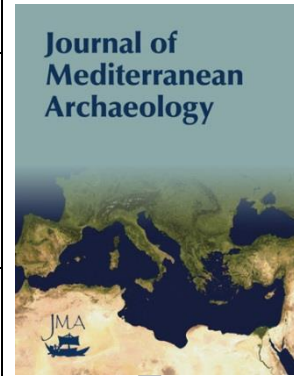


*MANUSCRIT ACCEPTAT***Cooking in the Iberian Culture (Sixth-Second Centuries BC): Private or Public?**

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## Cooking in the Iberian Culture (Sixth-Second Centuries BC): Private or Public?

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### Abstract

*In this article we analyse the structures and features related to food processing or preparation and their social and economic implications among the protohistoric communities of the Iberian culture during the Iron Age (sixth-second centuries BC). Different types of facilities are considered, including ovens, hearths, fire places and grinding areas, according to their specific location within the settlements (indoor or outdoor areas). We also look at the evidence from the artefacts involved in these processes and the contextualisation of their functional need within the urban*

*structure/planning. The presence of collective facilities located outside the houses implies, on the one hand, an organised collaborative practice and management network and, on the other, the transfer of certain specific household activities to the public sphere. The organisation of the management and use of those facilities would have affected various aspects of Iberian societies, such as the dynamic and routine of everyday life, not only through arranging and scheduling the availability of the facility, but also by operating as a mechanism of social interaction among both equals and persons of different statuses.*

**Keywords:** *Iberian culture, Iberian Peninsula, food processing, cooking features, collective facilities, domestic architecture, social organisation*

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## Introduction

This paper deals with certain aspects related to the domestic and economic life of the protohistoric populations living in the eastern Iberian Peninsula or roughly the present-day regions of Catalonia and Valencia (Figure 1 and Table 1); these are part of the territories of the so-called ‘Iberian culture’.

The ‘Iberian culture’ is described as a Second Iron Age civilisation that spread and developed in the Mediterranean territories of the Iberian Peninsula between ca. 550 BC and the Roman conquest in the second and first centuries BC. Iberian social organisation can be described as a complex system characterised by, among other traits, a hierarchical settlement pattern that included several levels, such as towns, villages, hamlets and farms (Bonet *et al.* 2008; Grau 2003; Sanmartí 2004; 2009; Ruiz and Molinos 1998). Recent research in the northern area has allowed us to define this culture as the result of increasing social complexity that led local groups of the Late Bronze Age to become the complex societies of the Iron Age, organised into archaic states (Sanmartí 2004; 2009; 2015a; Sanmartí *et al.* 2006; Sanmartí *et al.* 2015). This social development may have been boosted by demographic growth and a progressive emphasis on gaining control of resources and the means of production, which would have fostered the development of a political economy and the formation of a hereditary elite (Sanmartí 2004: 19).

A number of recent studies have stressed the social dimension of Iberian architecture in terms of town planning and building techniques, as well as in domestic and settlement organisation. Social differences have been detected within the settlements, particularly through the analysis of the domestic spaces: house sizes and plans, the distribution of domestic features and artefacts, and so on (Belarte 2008; Belarte *et al.* 2009; Bonet *et al.* 2008; Mata and Bonet 2015; Vives-Ferrándiz 2013). Recent research into the open spaces outside the houses (streets, plazas and other non-built-up areas inside the settlements) has yielded interesting data on daily activities, particularly those related to food processing (Monrós 2012), which we can add to those gleaned from the study of houses. The evidence regarding culinary tasks carried out both inside and outside the houses suggests that diverse stages of food processing were undertaken in separate spaces.

The aim of this paper is thus to analyse the specific items relating to food processing and preparation, focusing particularly on their spatial location within the settlements, as well as reflecting on the social implications of their different levels of use. Many settlements have provided information concerning food preparation; among them, we have chosen those that have been extensively excavated, including both domestic buildings and outdoor spaces. We have moreover prioritised, even if not exclusively, the most recent excavations with accurate archaeological records. Table 1 shows the list of sites taken into account, together with their period of occupation; Figure 1 shows their locations.

>>Insert Table 1 and Figure 1 about here<<

## Archaeology of Food

Studies of food are abundant in the archaeological, anthropological and sociological literature. They have focused on a range of different aspects such as culture, economy, social status, gender or religion (e.g. Fieldhouse 1996; Goody 1982; Gumerman 1997).

### *Previous Research and Theoretical Approaches*

Archaeological research into western Mediterranean protohistory has approached the subject from different perspectives; for example, the identification of foodstuffs or the use and function of artefacts involved in the consumption process (e.g. Py 1990: 333-36; Principal 1998; 2006; Oliver 2000; Pons and Garcia Petit 2008; Valenzuela 2008). Again, the contribution and impact of exogenous elements on indigenous foodways have also been a point recognised in the archaeological literature, in this case through their connection to economic and commercial issues (e.g. Bats 1987; Asensio 2004; 2010). The social function of food and its consumption have mainly been analysed from the perspective of status, colonial contacts and identity (Bats 1988; Dietler 2005; 2007; Sanmartí 2015b), while the social implications of food preparation have barely been considered. Food preparation, however, is particularly interesting when analysing social relations (Samuel 1999: 125) and can be detected through the archaeological record.

Food production and consumption have been integrated into the studies of domestic spaces, particularly from the perspective of household archaeology (Hendon 1996; Allison 1999; Ault and Nevett 1999; Brück and Goodman 1999; Cutting 2006; Parker 2012, among others). Production and consumption are considered among the foremost functions performed by the household (Ashmore and Wilk 1988: 4) and defined as the smallest activity unit in a given society (Wilk and Rathje 1982: 618). A household, however, is not always equivalent to a house, and some tasks — particularly those related to production and food preparation — can be shared between households (Goodman 1999: 152). Recently, the concept of ‘house’ as defined by Lévi-Strauss (1979; 1987) has also been used as an analytic unit in the study of societies whose organisation is based on the house and not on kinship (Gillespie 2007: 30; González Ruibal 2006). The analysis of food and consumption has also been addressed from a gender perspective, an approach that has been criticised, even from a feminist archaeological perspective (Tringham 1991). The discussion of the social dimension of commensality within prehistoric and ancient communities has also received special attention (Dietler and Hayden 2001; Aranda *et al.* 2011; Pollock 2012; Kerner *et al.* 2015).

