

A Unique Cogged Stone from a Late Prehistoric Site in Riverside County

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Abstract

A fish vertebra cogged stone of unique style was found in a Late Prehistoric site in Riverside County. The cogged stone is described, and its anomalous context in time and space is discussed. Most cogged stones come from the Cogged Stone site (CA-ORA-83) in coastal Orange County and are over 70 centuries old.

Introduction

A cogged stone was found in a Late Prehistoric seed processing site in western Riverside County. It is a fish vertebra type (Underbrink and Koerper 2006:112), and the indentations around its edge were made by grinding. Because most cogged stones come from the Cogged Stone site (CA-ORA-83) at Bolsa Chica Bay in coastal Orange County and date to ca. 7,500 BP, its presence in a Late Prehistoric site in western Riverside County is anomalous. The purpose of the article is to report information about this cogged stone, although some comparative material about dates and material type of other cogged stones from the ORA-83 is provided.

The Cogged Stone

The cogged stone was found during grading monitoring in 2016 at CA-RIV-11802, located in the hills east of Lake Elsinore, western Riverside County (Mason and Tubbs 2016). RIV-11802 was a seed processing site containing mostly manos and metates. RIV-11802 is adjacent to CA-RIV-1022 and CA-RIV-6256 which together likely formed a Late Prehistoric village with more residential activities at RIV-1022 and more

ceremonial activities at RIV-6256. Although no radiocarbon dates are available, the presence of pottery, large amounts of rock art, milling features, and dense midden, coupled with large site size (over 24 acres for RIV-1022) indicate a Late Prehistoric village (Mason 1999; Smith et al. 2007). The cogged stone was found only after it was displaced by a scraper and probably came from less than 50 cm below surface.

The 700 g, 10.5 cm diameter, 4.3 cm thick cogged stone is circular in plan view and has a biconically drilled center perforation. The point where the two cone shapes meet forms a circular ridge at the center point of the hole. The external diameter of the center hole is 5.4 cm, and the internal diameter is 3.5 cm (Figures 1 and 2). There are seven indentations around the circumference with some variation in the distance between them (Figures 2 and 3). The indentations are circular or nearly circular; the diameters of the circular indentations average about 3.0 cm, while the depths of the circular indentations average about 1.4 cm. The indentations are conical and smooth, not rough pits that would indicate manufacture solely by pecking. Undoubtedly, they were made by rotational grinding after some initial pecking. Replicative experiments show that most cogged stones were roughly shaped by pecking with beveled hammerstones, followed by grinding with sandstone to smooth and finish the cogged stone (Garrison and Colochó 2013:70).

The RIV-11802 cogged stone is a fish vertebra type (Underbrink and Koerper 2006:112,113, Figure 2),



Figure 1. Plan view of CA-RIV-11802 cogged stone.



Figure 2. Oblique view of CA-RIV-11802 cogged stone.

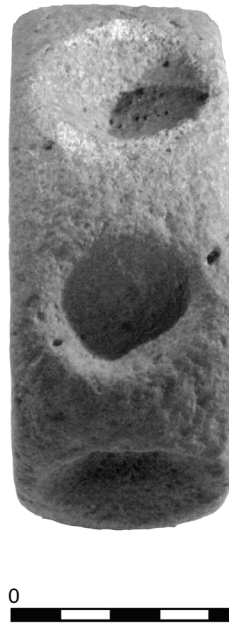


Figure 3. Edge view of CA-RIV-11802 cogged stone.

which lacks cogs around the circumference, but instead has indentations. The more common cogged stone that is circular in plan view with cogs around the circumference is known as the land-and-groove type. Many fish vertebra cogged stones have a center perforation (Wiley et al. 2012:8), while perforations are uncommon for land-and-groove cogged stones.

