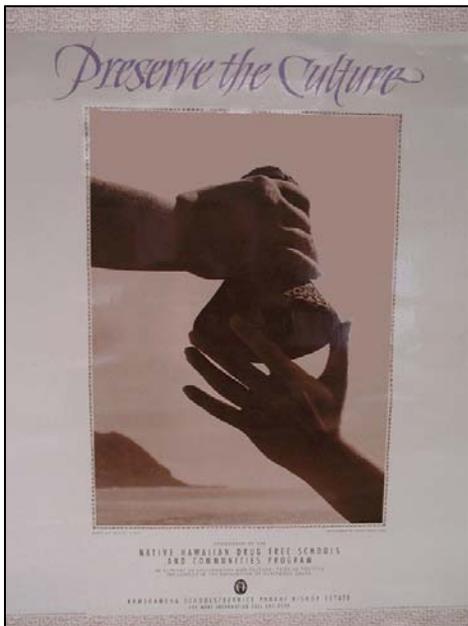


Variability in Poi Pounders From Kaua'i

By Windy Keala McElroy



Introduction

At the turn of the century W.T. Brigham described the poi pounder as “an implement very prominently identified with Polynesian life: one that had its beginnings with the race and which will perhaps be the last of ancient things to fall from the hands of the dying people” (1902:36). Indeed, traditional poi pounders continue to be used in Hawai‘i even today. In fact, they are among the most celebrated Hawaiian antiquities, a symbol of strength in Hawaiian culture.

Given the importance of this unique class of artifacts, surprisingly little systematic research has been done on Hawaiian poi pounders. In this paper I will examine variability in the morphology of poi pounders from the island of Kaua‘i, historically known for its distinctive poi pounder forms.

Previous Research

The earliest descriptions of Hawaiian poi pounders come from W.T. Brigham (1902) in the late 1800s. In his classic *Stone Implements and Stone Work of the Ancient Hawaiians*, Brigham describes these artifacts in striking detail and marvels at the effort put into their manufacture.

He identifies three general forms of Hawaiian poi pounders, or *pōhaku ku‘i poi*. The classic (also known as knobbed or conical)

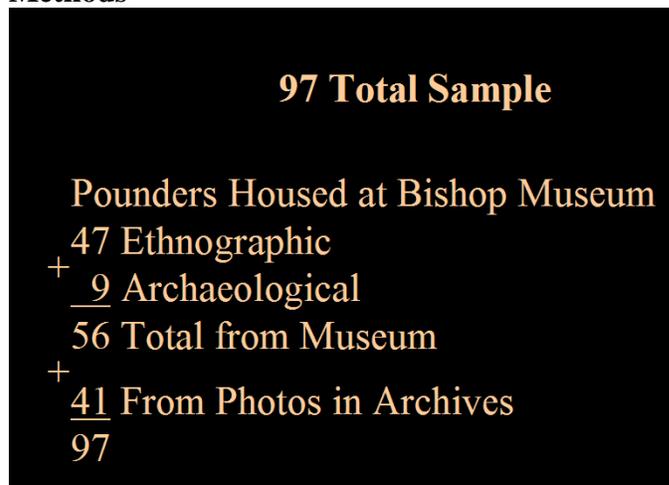


pounders were the most common, while the ring and stirrup forms were found only on Kaua‘i. Brigham regrettably notes that when he first visited Kaua‘i in 1864 the ring and stirrup pounders were already obsolete and were shown as curiosities. Thus the ring and stirrup forms are thought to be very old.

Te Rangi Hiroa’s early 20th century accounts of poi pounders are notable as well (1964:27-33). Published posthumously in 1964, *Arts and Crafts of Hawaii* presents a wealth of information on Hawaiian material culture ascertained by Hiroa in the early 1900s. Like Brigham, Hiroa identifies three types of poi pounders: knobbed, ring, and stirrup and maintains that the ring and stirrup forms are limited in distribution to Kaua‘i. But he goes a bit further to describe a number of variations within each grouping. He even characterized stirrup pounder tops as convex, concave, or straight.

More recent reviews of Hawaiian material culture also include poi pounders but never go beyond description. To summarize the literature, three basic forms of poi pounders are identified, but the distinguishing features of these forms are not clearly defined. All sources relate that two of the three poi pounder forms are known only to Kaua‘i, yet we know nothing of their distribution across the districts of the island or through time. I will attempt to address these issues herein.

