URBANIZATION IN IBERIA AND MEDITERRANEAN GAUL IN THE FIRST MILLENNIUM BC

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ICAC: Institut Català d'Arqueologia Clàssica
IEC: Institut d'Estudis Catalans
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VII • FORTIFICATIONS IN THE URBAN SETTLEMENTS OF THE NORTH-EASTERN IBERIAN PENINSULA DURING THE MIDDLE IBERIAN PERIOD (400-200 BC): SOME CASE STUDIES[1]

Oriol Cuscó[2]

Abstract

The aim of this paper is to analyse the fortifications of some of the most important Iberian urban centres in the coastal areas of the north-eastern Iberian Peninsula (present-day Catalonia) by characterising them and linking them to other aspects that define this type of settlement. We first studied the fortifications of five of the best-known urban sites in the study area, paying special attention to their level of sophistication. We then contextualized these defensive systems with other aspects such as the topography and accessibility; the size of the settlement; the complexity of the domestic architecture; the presence of public buildings; the signs of commercial activities and the accumulation of wealth; the presence of necropolises, etc. In doing this, we have been able to show that the complexity of the fortifications normally has a direct correlation with those factors, which are usually considered when assessing the "category" or hierarchical level of settlements. Therefore, we can confirm that the fortifications with a higher level of sophistication were built in the main urban settlements (from a political and socioeconomic point of view) and that their presence corresponded, to a great extent, to the interests of the aristocratic elites who resided in them.

Keywords: Middle Iberian period, north-eastern Iberian Peninsula, fortifications, urban settlements

Resum

Aquest treball vol ser una anàlisi de les fortificacions d'alguns dels centres urbans ibèrics més importants de les àrees costaneres del nord-est de la península Ibèrica (actual Catalunya), caracteritzant-los i posant-los en relació amb altres aspectes que defineixen aquests assentaments. En primer lloc, hem estudiat les fortificacions de cinc dels nuclis urbans més ben coneguts de la zona d'estudi, posant especial atenció al seu nivell de sofisticació. Després, hem contextualitzat aquests sistemes defensius a partir d'altres aspectes, com la topografia i l'accessibilitat, la grandària de l'assentament, la complexitat de la seva arquitectura domèstica, la presència d'edificis públics, els indicis d'activitats comercials i d'acumulació de riquesa, la presència de necròpolis, etc. Així, mostrem que la complexitat de les fortificacions sovint té una correlació directa amb aquests factors, que acostumen a tenir-se en compte a l'hora de valorar la "categoria" o nivell jeràrquic dels assentaments. Es confirma, doncs, que, almenys en aquesta àrea, les fortificacions amb un nivell més alt de sofisticació es van construir als principals assentaments (des d'un punt de vista polític i socioeconòmic), i que la seva presència responia, en gran mesura, als interessos de les elits aristocràtiques que hi residien.

Paraules clau: període ibèric ple, nord-est de la península Ibèrica, fortificacions, assentaments urbans

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1. Introduction

The framework of this study is the Middle Iberian period (approximately 400 to 200 BC) in the coastal areas of the north-eastern Iberian Peninsula (present-day Catalonia) (Fig. 1). As has been argued in several studies (Asensio *et al*. 1998; Sanmartí 2001; 2004; Sanmartí, Asensio *et al.* 2006; Sanmartí *et al.* in this volume), there is enough evidence to suggest that in this period and this area there were several archaic states that developed in the context of highly unequal societies, with aristocratic elites who concentrated political and economic power in their own hands. This socio-political structure was reflected in, among other aspects, the settlement hierarchy, in which four administrative levels or categories can be recognised, ranging from capital towns to scattered rural settlements. Moreover, the settlement distribution has made it possible to define political territories that roughly coincide with the ethnic territories described in the written sources.

Within this context, we will focus on the defensive systems of urban settlements, i.e. the large nuclei with a dense urban layout covering several hectares. In this area and period, the settlements that fall within this category coincide with the first and second levels of the settlement hierarchy. Therefore, for our in-depth study, we have selected five of the most relevant and best-known sites in the study area that belong to these categories. Thus, following the coast from north to south, this study first takes in Ullastret, the capital of Indigecia, and the second-order *oppidum* of Sant Julià de Ramis. Further south, we have included Burriac (Cabrera de Mar), the capital of Laietania, and the second-order settlement of Ca n'Oliver (Cerdanyola del Vallès). Finally, the study also covers Castellet de Banyoles (Tivissa), the only well-known urban centre in Ilercavonia.

Although the in-depth study will focus on these five sites, some other urban centres, along with several third-order (and therefore non-urban) settlements, will also be briefly mentioned and taken into account during the discussion; this is in order to make comparisons and thus offer a wider view. Such is the case of the second-order centres of Puig del Castell (Cànoves i Samalús) and Masies de Sant Miquel (Banyeres del Penedès), as well as the third-order settlements of Alorda Park (Calafell), Turó del Vent (Llinars del Vallès), Céllecs (Òrrius) and Castellruf (Santa Maria de Martorelles).

Our archaeological knowledge of Iberian fortifications in the study zone has increased significantly

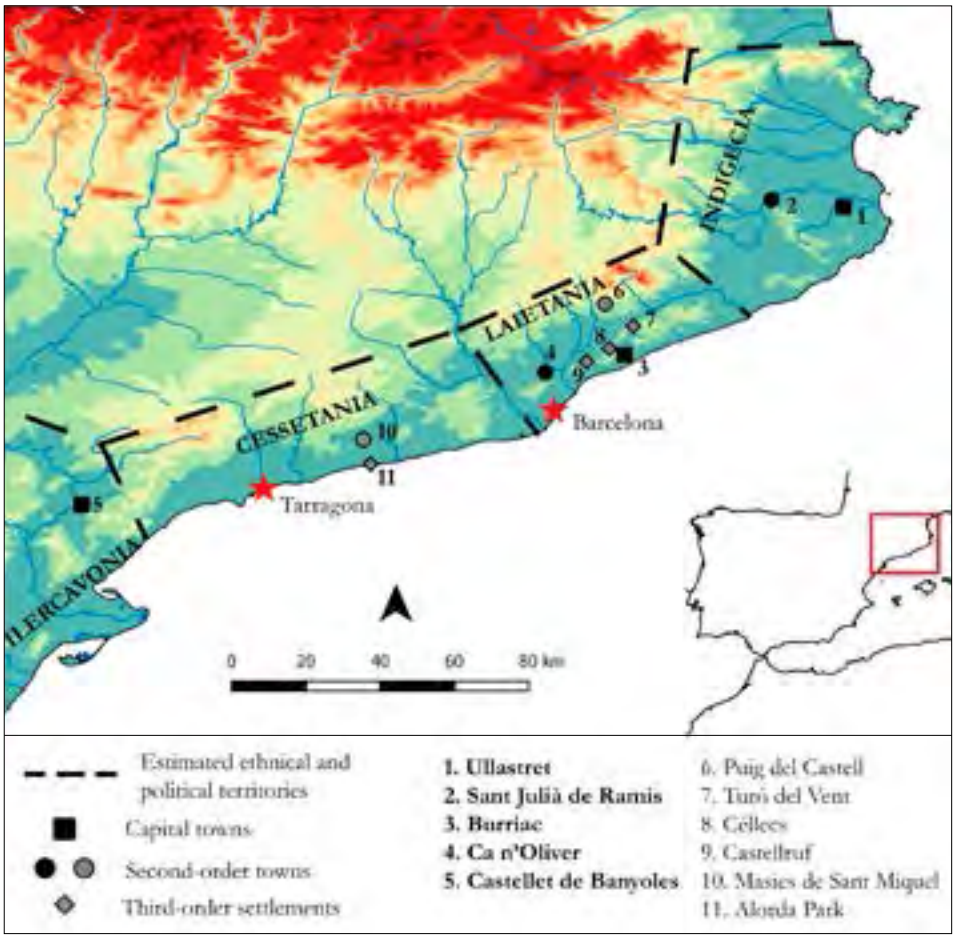

FIGURE 1. Map of the study area showing the political territories, the case studies (black) and other mentioned sites (grey).

over the last few decades, thanks to many excavations whose results have been published and discussed in several publications and meetings. Among the latter we can highlight the meeting held in Manresa in 1990 that focused on the Middle Iberian period (VV. AA. 1991) and those held in Lleida in 2008 and 2010 focusing on fortified gates and defensive moats respectively (Junyent and López 2009; Junyent, López and Mastria 2011).

In a wider approach, Iberian fortifications as a whole have sometimes been the subject of intensive discussion, mainly focusing on the colonial influences that can be recognized in them and which concepts of war and poliorcetics they reflect. This latter issue, which is, in fact, closely related to the former, has been at the centre of an intense debate between two opposing sides. On the one hand, some authors defend the existence of veritable sieges comprising the use of complex tactics (such as those featured in the treatises of Aeneas Tacticus and Philo of Byzantium) and war machines, both by attackers and defenders (Gracia 2006, with previous bibliography). On the other hand, there are authors who see no evidence of a widespread use of these tactics and elements, either in the archaeological data or in the written sources. Instead, they suggest a concept of war in which long sieges were exceptional and assaults on towns, where they occurred, mainly consisted of surprise attacks and raids (Moret 2006, with previous bibliography; Quesada 2007, with previous bibliography). There is a strong argument for this view: Pierre Moret's colossal study of all Iberian fortifications (Moret 1996), which led him to the conclusion that most of the Iberian defensive systems were limited to a simple enclosing wall and one or two towers next to the entrance. According to him, settlements where fortifications reached a very high level of sophistication were an exception in the Iberian world and probably had more to do with monumentality and power ostentation than with real military use, without entirely denying the latter.

These debates have focused mainly on a military analysis of the fortifications, linking them to the written sources and contemporary panoply, and less on their immediate context, i.e. the settlements in which they were built. However, a different approach places emphasis on detecting the causes of the differences in the defensive systems at Iberian sites by studying other elements and traits of the fortified settlements. In a paper published in 1991, Sanmartí and Santacana pointed out a link between settlement size, topographical location and fortification strength. This observation was later expanded on in another paper (Sanmartí, Bermúdez *et al.* 2006) in which the fortifications of various regions –Laietania, Cessetania and northern Ilercavonia– were compared. The authors noted, especially in the case of Laietania, a direct correlation between the three aforementioned aspects: on the one hand, smaller settlements (i.e. third-order fortified villages) tended to be located in less accessible places, which could explain why their defences were normally very simple. On the other hand, first- and second-order towns, conditioned by their larger size, usually had to be located at sites with gentler slopes around them and to counterbalance the defensive weaknesses of these locations stronger and more sophisticated fortifications were built. This same paper briefly noted that the strongest and most complex fortifications are found in settlements where a prominent presence of elites is proved through a convergence of independent data.

The first aim of this paper is to characterize the defensive systems of the Iberian urban nuclei in the study zone, recognizing the traits and features they had in common, their differences, and their degree of sophistication. In addition, seeking to understand the role of these fortifications in the society, we will compare them with other relevant aspects, such as the size of the settlements, their location, the indications of economic wealth, the evidence of prominent elites, etc. We will also briefly assess the differences with some non-urban fortified settlements. Thus, we will see if (and how) the strength and complexity of the defensive systems of these settlements coincided with the factors that constitute the main evidence for their economic, political and social importance, and ultimately, their urban nature.

2. The archaeological data on the sites

2.1. Ullastret (Ullastret)

Ullastret, the capital of Indigecia, has been interpreted as a single urban community comprising two settlements in close proximity (Martin *et al.* 2010). The first, Puig de Sant Andreu (Fig. 2), stretches along a triangular-shaped hill. Its eastern and southern sides are naturally protected by a steep slope and a lake (which was drained in the 19th century), whereas its longer western side has quite a gentle slope. The second site, Illa d'en Reixac (Fig. 3) is 400 m from Puig de Sant Andreu on an island in the lake and was connected to the shore by an artificial isthmus (Martin *et al.* 1999; Codina, Garcia-Garcia, Martin *et al.* 2016).

At its height, during the 4th century BC, the town covered more than 15 ha, divided between Puig de Sant Andreu (which surpassed 10 ha having grown from a previous settlement of about 3 ha) and Illa

Figure 2. Plan of Puig de Sant Andreu (Ullastret, Girona). Source: F. Codina (MAC Ullastret).

