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Supplementary Material for a Functional Classification of Hawaiian Curved-Edge Adzes and Gouges

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Title Supplementary Material for a Functional Classification of Hawaiian Curved-Edge Adzes and Gouges

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Introduction

This document describes 24 Hawaiian adzes from the collection of B. P. Bishop Museum in Honolulu, Hawai'i. It supplements and partially reproduces an article by the authors entitled "Functional classification of Hawaiian curved-edge adzes and gouges" that was published in the *Journal of Pacific Archaeology*.

Curved-edge Adze Descriptions

Terms for the parts of an adze follow Buck et al. (1930), with the exception that the edge is sometimes referred to as the cutting edge for clarity. Terms for orientation follow the scheme set out by Garanger (1972).

The cutting edge of an adze can be curved in one or both of two planes, which have been called curve A and curve B (Blackwood 1950). Edges with curve A look curved when the tool is viewed in longitudinal plan, while those with curve B look curved when the tool is viewed from the distal end (fig. 1). Edges with curve A are relatively common among Hawaiian adzes, typically because the edge of the tool curves back at one or both sides. An edge with curve A might be due to tool design or to the practice of resharpening adzes whose once straight edges were damaged at one or both ends. Edges with curve B are rarer than those with curve A, nevertheless, edges with curve B were almost certainly created by design, rather than from use modification. The 24 Hawaiian adzes that exhibit a curve B edge are referred to here as curved-edge adzes. Although adzes with a curve B edge frequently also exhibit curve A, the presence or absence of curve A is not among the classification criteria.

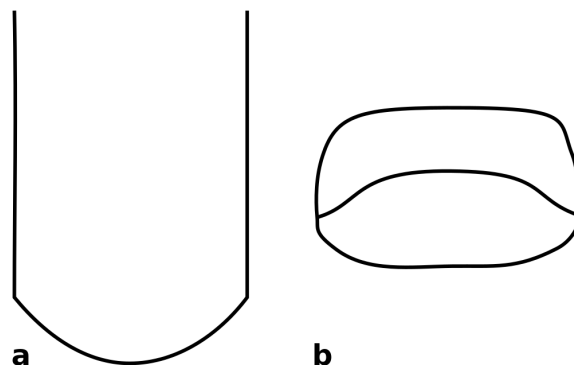


Figure 1: Cutting edge curves: *a*, curve A viewed in longitudinal plan; *b*, curve B viewed from the distal end with the adze front superior.

The adzes described here are identified as Hawaiian in Bishop Museum records, which often rely on information from donors that cannot be verified. The tools are identified by their museum labels, which in most cases are written in India ink directly on the tool. In some cases, a paper label is affixed to the tool. Some tools exhibit multiple labels, often with different identifiers; in these cases it is usually possible to identify the most recent label, which is the one used to identify the tool. The identifiers on the adze labels vary in their format; those reported here have been normalized

to reflect the convention followed in the digital catalog at Bishop Museum, but the task of joining the table of adze data used in this analysis with the digital catalog is not complete. Nevertheless, museum staff recognize this variability and are able to retrieve adzes with the identifiers as reported.

05853

This untanged, plano-convex section, black adze is polished on the front, sides, and bevel. There are small bits of polish on the back of the blade, but its surface is mostly flake scars. The butt has been reduced near the poll, leaving an irregular edge instead of a flat area. The bevel is very slightly convex, mostly near the edge, which is convex in both planes. This tool is stored with "Stone Chisels" in the Bishop Museum collection. Nevertheless, its curved edge is indicative of a gouge, rather than a chisel. The shape of the poll is ill-suited to direct percussion. It is 12.2 cm long, 1.7 × 2.1 cm at mid-section, and weighs 85 g. The cutting edge measures 1.4 cm.

09511

This tanged, plano-convex section, grayish brown adze is polished on the front, sides, and the back of the blade. The back of the butt is flake scars, and the poll is finished flat but is not polished. Flakes have been taken from both sides, from the corner of the edge extending onto the front of the tool and from the poll, also extending onto the front of the tool. It is 15.2 cm long, 4.25 × 3.4 cm at mid-section, and weighs 467 g. The cutting edge measures 4.8 cm.

10462

This untanged, irregularly plano-convex section, heavily patinated, dark gray adze is polished on the front, sides, and back. It has the slender shape of a gouge. The poll is flat and formed from an end-shock break of a formerly longer tool. There are small flake scars on the sides and back. The bevel is strongly convex. A bit of paper from an old museum label is present on the front. It is 6.5 cm long, 1.2 × 1.6 cm at mid-section, and weighs 32 g. The cutting edge measures 1.2 cm.