As for the Iberian area, research into domestic architecture in the area and period analysed has mainly focused on the definition of spaces and their functions, through their association with equipment and artefacts (Belarte 1997; 2008; Guérin 1999; 2003;

Belarte *et al.* 2009; Vives-Ferrándiz 2013; Mata and Bonet 2015). In all of them, cooking and eating are given an important place, as they are among the most easily detected activities. Recent research by two of the authors focused more specifically on food preparation and its identification in the archaeological record, mainly in domestic spaces (Camañes 2012; Camañes and Monrós 2015). The analysis of public spaces in Iberian settlements, conducted by one of the authors, shows that food preparation involved not only domestic intramural spaces (the house) but also streets, plazas and other open areas (Monrós 2012): roofed and unroofed spaces were closely connected and interactively used, and many activities of daily life were not specifically and systematically carried out either inside or outside the house.

Other recent projects have attempted to analyse and reconstruct Iron Age culinary processes and recipes (Santacana and Duran 2011a; 2011b). Nevertheless, archaeological research has made little attempt to link the study of equipment, artefacts and bioarchaeological remains, with the exception of some synthetic papers (e.g. Buxó *et al.* 2010; Iborra *et al.* 2010).

Studies on the social implications of the consumption process have recently emphasised the social and ritual role of the banquet in Iberian culture (Diloli and Sardà 2009; López-Bertran and Vives-Ferrándiz 2009; Garcia Petit and Pons 2011, following previous works by Dietler 1996; 2001) and the identification of different forms of commensality among the Iberians (Buxó and Principal 2011). In addition, several recent studies, mainly from a gender perspective, have analysed domestic spaces and their everyday activities focusing, among other issues, on the social significance of food, unequal access to certain products and the control of production processes (Masvidal *et al.* 2000: 117). These studies have explored the role of food production and consumption as generators of social relations and interaction (González and Picazo 2005: 143), permitting the survival of the group and its development at all levels, both domestic and public (Hernando 2005: 125-26).

In our view, and leaving aside the gender distribution of daily tasks, which may not always be detectable archaeologically, the analysis of food processing should yield evidence about the social organisation of household activities, particularly concerning private or communal use of facilities, as well as differential access to them. We consider the household as the most appropriate organisational unit for our analysis.

### *Food Production in the Iberian Iron Age*

The Iberian diet was based mainly on cereals such as barley, wheat and millet (Lopez *et al.* 2011: 77-79; Alonso 1999: 130), as was the case in most Mediterranean protohistoric societies. Legumes and fruit were also consumed. At the same time, the Iberians had many nutritional supplements from foodstuffs of animal origin, with a strategy closely linked to the territory and with variations between settlements (Colominas 2004-2005: 225). Animal husbandry focused mainly on ovicaprids, although pigs and cattle also had

an important presence (Albizuri and Nadal 1999; Franquesa *et al.* 2000; Valenzuela-Lamas 2008; López *et al.* 2011).

The prominence of cereals is observed not only in the archaeobotanical record, but is also evident from the so-called ‘silo fields’, which are clusters of dug-out pits for grain storage that are well-documented throughout the Iberian territory north of the Ebro (Asensio *et al.* 2002: 126). These structures were used for short- and medium-term storage of cereals (Miret i Mestre 2005: 324). Their proliferation from the Neolithic to the Middle Iberian Period shows the increasing importance of cereals in the Mediterranean diet. They also suggest that surplus production took off in the fourth to third centuries BC (Asensio *et al.* 2002: 137; Gracia 1995: 107; Salido 2009: 104), which brought about major changes in Iberian society and directly influenced the mode of production and social organisation.

As for the different food processing tasks, in other ancient societies such as the Greek and Phoenician ones, numerous terracotta figures or iconographic representations with scenes of women grinding grain, kneading dough or baking bread show that these activities were actually performed by women (Amouretti 1986: 137; Mirón 2007: 274-75; Campanella 2008: 50). Such representations do not exist for the Iberian culture, but many researchers accept that it would have followed the Mediterranean tradition, in which women’s labour would have been mainly dedicated to household chores (Gorgues 2010: 18), including the so-called maintenance activities, such as care and upbringing of children, hygiene and feeding the family (Curià and Masvidal 1998; González and Picazo 2005: 143; Montón-Subías and Sánchez-Romero 2008).

As far as classical sources are concerned, information about culinary tasks in Iron Age Iberia is practically non-existent. Perhaps the absence of information about this kind of domestic activity was the result of their similarity in other Mediterranean cultures. The lack of references in classical texts or iconographic data makes it difficult to know who were the protagonists of those tasks, which consequently leads to interpretations of untestable assumptions.

Ethnography has contributed interesting data, as the study of different cultures shows a direct association between domestic activities and women. Such is the case of grinding, documented in many African, South American and Asian cultures, and always carried out in a domestic setting by women (Alonso 2014). The artefacts involved in this task, common in most Iberian settlements, have generated a conceptual relationship between object-action-space and gender (Montón 2000: 53-54), thus linking domestic activities to the female sphere. Be that as it may, the simple truth is that the archaeological remains recovered in Iberian domestic spaces do not allow us either to confirm or reject this hypothesis.

The absence of information in the literary sources about food processing in Iberian culture prevents a homogeneous identification of all the stages in the process and, as a result, its study is almost exclusively based on archaeological remains.

Nevertheless, intensive archaeological research in recent years has provided a large amount of information on how and where food processing and preparation were undertaken. Generally speaking, the activities carried out in enclosed spaces have provided more data than those undertaken in the open air.

The particulars of a diet based on the prominence of a specific product imply a series of activities intrinsic to its consumption and several artefacts thus prevail over others. In Iberian settlements, a wide range of objects and equipment are associated with a largely cereal-based diet, as presented in the following section. Their presence in different types of spaces, and their specific features help us to understand food processing as far as it was part of daily and social life. That still leaves other phases, however, for which we do not have the same amount of information. For these, we know the objects and equipment that may have been used, but we have yet to locate the specific places in which they were carried out. Activities such as animal butchering and de-fleshing (Iborra *et al.* 2010: 101), or winnowing grain (Alonso 1999: 182), were mainly performed outdoors and the equipment was taken out and brought back home after use. These artefacts are thus documented in secondary positions that reveal little about such activities. This information gap concerns mainly the first stage of both plant and animal processing, and because of either a lack of data or the complexity of the process itself, it is consequently not possible to address all activities involving food and nutrition.