Figure 3. Plan of Illa d'en Reixac (Ullastret, Girona), including both excavated structures and those detected through geophysical prospection. Source: F. Codina (MAC Ullastret).

d'en Reixac (at least 5 ha). During the Middle Iberian period, both sites had a well-organised urban plan comprising main and secondary streets (Codina, Plana-Mallart and Prado in this volume).

Regarding the domestic architecture of the *oppidum*, at the beginning of the Middle Iberian period (450-380 BC) the houses in both sites were rectangular with areas of between 18 and 26 m^2 and one or two rooms. However, in the subsequent phase (380-325 BC), we see several complex dwellings, all built next to the defensive walls. The best known of these, in Zone 14 of Puig de Sant Andreu, was about 800 m^2 (not including the upper storey) and was divided into multiple specialized rooms. It has been interpreted as an aristocratic residence (Martin *et al.* 2010, with previous bibliography; Codina, Plana-Mallart and Prado in this volume).

In terms of public buildings, three *in antis* temples have been found at Puig de Sant Andreu (Codina *et al.* 2018, with previous bibliography). At the same site there are three Hellenistic-type cisterns dating from the 3rd century BC with a combined capacity of 111 m^3 (Prado 2008).

With regard to archaeological artefacts, imported pottery is very abundant at both sites, exceeding 12-15% of the ceramic individuals throughout the entire occupation period. This ratio reached its peak during the 4th century BC (up to 23%), while assemblages from the abandonment strata of Illa d'en Reixac (*circa* 200 BC) show a percentage of 16.5% (Asensio 2015; Sanmartí, Plana and Martin 2015, 126). It is also worth noting the considerable number of Iberian inscriptions on various materials, the abundant numismatic finds and a recurrent presence of weapons. Most of these weapons date from the 3rd century BC and mainly consist of La Tène-type swords that had often been rendered useless and exhibited alongside nailed-up crania as part of a ritual probably related to aristocratic groups (Martin *et al.* 2010).

Ullastret had a considerable amount of storage capacity, as is shown by the large number of silos in Puig de Sant Andreu, as well as several areas in Illa d'en Reixac where storage pits, silos and/or amphorae assemblages have been found (Burch 1996, 292-310; Martin *et al.* 1999).

In addition to all the above, we have to add a notable peri-urban settlement network, which reached its maximum development during the 4th and 3rd centuries BC (Plana and Martin 2012), and

the cremation necropolis of Puig de Serra with 87 tombs dating mainly from the 4th century BC. This and those linked to the first-order town of Burriac are the only known necropolises from the Middle Iberian period, which leads us to believe in a monopoly held by the aristocratic groups residing in these two capitals (Martin *et al.* 2010, 96).

In terms of defensive systems, at the beginning of the Middle Iberian period (up to the mid-4th century BC), Ullastret still had the fortifications that had been built at the end of the 6th century BC. At Puig de Sant Andreu, they consisted of a wall that was more than two metres wide (Codina, Garcia-Garcia, Prado *et al.* 2016). This was complemented by at least eight solid frustoconical towers, seven of which were placed at regular intervals along the western stretch, while the eighth was located at the top of the hill and was probably used mainly as a watchtower. The locations of the entrances during this period are still unclear, although some of them can be deduced (Martin *et al.* 2010, 93; Prado 2009; 2010). At Illa d'en Reixac, there is no evidence of a defensive systems prior to the 4th century BC, apart from a large wall that was found in the eastern section in the 1960s and was interpreted as a defensive wall belonging to the Ancient Iberian period, although this interpretation has not been verified (López 1999; Codina and Prado 2018*b*).

During the second quarter of the 4th century BC, the settlement of Puig de Sant Andreu underwent significant growth and spread to new areas of the hill. As a consequence, its defensive walls were extended to protect the eastern and northern sides, while the earlier western wall was reinforced. The thickness of these new walls varied according to the topographical conditions. It was less than a metre at some almost inaccessible stretches; some 4 to 5 m along the western flank; and up to 6 m at some particularly vulnerable points. The northern vertex (the so-called "Isthmus") was fortified with a two-room square tower (Tower III), while a pre-existing circular tower in the western sector was converted into another bipartite square tower (Tower I). At least eight entrances are known for this phase, taking into account five main gates, most of which had complex configurations based on a corridor flanked by a tower or bastion on the right-hand side (Fig. 10); two posterns clearly meant to facilitate active defensive actions; and a narrow gate directly linked to Zone 14, which has been interpreted as a private access to this aristocratic house from outside the settlement, with no obvious military purpose. Moreover, some sections of the walls formed angles or "setbacks", although they appear to be more related to structural stability than to flanking purposes (Prado 2009; 2010).

It has recently been discovered that the entire western side of Puig de Sant Andreu was protected by a moat, which is currently under study. It can be defined as a U-shaped moat, over 5 metres deep and 15 metres wide in some sections. It is known to have been filled in by the beginning of the 2nd century BC (although some sections had already lost their military function a century before), but the date it was dug remains uncertain. While it is unlikely that the northernmost stretch, opposite the "isthmus", predates the fortification of this sector (which dates from the 4th century BC), the rest of the moat can probably linked to the construction of the older wall (built in the 6th century BC), even more so when it was used as a quarry (Codina and Prado 2018*a*, with previous bibliography).

A defensive wall of between 2 and 4 metres wide dating from the 4th century BC has been found at Illa d'en Reixac (López 1999, Codina and Prado 2018*b*). Geophysical explorations and archaeological soundings have also allowed a pincer gate to be located in the north-western sector, precisely at the point of convergence between a main street and the artificial isthmus that connected the island with the lakeshore (Codina, Garcia-Garcia, Martin *et al.* 2016, 107).

During the 3rd century BC, the fortifications at neither of the two sites appear to have undergone any major changes. Gate 1 of Puig de Sant Andreu, whose previous shape is unknown, was converted into a re-entrant pincer gate flanked by a polygonal tower (built from a pre-existing circular tower) and a corner of the wall; it was also complemented with outwork defences with an uncertain function. In addition, during this last phase some gates were walled up, probably in a desperate attempt to block the way to attackers during the turbulent end of the 3rd century BC, just before the *oppidum* was abandoned (Prado 2009; 2010).

2.2. Sant Julià de Ramis (Sant Julià de Ramis)

Sant Julià de Ramis (Fig. 4) was a second-order town in Indigecia built on the summit and part of the slopes of a 203-metre-high elongated hill. Beyond the settlement perimeter, the ground slopes abruptly down, providing good natural defensive conditions, except at its north-western end, where the hill joins the rest of the Gavarres Massif, of which it is the last outcrop (Burch *et al.* 2011, 13-16).

At its peak, circa 400 BC, the settlement covered between 3 and 4 ha, having spread to the southwest from the pre-existing ancient Iberian settlement (which only occupied the northern part of the hill) and apparently destroying its necropo-

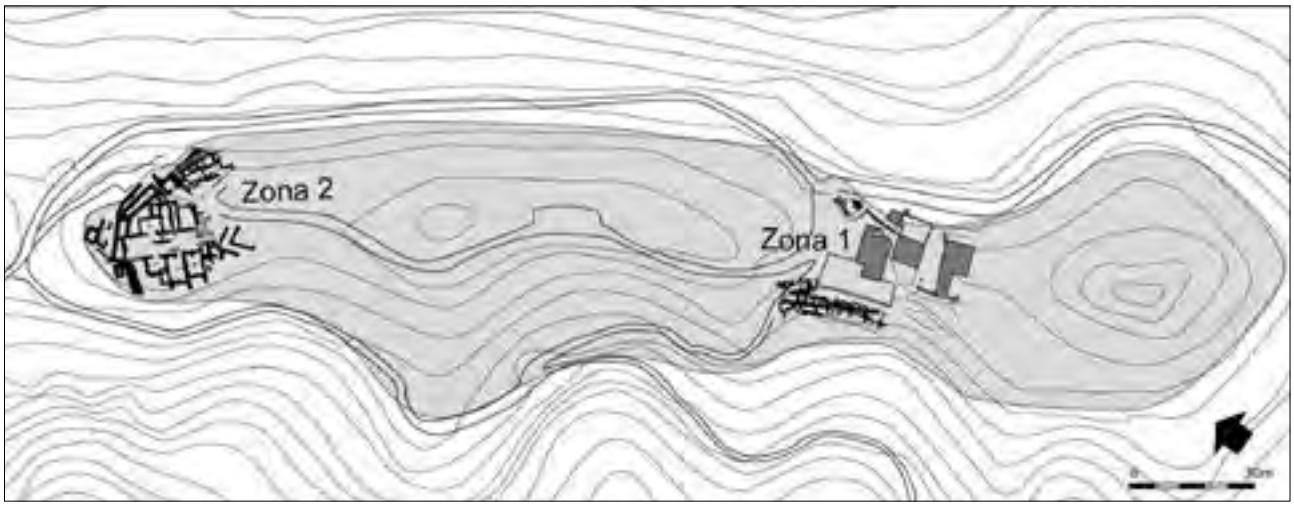

FIGURE 4. Diachronic plan of Sant Julià de Ramis (Sant Julià de Ramis, Girona). Source: Burch, Nolla and Sagrera 2011, 14, Fig. 3.1.

lis (Burch, Nolla and Sagrera 2010, 121-122). The town was organised in terraces along which ran long, mostly level, main streets, that were in turn crossed perpendicularly by shorter, more abrupt alleys (Burch *et al.* 2001, 68-69; Burch, Nolla and Sagrera 2010, 122).

Regarding the domestic architecture, the data available for the Middle Iberian period show a predominance of simple houses ranging in size from 15 to 50 m^2 lined up along both sides of the longitudinal streets. Most of them had one or two rooms, although there are two larger (at least 80 m^2 each) more complex buildings (three and seven rooms, respectively), with more domestic features (Burch *et al.* 2001; Burch, Nolla and Sagrera 2011). Despite this, it seems clear that these two buildings cannot be considered as aristocratic residences like the ones in Ullastret. Likewise, during this period there is no evidence of any public buildings with a religious or political function.

The ratio of imported goods is difficult to assess in this settlement, as the percentages of the various pottery types have not been published in the main studies of the site, although the authors speak of "really sparse amounts" of imported pottery (Burch *et al.* 2001, 57; Burch, Nolla and Sagrera 2010, 123). As for weaponry, only some undated pieces from earlier excavations have been reported, including a La Tène-type sword and a few spearheads (Burch *et al.* 2001).

We are not aware of any storage facilities inside the *oppidum*, although a few silo fields have been found at the foot of the hill on which it is located and must have been closely connected with it. One of them, Bosc del Congost, had 119 silos, of which 74 could be dated and only 14 of them belonging to the 4th and 3rd centuries BC. At Camps dels Escalers, 9 of the 16 excavated silos could be dated and it was concluded that they were used during the 3rd century BC, although some of them were not abandoned until the beginning of the 2nd century (Burch and Sagrera 2009; Burch, Nolla and Sagrera 2010, 123).

Finally, we have to add the presence of two nearby necropolises that, although they belong to the Ancient Iberian period, can be used as evidence of this settlement's importance. One of them is the hypothetical aristocratic necropolis that may have been located on the same hill until it was destroyed at the beginning of the 4th century BC, during the expansion of the *oppidum*. Its presence is only deduced from artefacts without context (Burch *et al.* 2001, 47-52). Another necropolis, Pla de l'Horta, was located 3 km from the settlement making a close connection less likely in this case.

