

Pre-Columbian Gold Assay Spoons from El Brujo, Perú

William E. Brooks

Reston, VA, USA

Email: webgeology@aim.com

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Abstract

A horn spoon is a modern gold prospector's field assay tool that is used to determine the amount of gold in an alluvial or crushed gold ore sample. The modern horn spoon is ~16 cm long, concave, flared at one end, and is made from a black ox-horn. The rough, black interior of the horn spoon holds and shows the gold "colors" or *chispitas*. Four Pre-Columbian ceramic spoons recovered from the El Brujo archaeological site in northern Perú are similar in length, concave form, flared lip, and most importantly, have post-firing, black-painted interiors. The similarities in size, form, shape and especially the interior color indicate that these ceramic spoons are consistent with use as ancient gold assay tools.

Keywords

Horn Spoon, Alluvial Gold, Assay, Moche

1. Introduction

Alluvial gold was ancient man's main source of gold (Boyle, 1979), and Perú's rivers and streams were the likely sources of much of Perú's ancient gold. Nuggets would have been easily picked from the stream or the concentrate in the miner's gold pan; however, finer-grained gold would have been more difficult to see until the lighter-colored minerals, such as mica or feldspar, were separated from the gold-bearing black sand. This would have been done by swirling water in a wooden gold pan or *batea* (Petersen, 1970/2010), until the light minerals were washed over the lip of the gold pan leaving a gold/black sand concentrate. After this gold-bearing concentrate is obtained, it may be further examined by using a horn spoon (Rose, 1902) to determine the amount of gold in the area and whether or not further exploration, or mining, should continue. For example, flakes of gold per *batea* were used as an exploration guide for gold prospecting in

Estado Bolívar, Venezuela (Brooks et al., 1995).

2. Use of a Modern Horn Spoon

A modern horn spoon (*puruña, tentador*), made of ox-horn from Chile, is shown in **Figure 1**. This exemplar horn spoon is: 1) ~16 cm long, 2) concave, 3) flared at one end, and 3) has a rough black interior surface that: a) “holds” the gold flakes, and b) shows the gold flakes (*chispitas*) or “colors.” After initial concentration in a *batea*, a smaller sample (~teaspoon) of the gold-bearing blacksand concentrate from an alluvial or hard-rock source is added to the horn spoon. Or, in an alluvial occurrence, the sample may be taken directly from the stream. Water is then added to the spoon and then the spoon, which fits in the palm of the user’s hand, is gently rocked so that any light minerals will be moved towards the flared end to be washed out of the spoon. At the same time, the black sand will also be moved toward the lip of the spoon and the rough, black interior surface of the horn spoon will hold the gold flakes or “colors” for counting.

Similarly, it was common for miners in 1850s California to blacken the interior of their metal gold pans with campfire soot so that the gold colors would be more readily seen. In some artisanal gold mines in West Africa, the interior of a tire similarly provides a rough, black surface that helps in the artisanal gold assay.

3. Ancient Mining Tools

Mining tools in ancient Perú were made of stone, copper, clay/ceramic, horn and bone, or wood. Tools such as a stone hatchet, a hammerstone with a wooden handle, and a bag containing atacamite were recovered along with the body of an ancient copper miner, the Chuquicamata Mummy, in Chile (Petersen, 1970/2010). Several gold workers’ tools from ancient Perú such as stone (porphyry) anvils and hammers that were used to shape the gold ingots or nuggets into jewelry were documented by Grossman (1972); however, thus far no gold assaying tools have been described.



Figure 1. Modern artisanal horn spoon/gold assay spoon (*tentador, puruña*) from Chile, carved from horn.

4. The Ceramic Spoons from El Brujo

Four Moche (~100-800 dC) ceramic spoons (*piezas* 7, 8, 20, 34) (**Figure 2**) were