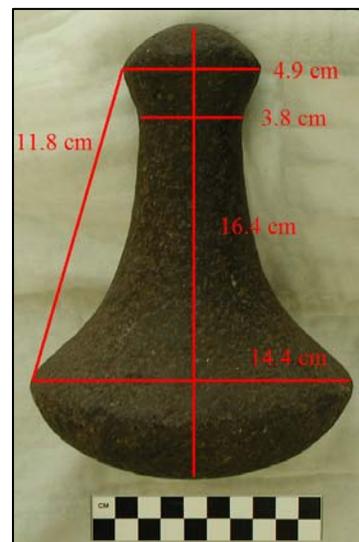
Methods



I examined a total of 97 poi pounders from Kaua‘i that had secure provenience information. Fifty-six pounders were housed at the Bishop Museum, where I was able to physically examine them. Forty-seven of these were from the ethnographic collections (donated to the museum) and nine were from archaeological contexts. In

addition, I gathered information from photographs and measurements of 41 ethnographic pounders in the Bishop Museum archives, cross-referencing weights and photos to ensure that these were not poi pounders I had already measured. I included only Kaua‘i pounders with provenience information no less than the scale of district and for which the dimensions of my classification could be clearly identified.

For the pounders that I was able to physically examine, I took digital photographs and used these to obtain precise measurements to characterize the morphology of each artifact. Digitally measuring these highly variable artifacts



proved advantageous in that the exact location of each measurement could be documented for future replication.

Paradigmatic Classification for Poi Pounders	
Dimension: Top	Mode: 1) Convex 2) Concave 3) Flat 4) Multiple
Dimension: Upper Sides	Mode: 1) Angled In 2) Angled Out 3) Straight 4) Multiple
Dimension: Perforation	Mode: 1) Present 2) Absent 3) Partial

Based on this information, I devised a simple paradigmatic classification (sensu Dunnell 1970) that focuses on the handle region of the poi pounder, as this is the most promising area to identify stylistic variability. It includes three dimensions: 1) the morphology of the top, 2) the morphology of the upper sides, and 3) the presence/absence of perforation. The first two dimensions have four modes and the last has three, therefore my classification produces 48 classes (4x4x3).

For example, a pounder with a concave top, straight sides, and no perforation is a class 232 artifact,

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while one with a convex top, sides angled out and partial perforation would fall into class 123. These classes are clearly capable of tracking variability at a finer scale than the traditional three-group classification of poi pounders (knobbed, ring, and stirrup).

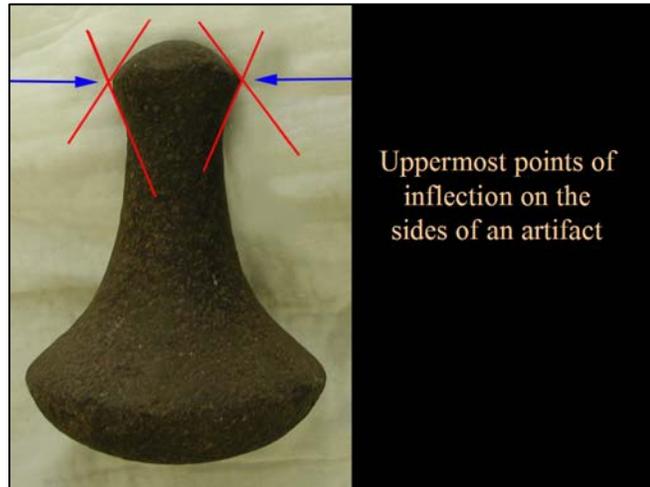
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The definitions of the top and upper sides follow Anna Shepard's analysis of pottery form (1956:225-227). Shepard utilizes a geometric approach that focuses on the contour of each artifact. Contour is characterized by points of inflection, which can be identified by moving a straight edge along the contour of a