### **Archaeological Data Associated with Food Processing and Consumption Processes: Equipment and Artefacts**

First of all, Iberian sites have provided us with a number of domestic features that are usually interpreted in relation to food processing. The most representative are fire structures (hearths and ovens) that are usually linked to cooking. This association was however not exclusive and the structures may have had other functions as well: hearths can be used for heating or lighting a room, and both hearths and ovens can be used for metalworking (Guérin 2003: 254). An accurate analysis of their location in relation to pottery and other artefacts, together with bioarchaeological remains, is crucial for interpreting a fire structure as a cooking feature.

Domestic contexts have revealed examples of different kinds of hearths. They are usually divided in two main groups, namely 'lenticular hearths', which consist of a simple clay plate on the floor without any preparation layer, and 'built hearths', where the clay plate has a preparation layer of potsherds and/or pebbles mixed with earth in an excavated hollow (Figure 2). In both types, the cooking area is at floor level. It can be rectangular, oval or circular in shape. Together with the hearth, the oven is one of the most significant cooking features. Iberian ovens had a circular structure made of earth and stones and were covered with an earthen dome, which has usually not been preserved (Figure 3). In the following section we discuss the location and nature of these structures.



>>Insert Figure 2-3 about here<<

Other equipment related to food processing includes those objects and features interpreted as supports for rotary querns. They have been particularly well documented at different sites in the Valencia region (Guérin 2003: 262; Mata and Bonet 2015: 474) (Figure 4). They are freestanding structures made of stone, and usually located in the centre of the room; querns have been documented in association with them. In other settlements such structures have been interpreted as supports for grinding, without any evidence underpinning their relation to querns. Finally, at other sites the room or space for grinding has a small area paved with stone slabs in a corner of the earthen floor to make the grinding (and flour collection) easier.

>>Insert Figure 4 about here<<

A third category of features often related to food processing involves benches. They were made of either stone or earth and usually placed against a wall within the house. They usually stretch along the whole length of the wall, although they can also be smaller structures, only occupying a corner of a room or a section of the wall. Although often interpreted as supports for vessels or other structures, they could also be used as a base or support while carrying out domestic activities, mainly related to food preparation and consumption.

Wine presses and olive mills are also attested in some settlements, particularly in the Valencia region (Mata *et al.* 2009; Mata and Bonet 2015: 475), as well as in Catalonia (Asensio *et al.* 2010; Jornet *et al.* 2016). They consist of basins dug into the ground, platforms for treading and pressing fruit, and millstones.

The artefacts most evidently related to food processing include cooking pots, querns and mortars. Several types of utensils, including knives and graters, are also related to meal preparation. Cooking vessels are, for the most part, locally produced and hand-made, whereas wheel-thrown kitchen wares and mortars can be either imported (mainly from the Punic area, especially Ibiza) or produced locally. The querns are of two main types, namely simple or saddle querns and rotary hand querns. The former come from a prehistoric tradition, while the latter are first attested in the Iberian area by the late sixth century BC (Alonso 2002).

In conclusion, the clearest indicators of culinary activities are the equipment, primarily hearths and ovens and their support features, because of their fixed nature. Querns are also good indicators when identified in their original location, even if that is not always obvious. Cooking wares, by contrast, are eminently portable, and it is consequently hard to establish whether they have been found at their place of use or in a storage facility.

### **Location of the Structures Related to Food Processing: Spatial Analysis**

>>Insert Table 2 about here<<

### *Open versus Enclosed Spaces*

Some of the above-mentioned items related to food processing can be identified in both open and enclosed spaces. They are mainly burning marks, hearths and ovens and their location and distribution vary according to their specific needs and uses.

First of all, occasional burning marks are identified by a reddened surface, and typically are without a regular pattern. They do not have the preparatory potsherd and earth layer normally found in domestic hearth structures, and they are usually located in open spaces near areas of domestic activity. Such random traces are rare in Iberian sites and their functional interpretation is not obvious. They may correspond to a specific need, such as cooking food, although it also seems plausible that the interior hearths were only the deposits for the embers, whereas the actual fire would have been lit outside, thus avoiding smoke and possible accidental blazes (Belarte 1997: 201; Monrós 2012: 266). If this were their function, however, we would expect them to be more common.

Built hearths are in most cases located in enclosed spaces with different domestic functions. Their use in open spaces would have been similar to that suggested for occasional fires. We know of a few examples in Iberian settlements such as Molí d'Espígol (Tornabous, Lleida; see Figure 2, above) and Estinclells (Verdú, Lleida; information provided by the Estinclells team), where several hearths were built against the facades of the houses in a space that can be considered a street; both examples have been dated to the third century BC.

Ovens can be found in both open and enclosed spaces. An indoor location, however, is rare for these structures, with the exception of so-called aristocratic dwellings. Examples of the latter are House 202 at Alorda Park, Houses 1 and 2 in the rural settlement of Mas Castellar (Fuertes *et al.* 2002: 157; see Figure 5), or House 7 at Tossal de Sant Miquel (Figure 6). It is more common to find these structures in open spaces, such as yards or porticos in the case of aristocratic dwellings, such as Zone 14 at Puig de Sant Andreu (Martín *et al.* 2004) and Zone 15 at Illa d'en Reixac (Martín *et al.* 1996: 32). They may also be located in streets or plazas, as for example at Molí d'Espígol (Camañes 2008: 195; Monrós 2012: 146), Alorda Park (Monrós 2012: 122-24; Figure 7), Castellet de Banyoles (Álvarez *et al.* 2008: 97), El Oral (Abad and Sala 1993: 73-78) or La Bastida de les Alcusses (Bonet and Vives-Ferrándiz 2011: 89).

>>Insert Figures 5–7 about here<<

Another food processing activity is grinding. Structures used for this task, such as rotary querns, are mainly located indoors. Different examples have been found in communal areas in the Valencia region. In settlements such as Castellet de Bernabé, Tossal de Sant Miquel (Guérin 2003: 267-68; Bonet 1995: 367-69; see Figure 4, above) or Puig de la Nau (Oliver 2006: 143), rooms have been recorded that appear to have

been specifically dedicated to grinding. In the last example, numerous saddle-querns have been documented along with a hearth and an oven in the same building. These elements, however, are mostly documented in enclosed domestic spaces. Querns have rarely been found in open spaces. They have been documented in settlements such as Puntal dels Llops (Bonet and Mata 2002: 97) and Bastida de les Alcusses, where the base of a rotary quern was found in a communal oven within room 155, next to storage spaces (Bonet and Vives-Ferrándiz 2011: 89; Bonet *et al.* 2011: 141).

