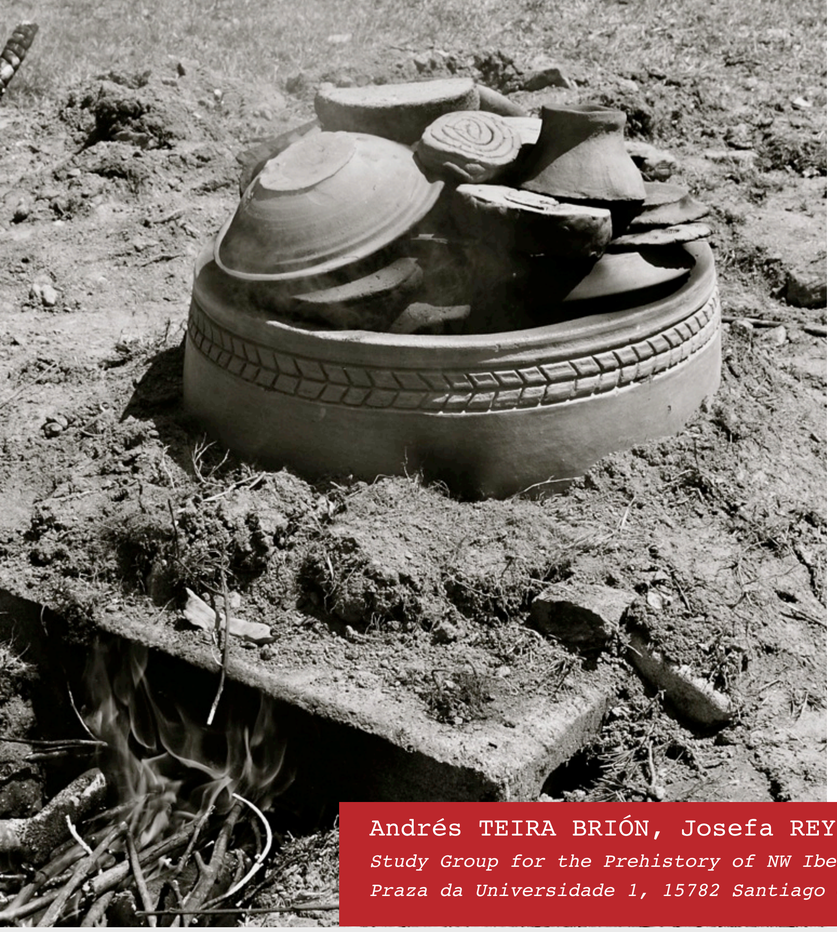

COOKING POTS OR COOKING WITH POTS?

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Portable baking/firing chambers

Portable ceramic firing/baking chambers have been found on fifteen Iron Age and Roman sites in the northwest of the Iberian Peninsula. They are circular in plan with a diameter ranging from 55–65cm, and can be comprised of one piece (where only the grill is recovered) or two, consisting of a lower grill with various perforations into which a cover can fit. Until now various functions have been attributed to these objects, ranging from their use as pottery kilns, or their role in food preparation (e.g. domestic ovens, stoves, driers, smokers), with a third hypothesis proposing that they are connected with metallurgical activity.

Why look at the Castromao oven?

One of the most complete ovens found so far was recovered from the hillfort of Castromao, and dates to the Later Iron Age (4th–2nd century BC). It is the only decorated oven of the entire corpus of known examples. In comparison to the others, it has a carefully finished surface, which may indicate that it had a special use. Soot marks on the interior and exterior of the lower part of the oven disappear in the zones of direct contact with the fire around the perforations. The high degree of conservation of this oven has permitted the analysis and reproduction of its use marks, as well as the examination of the activities that may have created them.

The experiment

In order to try to explain the functionality of these ovens, a replica of the Castromao oven was produced for the experiment. A batch of pottery was first fired in the oven, and afterwards the oven was used in the preparation of various foodstuffs. By using the oven for these different processes, the project aimed to record the changes and use marks that each activity generated.