Regarding its defensive systems, the north-western end of the settlement was the best defended part throughout the whole occupation period, without doubt to protect the gentlest slopes of the hill. This area already had a very modest fortification; it had been built during the 6th century BC and consisted of a 1.2-metre-wide wall with a simple opening as an entrance. With the transition to the Middle Iberian period and the expansion of the town, more sophisticated fortifications were built in this sector. Near the end of the 5th century BC, a new entrance was built, possibly defended by a wall that demarcated a corridor or a closed terrace in front of it. East of this entrance, two artificial platforms were raised in order to act as the foundations for a new wall (about 1.3 m wide) and to solve the structural problems caused by the natural slope. Finally, a postern was fitted between these two platforms in a withdrawn position with respect to the outline of the wall. No towers have been found for this phase, but the corners of the

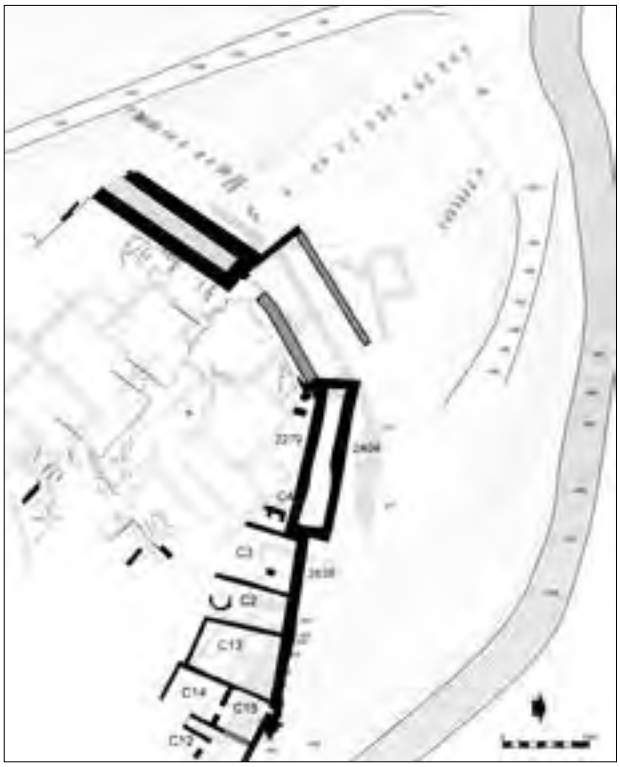

FIGURE 5. Plan of the northern entrance area of Sant Julià de Ramis in the 4th century BC. Source: Burch, Nolla and Sagrera 2011, 98, Fig. 5.3.1.1.

wall, together with the artificial platforms (which may have acted to a certain extent as bastions), provided good possibilities for flanking potential attackers (Burch, Nolla and Sagrera 2011).

Later, during the 4th century BC, the two wall sections adjacent to the gate were rebuilt a few metres inward and converted into solid, bastion-like structures. Each consisted of two stone walls and the filling between them and were 20 metres long and 5 metres wide (Fig. 5). They were probably conceived as platforms to help defend the entrance corridor, albeit with worse flanking conditions than the previous phase. Beyond these two sections, the ramparts continued as simple 1.4 m-wide walls (Burch, Nolla and Sagrera 2011).

Instead of protecting only the northernmost and weakest end of the *oppidum* (which would have formed a so-called "barrier fortification"), this defensive wall probably encircled the whole settlement, as hinted at by the discovery of a 5.5-metre-long and 2.5-metre-wide stretch on the central part of the hill (Burch, Nolla and Sagrera 2011, 175-181).

2.3. Burriac (Cabrera de Mar)

The *oppidum* of Burriac (Fig. 6), the capital of Laietania, stretches along the southern slope of a hill from an indefinite spot near the hilltop (which stands at 391 metres above sea level) to around the 200-metre mark. Its northern side is naturally protected by cliffs and very steep slopes, while the gradient of the hillside must also have been a considerable obstacle to potential attacks from the south. However, on its western and eastern flanks the slope was less steep and lacked any significant unevenness that could have facilitated the defence.

At its peak (probably reached during the 4th century BC, if not earlier), Burriac occupied between 7 and 10 ha. This is calculated from the perimeter of its defensive wall, although it is still unknown whether the whole walled area was ever occupied all at the same time. Despite the current paucity of archaeological knowledge about the site, it can be stated that it was fortified during the Middle Iberian period. It also seems that the town was developed according to an organised urban plan, at least in its central and western sectors, although its exact form and layout are still far from known (Zamora 2006-2007).

Regarding its domestic architecture, the data available for the Middle Iberian period is also very limited. Some poorly defined structures, probably corresponding to simple dwellings, have been found in the central and western sectors. The so-called "public building", a 43.5-m^2 room, may have been part of a complex building, perhaps an aristocratic residence (Barberà and Pascual 1979-1980; Zamora 2006-2007, 88-96).

As for archaeological artefacts, in the few well-studied assemblages from inside the *oppidum* (which belong to the end of the 4th century BC), imported goods represent 10% of the pottery individuals (Zamora 2006-2007); while in the assemblages from the nearby Can Bartomeu silo field (dating from around 200 BC) 12.7% of the items are imported vessels (Asensio 2015, 244). Account must also be taken of the finds from the necropolises linked to Burriac. These include valuable items rarely found in the *oppidum*, such as imported pottery, items of personal adornment and more than 80 pieces of weaponry.

In addition to the necropolises, there are many nearby sites that were almost certainly under the direct control of Burriac. They include several rural settlements (such as Turó dels Dos Pins and Can Segarra), silo fields (such as Can Miralles-Can Modolell, Can Bartomeu and Can Gandia) and a cave that appears to have been used as a sanctuary (Les Encantades, on the nearby Montcabrer mountain) (Zamora 2006-2007, 305-321, with previous bibliography).

The only defensive elements that can be definitively dated to the Middle Iberian period were excavated in 1984 in the western sector of the

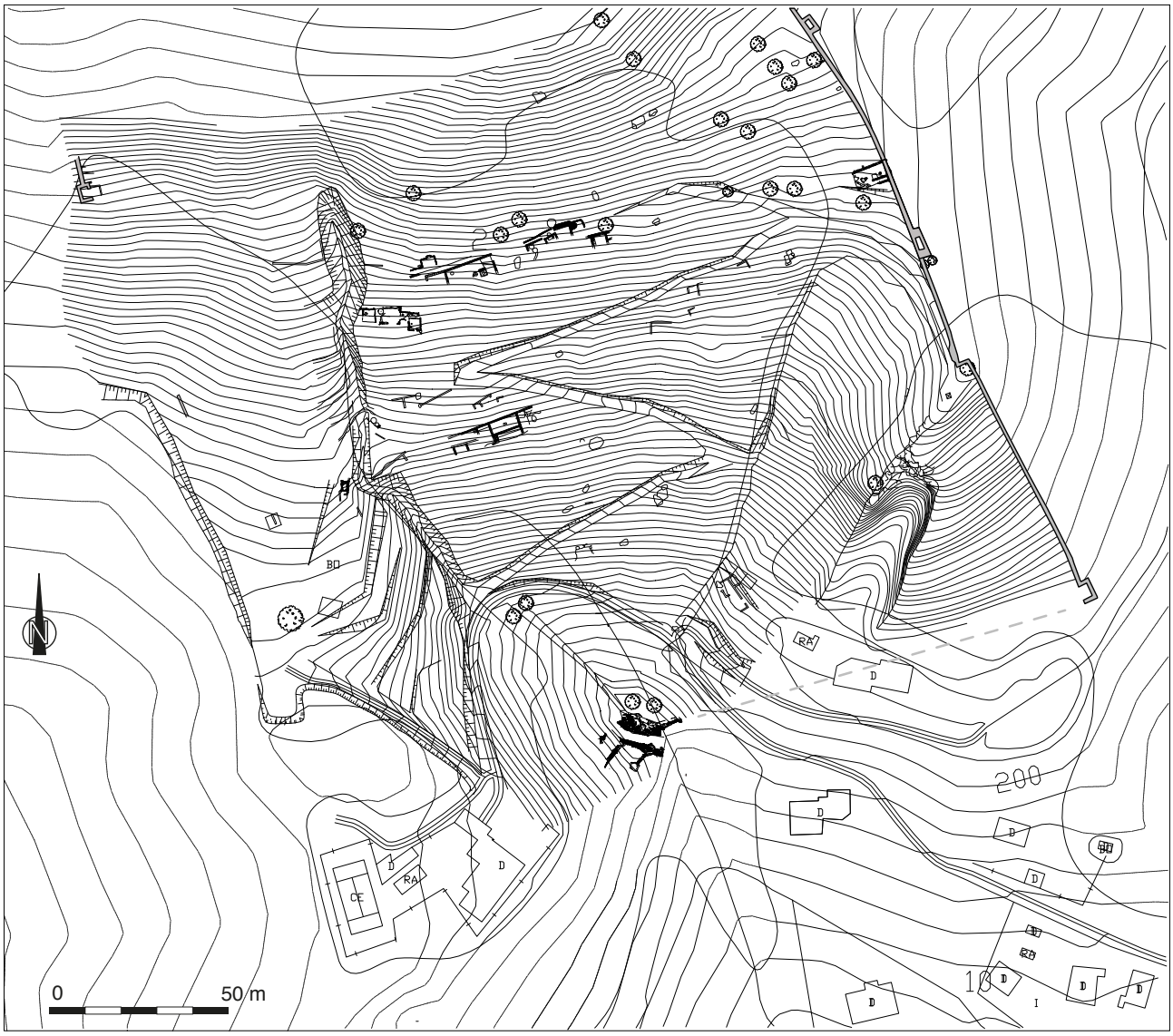

FIGURE 6. Diachronic plan of Burriac (Cabrera de Mar, Barcelona). After: Zamora 2007.

site. They consist of a hollow quadrangular tower (about 5.6 x 4.3 m) attached to a 1.5-metre-wide wall that continued to the north but not to the south, suggesting the presence of an entrance at this point. They were built towards the end of the 4th century BC, immediately after the raising of an embankment that heightened the whole sector, and they remained in use until the first half of the 1st century BC, when the town was abandoned or possibly destroyed. Also in the western sector, but further south and at a lower altitude, another stretch of wall was found, but although it was very similar to the other, it could not be dated (Burjachs, Benito and Defaus 1991; Zamora 2006-2007, 150-156).

In the eastern part of the settlement, Marià Ribas (1952; 1964, 3-6) described a 350-metre-long stretch of defensive wall of variable width (between 1.20 and 2.50 m) with 5 rectangular towers placed at regular intervals (Fig. 12) and two possible posterns. These fortifications remain undated due to the lack of a stratigraphic excavation, although D. Zamora (2006-2007, 31-32) has pointed out the similarity between these towers and the one located in the western sector. This could mean that they were built at the same time, near the end of the 4th century BC, as part of a consistent building plan aimed at fortifying the whole *oppidum* (with the possible exception of the northern side, which was already inaccessible due to a cliff).

The southern gate of the *oppidum* dates from the third quarter of the 2nd century BC, a period in which the area was already under Roman rule. It was built between two previous wall sections that have yet to be dated. They are 1.5 and 1.8 metres wide and were built with different construction techniques, meaning they may not be

contemporary, although they are stratigraphically earlier than the gate itself. Therefore, it is unclear whether they could have formed part of the hypothetical general fortification at the end of the 4th century BC or have been part of a later remodelling, shortly (or even immediately) before the construction of the gate itself, during the 2nd century BC. Moreover, the known gate may have replaced a previous one, given its strategic location at the confluence of two gullies (García, Miró and Pujol 1991; Banús 1993; Zamora 2006-2007, 252-256). The current excavation project begun in this sector in 2018 and expected to continue over the coming years will no doubt help clarify all these questions.

Finally, we should also note the tower of Turó dels Dos Pins, located less than 300 m south of the *oppidum*. This rectangular and apparently free-standing tower (about 12 x 5.9 m) was built during the last third of the 3rd century BC and dismantled only 30 years later. Its chronology and short life span suggest a defensive and visual control function in the context of the Second Punic War. We cannot rule out the possibility that there were other similar towers in the area around Burriac, possibly forming a line with defensive and/or vigilance purposes, as documented in other Iberian areas in the south (Zamora 2006-2007, 308, 312, with previous bibliography).

2.4. Turó de Ca n'Oliver (Cerdanyola del Vallès)

The second-order Laietanian town of Turó de Ca n'Oliver (Fig.7) is on a hill on the northern inland side of the Collserola mountain range, one of its last outcrops just before it reaches the Vallès plain. The hill has very steep slopes on its northern side, but it is more easily accessible from the other sides, especially from the south, where it joins the rest of the massif.