One of the major issues in analysing these objects is that once they no longer serve their purpose, they have been reused as building materials. In particular, querns found in open spaces such as streets and plazas, are habitually assumed not to have been recovered in their primary position, but to have been moved to or abandoned at that place. We cannot exclude, however, that a quern had been moved to a more convenient position to undertake the task at hand, as grinding was probably carried out in open spaces with sufficient light and ventilation.

### *Specialised Versus Multifunctional Spaces*

Food processing has always been considered part of the domestic sphere, traditionally carried out inside houses and sharing the space with other activities. Domestic space is however a highly variable concept, as Middle Iberian houses, dating to the fourth and third centuries BC, ranged from domestic single room dwellings with no internal partitions to residences with ten or more rooms (Belarte 2010: 116). In most of the houses, food was prepared in non-specialised, multifunctional spaces, irrespective of the number of rooms in the house (Camañes 2012; Belarte and Camañes 2016). Some buildings, however, did have separate rooms for specific culinary tasks. We may thus distinguish between two or possibly three major levels or modes of food processing, namely first at the domestic level and carried out mainly inside houses, often in a multifunctional room; and secondly of a specialised mode, carried out in specific rooms in certain dwellings. As a third type, we might add food processing outside of houses (discussed below).

There are many examples of spaces without partitions where multi-functionality has been observed. The artefacts found in these rooms inform us about food preparation through grinding and the use of fire, and about many other everyday tasks. Given the small size of most of these Iberian houses that on average measure 20 to 40 sq m, their multifunctional nature was inevitable. These spaces imply dynamic scenarios that were constantly under construction, and it is clear that many of the food processing tasks were carried out simultaneously alongside a wide variety of other actions, or sequentially through different variables such as time, in a space-time order. Activities such as cooking and taking care of household members could be carried out concurrently in a multifunctional space (Belarte and Camañes 2016).

Something similar can be seen in buildings with multiple rooms and a clear distribution of activities. One of the rooms is nevertheless always identified as the area where domestic life takes place and is intended for food processing, while others are used as pantries or for object storage. Some examples can be found in Puig de la Nau (Giner Meseguer 1976), Puntal dels Llops (Bonet and Mata 2002: 234-38) and El Castellet de Bernabé (Guérin 2003).

Specialised spaces did nevertheless exist and certain tasks were carried out in specific buildings. Examples include spaces dedicated to cereal processing, which probably involved the most specialised activities that took place in Iberian settlements, particularly from the fourth century BC onward. Such evidence can be associated with periods of large-scale cereal production during harvest time (Asensio *et al.* 2002: 140); it is however difficult to determine whether these facilities were shared or jointly used and to what extent, if at all, they were intended for domestic or commercial production. There are instances of clusters of devices related to cereal processing in specific buildings, as is best demonstrated by the ‘Querns House’ at El Tartrato, where three rotating querns were found, two of them *in situ* with surrounding cup-shaped hollows to collect the flour (Burillo 2009: 338); room 32 at El Castellet de Bernabé is another case in point (Guérin 2003; Figure 8). Similar concentrations of querns have also been noted elsewhere (Portillo 2005: 843). A somewhat different situation has been recorded at La Bastida de les Alcusses, where querns were not clustered in a specific house but in an entirely block of houses. Beyond the central area of blocks 2, 7 and 9, far fewer querns have been found (Vives-Ferrándiz Sánchez 2013). This distribution has been interpreted as reflecting inequality between different groups occupying each block and with unequal access to grinding devices. As a consequence, this activity would have been carried out in community-based facilities (Iborra *et al.* 2010: 108-109). Likewise, at Molí d’Espígol (Camañes 2010), the querns have only been documented in the southern quarter of the settlement (Figure 9).

>>Insert Figures 8–9 about here<<

### *Public Versus Private Spaces*

Structures associated with food processing are found in spaces that can be grouped into four categories: communal open zones, private open zones, communal enclosed spaces and private enclosed sectors. Communal open zones are building-free areas and accessible to all the population. This category includes streets, plazas, alleys and gateways. In contrast, private open areas have no buildings either but are not accessible to everyone; their use is restricted to certain people, as is the case of patios or courtyards inside houses or meeting spaces. Communal enclosed spaces include buildings with free access, such as stores, working areas, etc. By contrast, private enclosed sectors include buildings such as homes, whose access is limited to the occupants of the house and their guests. The main difference among these four categories is in the way in which access is configured; it can either be free or restricted. According to the data presented here

(Figures 2-4), most food processing activities were performed indoors, and there appears to exist a fairly evident relationship between the location of certain features and the most complex elite houses. We return to this subject below.

First, hearths are well attested inside houses, together with food remains and utensils for food preparation, whereas they are unusual in public spaces. This implies that most households prepared their own daily meal inside their houses. There exist nevertheless occasional fires that have been interpreted as private use equipment, despite being in an open communal space. It is unclear whether their use was exclusive to the inhabitants of the nearby house or if they were shared by several households. Neither is their function or use certain.

The public or private nature of querns is difficult to decide, as is the case with the occasional fires. Unlike fires, querns are moreover portable items, which further complicates their interpretation. For those querns encountered in communal spaces, whether open or enclosed, a public use can be suggested, even if their use may well have been subject to payment of a fee, like ovens.

The data finally show that the simple domestic units in large settlements did not have ovens, which may mean that only elites had access to all types of infrastructure and presumably controlled them. They may also have been responsible for the construction of both the ovens and the communal buildings devoted to baking bread.

## Discussion

The foregoing analysis of food preparation equipment makes it clear that certain activities like milling and baking were not carried out in every house, but only in certain dwellings or specific areas. The implication is that they were carried out by elite-controlled specialists or undertaken communally (Alonso and Pérez Jordà 2014; Mata and Bonet 2015: 474).

At this point, we should take into account Iberian social organisation as we understand it. The transformation process from Late Bronze Age communities to a more complex and hierarchical society in the Iron Age led to a concentration of power with a restricted group of families, who planned, organised and managed the Iberian settlements (Sanmartí 2004: 19; Sanmartí *et al.* 2006: 152-53). This accumulation of power in the hands of Iberian elites gave rise to greater inequality among the population, and the newly created social and political differentiation may be detected in the settlements from the construction of large, aristocratic houses in previously public areas such as streets or plazas, as exemplified by Zone 14 at Puig de Sant Andreu, Ullastret (Martín *et al.* 2004: 266). This suggests that the regulation of public spaces was controlled by the elites.