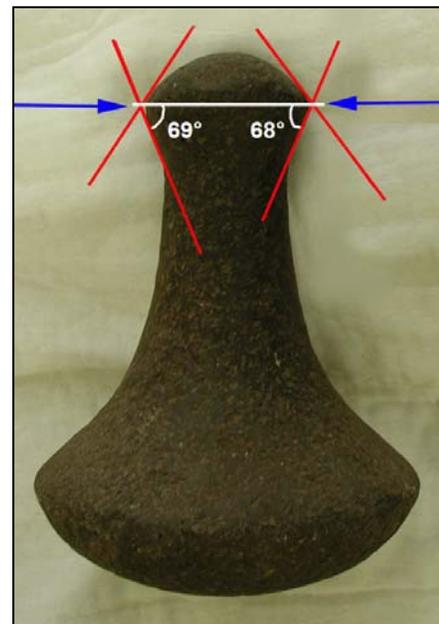
ceramic vessel. The lines created by the straight edge will change direction at the contours, and inflection points are located at the intersection of two lines. Shepard asserts that the inflection point is critical to characterizing the shape of a pottery vessel because “its position is definitive and it marks a fixed division of the vessel” (1956:226). The utility of the inflection point can be easily extended to the analysis of poi pounders as you can see here.

The first dimension of my classification, top, is defined as the region above the uppermost points of inflection on the sides of an artifact.



There are four modes that characterize the shape of this dimension: 1) convex, 2) concave, 3) flat, and 4) multiple.

The next dimension characterizes the morphology of the upper sides of the poi pounder. The upper side is measured down from the highest point of inflection on the side of an artifact. When measured against a horizontal line, upper sides that are angled in exhibit an acute angle, like the ones you see here, while sides that are angled out would exhibit an obtuse angle, and straight sides would be roughly perpendicular to the horizontal line. The multiple mode accounts for artifacts whose left and right sides differ, although I did not observe any examples of this.



These are examples of the different modes for this dimension: 1) angled in, 2) angled out, and 3) straight.



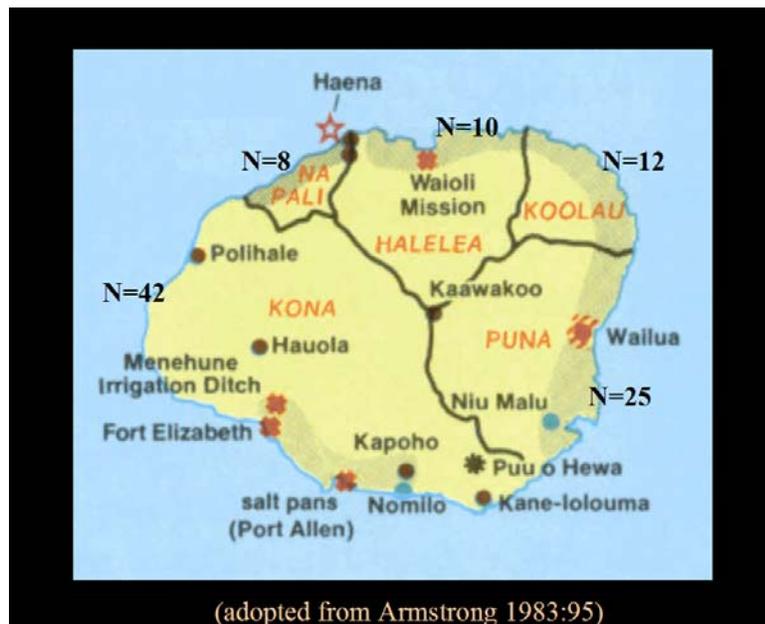
The final dimension characterizes perforation, which refers to the presence or absence of a puncture through the artifact. This dimension includes three modes: 1) present, 2) absent, and 3) partial.