During the Middle Iberian period, the area of the *oppidum* appears to have been between 1 and 2 ha, taking up most of the hilltop (Asensio *et al.* 2001, 238). The settlement was organised in terraces with several rows of houses placed along them and with streets running parallel to the perimeter walls (Francès and Guàrdia 2012, 274-276).

In terms of domestic architecture, during the Middle Iberian period the houses ranged from 25 to 40 m^2 and were usually divided into two

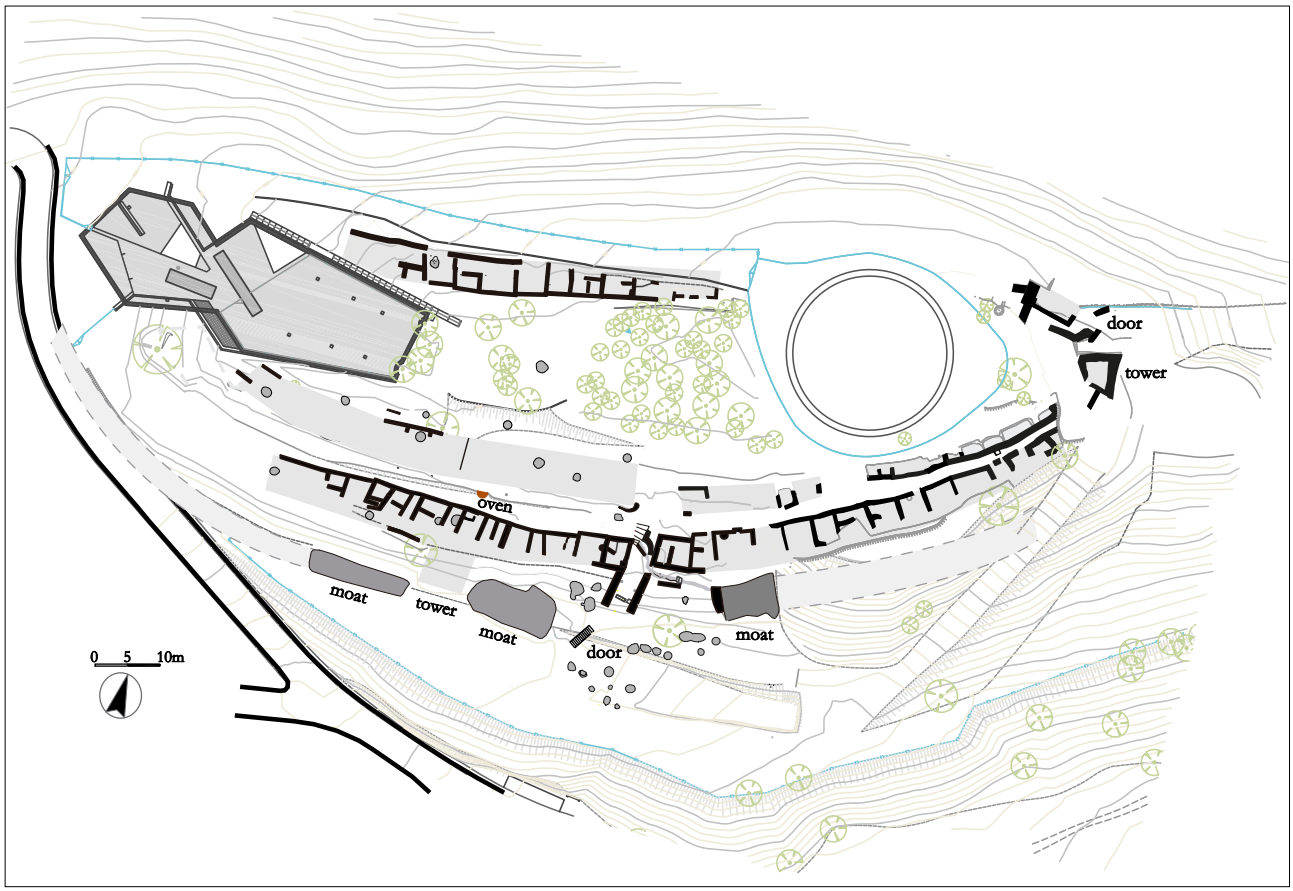

FIGURE 7. Plan of Ca n'Oliver (Cerdanyola del Vallès, Barcelona) in the Middle Iberian period. Source: Museu d'Història de Cerdanyola, modified.

rooms. Some of these dwellings were slightly enlarged during the 3rd century BC. There appear to have been specialized spaces, as suggested by the presence of a probable amphorae warehouse and several furnaces with forging residue. However, there is no evidence of any public building with a political or religious function (Belarte 2008, 188; Francès and Guàrdia 2012, 264-278).

The ratios of imported pottery in this settlement increased over time, growing from 5.5% of individuals during the 4th century to 11.5% by the end of the 3rd century BC (Asensio *et al.* 2000-2001, 183-191, with previous bibliography). Several pieces of weaponry have also been found, most of them connected to the destruction of the *oppidum* in around 200 BC (Francès and Guàrdia 2012, 278, 281).

Concerning storage facilities, two silos belonging to the 4th century and at least 27 dating from the 3rd century BC have been found distributed among the houses, streets and a silo field located right opposite the southern gate (Asensio *et al.* 2000-2001, 171-173; Francès and Guàrdia 2012, 275-280, with previous bibliography).

Within a 5-km radius around the site there are several rural settlements that may have been under its influence: the hamlet of Can Xercavins (Cerdanyola del Vallès), the group of four silos at Carrer Elisenda (Sant Cugat del Vallès), the two silos of Bellaterra (Sant Quirze del Vallès), and the three silos found by the UAB Faculty of Medicine (Cerdanyola del Vallès) (Asensio *et al.* 2001).

As for its defensive systems, the *oppidum* is presumed to have had an enclosing wall since the Ancient Iberian period, although the oldest fortification found so far is the enclosing wall that was built around 425 BC. It protected both sides (south and north) of the settlement, adapting to the shape of the hill, and was between 60 and 80 cm wide (although this exceeded 1 metre at some points). It also acted as the rear wall of the houses. During this phase, the only known access consisted of a simple break in the wall at the southern end of the hill (Francès and Guàrdia 2011, 166-167; 2012, 272-274).

In around 300 BC, the defences of Ca n'Oliver underwent a significant development consisting of the construction or strengthening of several defensive elements. Firstly, a new gate was opened at the eastern end of the settlement. It was protected by a trapezoidal tower that jutted inwards (leaving the exterior face of the wall unchanged) and was completed with a postern that formed an L-shaped paved corridor (Francès and Guàrdia 2011, 167-168; 2012, 276). In addition, the southern entrance was fully remodelled by adding two strong parallel walls (6 metres long and 1 metre wide). These walls protruded outwards to define a two storey corridor that sloped up from the exterior gate to a narrower entrance that gave access to the inhabited area. This system was rounded off with a postern on its eastern side and concealed by a wall. It is also worth noting the rectangular-shaped rock outcrop to the west of this entrance, where there appear to be the remains of the foundations of a tower. However, it is impossible to determine whether it was built during this phase or at an earlier time (Francès and Guàrdia 2011, 167-168; 2012, 276).

Also during this phase, a defensive moat was dug outside the perimeter wall, at least along the southern and western sides of the settlement (it is unknown whether it also protected the northern side). The moat, either V or U-shaped depending on the section, is between 3 and 5 metres wide and 2 and 3.5 m deep. It was interrupted in at least at two places and thus divided into several stretches with slight differences in size and shape, some with built-in receptacles which seem to have had some productive function (Francès and Guàrdia 2011, 168-170; 2012, 278; Francès 2012-2013).

Around 200 BC, the site was abandoned (most likely after a violent destruction); all the defences collapsed and the moat was filled in. About 20 years later, then under Roman rule, the site was reoccupied. A new enclosing wall was built, the eastern gate was walled up, and the southern gate was remodelled, while the moat remained buried and therefore useless. Around 50 BC, the settlement was abandoned for good (Francès and Guàrdia 2011, 170-171; 2012, 281).

2.5. Castellet de Banyoles (Tivissa)

Castellet de Banyoles (Fig. 8), the best known urban centre in northern Ilercavonia, is on a large triangular plateau overlooking the River Ebro. Surrounded by steep cliffs, the only possible access is via a long, narrow isthmus on its eastern vertex, on the opposite side from the river. The town is estimated to have occupied the whole area of the plateau, i.e. some 4.2 ha (Asensio *et al.* 2016).

Its urban layout consists of a dense, regular pattern with rows of houses organised along wide streets (that run parallel to the defensive walls) that were complemented by minor transversal streets. A main street also probably crossed the entire town from the gate to the opposite end of the plateau. Several squares or open spaces have also been identified (Asensio *et al.* 2012; Sanmartí *et al.* 2012, 47-49). The domestic architecture was quite diverse with three categories of houses according to their size and complexity, matching

FIGURE 8. Plan of Castellet de Banyoles (Tivissa, Tarragona). Source: David Asensio, Rafel Jornet, Maite Miró and Joan Sanmartí.

the different social strata that were present in the town (Asensio *et al.* 2012).

Regarding possible public buildings, we note two structures designated as Buildings 10 (Sanmartí *et al.* 2012, 56-59) and 31 (Asensio *et al.* 2016, 337-338) that have been interpreted as worship or ceremonial places.

Imported pottery is very scarce, representing only 7% of the individuals. However, evidence of metallurgical activities (mostly lead) is abundant and several inscribed lead plates and many coins have been found. To all this we can add an assemblage of exceptionally luxurious objects: two bronze oxen, several pieces of jewellery, gold and silver tableware, etc. (Sanmartí *et al.* 2012, 49-52, 60) and some items of weaponry. These finds are concentrated in the last moments of the town, which probably suffered a violent destruction around 200 BC (Noguera, Asensio and Jornet 2012).

We know of no storage silos either here or at any of the other Iberian sites in the surrounding area. It has been suggested that some elongated rooms in the aristocratic houses may have been used as warehouses (Asensio *et al.* 2012, 189).

The almost complete absence of other contemporary settlements in the area around Castellet de Banyoles has led researchers to consider a mononuclear settlement pattern (Sanmartí *et al.* 2012, 59). According to this model, the whole population of the Móra basin would have lived in this town, farming the surrounding arable areas without a network of dispersed rural settlements, unlike the other Iberian towns we have already analysed.

Regarding its defensive systems, a wall seems to have enclosed the site on all sides, following the edges of the plateau. Along the northern side, the wall consisted of two parallel stretches separated by between 2.5 and 3 metres. The hollow space between them was compartmentalised and used for various activities, including metallurgy. The roof of these compartments was probably used as a *chemin de ronde*. The relative weakness of the outer wall (only 60-70 cm thick) and the absence of towers along the perimeter (except for the gate) may be explained by the natural inaccessibility of the plateau, which is almost completely encircled by very steep slopes or even cliffs (Sanmartí *et al.* 2012, 52). However, recent excavations seem to indicate that this type of arrangement was not ap-

plied to the entire walled perimeter, as apparently the southern quarter was protected only by a simple enclosing wall (Asensio *et al.* 2016, 339).

On the eastern vertex of the plateau, at the only easily accessible place in the settlement, two pentagonal towers were built to protect the main gate (Fig.11). Each of them consisted of a hollow quadrangular section with a solid triangular structure attached to its outer side, which has been interpreted as a means of protecting the tower from sappers, battering rams and artillery (Asensio *et al.* 2011; Sanmartí *et al.* 2012, 53). The two stretches of the perimeter wall that converge at this spot were built up against a corner of each tower. Behind the two junction points, two small lateral gates (one for each side) completed the ensemble, probably to allow the defenders to carry out counterattacks. The construction date of these towers remains uncertain as they were excavated using unscientific methods. However, following stratigraphic criteria, the current excavators maintain that at least the quadrangular parts must have been built just before the perimeter wall and that they can therefore be dated to around the foundational date of the settlement, in the second half of the 3rd century BC (Sanmartí *et al.* 2012, 53-55).