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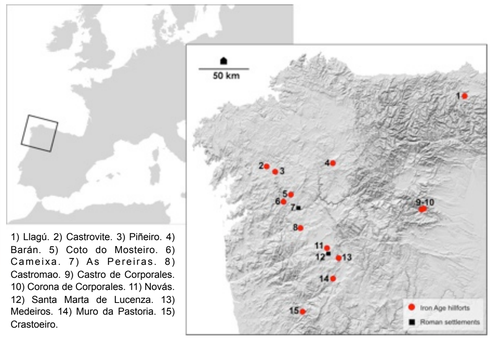

1) Llagú. 2) Castrovite. 3) Piñeiro. 4) Barán. 5) Coto do Mosteiro. 6) Cameixa. 7) As Pereiras. 8) Castromao. 9) Castro de Corporales. 10) Corona de Corporales. 11) Novás. 12) Santa Marta de Lucenza. 13) Medeiros. 14) Muro da Pastoria. 15) Crastoeiro.

CASTROMAO OVEN

"CASTROMAO OVENS" IN NW IBERIA

Analysis

Chemical and mineralogical analyses of the fabrics of the ovens of Castromao and Castrovite were undertaken (see map):

- The absence of kaolinite in the granitic substrate indicates that the analysed ovens reached temperatures greater than 550°C.
- The absence of neoformation elements and the reduced presence of muscovite mica in the grill shows that temperatures were less than 1050°C, and that the grill was the area of greatest heat intensity.

The results of phytolith analysis were negative. The absence of phytoliths could indicate that the oven was not used for the preparation of vegetable foodstuffs, or that it reached temperatures greater than 900°C which caused these remains to completely disintegrate.

Analysis of X-ray diffraction and fluorescence to determine the components of adhering residues is still to be undertaken.

Preliminary Conclusions

While this type of oven could have had various uses, the evidence suggests that the Castromao oven had a domestic function associated with food preparation. This conclusion is based on usewear analysis, as well as the presence of decoration, and the quality of surface finish. To comprehensively determine the use of the oven it is still necessary to complete the residue analysis of the materials that the oven may have contained.

EXPERIMENTS WITH IRON AGE PORTABLE BAKING/FIRING CHAMBERS OF NW IBERIA

- Around 80kg of damp clay was used in the production of the oven replica, which measured 61.5cm in diameter, 36.5cm high, with 4cm thick walls, and a 6cm thick grill.

The wall of the oven was coil-built, and then smoothed with a water-rolled pebble or damp cloth, and decorated with incised motifs using a wooden tool, to reproduce the original surface of the Castromao oven.

The base of the grill rested on a bed of ferns which left the impressions of its leaves. The perforations caused an exterior burr in the base of the oven. Both traits are consistent with those found in the archaeological ovens.

Impressions on the external part of the grill of an oven.

- The replica was fired in a traditional potter's kiln.

MAKING THE OVEN

- The firing of the pottery took 7 hours, with temperatures reaching around 800°C.

Crack produced by thermal shock on being partially uncovered and exposed to the air.

- While sooty accretions did not form in the oven due to it being in direct contact with the heat source, different colouration was noted in its interior and exterior.

Of the 26 vessels and other clay objects that were fired, two broke with another two suffering firing accidents.

- The top covering during firing consisted of previously fired or broken vessels, which is the way local traditional potters arrange the pottery within their kilns.

Brown colouration on the surface exposed to exterior air.

Reddened tones from the original firing of the oven.

Black tones from contact with vegetal substance of the sediment of the covering, forming around 700/800 °C

FIRING POTTERY

Various food preparation processes were undertaken – the boiling of food in ceramic containers; the roasting of fish; and the baking of bread by converting it into a bread oven by closing the chamber or by wrapping the dough in a cabbage leaf.

- During the experimentation the intensity of the heat was varied depending on the type of cooking. The oven was fuelled from the combustion chamber or by adding embers to the cooking chamber itself.
- As a result of these experimentations accretions were produced in the interior part of the grill. These accretions, which were not produced by the firing of the pottery, were distributed in a similar way to those of the archaeologically recorded oven.

Accretions of the Castromao oven (left) and the experimental replica (right).

COOKING FOOD