The RIV-11802 cogged stone is made of vesicular basalt. However, the vesicles are few and small. Basalt of various types is the most common material type for cogged stones. Of the 200 cogged stones found after 1980 at the Cogged Stone site on Bolsa Chica Mesa, Huntington Beach, Orange County, 45 percent are made of vesicular basalt, and 12 percent are made of non-vesicular basalt (Wiley et al. 2012:111). The basalt in the El Modena volcanics, found in the hills in the El Modena area of east Orange, is the closest source of vesicular basalt to ORA-83. The weathered volcanic material at El Modena has been suggested as a likely source of material used to make cogged stones (McKinney 1968:42). Vesicular basalt from the El Modena Volcanics was used in

replication experiments to make cogged stones (Garrison and Colucho 2013:71)

Most cogged stones were manufactured at the Cogged Stone site where tools used to make them (beveled hammerstones) have been found and where blanks and preforms make up nearly one third of the cogged stones (Wiley et al. 2012:113; Garrison and Colucho 2013:69). Eleven ORA-83 cogged stones were repaired with asphaltum (Wiley et al. 2012:116).

By the late 1960s about 415 cogged stones had been collected from the Cogged Stone site (Wiley et al. 2012:7). Over 200 cogged stones were recovered from the site during post-1980 investigations.

Although most cogged stones were manufactured at ORA-83 and found in the archaeological deposits there, they have also been found along the Santa Ana River drainage extending into the San Bernardino Mountains (Eberhart 1961:364). One specimen found in Oak Glen, east of Yucaipa (Wilson 2016), appears to mark the easternmost extent of cogged stones. Other cogged stones in private collections come from Yucaipa, Cajon Pass, Redlands, San Timoteo Canyon, Colton, and Alta Loma, all in the upper Santa Ana River drainage area. In the valleys of western Riverside County, cogged stones in private collections come from Temecula, Murietta, and French Valley. There are 28 cogged stones in private collections from Los Angeles County. In San Diego County, six cogged stones are known from the San Luis Rey River area (McKinney 1968:39–40).

Three cogged stone caches at ORA-83 (Wiley et al. 2012:162) have been dated to a calibrated 1 sigma range of 7510 to 8263 BP, as shown in Table 1. A cogged stone made of ochre found in an early Holocene site in the San Joaquin Hills of Orange County had an associated radiocarbon conventional age of 6750 +/- 50 BP and a calibrated one sigma range of 7529 to 7607 BP (Koerper and Mason 1998). This Early Holocene period probably marks the time of greatest manufacture and use of cogged stones.

Discussion

The RIV-11802 fish vertebra cogged stone is of unusual manufacture. The material is a fine-grained vesicular basalt with few and small vesicles. The indentations around the circumference are nearly circular, are quite smooth, and were made mostly by grinding. In contrast, the 22 fish vertebra cogged stones from ORA-83 are made of coarse vesicular basalt (8), basalt (12), and an unknown material (2), and the indentations appear to be made by pecking and are mostly oval or almost rectangular (Wiley et al. 2012:Appendix C). No fish vertebra cogged stones are among the cogged stones from museum collections illustrated by Wiley et al. (2012:Appendix A). Further research on cogged stones in private collections could be conducted to correlate material type with manufacturing techniques.

The cogged stone from a Late Prehistoric site in Riverside County is a temporal anomaly. Koerper et al. (2006) “hypothesize that specimens recovered from

Table 1. Radiocarbon Dates for Features Containing Cogged Stones at CA-ORA-83.

Provenience	Conventional ¹⁴ C Age ^a	Median Probability Age: 1 σ Range ^b
Feature 17	7320 ± 50	7510 (7575) 7631
Feature 18	7390 ± 30	7581 (7630) 7668
Feature 84/BC77	7940 ± 30	8132 (8184) 8263

a. All radiocarbon ages reported in years before present (BP).
 b. Marine calibrated age, CALIB REV 7.1.0, MARINE13C (Reimer et al. 2013).

post-early Holocene contexts are heirloom pieces that have been scavenged and recycled.” This is likely the case for the RIV-11802 specimen. It may have been found in an early Holocene site near Lake Elsinore by Late Prehistoric people who lived at the village near RIV-11802. It might also have arrived at the Late Prehistoric village as a trade item or souvenir.

Acknowledgments

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