3. Results and discussions

3.1. Analysis of the defensive systems

In this paper, we analyse not only the military aspects but also the social and economic implications of the construction of defensive systems in Iberian urban centres. Therefore, we have mainly taken into account two aspects that are, in fact, closely related to each other. In the first place, we have considered the defensive elements that entailed a greater investment in labour. Their presence in a settlement can indicate not only a greater demographic power, but also the presence of an authority capable of inducing or even forcing the population to take part in a project that would in any event have required a considerable effort (Moret 1996, 272). In the Iberian context, one can assume this authority to have been the aristocratic elites, who were the main beneficiaries of the fortifications as a tool for demonstrating and exerting their power and status, both in a practical and an ideological sense.

Secondly, we have considered to what extent the defensive systems of each settlement exceeded the "minimum" defensive parameters, according to the Iberian concept of war as proposed by P. Moret (1996, 261-263; 2006, 209-210). As mentioned above, the lightness of the Iberian armament, the tactics that can be deduced from the classical written sources (which seem to focus on speed and manoeuvrability) and an exhaustive study of Iberian fortifications (mostly characterised by their simplicity) led this author to suggest that, in the Iberian way of war, assaults on a fortified place consisted almost always of surprise or sneak attacks, with the attacking army bursting into the settlement through the main gate. Therefore, Moret stated that a simple enclosing wall, provided it was constantly guarded, would have provided sufficient defence against most assaults and that in most cases the only complex elements with any real utility were those that helped defend the accesses and/or observe the surrounding area. Consequently, the few cases where we find other elements (e.g. flanking towers not associated with any entrance) can be explained to a large degree in terms of ostentation.

Our aim is to determine in which way this approach can be applied (or not) to the fortifications of the urban settlements selected for this study, ascertaining whether they met only the most basic defensive needs (vigilance and defence of the entrances) or whether they comprised additional elements, also bearing in mind the higher investment in labour these implied. If we observe differences in this regard between the selected defensive systems, linking them to other aspects of the settlements should help us explain those differences, based either on topographical or socioeconomic reasons or on a combination of different causes.

To begin with, the width of the defensive or perimeter walls of the settlements (Fig. 9) would seem to be a relevant factor, because of its implications regarding the amount of constructive effort needed, as well as the tactical approach to the fortification. In this respect, a considerable width usually implies that the wall was primarily conceived as an independent defensive element and

	Thickness
Ullastret *Puig de Sant Andreu* *Illa d'en Reixac*	 1 – 6 m 2,5 – 4 m
Sant Julià de Ramis	1,4 – 2,5 m
Burriac	1,2 – 2,5 m
Ca n'Oliver	0,6 – 0,8 m
Castellet de Banyoles	0,6 – 0,7 m

FIGURE 9. Table showing the thickness of the defensive walls of each settlement.

that its role as the rear wall of the houses, if that was the case, was secondary (Moret 1996, 102-103). Although at most of the selected settlements the width of the walls changed along their perimeter (usually due to different topographical conditions), the walls of Ullastret (both at Puig de Sant Andreu and Illa d'en Reixac), Sant Julià de Ramis and Burriac clearly stand out. Meanwhile, the wall of Ca n'Oliver remained rather narrow during the entire Middle Iberian period. At Castellet de Banyoles, the relative weakness of the outer wall must be understood as due to its natural inaccessibility, which made a stronger wall unnecessary. Moreover, we must not forget that it was actually part of a double wall made up of compartments, at least along much of its perimeter.

As for the presence of additional elements, none of the selected defensive systems was limited to the simplest and least costly form of defence, i.e. an enclosing wall also used as the rear wall of the houses, without additional defensive features. With the exception of Ca n'Oliver in the 4th century BC, during which there is still no evidence of elaborate fortifications comparable to those of the 3rd century, in all the settlements studied in this paper some kind of complex element was built to protect at least the entrance (or entrances) to the town. This is in contrast to the fortified non-urban nuclei (i.e. third-order settlements), where defensive systems consisting of a simple enclosing wall are rather frequent, with examples like Céllecs (Sanmartí 2013) (Fig. 16) and Castellruf (Gasull *et al.* 1995). Nevertheless, quite strong fortifications can be found in some of them, including the aristocratic citadel of Alorda Park (Asensio *et al.* 2005) (Fig. 18) or the small fortified settlements along the lower reaches of the Ebro (Belarte and Noguera 2015).

Concerning the protection of the main entrances to the settlements (which in most cases would have been the main, or even the only, spot to be defended, according to Moret), at all the selected sites some sort of complex solution was applied. These entailed a considerable building effort, thus implying a particular interest in defending and/or monumentalising these places. At Puig de Sant Andreu in Ullastret, three of the four main gates known to have been in use from at least the 4th century BC had a complex defensive system comprising at least a corridor and a tower that could flank the attackers from their left (to which must be added a postern, in one case, and outwork defences, in another) (Fig. 10). Meanwhile, at Illa d'en Reixac only a pincer gate has been identified to date. As for Sant Julià de Ramis, the northern gate was shaped like a corridor and flanked by two bastion-like structures, which were built by widening the defensive wall (Fig. 5). At Burriac, putting aside the southern entrance (built at a later date), the presence of a gate flanked by a tower in the western sector seems likely. At Ca n'Oliver, the only known entrance during the 4th century BC consisted of a simple break in the wall. In the 3rd century BC, the same gate was fortified with a protruding two storey corridor and a postern (not forgetting the moat) and, at the same time, a new gate protected by a tower and a postern was built. Finally, at Castellet de Banyoles, the single entrance was defended by two polygonal towers complemented by two side posterns (Fig. 11).

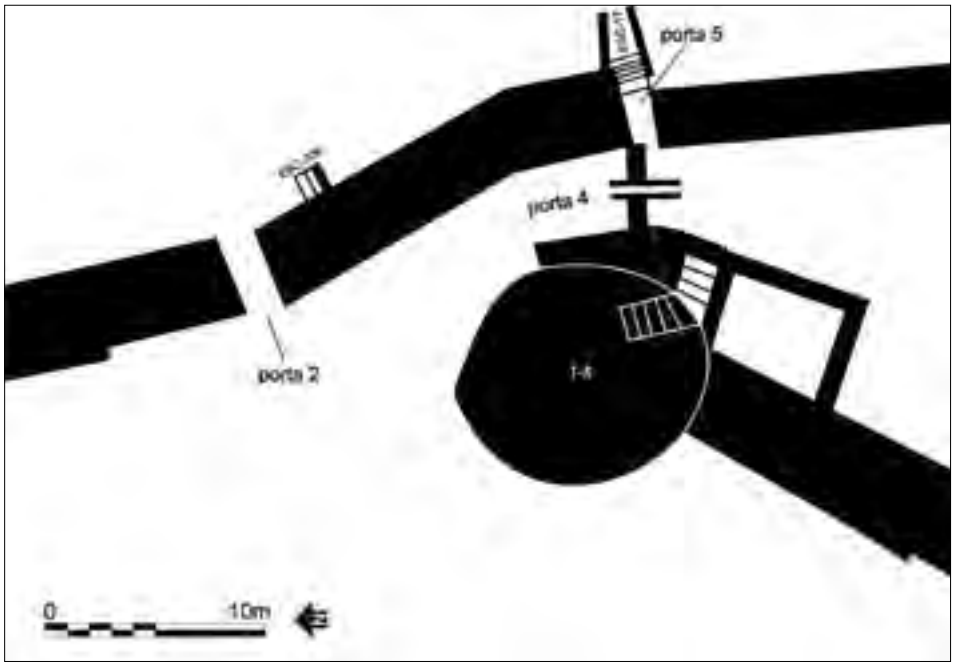

FIGURE 10. Plan of Gate 4 at Puig de Sant Andreu. Source: Prado 2009, 341, Fig. 7.

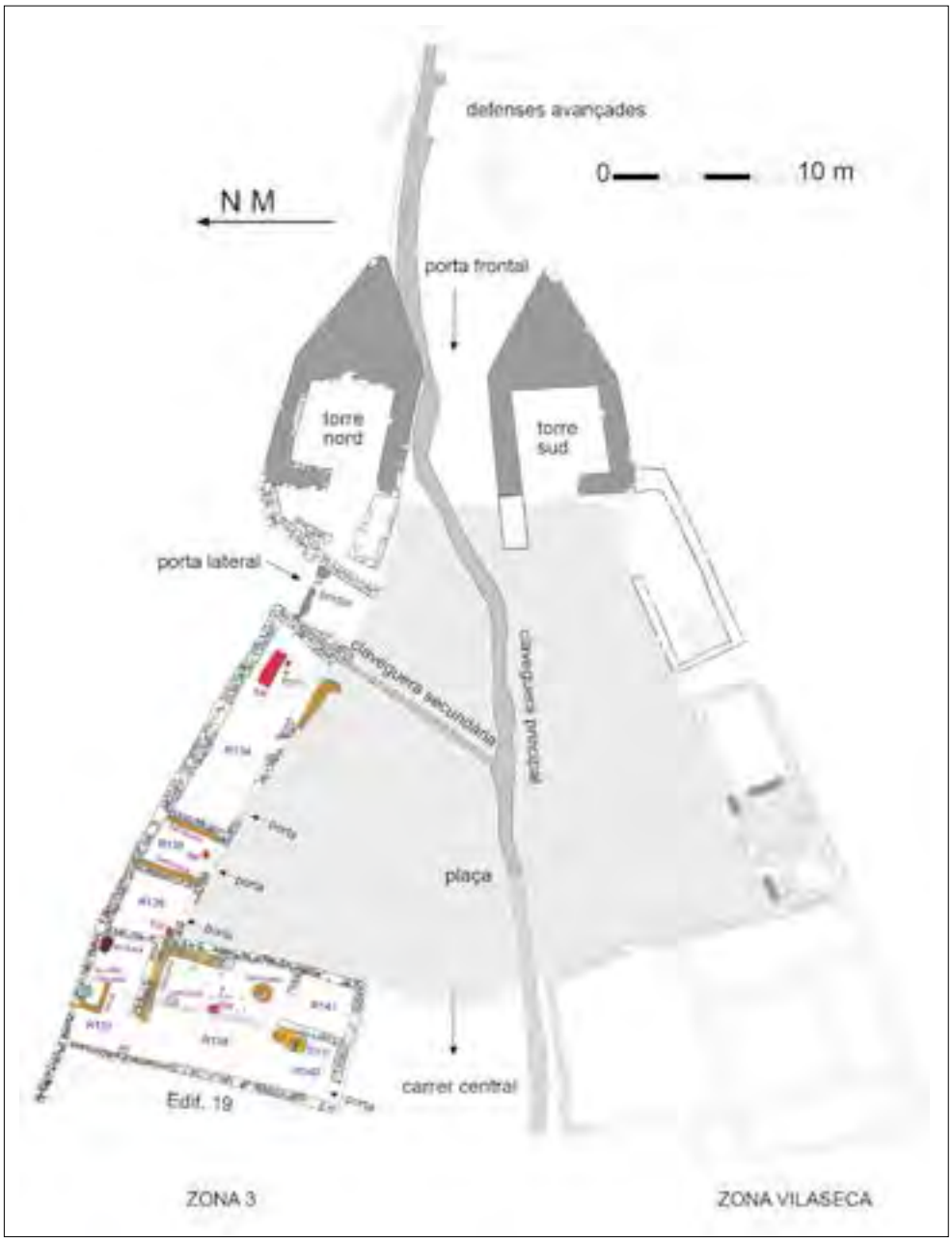

FIGURE 11. Plan of the fortified entrance of Castellet de Banyoles. Source: Asensio *et al.* 2011, 247, Fig. 3.

According to Moret, vigilance would have been the second main purpose of the Iberian defensive systems. Although the defenders could keep watch from the walls themselves (or from the gate defences, if any), at two of the selected sites we find structures that appear to have been devoted mainly to that purpose. Firstly, on the highest point of Puig de Sant Andreu in Ullastret, a frustoconical tower was built to watch over the surrounding territory. Secondly, the rectangular tower of Turó dels Dos Pins, built outside the walls of Burriac in the last third of the 3rd century BC, was probably meant to assist the vigilance and/or defence of the southern side of the *oppidum*, although was only used for 30 years.