Social distinction within urban space can easily be recognised in several settlements. This is the case at Bastida de les Alcusses, where the main street marks

social differences: the complex houses identified as aristocratic residences are in the southern quarter, along with several metal workshops, the storage buildings, and the 'bakeries' (i.e. spaces dedicated to bread baking). Smaller dwellings are located in the northern area, and are clearly under the control of the aristocratic residents (Bonet and Vives-Ferrándiz 2011). We find a similar situation at Castellet de Banyoles, where in the northeastern area of the settlement, the distribution of streets separates the perimeter area with aristocratic houses from the central area, where the standard residences are located. In the latter zone, there is also a building with administrative or religious functions (Álvarez *et al.* 2008: 87-102). Similarly, the main street in El Molí d'Espígol (street 3) leads to aristocratic residences, meeting spaces and storage and collective work areas, while the standard residences are on the periphery. These examples show that the planning of urban design and the distribution of the space depended on the decisions of a small group of people, probably the same ones who maintained public order within the settlement.

Hierarchy and control of spaces have been also deduced from certain food processing features, particularly ovens. Their location is indicative of the complexity of social life in the Middle Iberian period (fourth-third centuries BC). They have been documented in the four categories of spaces described above, but the link between ovens and elites is remarkable. Most of the ovens located in private spaces belong to aristocratic residences. The proximity to large residential dwellings of ovens located in communal spaces is even more significant, with interesting examples at El Molí d'Espígol, Bastida de les Alcusses, Illa d'en Reixac and Puig de la Nau.

The location of ovens in open areas or courtyards is not unusual in the Mediterranean, where comparable ovens, known as *tannur* or *taboun* (De Castro 2001), were used. Communal ovens in courtyards are attested in the Levant in the Middle Bronze and Iron Ages (Campanella 2008: 50-51; De Castro 2001: 287; Delgado 2010: 32-33). These structures have a conical shape; their walls are made of clay and there is a large opening at the top for introducing both fuel and food. Some may also have a side opening. They were fixed structures situated both inside the houses and in courtyards or open spaces and built directly on the ground, either free-standing or leaning against a wall (De Castro 2001: 287). In the western Phoenician and Punic areas, they were located inside houses and occasionally shared by two or three households (Campanella 2008: 51). Recent excavations at Cádiz (in the 'Teatro Cómico' archaeological area) have revealed a number of such structures located inside the houses, in a corner of the room devoted to food preparation (Gener *et al.* 2015: 28). However, culinary ovens leaning against a wall but in unroofed areas have also been documented in Phoenician settlements such as Sa Caleta (Ibiza), where they were used for communal production (Ramon 2007: 132).

In the Valencia region, Iberian ovens located outside the houses are interpreted as communal structures (Mata and Bonet 2015: 475), based on an ethno-archaeological study of communal ovens in the region of Los Serranos in Valencia, which compared present-day structures to Iberian ones (Albir 2010). These contemporary ovens, which

in some cases are still in use, are located in the centre of the village and close to other communal places or areas. The ovens are owned by the community, which is also responsible for their maintenance (Albir 2010: 152). They are situated inside a building, where the dough is also kneaded and left to ferment before being baked.

Iberian ovens were usually attached to the façades of the houses, but open to public space, i.e., with no enclosing structure. Less common are the ovens that are located inside communal buildings with several functions, as in the above-mentioned ethnographic study. Iberian instances have been recorded in El Tossal de Sant Miquel and Puig de la Nau (Oliver 2006: 122). These Iberian communal ovens point to various possible ways how bread was baked in Iberian communities. One possible interpretation sees the use of the ovens restricted to specific families and situations, considering that most families would have baked their bread on their own hearths (Iborra *et al.* 2010: 107-108). These types of ovens, as well as the communal buildings intended for food processing, are assumed to have been managed by the dominant group (Iborra *et al.* 2010: 112). This group would have controlled their use and possibly received payment in kind. It is also possible, however, that the maintenance of these structures, which could be used for baking bread or any other kind of food, was a shared responsibility of the community.

Another option is that baked bread and perhaps other types of food were freely consumed by elites, whereas access for the rest of the households was restricted. Arnold and Marzoli (2009: 450) have pointed out that owning an oven in the ancient Near East was an element of social status, as it involved the specific possibility of cooking the cereals — baking bread — that would otherwise be boiled and eaten as porridge. This could also be a plausible interpretation of the Iberian case.

## Conclusions

In spite of the difficulties created by the absence of literary and iconographic sources for Iberian daily food processing, the archaeological data alone nevertheless allow us to reconstruct several aspects of the organisation and operation of these tasks and to interpret their social implications.

The data discussed testify to diverse scales of production in food processing. On the one hand, we see food processing at a domestic and non-specialised scale, in which the structures and objects linked to it were located in multi-functional and non-specific spaces. A number of domestic units produced the food needed to maintain the household. In this respect, no regular pattern has been observed in the houses, and the distribution of food processing tasks does not appear to have had a specific location inside the house. The possibility of a partial, occasional and private use of the street for culinary purposes has been put forward, but the evidence remains limited.

On the other hand, we can see a communal use and/or management of certain features, particularly ovens, when they are located in open areas. The evidence for culinary tasks carried out both inside and outside houses suggests that different aspects of food processing were undertaken in separate spaces, which suggests that different social actors participated in the various stages of the process, that certain practices were collaborative, and that scales of production varied.

Some steps in the food processing chain, however, were in all likelihood controlled by elites, or were even reserved for them, and may have been carried out in specific spaces. The association of ovens with aristocratic dwellings suggests that bread baking was controlled by elites, even though there is no evident pattern in the location of such structures.

Grinding, too, was carried out in specialised areas, but it has not been possible to discern any pattern or structure and it is therefore difficult to conclude that these tasks were controlled and specialised during this period. Variations occurred on a microspatial level, with structural differences among settlements just a few miles apart or even at sites, where specialised grinding areas have been attested. In this respect, even if the evidence for standardisation is not conclusive, we consider it a serious possibility that, at least in several settlements, specialised grinding areas and equipment were controlled by elites.

All this suggests that the production of bread, the basis of daily nourishment, could have been controlled by a family or a small group of families in each settlement. The evidence also suggests that the elites living in the aristocratic houses enjoyed preferential, if not exclusive, access to certain kinds of foodstuffs. This interpretation is consistent with our general understanding of Iberian societies as markedly hierarchically organized, and with elites in control of crucial facilities in settlements, in particular during the fourth and especially the third century BC.