Analysis and Discussion

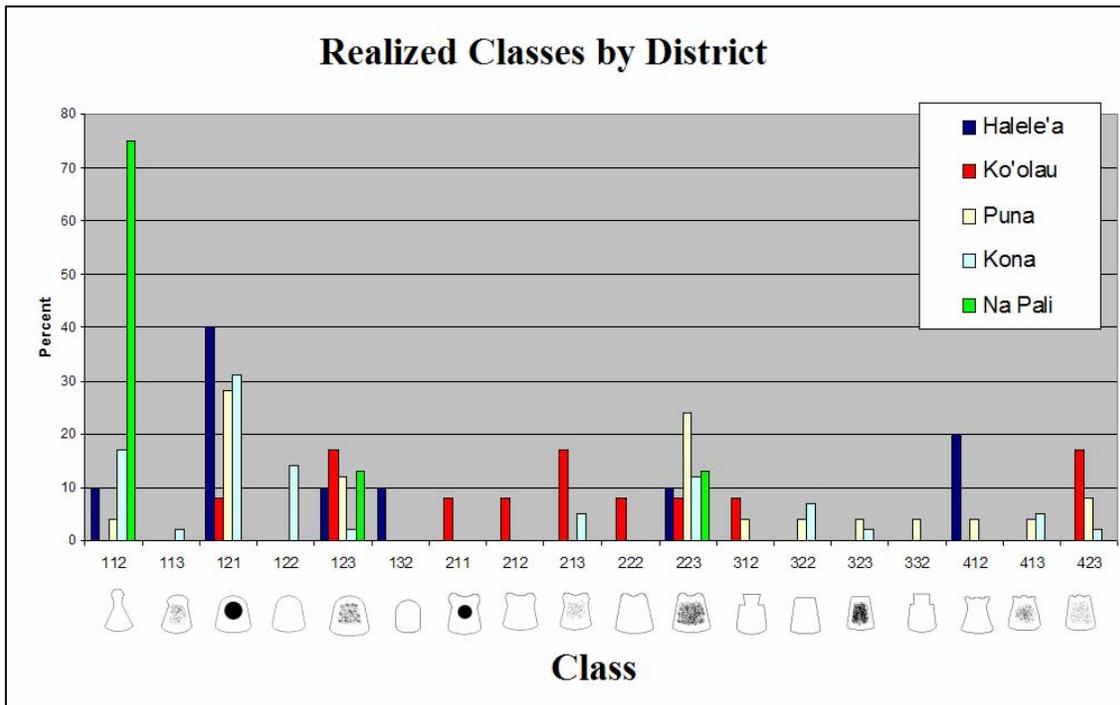
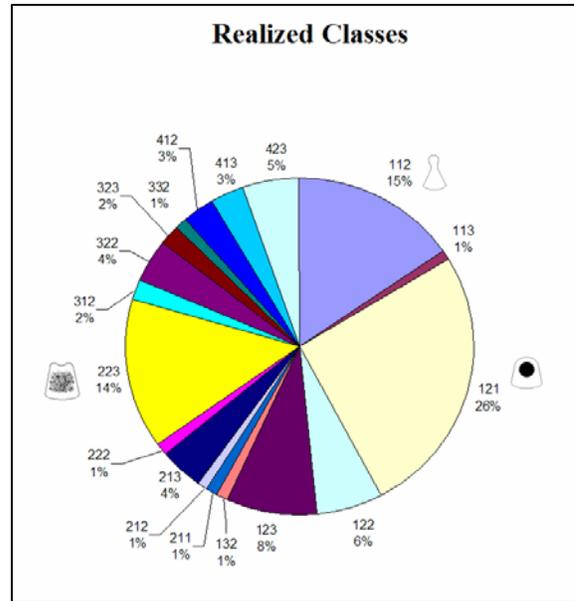
I grouped the poi pounders according to ancient *moku'āina*, or district boundaries and by Windward and Leeward divisions. The island of Kaua'i consists of five *moku'āina* districts: Halele'a, Ko'olau, Puna, Kona, and Nā Pali. The Kona and Nā Pali districts together make up the Leeward division while the remaining three districts comprise the Windward division.

Ten poi pounders were from Halele'a, 12 from Ko'olau, 25 from Puna, 42 from Kona, and 8 from Nā Pali. Stretching from Nu'alolo to Hanapepe, the Kona district is by far the largest, and fittingly includes the largest number of artifacts.