When we analyse the elements that would have exceeded the basic defensive functions (defence of accesses and vigilance), we begin to find more important differences among the selected settlements, with features that are only present in some of them. At Puig de Sant Andreu in Ullastret we find several flanking towers that are not directly related to any main gate: five along the western section of the wall, and another on the northern edge of the *oppidum*. This town's defences also comprised at least one military postern that cannot be directly linked to the defence of any entrance and a colossal moat that protected at least its the entire western flank. Of special note is the regularity of the distances separating the five western towers (close

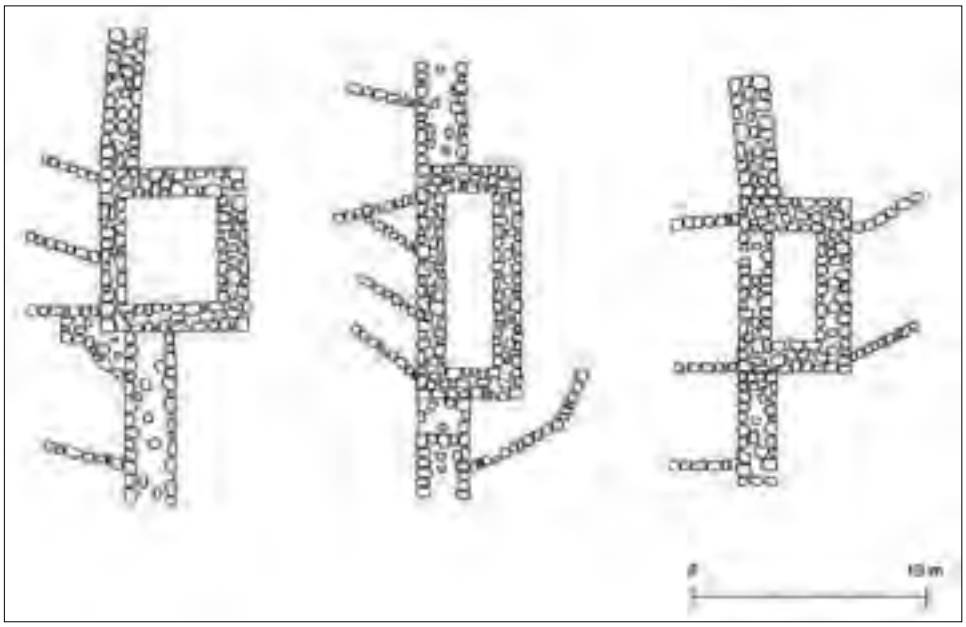

FIGURE 12. Plan of three of the towers of the eastern wall of Burriac. Source: Zamora 2006-2007, 33, Plate 1, after Ribas 1952.

to 29.5 m), which has been linked to a metrology system of Greek origin (Moret 2006; Olmos 2008). As for Sant Julià de Ramis, the excavations to date have not found any defensive elements whose purpose can be interpreted beyond the aforementioned essential functions, given that the postern in the northern sector, which was walled up in the 4th century BC, was probably meant to complement the defence of the nearby main gate. At Burriac, we have to note the fortifications in the eastern sector that consist of five rectangular flanking towers (Fig. 12) and two possible posterns, probably dating from the Middle Iberian period, like the tower on the western side. In the case of Ca n'Oliver, the moat (much smaller than the one at Ullastret) and a possible tower are the only additional elements that do not seem to be exclusively devoted to the protection of an entrance. Finally, at Castellet de Banyoles no complex features are known beyond the defences of the main gate and the compartments in the wall.

Having made this synthesis, it seems risky to divide the five selected cases into typologies or groups, although we can find relevant similarities and differences. In the first place, we have observed the exceptional nature of defensive systems with a maximum degree of sophistication, i.e. those that not only include sufficient elements to cover the basic defensive functions as defined by Moret (defence of the gates and vigilance), but also others whose addition can be explained by a strong desire for ostentation and/or as part of a more complex defensive strategy. This could include carrying out counterattacks or sorties as part of an active defence (posterns and outwork defences), preventing the attackers from reaching the foot of the walls (moats) and harassing them with projectiles if they came close enough (flanking towers along the wall). This type of defensive system seems to be a typical feature of those settlements that have been interpreted as first-order capitals. Ullastret (especially Puig de Sant Andreu) is a clear example, as is probably Burriac, despite the doubtful chronology of some of its complex elements (the posterns and most of the flanking towers). However, the same cannot be said of Castellet de Banyoles, where the only complex elements are the fortified entrance (in any case a very remarkable feature) and the compartments in the wall. We will try and explain this based on a correlation with other aspects.

Regarding second-order settlements, Ca n'Oliver also has some elements that exceed the "basic functions". In addition to two strongly defended gates, the site was equipped with a moat that protected the southern slope and a probable flanking tower. However, its perimeter wall was barely one metre thick, the moat was much smaller than that of Ullastret, and apparently its defensive system did not comprise any complex features before the 3rd century BC (whereas the flanking towers of Ullastret were built back in the 6th century BC). At Sant Julià de Ramis, the only complex defensive elements that have been found so far were intended to protect the northern gate, i.e. one of the aforementioned "basic functions".

3.2. Fortifications, topography and surface area

Analysing the defensive systems of each settlement in relation to their topographical position and their surface area can help elucidate to what degree and according to which patterns these

factors affected each other and what impact they had on the construction of fortifications. These two variables have already been noted in several studies (Sanmartí and Santacana 1991; Sanmartí, Bermúdez *et al.* 2006) as key factors for understanding the differences in terms of strength and level of sophistication among the defensive systems of the various Iberian settlements, without downplaying the importance of the socioeconomic factors.

For this reason, we have created a slope map of the nearby surroundings of each site (Fig. 13). Based on these maps, we have analysed the configuration of the inhabited area and the defensive systems in relation to the natural defensive conditions of the location, as defined by the accessibility (i.e. the steepness of the slopes) to the various sectors of the perimeter. We have also considered the surrounding areas to briefly assess alternative locations where the settlements could have been sited, attempting to deduce which interests best explain the location at which each town was finally built or developed.

In the case of Ullastret, looking at the map we can observe that in the surrounding area there are other locations that could have been equally or even more easily defended and/or have better visibility. These include the hills of Creu de l'Estany, 1.5 km to the east, from which the coast can be controlled; Garriga Grossa, to the south; and even the Montgrí Massif, less than 7 km to the north. However, these are sites at which it would have been very difficult to accommodate a large settlement. Instead, these places often show minor evidence of occupation and they have been interpreted as watchtowers or vantage points under the control of Ullastret (Plana and Martin 2012, Martin 2016, 30). In contrast, the largest of the two major sites that formed the community of Ullastret was at Puig de Sant Andreu, a reasonably good defensible position (with its eastern side protected by the steep slope and the lake), very close to the fertile plain and an orography with enough space to allow the development of a town that would eventually cover more than 10 ha. However, the slope on its wide western flank was rather gentle and therefore it was considered necessary to build artificial defences of considerable strength and complexity in that sector. In contrast, the other main site of Ullastret, Illa d'en Reixac, is a special case, as it occupied a lake island of considerable size (more than 5 ha) and was accessible only via an artificial earthen isthmus, which was probably fortified by a pincer gate where it joined the island. Despite this optimal placement in terms of natural defences, the whole settlement was surrounded by a strong wall.

The slope map for Burriac shows that the Montcabrer mountain to the south (where there was a cave sanctuary) or the Catalan coastal mountain range to the north would have offered better locations if natural defences had been the main priority. However, a town the size of Burriac, which grew to between 7 and 10 ha, needed a more favourable place to accommodate a large population, and also probably to exert a more direct control over the crops and settlements in the valley. Therefore, the selected site along the southern slope of the Burriac mountain, despite having a considerable gradient and being protected by cliffs on the northen side, is relatively unprotected on the other sides, especially the western and eastern flanks, precisely where the only known flanking towers of the *oppidum* were built.

Castellet de Banyoles, despite being the most important known town in northern Ilercavonia, is a different case, not only because of its later chronology (second half of the 3rd century BC) and the fact that it was not an actual capital at the top of a hierarchical settlement network. It also stands out for its particularly favourable topographical location on a triangular-shaped plateau overlooking the River Ebro and surrounded by inaccessible slopes, except for a narrow isthmus on the opposite side from the river. However, it was also large and flat enough for the development of a town of over 4 ha. Being able to accommodate such a large settlement and, at the same time, occupying an almost optimal location in terms of natural defensibility, is an exceptional coincidence that was fully taken advantage of in this case. It is very likely that the other urban centres in our study would have taken advantage of the same conditions had they existed in their vicinity. This is because in all those cases we have observed a tendency to choose the most easily defensible place within the limitations imposed (mostly) by the size of the settltement. In addition, this topographic configuration allowed the only vulnerable spot to be protected by a very powerful fortification, while along the rest of the perimeter, where artificial defences were almost unnecessary, a weaker wall was considered enough protection, although it was conceived as a compartment wall, at least along the northern side.

In terms of the second-order settlements, we observe certain differences from the large capitals. Ca n'Oliver was located close to the Vallès plain, on one of the last outcrops of the Collserola mountain range, occupyinging between 1 and 2 ha along the top of a mid-sized hill. We can see from the slope map that most of the northern slope of the hill is practically inaccessible, while the southern and eastern slopes have a relatively

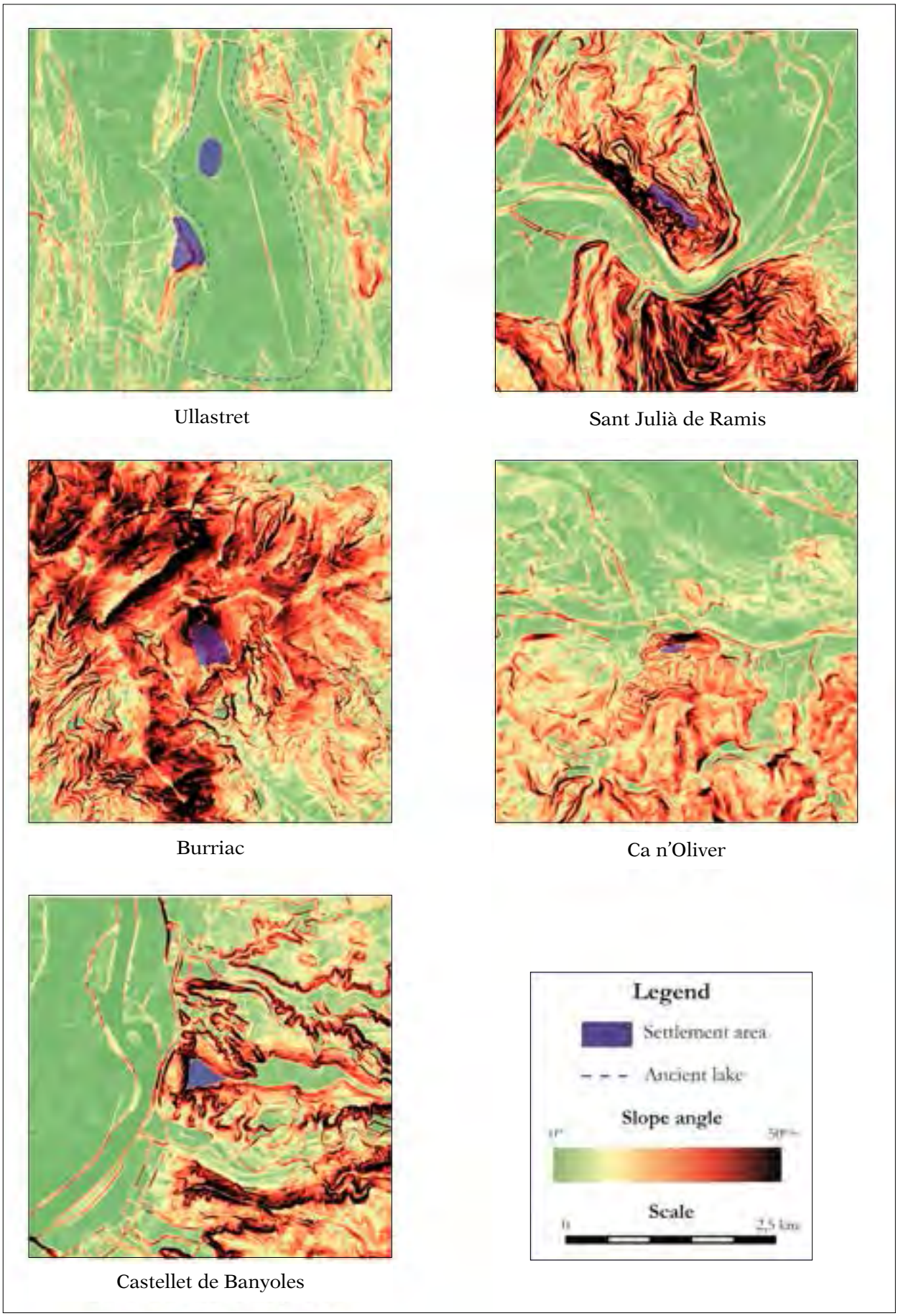

FIGURE 13. Slope maps of the surroundings of each settlement. Source: Drawn up by the author using data from the Institut Cartogràfic i Geològic de Catalunya (ICGC).