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## Figure Captions

Figure 1. Main sites mentioned in the text:

1. Mas Castellar (Pontós, Girona)
2. Illa d'en Reixac (Ullastret, Girona)
3. Puig de Sant Andreu (Ullastret, Girona)
4. Alorda Park (Calafell, Tarragona)
5. Molí d'Espígol (Tornabous, Lleida)
6. Estinçlells (Verdú, Lleida)
7. Castellet de Banyoles (Tivissa, Tarragona)
8. Barranc de Gàfols (Ginestar, Tarragona)
9. El Tartrato (Alcañiz, Teruel)
10. Puig de la Nau (Benicarló, Castelló)
11. Puntal dels Llops (Olocau, València)
12. Tossal de Sant Miquel (Llíria, València)
13. Castellet de Bernabé (Llíria, València)
14. La Bastida de les Alcusses (Moixent, València)
15. El Oral (San Fulgencio, Alacant)

Figure 2 Preparation layer of a hearth at Molí d'Espígol (Tornabous) (photo: J. Principal).

Figure 3 Oven in a house at the site of Barranc de Gàfols (Ginestar, Tarragona) (photo: M.C. Belarte).

Figure 4 Rotary quern at Tossal de Sant Miquel (Llíria, València) (photo: Helena Bonet Rosado. Archivo del Museu de Prehistòria de València).

- Figure 5 Plan of complex houses 1 and 2 at Mas Castellar (Pontós, Girona), with the location of the hearths, querns and ovens (after Enriqueta Pons, modified by the authors).
- Figure 6 Location of the ovens inside a complex dwelling (house 7) at Tossal de Sant Miquel (Llíria, València) (Belarte *et al.* 2009: 108, fig. 17).
- Figure 7 Oven located in a street at Alorda Park (Calafell, Tarragona) (photo: M. Monrós).
- Figure 8 Plan of room 32 of Castellet de Bernabé, used for storing and processing cereals, with the location of the querns (Guérin 2003: 123, fig. 180).
- Figure 9 Plan of the site of Molí d’Espigol (Tornabous, Lleida), with a concentration of querns in the southern area.

### Table Captions

- Table 1 List of the main sites mentioned in the text, with an indication of their chronology.
- Table 2 Food processing organisation: summary of the most significant locations of features.

