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Grinding Implements from San Clemente Island

Clement W. Meighan

Comparative comments on ground stone implements from Eel Point are provided by Geiger (in press). Some general comments about these finds, including discussion of the Ledge Site, are given here. Mortars, pestles, manos, and metates are the prevalent grinding tools.

Mortars

A small number of bedrock mortars was noted on the island, but only one was present at our excavated sites



Fig. 15.1. Bruce Bryan at the Ledge Site in 1962 pointing to the small mortar.

(from Ledge) and it is in a small enough “boulder” to be rather easily moved around. This one was recorded originally in the Southwest Museum work by Bruce Bryan (Fig. 15.1). Subsequent to the Southwest Museum studies, amateur diggers unearthed the mortar and rolled it from its original location. Some circles cut in the soft volcanic tuff rock were added as recent embellishments; they are not visible in the early photos, although they may have been present but buried at that time. The absence of petroglyphs on the island would argue against these grooved elements being rock art.

The great majority of grinding stones was found in fragments and there are few whole specimens, although the general size range appears to conform to the evidence of the whole specimens recovered. Some deliberately broken, but reconstructible, small stone mortars came from the cache pits at Ledge. There were no doubt many more whole mortars on the surface at one time, but some have been carried away by collectors. There is also a report that Mexican cowboys of the rancho period deliberately broke all surface finds they encountered (this may relate to a common belief among Mexicans that archaeological

finds contain gold or other treasure buried within them).

A preliminary study, including measurements of 150 specimens of mortars was made during the 1983 field season by Mark G. Savage, one of the field school participants, and his data are used here along with additional observations. Not all of the tabulated items were collected; the Ledge Site in particular was marked by a very large number of mortar fragments scattered over the surface. Some may have been surface debris of the aboriginal village, but many were apparently discarded by relic collectors. We retained only the items recovered in our own excavations. The surface fragments increased the size of the measured sample, but included no new variants in size, shape, or material. Most of the surface fragments were too small to provide any attributes except vessel thickness and material. Table 15.1 lists the items recorded.

There are two basic mortar forms: a small globular form less than 30 cm in diameter (Fig. 15.2 a) and a type with flat rim, flat base, and straight sides (some-



Fig. 15.2. a. (right) Mortar, b. (left) Dish. Scale in centimeters.

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Table 15.1. Grinding tools from San Clemente Island (1983 season).

Artifact	Ledge	Eel Pt. B	Eel Pt. C
Globular mortar	42	2	1
Flat rim mortar	29	0	1
Subconical pestle	33	3	2
Mano*	22	3	1
Metate*	9	0	0

* The count is of catalog entries. See text discussion on the problematical identification of manos and metates. Note: Nearly all specimens are fragments, ranging from 4-36 cm in maximum dimension (average under 10 cm). One complete and one small restorable boulder mortar were found at Ledge, which also yielded a broken but reconstructible flat-rim ("flower pot") mortar.

times referred to as a "flower pot" mortar). The former is the everyday domestic implement, used with small subconical pestles. The latter are often considered to be special-purpose vessels because of their greater size and the care taken in their manufacture. There is no direct evidence, however, for differing functions on San Clemente since both occur in fragmentary form in midden debris and both also occur with burials or mortuary offerings.

The preferred material for mortars was volcanic rock, ranging from basalt to vesicular lava. Sandstone was sometimes used but is less readily available on the island. The bedrock mortar at Ledge is a relatively soft volcanic tuff.

The thickness of the straight-sided mortars is remarkably constant and nearly all measured specimens show a wall thickness between 2.8 and 3.2 cm. The globular mortars are more

variable and wall thickness is determined by the shape of the rock used. All these mortars are made on a natural globular cobble 18-32 cm in diameter.

Elsewhere in southern California, flat-rimmed mortars are sometimes grooved around the rim and may be decorated with shell beads set in the rim with asphaltum. No such elaboration is present in this sample.

While the larger mortars are assumed to have been used primarily for seed-grinding, the small ones with small pestles do not seem particularly effective for such use. Certainly they could have ground only very small amounts of seeds at a time. It is possible that they were used more for purposes other than hard seeds, such as grinding mineral pigments, roots, or bulbs.

Pestles

The subconical pestle of volcanic rock is standard in this collection. The smaller size (10-15 cm length) goes with the small boulder mortars (Fig. 15.3); larger specimens which are 30 cm or more in length,

presumably were used with the larger “flower pot” mortars. A single specimen from Ledge has a flange around the conical end. Small pestles of this kind are common in the late sites of southern California.

Metates and Manos

These portable grinding implements are not common but are found widely scattered over the island. Some unquestionable metates of the “Early Milling Stone” tradition occur as surface finds, but their number is very small and no excavated site can be considered an Early Milling Stone site comparable to those on the mainland. No such metates were found in any of the UCLA excavations. Their origin and use on the island remains enigmatic.