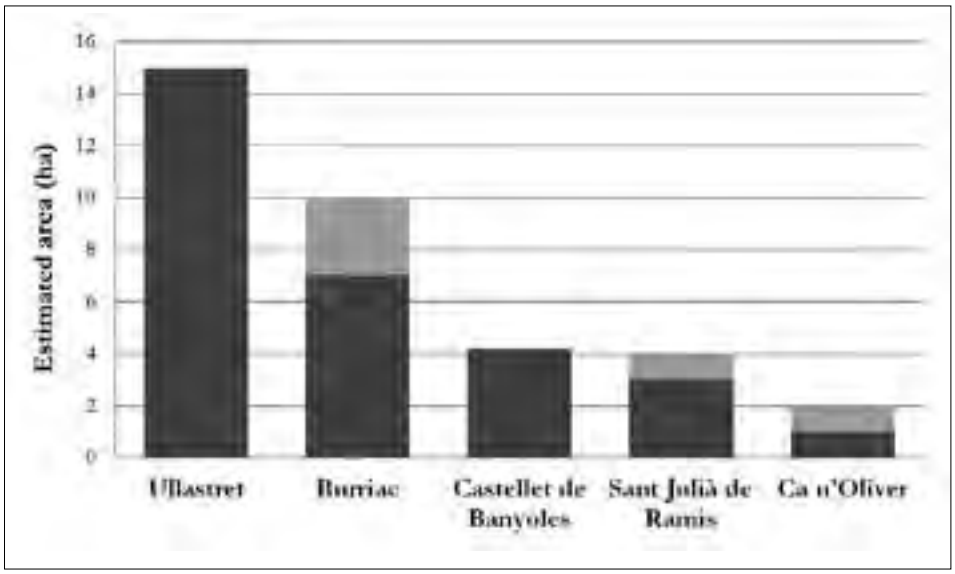

FIGURE 14. Graph showing the estimated area of each settlement.

gentle gradient. This explains why the vast majority of the defensive elements that were built during the 3rd century BC were placed in these latter sectors. In that respect, Ca n'Oliver's location is not very different from those of Puig de Sant Andreu or Burriac. Nevertheless, according to the slope map there do not appear to be many more defensible locations in the surroundings, which is why the choice of this relatively vulnerable site was probably due to that fact, rather than to the size of the settlement, which was much smaller than the two aforementioned capitals. The site also offered the advantage of having direct visual control over the plain.

In contrast, in the case of the *oppidum* of Sant Julià de Ramis, the chosen location was not only a good vantage point overlooking an important pass carved out by the River Ter, but was also easily defensible, with a very steep perimeter (virtually inaccessible from the west) except for an isthmus to the north. In addition, the flat summit, despite being quite narrow, was long enough to allow for quite a large settlement (about 4 ha) to be built. The known defences were clearly adapted to this situation in order to economise on building effort, as the only complex elements have been found in the access area (the isthmus), although the width of the defensive wall in other parts of the perimeter (about 2.5 m) is certainly remarkable. It seems clear that a settlement this large could not have been developed as easily on the nearby Congost mountain (located to the south, beyond the River Ter). That site is higher and steeper and while it has the same visual control over the Ter gorge, it is farther away from the fertile lands and lacks flat areas where such a settlement could have been accommodated with reasonable efficiency.

This overview seems to coincide to a large extent with the correlation between settlement size (Fig. 14), topographical location and defensive strength defined by Sanmartí, Bermúdez *et al.* (2006). Indeed, the tendency to occupy high places, more favourable in terms of visual control and natural defensive conditions, seems to have been common in the five selected urban centres, and is in fact shared by the vast majority of the Iberian fortified settlements. However, whereas in most of the third-order fortified villages this factor was strongly prioritized, in the case of the large urban settlements like the ones studied in this paper, it seems that this preference often had to be adapted to the need to urbanize large areas (covering as many as several hectares) without major impediments, and also probably to exert more direct control over and have easier access to the surrounding agricultural resources and the scattered settlements devoted to exploiting and storing them. This is especially evident in the largest nuclei, i.e. first-order towns that, because of these needs, had to be placed in locations that, while being high places with one or two inaccessible sides, have a relatively gentle (and therefore vulnerable) relief along a large extent of their perimeter. This weakness was counterbalanced with exceptionally strong and sophisticated defensive systems that did not focus only on vigilance and defending the accesses and were mostly concentrated in these more exposed sectors.

3.3. The socioeconomic factors

In addition to the "physical" factors that, as we have seen, exerted a major influence over the shape, strength and complexity of the selected

Site	Area	Complex houses	Public buildings	Imported pottery (percentage of individuals)	Weapons	Storage facilities	Periurban occupation	Necropolis
Ullastret	More than 15 ha (10+5)	Yes	Yes (3 temples and 3 cisterns)	23% (4th cent. BC) 16.5% (*circa* 200 BC at Illa d'en Reixac)	More than 30 pieces, concentred in the 3rd century BC	More than 200 silos; aristocratic domestic warehouses	Dense network of varied settlements	Yes
Sant Julià de Ramis	3-4 ha	No	No	No percentages available (scarce amounts, according to authors)	Isolated and/or undated finds	Nearby silo fields	Some rural settlements	No
Burriac	7-10 ha	Probable	1 probable	10% (end of the 4th cent. BC) 12.7% (*circa* 200 BC at the nearby rural settlement of Can Bartomeu)	More than 80 pieces, mainly from the necropolises	Nearby silo fields	Dense network of varied settlements	Yes
Ca n'Oliver	1-2 ha	No	No	5,5% (4th cent. BC) 11,5% (*circa* 200 BC)	Some pieces associated with destruction levels	At least 27 silos; an amphorae warehouse	Some rural settlements	No
Castellet de Banyoles	4,2 ha	Yes	Yes (2 ritual buildings)	7%	Some pieces associated with destruction levels	Possible aristocratic domestic warehouses	No	No

FIGURE 15. Summary table of the main variables related to social and economic factors.

fortifications, we must also study the differences between the defensive systems in relation to data more directly linked to the social and economic aspects of the settlements (Fig. 15). The data we have collected in this respect converge in two issues that we find especially relevant: on the one hand, the level of political and economic importance of each settlement (as defined by their role in the political structure of their territories and by their capacity for resource concentration and accumulation), and on the other, the presence of prominent aristocratic elites residing in them and therefore exerting and expressing their power in many different ways.

These two aspects were closely interrelated in the Iberian world, especially during the Middle Iberian period. Political power was concentrated in the hands of the aristocracy through state-like structures; they also enjoyed economic power –control over the production and storage of agricultural surpluses, as well as prestige goods– and ideological power, with a warlike ideology and exclusive or preferential access to rituals and divinities (Sanmartí, Plana and Martin 2015). Analysing the differences between settlements regarding these aspects, which must have entailed different degrees of interest in protecting the settlement (especially the elites and their possessions) and/or in displaying power, could help to explain the differences in the strength and sophistication of the defensive systems.

In the first place, linking the fortifications and the domestic architecture of the selected sites is a relevant factor, as the latter can reflect the presence of aristocratic elites in a settlement. Some of the characteristics that allow us to interpret a dwelling as an aristocratic residence are its size and architectural complexity, a privileged location inside the settlement (even appropriating public spaces in some cases), the presence of exceptional architectural elements (columns, pavements, plastered walls, etc.) or notable amounts of expensive prestige goods, such as imported pottery. Although some of these criteria cannot be considered as undeniable or definitive evidence, the coincidence of several of them in the same building can be quite a clear indication that its residents were members of the elite (Belarte 2008, 194-195).

There can be no doubt that there were aristocratic residences that coexisted with humbler dwellings at the two Ullastret sites. This can also be seen on a more modest scale at Castellet de Banyoles, while in Burriac it is still just a hypothesis. On the other hand, in both Ca n'Oliver and Sant Julià de Ramis there is a certain degree of variability between the houses in terms of size, number of rooms and domestic features. However, in general, simplicity prevails and the differences are not pronounced enough to interpret them as indications of the different social statuses of their occupants.

Secondly, the presence of buildings with community functions (either civil or religious) at a site can be linked to the political importance of the settlement and its elites (in the case of meeting places) and to their desire to appear as "connected" with divinity (in the case of worship places). However, in the northern Iberian world, such places are very rare and it is very difficult to identify them with certainty. Some of the arguments used to attribute such functions to a building are its location inside the settlement, its architectural features (complex distribution, singular internal circulation, quality finishings, etc.), its internal features (possible altars, large hearths, etc.) and the materials found inside. As in the case of aristocratic residences, only a suitable combination of all (or almost all) of these criteria allows us to identify a public building with reasonable certainty, and even so it is usually very difficult to distinguish between a religious or civil function (Belarte and Sanmartí 1997, 27).

In our sample of settlements, the presence of such places can be confirmed at Ullastret and it seems very likely at Castellet de Banyoles, while in Burriac it is only a possibility (depending on the interpretation of the so-called "public building"). On the other hand, no evidence of such spaces has been found either at Ca n'Oliver or Sant Julià de Ramis.

Regarding archaeological artefacts, we have focused on two factors: the percentage of imported pottery and the presence of weapons. The former is often used as evidence of the intensity of trading activities in the settlement and/or the presence of elites who, by controlling trade, managed to accumulate imported goods (considered as prestige items) as a means of social distinction and power consolidation (Sanmartí 2009; Asensio 2015). Weaponry is also often considered a prestige element, as well as a distinguishing feature of the aristocracy and a major component of the elites' ideological apparatus, given that weapons are most frequently found in necropolises. Therefore, their presence in a settlement (or in a necropolis linked to it) constitutes a possible sign of the presence of these elites, although we should not forget the potential bias derived from the scarcity of this kind of finds outside funerary and destruction contexts (García, Zamora and Pujol 1998, 324).

Ullastret has by far the largest percentage of imported pottery, followed by Burriac and Ca n'Oliver. Castellet de Banyoles comes next and, fi-

nally, Sant Julià de Ramis, where imported pottery is present only in small amounts, although exact percentages have not been published. Weaponry is abundant at Ullastret and Burriac, but rather scarce at the other selected sites.

For its part, a high storage capacity in a fortified settlement can indicate a need to protect economic resources. Moreover, control over the production and storage of resources (mainly grain) was a key element in the economic system through which the Iberian elites maintained and intensified social inequality. Although storage activities were not limited to urban centres and their close surroundings (they were also present in specialized settlements), a high capacity for the accumulation of agricultural resources can point to the presence of powerful elites concentrating a marketable surplus from a large area of influence, while the presence of a dense network of rural settlements in the vicinity of a town can indicate direct control over production (Asensio *et al.* 1998, 376; Asensio, Francès and Pons 2002).

In this respect, Ullastret stands out again, both due to the large number of storage structures and because it was surrounded by a dense network of dispersed settlements. The latter applies also to Burriac, although in this case there are almost no data about *intra muros* storage facilities. At Sant Julià de Ramis, there are some silo fields near the urban nucleus, but only a few of the silos were in use during the Middle Iberian period. As for Ca n'Oliver, a considerable number of silos has been found inside the *oppidum* itself, along with some nearby rural settlements that were probably under its control. Finally, in the case of Castellet de Banyoles, research so far has failed to find any storage structures in the town itself (besides the possible domestic warehouses) or in any rural settlements in its vicinity. However, we must not forget that storage in silos was almost non-existent in northern Ilercavonia (Asensio, Francès and Pons 2002, 137; Asensio 2015) and that the absence of dispersed settlements around Castellet has been attributed to a concentration of population according to a mononuclear model. Therefore, the fact that these elements are missing does not imply that this nucleus and its aristocratic groups lacked economic power.