10602

This untanged, irregularly ovoid section, brown adze has the long, slender shape of a gouge. It is polished over most of its surface, with the exception of the butt, which is mostly polished on the sides. The butt appears to have been prepared for hafting. The back of the butt is flattened and partially polished. The front of the butt is a scar from a hinge-terminated flake originating at the poll. The poll is irregular and rounded. The bevel is slightly convex. Most of the edge was taken away by a flake that originated near its mid-point. It is 11.4 cm long, 1.6 × 2.3 cm at mid-section, and weighs 96 g. The cutting edge measures 1.4 cm.

11018

This untanged, plano-convex section, very dark gray adze appears to have been re-worked extensively to narrow the butt (fig. 2, *b*). The front and sides of the blade and the bevel are polished, but the rest of the back and the butt are covered with flake scars with small remnant patches of

polish in between scars. The poll is flat but not polished. The tool is widest at the edge and narrows markedly toward the poll. It is 11.4 cm long, 3.65 × 2.5 cm at mid-section, and weighs 258 g. The cutting edge measures 6.6 cm.

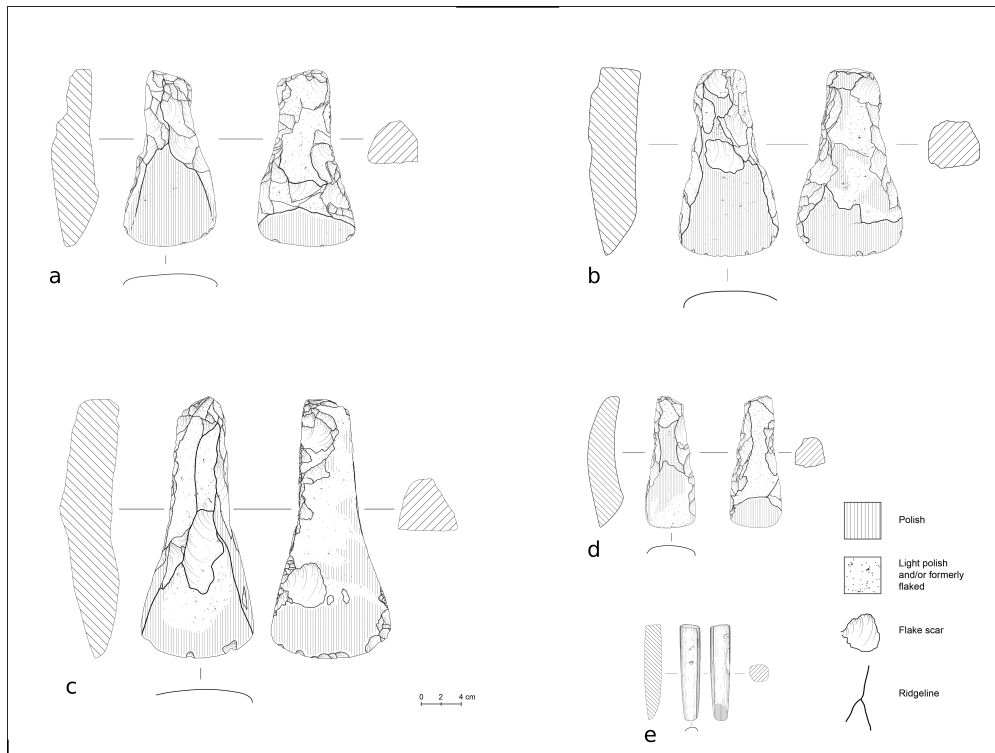


Figure 2: Curved-edge adzes and gouge: *a*, curved-edge adze, B.01799; *b*, curved-edge adze, 11018; *c*, curved-edge adze, 1970.010.020; *d*, curved-edge adze, C.08290; *e*, gouge, 70.286.21.

1970.010.020

This tanged, triangular section, dark gray adze is polished on the front, back, and sides of the blade (see fig. 2, *c*). The surface of the butt has not been polished. The poll is squared off. Shallow flakes have been removed from the front, sides, and back of the blade, probably through use. Four small flake scars originate at the edge. The edge is the widest part of the tool. It is 23.3 cm long, 3.55 × 4.5 cm at mid-section, and weighs 1274 g. The cutting edge measures 11.1 cm.

1970.286.17

This tanged, plano-convex section, grayish brown adze is fully polished on the front and sides of the blade and on the convex bevel. A small polished area on the back near the poll indicates that the tool was once more completely finished. The back has been greatly reduced by the removal of flakes from most of its surface, and a few small flakes have been removed from the sides. The

poll is pointed. A flake originating at the edge and extending onto the bevel has been glued back in place. A dark rectangular area on the front of the blade is residue from a museum label that is no longer attached. It is 8.4 cm long, 2.35 × 1.9 cm at mid-section, and weighs 78 g. The cutting edge measures 3.4 cm.

