Settlements and territory in southern France between the Iron Age and the late-republican period (seventh to first century BC): the Vidourle valley
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SETTLEMENTS AND TERRITORIES IN SOUTHERN FRANCE BETWEEN THE IRON AGE AND THE LATE-REPUBLICAN PERIOD (SEVENTH TO FIRST CENTURY BC) : THE VIDOURLE VALLEY

Abstract

From the Cévennes to the Mediterranean, across limestone hills and coastal lagoons, the valley of the Vidourle takes in all the features of the lower Languedoc geo-system. This 800 sq km catchment area has been settled for millennia and so is an excellent field of study for spatiotemporal analysis of population by means of surface surveys and programmed or rescue excavation. These have contributed to the rich database of 205 settlements between the Iron Age and the Late-Republican period (seventh-first centuries BC): archaeological sites (oppida, dwellings, burial sites) that have been mapped with a geographical information system using ArcGIS software. Detailed mapping helps us to analyse the spatiotemporal dynamics of the population within the geographic entity formed by the valley. Analysis has revealed contrasts in the rate of occupancy of its sectors from the coast to the Cévennes foothills, ranging from scattered dwelling places to population clusters within the oppida*.

Keywords : France, Iron Age, settlement, territory, Vidourle valley, surveys, oppida
INTRODUCTION

Rising to a height of 500 m at the foot of the Cévennes hills, the Vidourle River runs between Montpellier and Nîmes and has an outlet in the Mediterranean in the Languedoc-Roussillon region (fig. 1). It covers 95 km before reaching its mouth in the coastal lagoon, gathering the waters of a catchment area of 800 sq km and crossing a range of units in the regional geo-system. The Cévennes hills and foothill basins, limestone hills, garrigue scrub, plain and lagoon together form a contrasting landscape (fig. 2). But the current appearance of the delta is different from that of antiquity. Until the mid-nineteenth century, the Vidourle flowed into the coastal lagoons, but with the large amount of silt it brought down, the lagoons have clogged and severe flooding of the river gradually drove the population towards the coast.1

The prehistory and history of the Vidourle valley have interested many researchers for hundreds of years. Evidence of this interest goes as far back as the sixteenth century, though programmed excavation followed by rescue archaeology did not begin until the mid-twentieth century.2 Together with much excavation, a prospection programme was developed from 1985 to 2013, directed by Claude Raynaud (CNRS-ASM) to locate and map settlements in the entire valley from Neolithic times to the Middle Ages. Part of the data has been analysed within the European Archaeomedes programme which laid the bases for spatial archaeology in southern France in the 1990s.3 But it was from 2009 to 2014 that a diachronic study of the population on the scale of the valley from the Iron Age to the High Middle Ages was undertaken for a thesis.4 The purpose of this paper is to examine the dynamics of land occupancy from the sea to the hinterland within a broad chronological scope, to gain greater insight into the evolution of settlement patterns and the categories of archaeological settlement. Moreover, it aims to understand human behaviour in relation to a river, based on people’s movements and ways of using land, as well as offering some answers to the role or roles of the waterway in this use.
In France, in most cases, research programs have focused on portions of Mediterranean valleys, notably the Archaeomedes program, which was interested in the lower Rhône Valley, Stéphane Mauné’s researches on the middle Hérault Valley, or also Frédérique Bertoncello’s studies on the lower Argens Valley. However, in Italy, the Biferno valley (Molise) is a reference territory, through a multidisciplinary analysis from prehistory to the late twentieth century of the entire valley. In the neighbouring region of Abruzzo, research has continued in this direction for about twenty years, in the heart of the Sangro Valley, as well as in the Tiber Valley, and in an Adriatic valley, the Potenza.

The advantage of a study area extending over the whole of a river valley lies in the rich landscape between sea and mountains, true to the “Braudelian” definition of the Mediterranean geosystem. So many environmental contexts lead to a multitude of forms of land use, habitat and networks, thus justifying the need for an analysis on this scale, in order to compare the situations in different sectors. What is the nature of the settlement evolution between the Iron Age and the first decades after the Roman conquest? Are there differences between the occupation of the upper and lower Vidourle? Does the river influence the location choices of the settlements?

In this study, these issues are discussed with respect to the Iron Age and Late Republican period, from the seventh-first centuries BC. The Vidourle valley features in the protohistoric cultural context of Mediterranean Gaul – rich, varied and fairly well known. The advantage of this contribution lies in its complementarity to previous researches, by addressing a developing problem, especially through several regional studies between Catalonia and Provence.

