Fig. 13.1. Cache pits at Ledge (SCLI-126). Feature 6 contains two halves of a perforated stone. Feature 5 contained thousands of *Calandrinia* (Red Maids) seeds.

Anacapa, and that is probably due to limited sampling). They also occur at sites far inland, so they are not unique to coastal California but are almost universal in distribution.

Workmanship can be rather rough and crude or very fine, with a high polish (Fig. 13.2). Several reported specimens have battered and fractured surfaces suggesting hard usage. Some are decorated with incised lines and grooves or even beads embedded in asphaltum.

Function of Perforated Stones

Extensive mention of these stones in the literature, starting with Putnam (1879), has offered a wide variety of speculation about their uses including: fishing net weights, clubheads or bolas for hunting or warfare, a form of exchange (trade items), flywheels for drills, canoe anchors, part of a shaman's medicine kit, a piece from a hoop and pole game, die for a pipe, spindle whorls, children's toys, and digging stick weights. While all of these uses are possible, and some

variation in use and meaning is to be expected, there is no evidence for the majority of these suggestions and the most valuable interpretations are those based on ethnographic observations.

The most definitive work is that of Henshaw, who analyzed the hypotheses proposed by others and interviewed informants. Henshaw (1887:8) reported a visit to an old Indian from Ventura and witnessed a pantomime "...which would have been quite enough to remove all lingering doubts as to one use, at least, of these stones. In reply to the question, 'What do you know of its use?,' she instantly seized a small stick from the fireplace and slipped the ring down its middle...holding it there with the left hand to show that the middle of the stick was its proper position, and began to dig industriously into the dirt floor."

Putnam, on the other hand, held that it was inconceivable for anyone who had examined the stones carefully to hold with the theory of their being used primarily as digging stick weights.



Fig. 13.2. Perforated stones from Ledge (SCLI-126) showing highly polished chlorite schist and rougher volcanic material.

That they may have been occasionally used as such is possible, but their probable use was more likely similar to that which the Eskimos put their perforated stones as a club, with a loose or flexible handle. If they were used for digging stick weights, how is it that not a single example of these sticks has ever been found, not even a trace? (Putnam 1879:161).

Since this early comment was written, numerous digging sticks have been recovered archaeologically, some with the perforated stones in place. The possibility, however, that some of the perforated stones were used as club heads must be considered. Similar stones are known to be used as clubs not only by the Eskimo, but by ancient cultures of Mesoamerica and South America. Lacking any proof, however, there is no reason to conclude that the perforated stones of the Channel Islands were used as club heads. There is no particular evidence for warfare among the hunter-gatherer populations of the islands and the only game animals that could be clubbed are the sea-lions. Again,

there is no indication that specially made clubs were used for this purpose

The idea that the perforated stones were used as net sinkers is possible but seems very unlikely, since recognizable sinkers are beach cobbles, sometimes grooved or notched. Henshaw questioned an Indian about this use for perforated stones and was told: “Why should we make stones like that when the beach supplies sinkers in abundance? Our sinkers were beach stones, and when one was lost we picked up another” (Henshaw 1887:19). This comment is probably the answer since finely crafted, highly polished stones represent too much manufacturing time to be casually used as net sinkers. Still less likely is the possibility of their use as canoe anchors; none of them are heavy enough to be useful for this purpose and their round shape would not hold to anything on the bottom.

A unique find was the discovery of four sticks with perforated stones still attached in Bowers Cave, Los



Fig. 13.3. Perforated stones with the same size perforation shown both on (above) and off (below) the dowel (used to simulate a digging stick). Stones from the Murphy Collection, San Clemente Island.



Angeles County. Dr. Stephen Bowers (1885), for whom the cave was named, described the finds in detail after their discovery in 1885. Henshaw (1887:28-31) goes to great lengths to establish the special qualities of these specimens. He describes the material, the bi-conical perforation, and traces of paint markings still present on the surface. He also mentions that the stones show no signs of abrasion or rough handling, which further indicated to him that they were not used for club heads or as digging stick weights. The stones are attached to the sticks by asphaltum, but in such a way as to reflect a design or intent since they are all canted at angles of 8, 10, and 18 degrees.

Hudson and Underhay (1978), as well as Elsasser and Heizer (1963:27) believe these sticks and their attached stones to be ritual and not functional, based on their painted decoration, the absence of any evidence of physical use, and the associated archaeological finds which were largely ritual items (including feathered headdresses, bone whistles, and bull roarers). Elsasser and Heizer further report that the perforated stones bore surface asphaltum, in which was embedded 15 *Olivella* shell beads, a decoration

which would not survive hard physical use of the perforated stones. They conclude that "...the shafts are so slender and the weight of the discs so slight that serious consideration of their being weighted digging sticks is rejected."