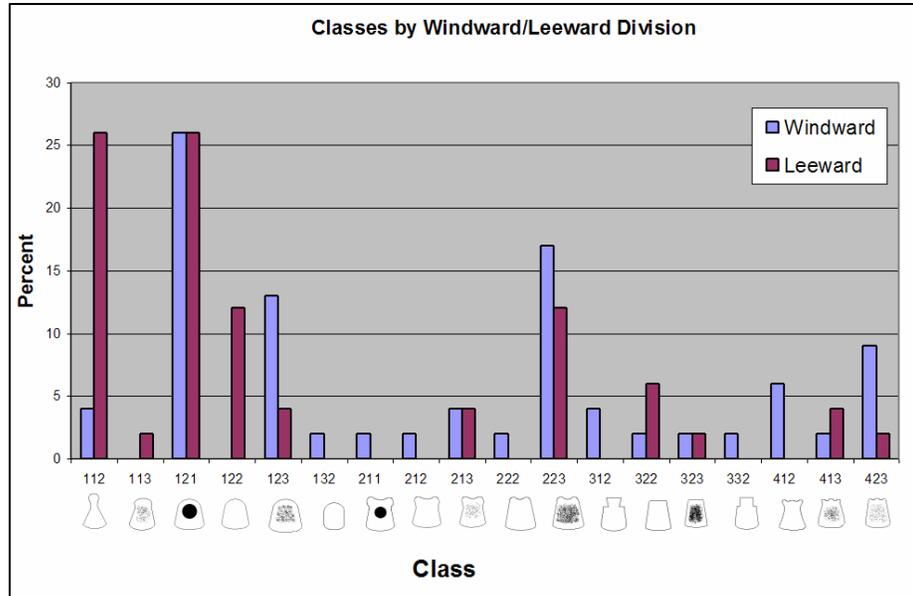
Correspondingly, Nā Pali, the smallest district, includes the fewest number of artifacts. Class size is more comparable when the poi pounders are grouped according to the windward/leeward divisions, with 47 artifacts from the windward side and 50 from the leeward.

Eighteen of the 48 potential classes produced by my classification were realized. This shows the distribution of artifacts in these classes. The most common classes were 121, 112 and 223, thus over 50% of the artifacts fell into just three of the 18 classes. It is also notable that six classes contained only one artifact each.



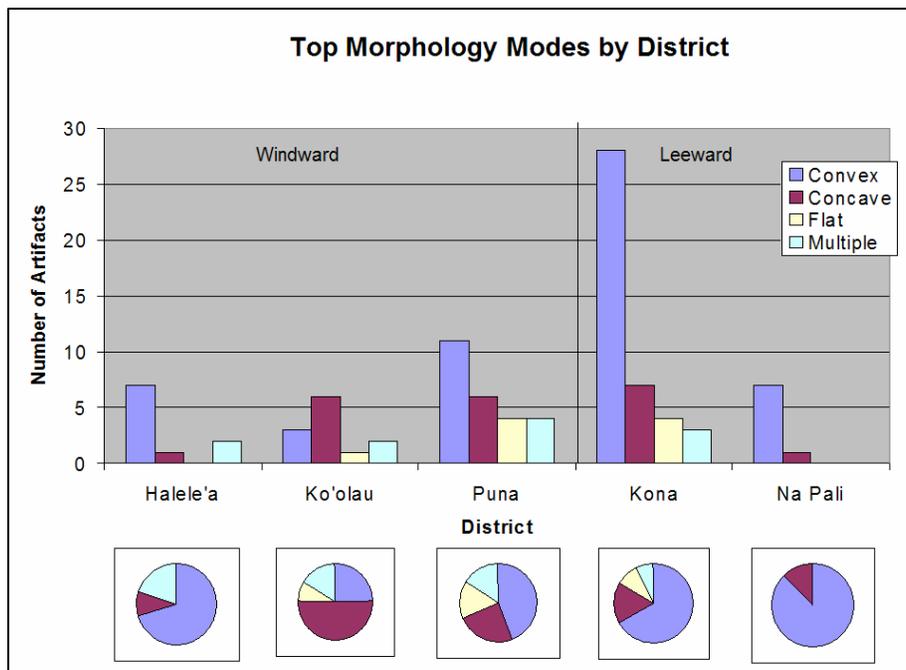
This illustrates the distribution of classes by district. As expected, the Nā Pali district with the fewest number of artifacts yielded the fewest realized classes. However, the 12 poi pounders from the Ko'olau district were spread across 9 different classes, while Kona district's 42 pounders were distributed among only 11 different classes. Although the sample is small, it appears that Ko'olau district's poi pounders are the most variable in form and those from Kona are the least variable. In fact, Ko'olau district's nine classes are all represented by fewer than two artifacts each.