**METHODOLOGY**

The Vidourle is ideal for this study because many archaeological activities (surveys, excavations, geo-archaeological studies) have resulted in several publications on the lower valley and part of the middle valley where the history of settlement is partially known. This is less evident in the high valley where the investment of archaeological research was limited. To enrich the archaeological map and get a picture, at least partially, of the whole valley, several survey operations were conducted from 2008 to 2013 between the middle and the upper Vidourle under my direction. Vineyards and cultivated fields have been the subject of systematic surveys, unlike woodlands, where ground readability is low or zero (fig. 3).
Prospecting for some of these sectors was conducted according to visibility conditions, but also geographic conditions, with a preference for hilltops corresponding to strategic points.

Thus, this new program has recognized 115 new sites, completing the corpus which amounts to 832 sites dating between the seventh century BC and the tenth century AD. For the time period that interests us in the context of this article, the database amounts to 205 sites (oppida, habitats, burial sites). Moreover, these field operations are a major scientific contribution to our knowledge of the settlement of sub-Cevennes hinterland, long considered isolated, unattractive and underpopulated. If the geography of this sector, unfavourable to agriculture, contributed to this idea, the lack of research, mainly concentrated on the coast, also played a role. After the fieldwork, we could work on a river valley completely covered by the survey programs (fig. 4). These are supported and complemented by numerous scheduled and rescue excavations, which enrich our knowledge, both on the function and organization of the settlement systems, as well as on the chronology and evolution of material culture.

In order to make precise cartographic documents, on which depends the quality of careful analysis of spatial data, the entire corpus has been integrated into an ArcGIS. As for the method of analysis, it was based on cartographic results, and topography. Indeed, the field of study follows a geographical logic that is equivalent to the catchment area of a river valley. We are in the presence of an area that is part of a very special local dynamic, including various landscape units (plains, hills, mountains). While retaining some of the criteria established by the Archaeomedes Project such as surface area, artefacts, materials, persistence, date of intake, essential to understand the dynamics of land use, we proceed with an analysis of settlement that relates to these different units, starting from the coast, to trace the valley to its source. This process allows us to perceive the specifics for each period, by developing case studies, including excavated sites, or sites that have particular characteristics in terms of artefacts or topography.
THE SPATIO-TEMPORAL DYNAMICS OF SETTLEMENT

*Older First Iron Age (seventh century BC): Settlement in the Continuity of the Final Bronze Age IIIb*

At the end of the Final Bronze Age IIIb, between the last quarter of the eighth century and the first quarter of the seventh century BC, there was a growth in population which could be related to climatic conditions conducive to crop and livestock farming. This led to the development of open-air clusters of dwellings built of perishable materials with a rather short lifespan, the outcome of an incomplete settling process implying a subsistence economy based principally on pastoralism. It was in this context that the transition between Final Bronze Age IIIb and the first Iron Age arose, the early phase of which was still marked by this type of settlement.

The data we have for this period tell us that there were 16 settlements with a lifespan of less than a century and a size for the most part estimated at under 1000 sq m. This occupancy was mainly concentrated on the hillsides southeast of the Bois des Lens in the middle valley of the Vidourle, where a there is set of eleven dwelling places round the fertile basin that developed at the foot of the hill (fig. 5). This sector is typified by a diversity of natural resources such as water, wood and clay which explains why settlements concentrated here. Only the one at Arriasse has been excavated and has revealed traces of dwellings made of perishable materials: hollowed foundations, two silo pits, pieces of a hearth and carbonised seeds (fig. 5, n° 1). Research and experiments on silos have shown they were used over the long term to feed a family of four and/or for storage against a poor harvest. They might actually have contained a store of seed but, in any case, their capacity implies family rather than communal usage. Carpological data offer information on the subsistence economy of this population that grew barley and wheat, gathered oats and acorns and bred cattle, sheep and/or goats. Overall, the Arriasse site opens a window onto the life of the population southeast of the Bois des Lens, one that it is very tempting to extend to neighbouring settlements known only by prospection.