The identification of manos and metates is a serious problem which has important implications for the relationship of San Clemente Island to other areas. In general, manos and metates are characteristic of the Early Milling Stone Horizon and are replaced by mortars and pestles by at least 3000 years ago on the northern islands and by about 2000 years ago in the

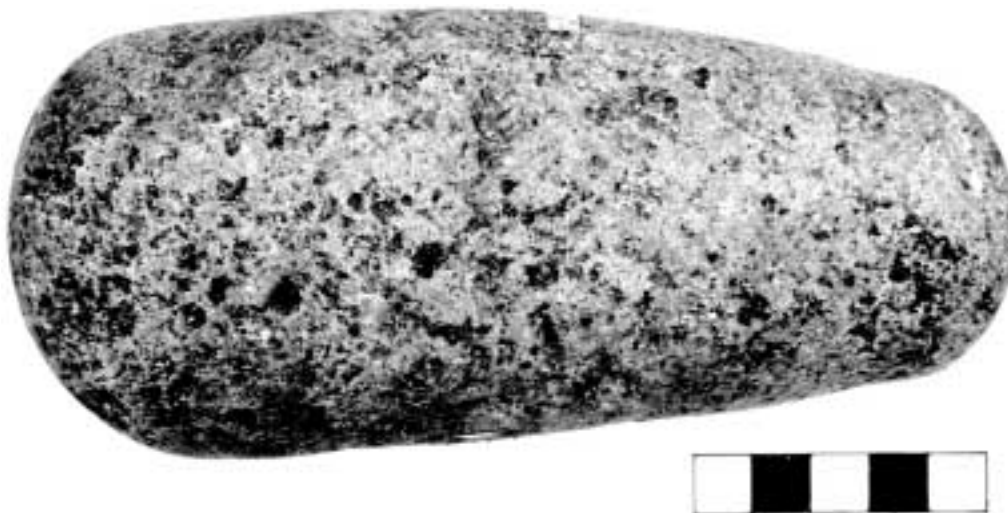


Fig. 15.3. Pestle from Eel Point B Site. The scale is marked in centimeters.

Santa Monica Mountains. This simple sequence is complicated by the fact that in desert areas and in San Diego County, use of manos and metates continued down to historic times. It is further complicated by the fact that some mortars occur in early sites along with the prevalent manos and metates.

It would be logical to conclude that the use of these implements into protohistoric times would imply a cultural relationship with the adjacent mainland, while the early replacement of these grinding tools would relate to the pattern observed on the northern islands and the mainland from Los Angeles north. For our earlier sites, specifically Eel Point B, presence of manos and metates would provide a cultural parallel to the contemporaneous Early Milling Stone sites of the mainland. Absence or scarcity of such implements, on the other hand, would indicate a sharp separation of the islanders from mainland developments at a very early time period.

Providing clear-cut answers to these questions is made difficult by the uncertainty with which manos and metates are recognized and tabulated (both on San Clemente and in mainland sites). Metate-like stone implements occur in later sites on San Clemente, but the whole ones are clearly not metates comparable to the mainland specimens. For the earlier sites, no large metate fragments have been found, and small fragments could be pieces of something other than a metate (mortar, bead-grinding slab, etc.).

What can be said about the earlier San Clemente cultures is that seed-grinding metates are virtually absent, and may be entirely absent, unlike their occurrence in Early Milling Stone sites, where manos and metates constitute the predominant artifact types in many sites.

Recognition of manos is an even larger problem since the standard southern California mano is a natural cobble which shows minimal modification until it has

been used sufficiently to develop clear-cut surface wear (and eventually facets on the edges). Manos in the early stages of use can occasionally be recognized by pecking which roughened the surface and sharpened the mano.

Field workers in southern California have a tendency to err on the side of caution and routinely collect all mano-sized cobbles as "manos," particularly if such implements are known to occur in the site. This is particularly true with field classes or inexperienced excavators who are learning to recognize wear patterns on stone implements. If in doubt, the excavator will put it in the level bag. Other inexperienced people will very likely wash and catalog the object and soon the catalog is full of "manos," many of which are natural rocks showing no human modification or use. The same problem of identification, of course, occurs with other kinds of tools, but it is particularly serious with manos because even the expert cannot always be sure whether a given cobble was used as a mano. Furthermore, there are other uses for cobbles, the most common ones being as fireplace stones, cooking stones, or hammerstones. Depending on how long they were used and in what context, these uses also may not be readily recognizable to the archaeologist from any physical evidence on the cobbles.