Finally, as stated before, the extreme scarcity of necropolises in the study area during the Middle Iberian period has been interpreted as due to a monopoly on the part of the main aristocratic lineages (Sanmartí, Plana and Martin 2015). Therefore their presence close to an urban centre constitutes a clear sign of its importance and of the importance of the elites residing in it. In our selected sample of settlements, only Ullastret and Burriac had associated cemeteries that were in use during the Middle Iberian period. In fact, they are the only known necropolises dating from that period in the whole study area.

Based on all these data, it is clear that Ullastret and Burriac, i.e. the two settlements in the sample with the strongest and most sophisticated fortifications, also stand out in most of the variables related to the economic and political power of the settlements and especially of the elites residing in them. Their exceptional size has already been pointed out in relation to the topography, but it obviously also had demographic and socio-political implications. In addition, the town of Ullastret is exceptional among the selected sites in terms of its aristocratic residences and public buildings, as well as the number of silos inside the urban nucleus itself, although in the case of Burriac these aspects remain almost unknown due to the lack of research into the site. Furthermore, these two sites are the only ones with associated necropolises and they also have the highest percentages of imported pottery and the most notable assemblages of weaponry. Moreover, they are the only settlements that were surrounded by a really dense network of nearby settlements under their control, which were devoted to functions such as agricultural production and storage, vigilance, craft and/or industrial production and worship activities. In fact, this combination of variables, along with other aspects that we have not addressed thoroughly, such as the presence of specialised craftsmen and the large volume of items related to bureaucracy, have led these two sites to be interpreted as first-order urban nuclei. In other words, they were capital towns at the top of the settlement hierarchy of their respective archaic states, each one ruling over a territory of more than 2000 km^2 (Sanmartí 2001). The same applies to the aristocratic elites who resided in these two towns. They doubtlessly constituted the ruling groups of these states, exerting their power not only over the lower classes, but also over less powerful aristocratic groups who lived in the same towns or in other second– and third-order settlements.

In contrast, in the case of the other three urban nuclei in our study, whose fortifications were notable but inferior to those of Ullastret and Burriac, the variables related to social, political and economic power tend to appear in a more modest way, although they clearly stand out in comparison to most of the third-order nuclei, which are not included in our sample. This pattern is consistent with the fact that two of them –Ca n'Oliver and Sant Julià de Ramis– have been interpreted as second-order nuclei, subordinate to the capital

towns. However, Castellet de Banyoles, although considered a first-order settlement, may not have acted as a true capital ruling over a large territory and a hierarchical network of settlements (Belarte and Noguera 2015). Despite this, we must not forget that the importance of this town and its elites is evident in many aspects: the domestic architecture, the presence of two possible sanctuaries, the assemblages of sumptuary items, etc. It is also a special case in terms of its topographical location, which was exceptionally advantageous for both urban development and natural defences, which made it unnecessary to build stronger and more elaborate fortifications.

4. Final considerations

In broad terms, this study has allowed us to confirm our hypotheses. Firstly, analysing the strength and complexity of the selected fortifications has painted a picture that is in keeping with Pierre Moret's (1996) considerations on Iberian poliorcetics (consisting of surprise attacks instead of extended sieges) and the consequent rarity of truly sophisticated fortifications in the Iberian world. The defensive systems of all the selected sites present a considerable degree of complexity (comprising towers, moats, etc.), well above most of the much more numerous third-order settlements, which often only have a simple enclosing wall, as in the case of Castellruf (Gasull *et al.* 1995) or Céllecs (Sanmartí 2013) (Fig. 16). However, only at the two first-order capital towns –Ullastret and Burriac– did the additional defensive elements go beyond the basic functions of protecting the entrance and watching over the surroundings to endow the fortification with extra sophistication.

In terms of the correlation between the level of sophistication of the defensive systems and other defining aspects of the settlements, certain patterns have been recognised. In the first place, linking the strength of the fortifications to the topographical location and size of the settlement has allowed us to confirm that, in the case of the largest Iberian towns, the relatively poor natural protection of their position (conditioned by the need to accommodate a large population) was compensated for by strong fortifications, at least on the most vulnerable flanks.

Furthermore, comparison with data related to social and economic aspects (surface area, complexity of domestic architecture, presence of public buildings, storage capacity, richness of the material assemblages, presence of necropolises, etc.) has also revealed significant correlations. These allow us to affirm that, in general, the strongest and most elaborate fortifications coincide with the most important settlements in political, economic and social terms and with the presence of aristocratic elites of the highest status. It was they who had the capacity and the intent to promote the construction of especially powerful defensive systems, in order to benefit from their great potential as elements of the ostentation of power and ideological prestige, while also using them to protect themselves and their possessions.

Consequently, the relationship between defensive systems and the settlement hierarchy of the study zone is quite clear. Regarding the selected sample consisting of settlements of the two higher levels of the hierarchy, to a large extent, the results show the distinction between these two levels. On the one hand, we have the first-order capitals with greater demographic and economic power, a very prominent aristocratic class and superior defensive systems; on the other, we have the second-order towns, more modest with regard to the same aspects, even though they stand out over most of the third-order settlements.

However, it is not entirely possible to establish strict correlations. In the first place, endowment with defensive elements that exceeded the basic necessities of vigilance and access protection, our main criterion for determining which defensive systems reached a higher level of sophistication, was not actually exclusive to first-order nuclei. This is evidenced by the Laietanian *oppidum* of Puig del Castell (Fig. 17), a hilltop settlement of approximately 4 ha that can be considered as a second-order town. Its urban layout is still largely unknown, but it had an exceptional defensive system (with several fortified entrances, many flanking towers, posterns, a bastion, etc.) (Guàrdia 2019). Another example could be the second-order Cessetanian settlement of Masies de Sant Miquel (Banyeres del Penedès), if future excavations confirm that it had very powerful fortifications, as suggested by archaeological soundings and geophysical explorations, which have already defined the site as a second-order town covering 2.5 ha (Cela, Adserias and Revilla 2003; Sanmartí *et al.* in this volume). Indeed, its relatively accessible location suggests the need for strong defensive systems to counter its topographic vulnerability. On the other hand, not all the settlements that are considered as third-order nuclei because of their small size correspond to villages characterized by inaccessible locations, modest fortifications and few signs of economic wealth or the presence of elites. Although they are much less numerous, we must

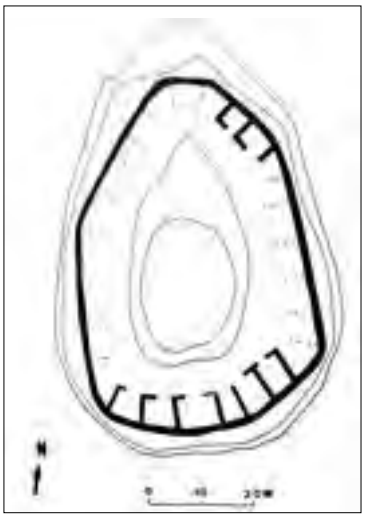

FIGURE 16. Plan of Céllecs (Òrrius, Barcelona). Source: Sanmartí and Santacana 1991, 132, Fig. 4.

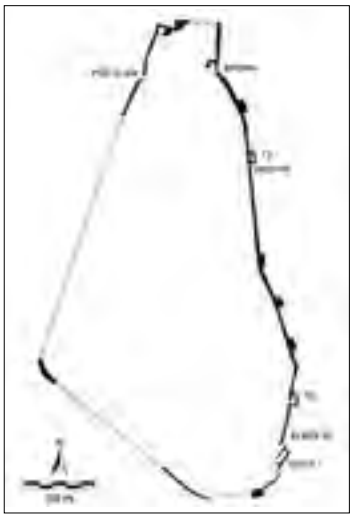

FIGURE 17. Plan of Puig del Castell (Cànoves i Samalús, Barcelona). Source: Guàrdia 2019, 120, Fig. 1.

FIGURE 18. Plan of Alorda Park in the 3rd century BC. Source: Asensio *et al.* 2005, 613, Fig. 4A, modified.

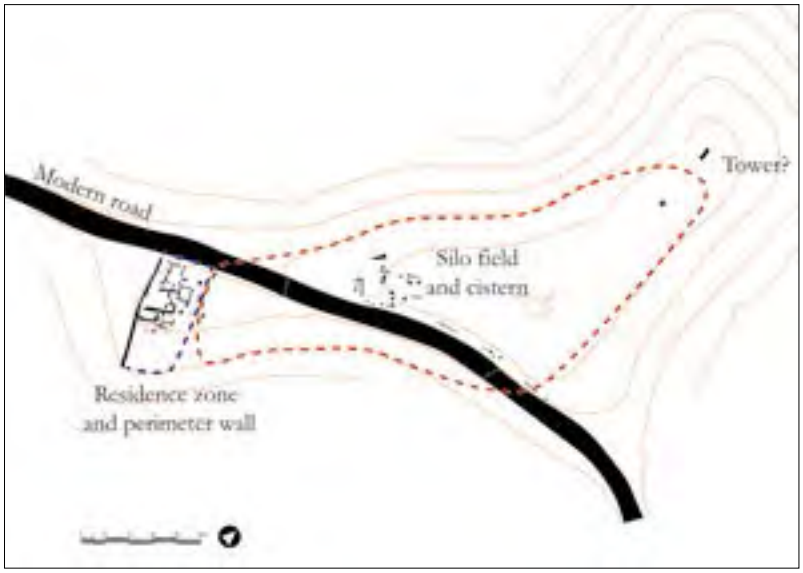

FIGURE 19. Plan of Turó del Vent. Source: Courtesy of Pau Menéndez and Eric Sobrevia, directors of the current excavations.

also take into account the so-called aristocratic citadels, such as Alorda Park (Asensio *et al.* 2005) (Fig. 18), where powerful fortifications coincide with complex houses and a high percentage of imported pottery. We also have to add another type of third-order settlement that was devoted to specialised economic activities, as evidenced by large numbers of silos and/or signs of textile or metallurgical production. These could sometimes be fortified, as in the case of Turó del Vent (Bosch *et al*. 1986) (Fig. 19), a site that is currently being reviewed thanks to new excavations (Menéndez and Sobrevia, 2019).

On another note, Castellet de Banyoles, the only well-known town of northern Ilercavonia, has turned out to be a unique case, in which some aspects correspond to a first-order settlement (complex domestic architecture, two probable public buildings, etc.), while others are present in a modest way (e.g. low percentages of imported pottery) or are even non-existent (the absence of storage structures, associated necropolises and nearby rural settlements). Furthermore, its only access was well fortified, while the rest of the defensive perimeter lacks "additional" elements such as the flanking towers we find at Ullastret and Burriac, although this could also be explained by its exceptionally defendable topography. These singularities can probably be explained by two factors: on the one hand, the Ilercavonian political system did not develop the urban phenomenon until a very late chronology and, according to some authors (Belarte and Noguera 2015), its structure was atomised or heterarchical, quite different from the centralized states and settlement hierarchies found in Indigecia, Laietania and Cossetania. On the other hand, the absence of silos and the relative scarcity of imported goods throughout Ilercavonia seems to point towards an economic strategy in which mining and metallurgical activities were very important, in contrast to the coastal states to the north that based their economies on the production and management of grain surpluses. These regional idiosyncrasies could imply a different way of exerting and demonstrating power on the part of the elites of this town (Asensio, Francès and Pons 2002; Asensio 2015).

In any case, we can conclude that in the selected urban centres we have generally observed a clear relationship between the complexity and the strength of the defensive systems and most of the other analysed aspects. In these correlations, we can recognize two main, closely interrelated lines –topography and the variables regarding the socioeconomic importance of the settlement and its elites– that form consistent patterns and reach their ultimate expression in the large first-order capitals.

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