This illustrates the distribution of classes by the windward/leeward divisions. You can see that the classic knobbed form represented by class 112 is predominantly a leeward phenomenon, while the ring pounders of class 121 were equally

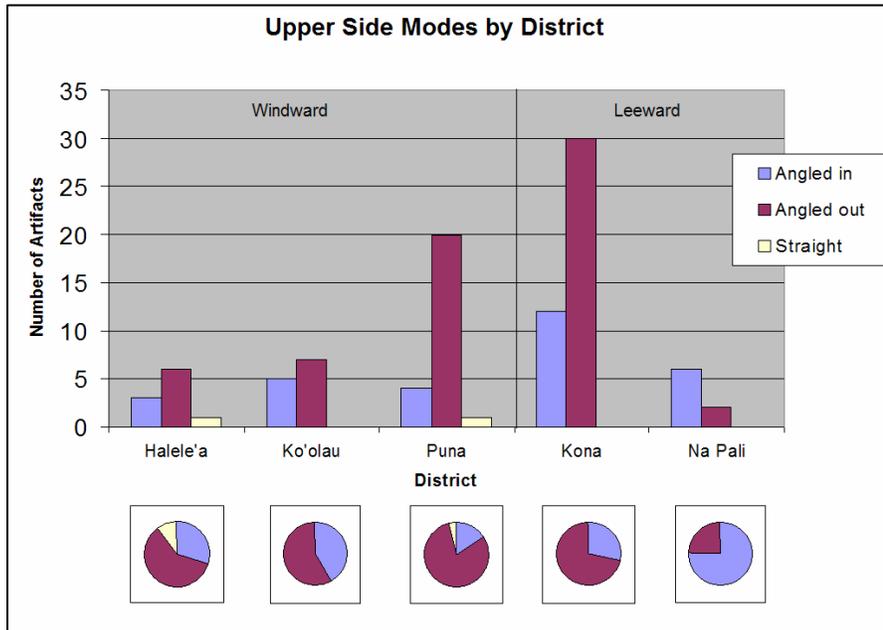


common on both sides of the island. The more variable stirrup forms were more common on the windward side.

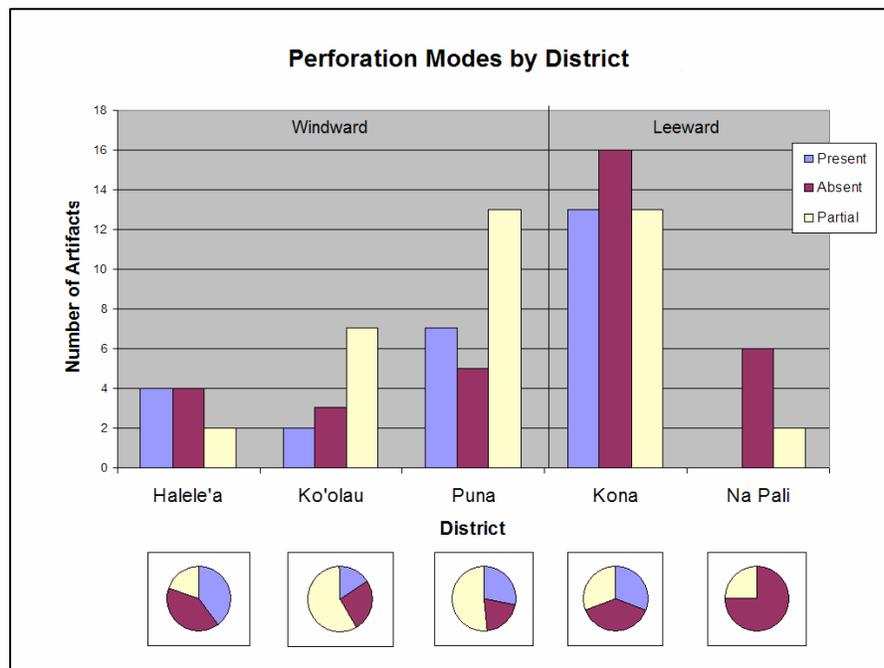
The windward poi pounders exhibited greater diversity overall, with 47 artifacts spread across 16 classes. By contrast, leeward's 50 poi pounders were distributed among only 11 classes. The greater diversity in the windward pounders may be attributed to a greater importance of poi in the wet windward region or a longer period of occupation on the windward side of the island, or both.



This graph portrays the division of artifacts by the first dimension, top. The convex mode was most common across all districts except Ko'olau, where concave was most common.



Here you can see the distribution of poi pounders by the second dimension, upper side morphology. The angled out mode was most common in all districts except Nā Pali, where angled in was most common, but this may be a product of the small sample size for that district. The straight mode was least common, with only two instances observed – both from windward districts.