1986.602

This unusual adze is the longest tool recorded at Bishop Museum. It was found in 100 ft. of water off the south coast of O'ahu Island in 1986 and has been sourced to a quarry on the south coast of Moloka'i Island (Sinton and Sinoto 2015). This untanged, plano-convex section, gray adze is heavily encrusted with calcareous material from its time in the ocean. The calcareous encrustation makes it difficult to observe the underlying tool. The blade appears to be polished all over, but the polish appears not to extend on to the butt. The poll is nearly complete, with a flake missing from a corner with the back. It is 36.8 cm long, 6.3 × 4 cm at mid-section, and weighs 2284 g. The cutting edge measures 10 cm.

25204

This untanged, irregularly plano-convex section, very dark gray adze is polished on the front, sides, and back. It has the slender shape of a gouge. The poll is flat and appears to have formed from an end-shock break of a formerly longer tool. The poll is worn, suggesting that the tool remained in use after the end-shock break. The convex portion of the section is slightly beveled. The tool narrows as it approaches the edge. There are two remnants of paper labels on the adze. It is 5.4 cm long, 0.8 × 1.3 cm at mid-section, and weighs 20 g. The cutting edge measures 0.7 cm.

70.286.21

This untanged, irregularly hexagonal section, dark grayish brown adze is polished all over, including the poll (see fig. 2, e). It has the slender shape of a gouge. There are two small flake scars on one side and one on the poll. The bevel is convex. There is a dark deposit from an old museum label on the front near the poll. It is 8.7 cm long, 1.35 × 1.5 cm at mid-section, and weighs 49 g. The cutting edge measures 1.1 cm.

70.286.22

This untanged, plano-convex section, dark grayish brown adze is polished on the front, sides, and back. It has the slender shape of a gouge. The poll is flat and formed from an end-shock break of a formerly longer tool. There are flake scars on one side and the back near the poll. The bevel is convex. It is 6.5 cm long, 1.45 × 1.6 cm at mid-section, and weighs 39 g. The cutting edge measures 1.6 cm.

B.00524

This tanged, quadrangular section, gray brown adze is polished on the front and sides of the blade and on the bevel. The butt is not polished. The poll is flat and intact. A few small flakes have been

detached from the front, both sides, and the bevel of the blade, but the adze is otherwise in good condition. There are a few small chips from the edge, which reveal a dark gray rock. The edge is very slight convex, as is the front of the blade. The plan of the tool flares moderately toward the edge. It is 30.5 cm long, 6.05 × 5.9 cm at mid-section, and weighs 2682 g. The cutting edge measures 9.8 cm.

B.01695

This tanged, quadrangular section, grayish brown adze is polished on the front of the blade, one side, and the bevel. The butt is not polished. The poll is flat and intact. Several flakes have been removed from one side of the blade, leaving a small patch of polish near the edge. The back of the tool is formed by a single flake scar. There are small chips along the edge, one of which reveals a very dark gray rock. In plan, the tool flares slightly toward the edge, which is the widest part. The front of the blade is slightly convex. It is 24.4 cm long, 6.8 × 3.7 cm at mid-section, and weighs 250 g. The cutting edge measures 10 cm.

B.01799

This hoof-shaped adze with a plano-convex transverse section has a reduced, triangular-section butt that shows traces of light polishing, but whose surface is primarily flake scars (see fig. 2, *a*). The poll is irregular and in plan does not form a right angle with the longitudinal section. The color of the rock is gray (N5/) and the tool has a reddish yellow (7.5 YR 6/6) patina common on artifacts found on the surface where there is red soil. The blade is fully polished on the front and the back. The edge is curved in both A and B sections, consistent with its classification as hoof-shaped. It is 10.4 cm long, 2.75 × 2.4 cm at mid-section, and weighs 167 g. The cutting edge measures 5.4 cm.

B.02501

This tanged, quadrangular section, dark grayish brown adze is polished on the front of the blade and the bevel, with some patches of polish on both the sides. The butt is shiny on high points, perhaps from the haft, but is otherwise unpolished. The poll is nearly flat and intact. In plan, the tool widens toward the edge, which is the widest part. The front of the blade is slightly convex. There are some small chips in the edge, which reveal a very dark gray rock. The back and sides appear to have been worked slightly with a metal tool, which has left shallow striations in the rock. It is 27.2 cm long, 6.65 × 4.4 cm at mid-section, and weighs 2150 g. The cutting edge measures 11 cm.