One of these sticks with its associated stone was on display at the Bowers Museum in Santa Ana where I was able to examine it in 1983. The

decoration is still clearly visible and consists of 8 broad lines of red paint arranged in V-shaped pairs and extending outward from the center. The shaft is badly warped but nevertheless canted at an 8 degree angle and still has traces of blue and green coloring. Hudson and Underhay (1978) report that all these colors (red, blue, and green) are related to Chumash mythology in which the sunstick is a metaphor for the central axis of the world, with the stone representing the sun. They report on the use of sunsticks in winter solstice ceremonies. [While the symbolism may be valid, it is worth noting that a stick inserted in a biconical perforation will automatically result in a stone which is canted with respect to the stick.]

I consider it possible that some of the perforated stones were used in a game, being rolled across the ground while used as a target for darts or arrows (see following addendum by Wood). Such a game is nearly universal in North America and serves not only for amusement, but to sharpen accuracy for effective hunting or spear fishing. Other suggested uses (bolas, spindle whorls, etc.) are more fanciful, unsupported by either archaeological or ethnographic evidence. The smallest of the stones could be miniatures intended for children copying adult activities.

At Ledge, perforated stones occur in association with everyday utilitarian items and are found in the midden soil. They also occur in the offering pits believed associated with mourning ceremonies. At other sites on the island (Nursery, Eel Point C), perforated stones

also occur with burials, but the associated offerings are not of the ceremonial nature seen at Bowers Cave; rather, they are utilitarian items such as shell fish hooks.

Conclusion

In my estimation, it seems that the most plausible interpretations of use include digging stick weights, ceremonial items, and games. These three uses would account for the perforated stones being buried with both males and females and could explain their presence as part of a shaman's kit. Other uses are possible but are not documented and therefore remain speculative.

At the Ledge Site, the close association between the items and their owners is important. Henshaw's informant said: "It is many years since I have seen one of these stones....We used to bury them with the dead" (Henshaw 1887:8). Perforated stones are found with both male and female burials in many locations in Southern California. At Eel Point C, two perforated stones were found with male burials. Assuming that the things found in the offertory pits at Ledge included belongings of the deceased, the "killing" of perforated stones could be to re-unite the artifact with its owner in the spirit world. This does not mean that the use to the living owner was not utilitarian nor that the objects could not have served as digging stick weights (Fig. 13.4a and b). Such a functional use seems the most likely one for the Ledge specimens.

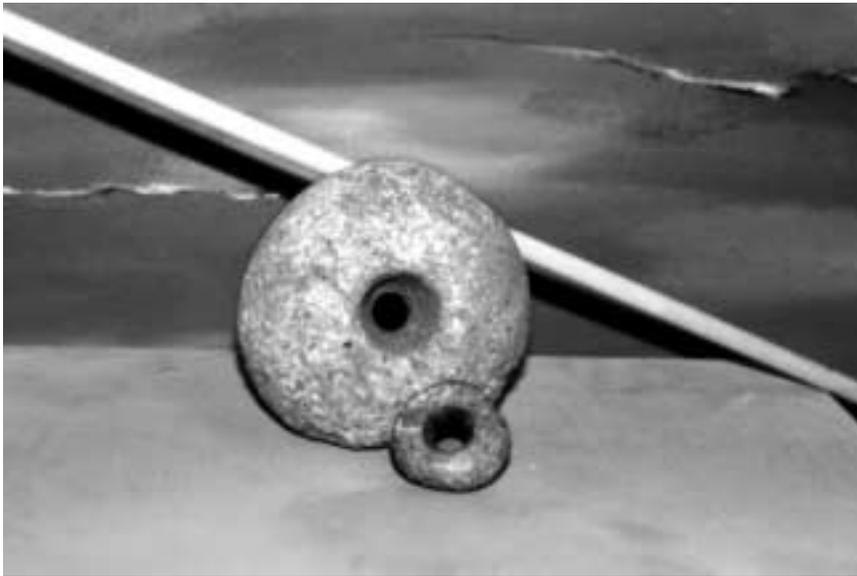


Fig. 13.4. a & b: Perforated stones as digging stick weights. The center holes in the stones shown in 13.4a (above) and 13.3b are the same size and fit the dowel behind them. Stones from the Murphy Collection, San Clemente Island.