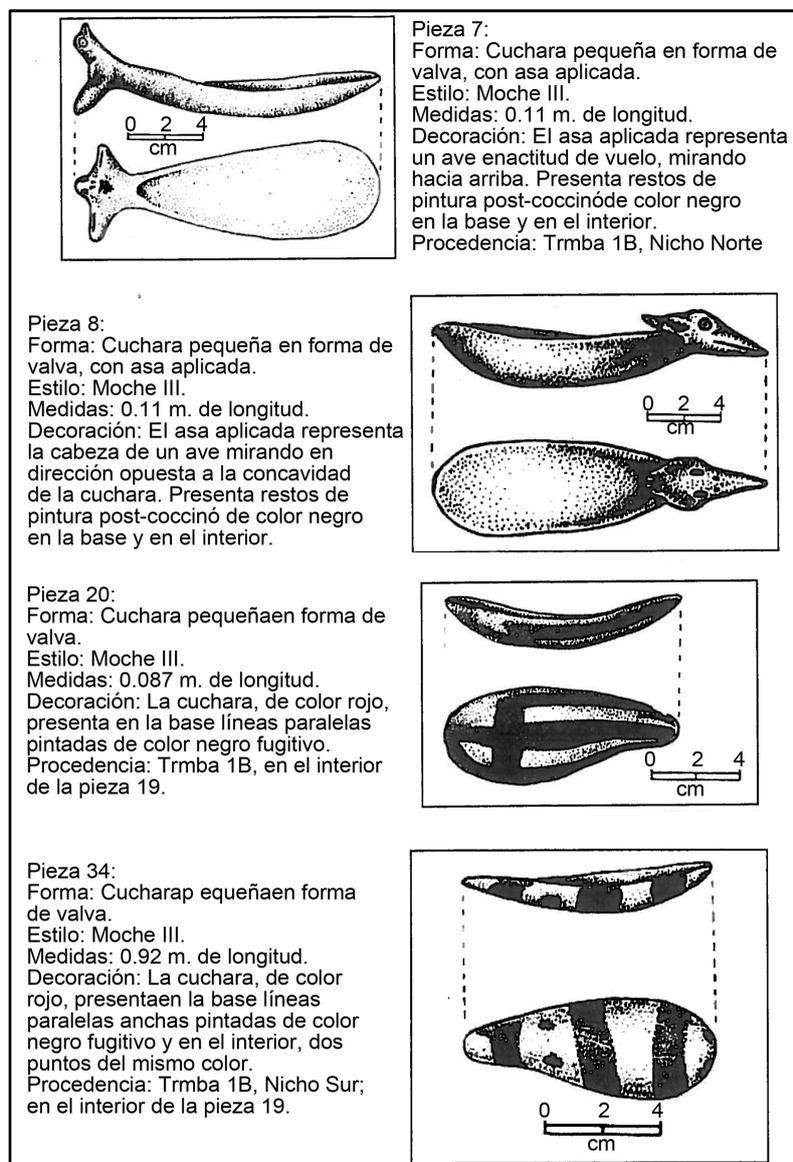


Figure 2. Four Moche ceramic spoons from El Brujo, northern Perú (Franco Jordán et al., 1999). Piece 7, Form-small spoon in the shape of a seashell, with an attached handle; Style-Moche III; Length-0.11 m; Decoration-handle is in the form of a bird in flight looking upward, post-firing remnants of black pigment in the base and interior; Location-Tomb 1B northern site. Piece 8, Form-small spoon in the shape of a seashell, with handle; Style-Moche III; Length-0.11 m; Decoration-handle shows the head of a bird looking in the opposite direction of the concave center of the spoon, remnants of post-firing, black pigment in the base and interior; Location-not given. Piece 20, Form-small spoon in the shape of a seashell; Style-Moche III; Length-0.087 m [use cm scale in sketch]; Decoration-spoon is red, showing remnants of parallel black lines on the base; Location-Tomb 1B, inside piece 19 (not shown). Piece 34, Form-small spoon in the shape of a seashell; Style-Moche III; Length-0.92 m [use cm scale in sketch]; Decoration-red spoon with wide parallel lines showing remnants of black, also in the interior, with two black spots; Location-Tomb 1B, southern site, inside piece 19 (not shown).

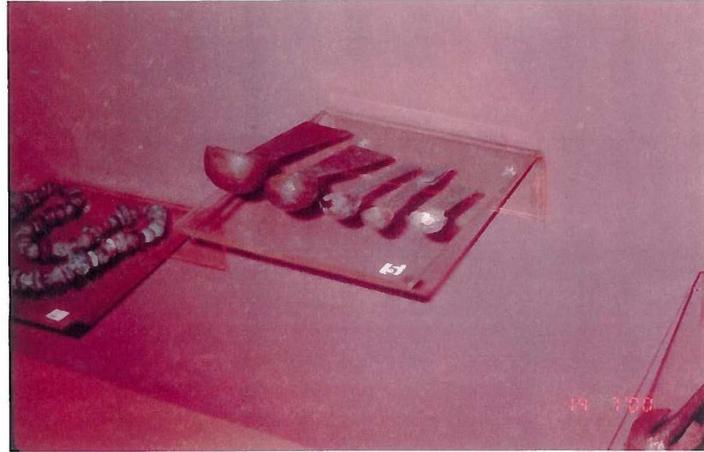


Figure 3. Pre-Columbian copper spoons from Museo Chan Chan, northern Perú.

recovered from the El Brujo archaeological site, northern Perú (Franco Jordán et al., 1999). These spoons are: 1) ~10 - 12 cm long, 2) concave, 3) flared at one end, and 4) most importantly, have post-firing, black-painted interiors or remnants of black pigment. The composition of the black pigment is not known; however, black pigment may have been sourced from ground pyrolusite or manganese mixed with other minerals and a binder (Petersen, 1970/2010) or possibly coal or soot. Two of the spoons (*piezas* 7, 8) have bird-head handles; however, the symbolic meaning of the bird heads is not known and the other spoons (*piezas* 20, 34) have no similar decoration. The physical similarities of the Moche ceramic spoons from El Brujo to a modern horn spoon, especially the black interior, suggest the alternate interpretation that these ancient ceramic spoons were not intended for kitchen use but were used as gold assay tools and were buried with their owner. A number of copper, gold, and *tumbaga* artifacts were also recovered from the site (Franco Jordán et al., 1999).

For comparison, five Pre-Columbian spoons from the Chan Chan Museum, northern Perú, are made of copper and show no black interior (Figure 3)—the shape and size of these spoons is more similar to spoons for kitchen use and not the Moche ceramic spoons.

5. Conclusion

The shapes, sizes, and distinctive black interior of the four Moche ceramic spoons from El Brujo are comparable to a modern gold assay horn spoon and, therefore, permit interpretation of the spoons for something other than kitchen use. The black interior of the ceramic spoons would have served no special purpose in the kitchen; however, the black interior would be especially useful to show the gold “colors” as part of the artisanal gold exploration and assay process.

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