B.08629

This untanged, circular section, very dark gray adze is polished on the front, sides, and back. It has the slender shape of a gouge. The color has a slightly reddish cast, perhaps from exposure to high heat. There is a deposit of hardened material on one side near the poll that might represent material melted in a fire. The poll is flat near the center, but has been diminished by three or four flakes that have broken away the edges. The bevel is flat and most of the edge has been chipped away. The

tool was broken about a quarter of the way back from the edge and has been glued together. It is 10.5 cm long, 1.65 × 1.9 cm at mid-section, and weighs 66 g. The cutting edge measures 1 cm.

B.09360

This untanged, irregular section, dark gray adze was fashioned from a thin flake blank. It is polished on the front, both sides, and the bevel, which is irregularly shaped due to a flake scar that runs along the back of the tool and makes it concave. The poll is flaked on either side, possibly for lashing. The cutting edge is angled and slightly convex when viewed end on. This appears to be a case of a convex edge shape being determined by the form of the raw material, rather than the design and work of a craftsman. It is 4.1 cm long, 2 × 0.7 cm at mid-section, and weighs 15 g. The cutting edge measures 3.1 cm.

C.02493

This untanged, nearly circular section, black adze is polished on the front, sides, and back. It has the slender shape of a gouge. The bevel and the front near the edge are highly polished, perhaps from use. The poll is flat and formed from an end-shock break of a formerly longer tool. There is a flake scar on the back at the end-shock break. The circular section is slightly beveled; striations indicate the bevel was finished by moving a rough surface over the tool in a latitudinal direction. The bevel is strongly convex. It is 4.3 cm long, 1.2 × 1.4 cm at mid-section, and weighs 16 g. The cutting edge measures 1.1 cm.

C.08290

This untanged, plano-convex section, dark grayish brown adze is polished on most of the front, on the sides near the edge, and on the bevel (see fig. 2, *d*). Flakes have been taken off both sides to narrow the butt. The front is reduced near the poll, which is small and irregular. Both the front and back of this tool are curved. It is 8.6 cm long, 2.95 × 2.6 cm at mid-section, and weighs 64 g. The cutting edge measures 3.2 cm.

C.09063

This untanged, irregularly plano-convex section, black adze is polished on the front, sides, and back. It has the slender shape of a gouge. The poll is flat and formed from an end-shock break of a formerly longer tool. There are flake scars on the sides and back of the adze. The bevel is slightly convex, primarily near the edge. It is 6.4 cm long, 1.3 × 1.7 cm at mid-section, and weighs 38 g. The cutting edge measures 1.5 cm.

C.09210

This untanged, plano-convex section, grayish brown adze appears to have been fully polished on the front, sides, and bevel. The bevel is convex. The back surface is mostly flake scars. Shallow flakes have been taken off both sides and several deep flakes from the butt end of the front. The poll is squared off but not polished. The tool widens toward the edge. The cutting edge is convex

in both planes, and is somewhat dull. There is quite a bit of abrasion, probably modern, at the edge of the bevel. It is 9.8 cm long, 3.8 × 2.3 cm at mid-section, and weighs 190 g. The cutting edge measures 5.3 cm.

D.00073

This untanged black adze is highly polished on the front, sides, and the bevel of the blade. The back of the blade is polished in the middle, with a series of small flake scars on one side and a large, deep flake scar on the other. The butt is partially polished, but most of its surface is taken up by flake scars. The poll is uneven. The transverse section is plano-convex. The edge is convex in both dimensions, with chips missing from the corners and the middle. The bevel is very slightly convex, mostly near the edge, and the rest of the bevel is nearly flat. It is 7.7 cm long, 2.7 × 2 cm at mid-section, and weighs 74 g. The cutting edge measures 3.5 cm.

D.00435

This untanged, irregular section, very dark gray adze has a surface almost completely covered with flake scars. Polish is restricted to the vicinity of the edge; the bevel is almost fully polished, but there is only a thin band of polish on the front. Several large flakes on one side of the butt have greatly reduced the width of the tool. The poll is thin. The edge is convex in both planes, but the B curve is somewhat irregular. The bevel is very slightly convex. It is 7.3 cm long, 2.3 × 1.4 cm at mid-section, and weighs 39 g. The cutting edge measures 2.8 cm.

Oa-109

This plano-convex section, black adze is reduced at the butt with a series of flakes that appear to have originated at the poll, which is thin and irregular as a result. The front and sides of the blade and the bevel are mostly polished, except where there are post-polish flake scars. The back of the blade and butt are marked by flake scars; a flake that apparently originates from the side has greatly reduced the thickness of the butt. The edge is convex in both planes. It is 7.1 cm long, 2.35 × 1.1 cm at mid-section, and weighs 35 g. The cutting edge measures 2.7 cm.

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