I conclude, from a careful examination of the collection, that nearly all of the 31 items cataloged in 1983 as mano or metate fragments from the Ledge site are highly questionable as seed-grinding implements. Although the catalog indicates such implements to be a quarter of the seed-grinding implements from the site, this is misleading for the reasons stated above. I find no acceptable metate fragments in the collection i.e. pieces large enough to be sure they are not fragments of mortars, bead-grinding slabs, etc. There are, however, half a dozen specimens of manos which show sufficient use to make such a classification. Hence, for the Ledge Site, there appears to be a

limited use (less than 10%) of manos/metates as grinding implements. Ledge is a historic/protohistoric site comparable in age to Molpa and SDI-132, inland sites in northern San Diego County. Although these sites are a considerable distance inland, and therefore not very similar to Ledge in their subsistence practices, they make use of a diversity of seed-grinding implements and have both mortar/pestle and metate/mano tools in use simultaneously. They also have bedrock mortars and bedrock metates. On the basis of its assemblage of grinding tools, therefore, the Ledge Site is more like the adjacent mainland of Orange and San Diego counties and less like the sites of the more northern coast and islands. Not too much can be made of this comparison because the resemblance is weak (and absent for other aspects of the collection).

Furthermore, the fact that Ledge extends into the early 19th century and was apparently inhabited by a mixed group of mission runaways, argues that its tool assemblage is not merely the result of historical continuity on the island, but may have been affected by a mixing of tribal peoples as well as contact with the missions. Incidentally, sites this late in time would be expected to produce evidence of hopper mortars, flat rocks with minimal grinding depressions to which basketry hoppers were affixed, but these were not recognized at Ledge.

Eel Point C has few grinding implements recorded because the site is primarily a cemetery area with limited midden accompaniments and grinding implements were not generally provided as grave offerings. The cemetery did yield two large oval dishes made of basalt, but these are not metates (See Fig. 15.2b). The few mortars and pestles from this location are clearly affiliated with late island tools and fit the context of the other finds in the cemetery. The three "manos" in the catalog are dubious and appear to be no more than beach cobbles.

Most interesting is Eel Point B with its very early radiocarbon dates. Here the mortar and pestle fragments are from the upper levels of the site and represent re-occupation. What remains in the grinding tool category is a single "mano." Since the site spans the entire Early Milling Stone Horizon on the coast, this is a remarkable absence of the most typical Early Milling Stone artifacts and indicates that island adaptations were sharply different from those on the mainland, from the earliest times.

Eel Point B also overlaps Little Harbor, Catalina (4000-5000 BP), which is equally barren of manos and metates. This cannot be due to lack of plant seeds, since both Catalina and San Clemente are largely covered with grasses and have many of the plants traditionally processed with stone tools. Rather, it must be attributed to a very early and very heavy adaptation to ocean resources (fish, shellfish, and sea mammals), with plant foods never attaining the importance they gained on the mainland. It is worth suggesting that the original settlement of these islands was by an ancient (prior to 10,000 years ago) group of ocean-oriented wandering bands moving down the coastline before the land-oriented, seed-using developments of the so-called Desert Culture. There is little evidence that these early people were ancestral to any of the recent tribes of California.

Tools for the preparation of plant foods, unfortunately, do not yield quantifiable information about the plant resources collected and used. We can get fairly precise estimates of the amount of food represented by bones and molluscs, but the plant foods consumed at our sites are attested only by occasional carbonized plants and seeds. A rough estimate of the importance of plant foods may be derived from looking at the ratio of plant-preparation tools to other kinds of tools in the artifact collection (points, fishhooks, and other food-getting technology). For our sites, only Ledge has a significant component of seed-grinding tools in the artifact inventory. Excluding the large collection from

the pit features (offerings of some sort), the 104 specimens representing mortars and pestles are the most abundant class of artifacts in the midden.

Although the site also shows intensive exploitation of fish and shellfish, it must be concluded that a substantial part of the food consumed at this site was plant food in the form of seeds that were ground into flour. It is likely that seasonal collecting of plant foods was one basis for locating the site on the grassy plateau in the middle of the island. As mentioned, this site extends into the historic period and may have been occupied by a mixture of island and mainland peoples who fled the Spanish missions. It cannot be used to represent the end of an evolutionary sequence toward plant utilization on the island.

Eel Point C has few plant preparation tools, as mentioned previously. Eel Point B, the earlier portion of the site, shows minimal use of plant preparation tools. Since the site is immediately on the coast, it is to be expected that it will show emphasis on the collecting of coastal resources and that is the case. On the other hand, the island averages only a few miles wide so any site has access to just about any part of the island, and the general absence of plant preparation tools argues against much seed use in the early periods. The plant resources gathered by the earliest settlers may have been used without any seed-grinding, constituting a pre-milling stone tradition such as appears to be present with cultures like San Dieguito and Lake Mohave.