This shows the division of poi pounders by the final dimension, perforation. Partially perforated artifacts were most common in Ko'olau and Puna, while they were least common in Halele'a and Nā Pali. Un-perforated poi pounders were most common in Kona and Nā Pali and least common in Puna. Perforated pounders were represented in

only two realized classes. Thus, these artifacts exhibited the least variability, with 25 of the 26 pounders having a convex top and sides angled out.

Finally, it is worth mentioning that the small sample of nine archaeological pounders showed no clear patterns through time. They were all found in the large Kona district – eight from Nu‘alolo Kai and one from Koloa Caves. Two of the Nu‘alolo Kai pounders lacked any depth information. None of the classic knobbed pounders of class 112 were observed in my archaeological sample, and this may be a product of small sample size, or may reflect a later age for the knobbed pounders.

Artifact #	Provenience	District	Depth Below Surface (in.)	Class
Ka-120	Koloa Caves	Kona	0 (Surface)	322
281-K3-G16	Nu'alolo Kai	Kona	6"	113
276-K3-F7	Nu'alolo Kai	Kona	8"	423
280-K3-D12	Nu'alolo Kai	Kona	12"	122
446-K5-J17	Nu'alolo Kai	Kona	14-18"	122
452-K3-G17	Nu'alolo Kai	Kona	37-54"	122
447-K5-I15	Nu'alolo Kai	Kona	44"	322
827-K3-G8	Nu'alolo Kai	Kona	No Depth Information	122
277-K3-E9	Nu'alolo Kai	Kona	No Depth Information	121

Conclusion



This research shows that Hawaiian poi pounders are highly variable in morphology. The 97 artifacts in my sample were distributed across 18 different classes, demonstrating that these implements show more variability than can be accounted for by the traditional three-group classification of knobbed, ring, and stirrup pounders described in the literature. However, most variability in this classification appears within the stirrup group.

Nevertheless, the ring and knobbed pounders are not completely homogenous. The bases of these artifacts flare to differing degrees



and even though the tops of the knobbed pounders were all convex with upper sides angled in, variations occur in this region, ranging from mushroom-shaped to underdeveloped.



Summary of Findings

- Ko'olau district's pounders were most variable
- Kona's were least variable
- Knobbed pounders more common on the leeward side
- Windward pounders more variable
- Stirrup and ring forms older than knobbed??
- 12 stirrup and ring pounders not from Kaua'i

Interesting patterns were evident when these artifacts were grouped according to district. Though small in area, Ko'olau district exhibited the most diversity of poi pounder form. By contrast, the large Kona district was least variable. The classic knobbed pounders were more common on the leeward side, while the windward poi pounders were more

diverse. This observation along with the lack of knobbed pounders in the archaeological sample suggests that the stirrup pounders are an older form than the knobbed. Brigham's observation that the stirrup and ring pounders were out of use by the mid 1800s lends support to this hypothesis.



Finally, while I focused my research on Kaua'i, I did come across 12 poi pounders from other Hawaiian islands that were not of the classic knobbed form. This is a direct contradiction to the literature, which consistently restricts ring and stirrup pounders to Kaua'i. These artifacts may have been transported to other islands by Kaua'i migrants or may have been items of exchange. Geochemical sourcing would reveal if these pounders were actually manufactured from Kaua'i basalts.

In conclusion, Hawaiian poi pounders are unique artifacts which have received inadequate attention by the archaeological community. My classification highlights some of the variability within and between the traditional three-group classification of poi pounders and identifies similarities and differences in poi pounder form across the five districts of Kaua'i. Nevertheless, further research is needed to fully understand these fascinating artifacts and the skilled craftsmen who made them.

References

- Armstrong, R.W. 1983 *Atlas of Hawaii*, Second Edition, edited by R.W. Armstrong. University of Hawaii Press, Honolulu.
- Brigham, W.T. 1902 *Stone Implements and Stone Work of the Ancient Hawaiians*. Memoirs of the Bernice P. Bishop Museum. Vol. I, No. 4. Bishop Museum Press, Honolulu.
- Dunnell, R.C. 1970 Seriation Method and Its Evaluation. *American Antiquity*. 35(3):305-319.
- Hiroa, T.R. 1964 *Arts and Crafts of Hawaii, Section I, Food*. Bernice P. Bishop Museum Special Publication 45, Bishop Museum Press, Honolulu.
- Sheppard, A.O. 1956 *Ceramics for the Archaeologist*. Publication 609, Carnegie Institution of Washington, Washington D.C.