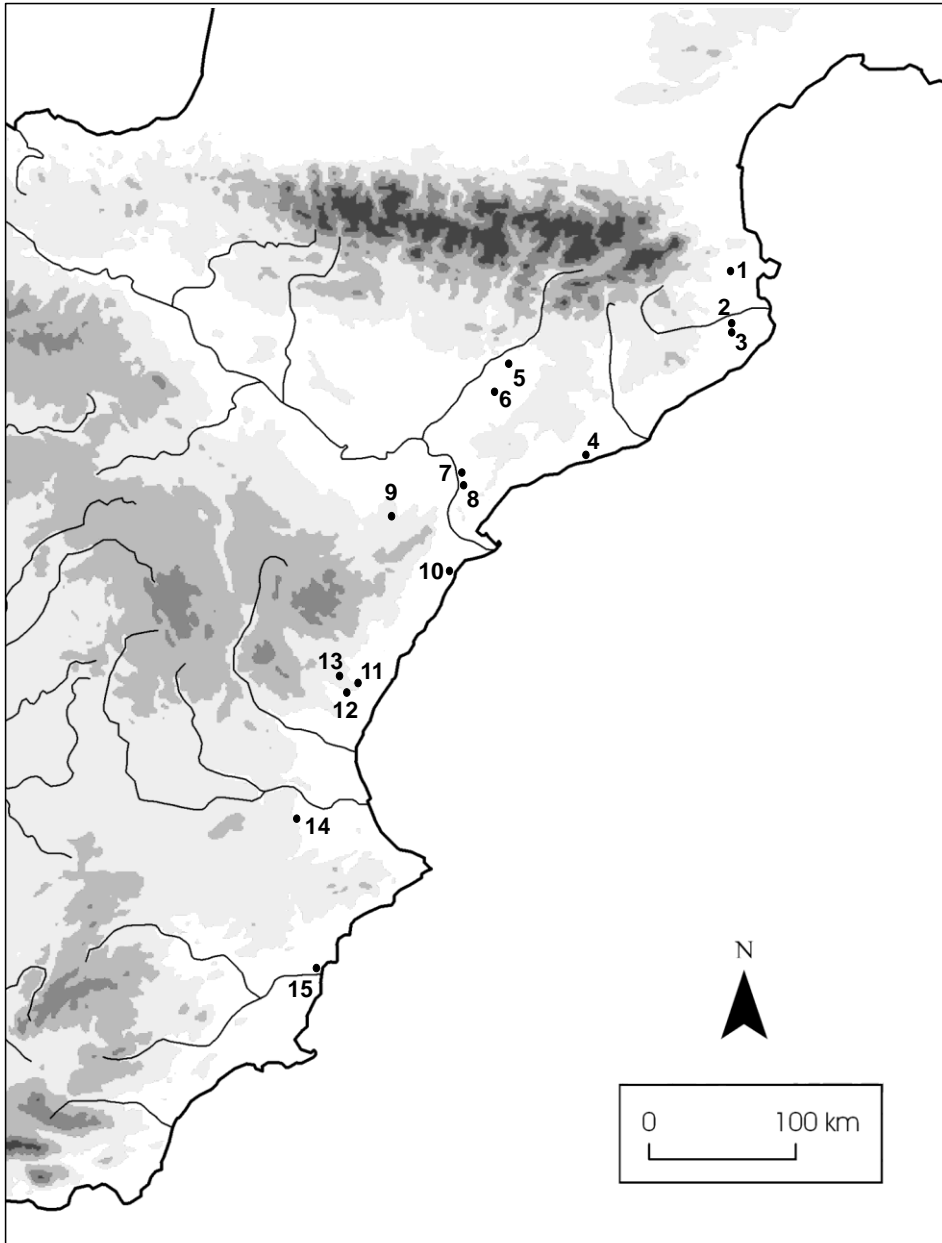


Figure 1



Figure 2





Figure 3

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Figure 4

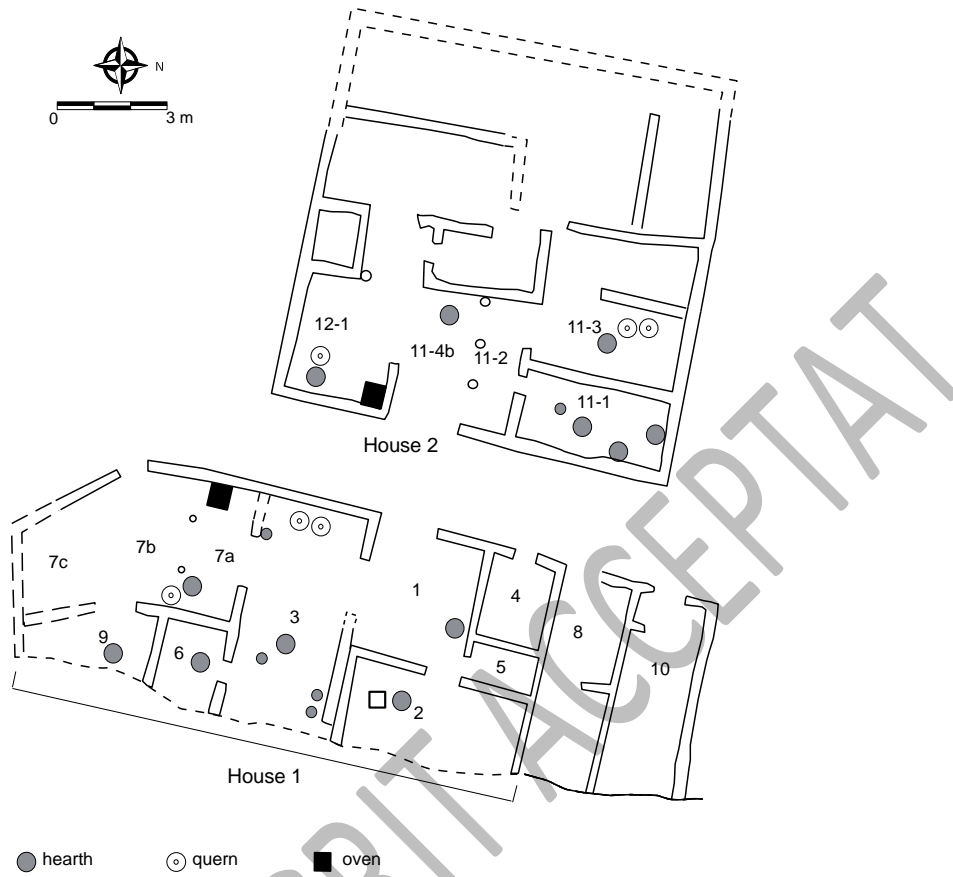


Figure 5

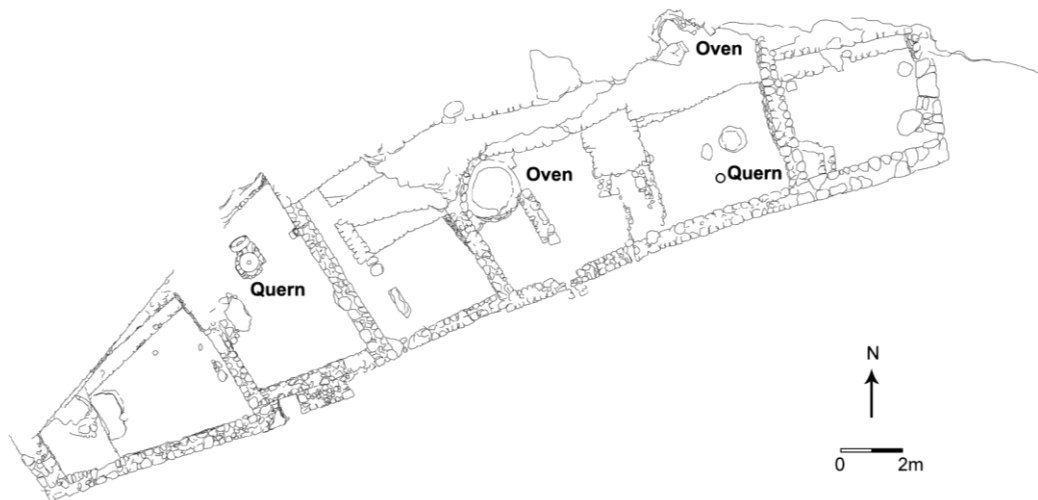


Figure 6



Figure 7

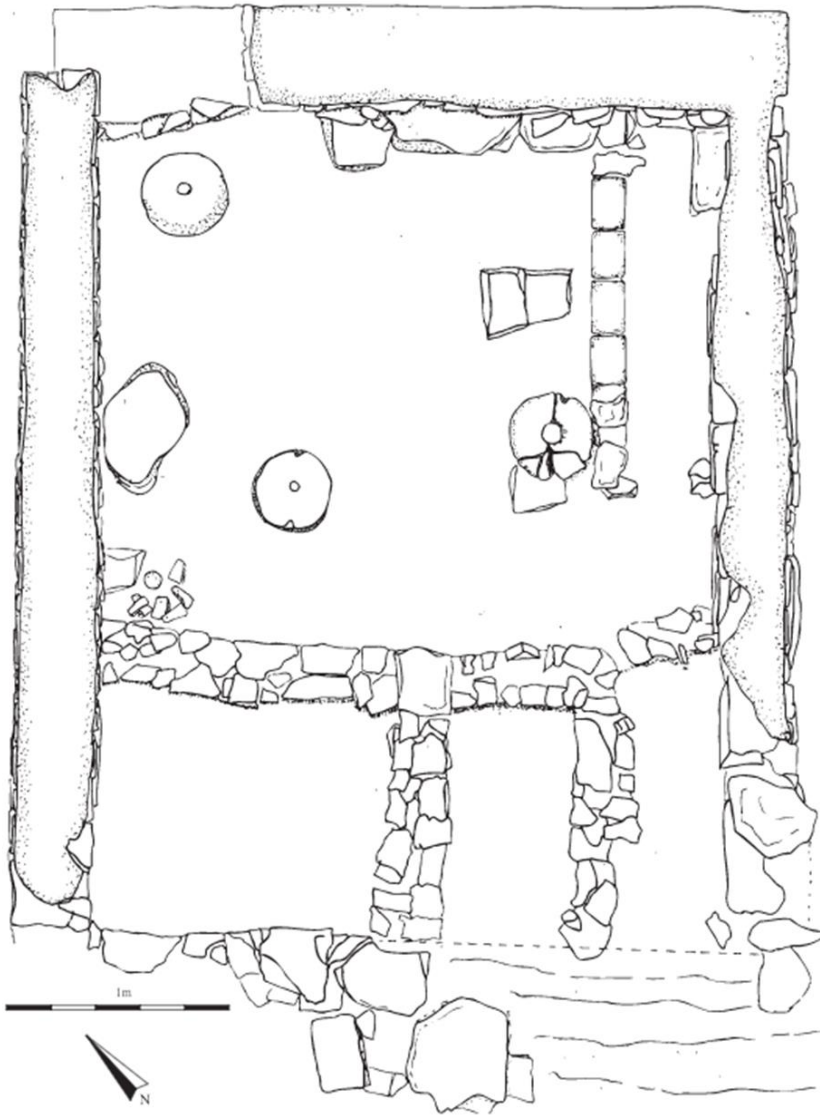


Figure 8

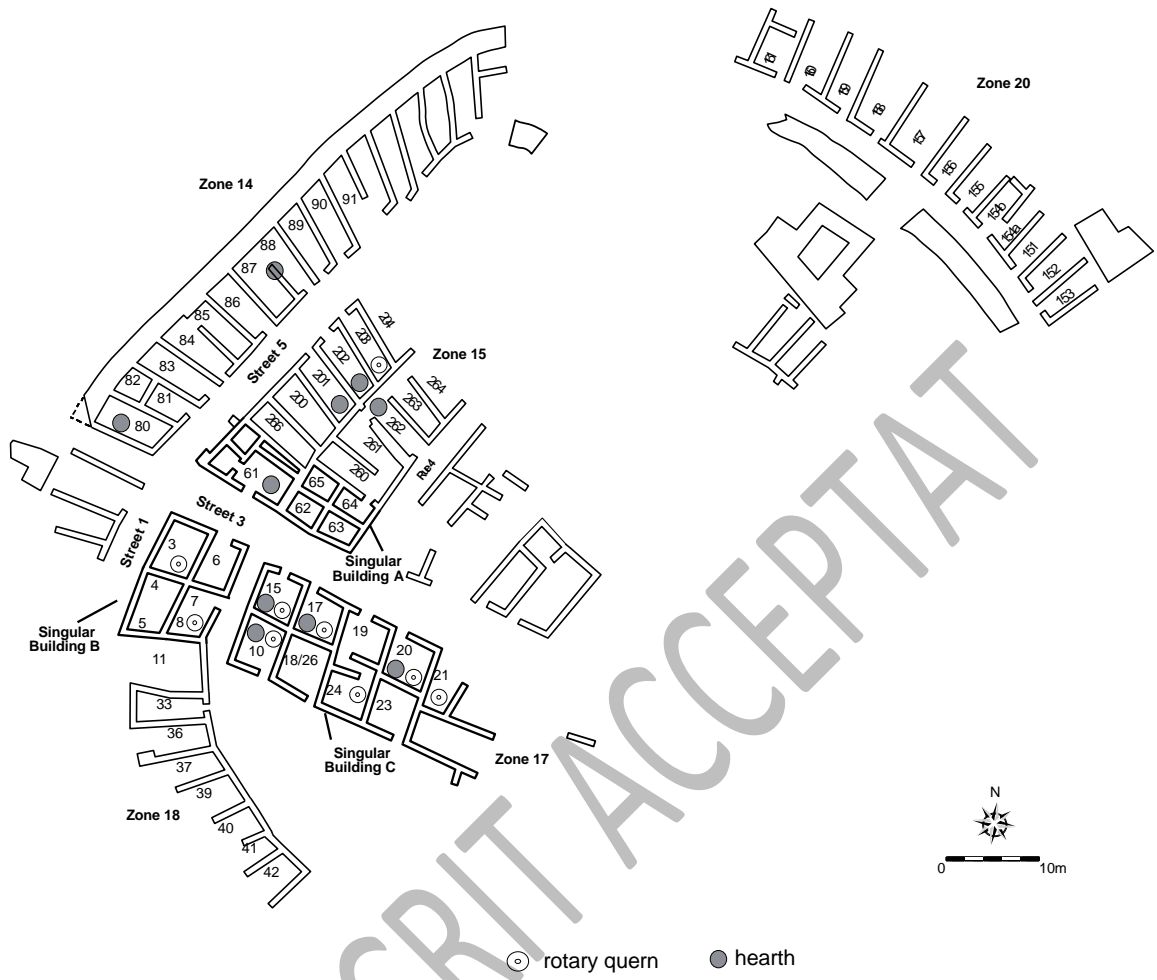


Figure 9

Site	Chronology
Mas Castellar (Pontós, Girona)	6th – 2nd cent. BC
Illa d'en Reixac (Ullastret, Girona)	6th – 2nd cent. BC
Puig de Sant Andreu (Ullastret, Girona)	6th – 2nd cent. BC
Alorda Park (Calafell, Tarragona)	6th – 2nd cent. BC
Molí d'Espígol (Tornabous, Lleida)	6th – 1st cent. BC
Estinçells (Verdú, Lleida)	3rd cent. BC
Castellet de Banyoles (Tivissa, Tarragona)	3rd cent. BC
El Tartrato (Alcañiz, Teruel)	5th-4th cent. BC
Puig de la Nau (Benicarló, Castelló)	5th – 4th cent. BC
Puntal dels Llops (Olocau, València)	3rd cent. BC
Tossal de Sant Miquel (Llíria, València)	6th – 2nd cent. BC
Castellet de Bernabé (Llíria, València)	3rd cent. BC
La Bastida de les Alcusses (Moixent, València)	4th cent. BC
El Oral (San Fulgencio, Alacant)	6th – 4th cent. BC

Table 1

Feature	Sites
Oven inside houses	Mas Castellar, Alorda Park, Tossal de Sant Miquel
Oven in unroofed areas inside a house	Puig de Sant Andreu, Illa d'en Reixac, Alorda Park
Oven in open, public areas (streets or plazas)	Molí d'Espígol, Castellet de Banyoles, Bastida de les Alcusses, Alorda Park, El Oral
Room with a concentration of querns	Barranc de Gàfols, El Tartrato, Puig de la Nau, Castellet de Bernabé, Bastida de les Alcusses
Open area with a concentration of querns	Puntal dels Llops, Bastida de les Alcusses

Table 2

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