This situation does however contrast with the rest of the valley because there were no dwellings in higher areas, while just five settlements can be detected across the middle valley, the delta and the lagoon. Boring of the Port-Vielh and Tonnerre sites (fig. 5, n° 2 and 3) has revealed traces of dwellings made of perishable materials (brush and wood), thus confirming the data found at Arriasse. However, artefacts found at Tonnerre provide evidence for the
beginnings of the trade which developed dynamically in the following century, with the presence of the first imported Mediterranean goods consisting of Etruscan amphorae and buccero nero, dating from the last quarter of the seventh century BC. The sub-Cévennes backcountry remains, for now, away from the organized traffic around wine. We have highlighted, in the previous section, the low density of occupation in the valley of Vidourle where most settlements are only occupied during the first three quarters of the seventh century BC. It is therefore not surprising to note the scarcity of imports in the hinterland, where a new dynamic is created in the following century, in which Mediterranean trade had its full place.

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Overall, the configuration of settlement during this period does not allow us to speak of a network organisation. The dwellings here most certainly offered a large degree of self-support but they could have belonged to the same community in the southeast of the Bois des Lens, with an economy based mainly on stock-breeding, hunting and the development of farming. Their scarcity, small size and short-term occupancy implies an incomplete settling process. The existence of silos in Arriasse does however reveal a trend towards permanent settlement, perhaps related to management of farming surpluses. In the upper valley, where there are no settlements, the presence of burial monuments, dolmens and tumuli, could indicate a territorial division between the worlds of the living and the dead. Yet the smallness of the dwellings and their construction of perishable materials makes them difficult to detect by prospection, especially in this mainly woodland area. This situation contrasts sharply with the first phase of the Late Iron Age where tombs and necropoleis were closer to the dwellings.

*Younger First Iron Age (sixth Century BC): Scattered Dwellings to Clustered Settlement in Oppida*

The seventh century BC was still steeped in the Final Bronze Age IIIb culture but the following century heralded new territorial dynamics. With 33 settlements recorded together with six presumably contemporaneous burial monuments (only two are confirmed for the
sixth century BC), the number of points occupied almost doubled in the first phase of the Late Iron Age (fig. 6).

A new form of land occupancy appeared in the early sixth century BC, evidently driven by Mediterranean trade and the grouping of populations in hillside settlements, oppida. The sixth century BC is the period with the greatest number of new settlements recorded but with a proportion of abandonments that is high, owing to their small area and impermanence. These findings thus provide evidence of the instability of settlement in scattered dwellings. With the appearance of oppida, however, we find a growth of settlements that could reach a size of several hectares and were occupied for more than a century.

The lagoon environment offered fishing, shellfish harvesting and salt farming but it must be said that these activities are still poorly identified and it was probably access to Mediterranean trade that drove the new economic growth. Indeed, from the beginning of the sixth century BC, the capacity of Phocaeans to develop a commercial network towards the western Mediterranean is perceptible through the foundation of Marseille, Ampurias and perhaps a first port in Agde. From this period onward, traffic is shared among many groups: Etruscans, the Phocaeans and further west, the Phoenician-Punic. On the shores of the Mauguio lagoon, the accentuation of trade, early in the sixth century BC, associated with a decrease in the level of the body of water, are certainly the key factors that have led to increased density of occupation in the sector.

The lagoon settlements received goods, mainly wine from the Italian peninsula, in exchange for local resources such as grain, meat and leather. The Gauls then carried these goods into the hinterland themselves. Without extensive excavation, the area now settled is difficult to detect and the poor state of conservation of the first Iron Age levels, which have often shifted location, cannot be discounted. Were there several scattered domestic units or one or more villages? This question remains unanswered but does not undermine their importance in the Mediterranean trade of eastern Languedoc which benefitted the settlements in the garrigue scrubland and sub-Cévennes hinterland.

Established on hillsides, not far from waterways, for the purposes of defence and control of routes and farmland, oppida were an indication of the way populations joined and restructured their settlements within urban areas that were sometimes fortified. This new form of occupancy demonstrates that the settlement process was almost complete and that new agrarian practices had developed, along with a significant rise in population. The process included a much higher rate of travel between the coast and hinterland, as can be seen from
the Mediterranean artefacts found in the upper valley of the Vidourle. Transported by land or water, these goods were sold and redistributed in the neighbouring settlements.

As for the scattered settlements, dwellings and farm buildings, these were built on the plain at the foot of the hillsides, generally near to a waterway, implying human presence outside the oppidum, across the food-producing territory of the urban territories. This position adjacent to routes also offered territorial control, while small hillside dwellings could act as lookouts and refuge in the event of danger. Furthermore, it cannot be excluded that some family groups in some settlements may have been independent.

In the mid-sixth century BC, all of the coastal settlements were abandoned with the founding of the port district of Lattara on the coastal lagoon where the Vidourle had its outlet between the end of this century and the beginning of the fifth century BC. This initiative was to underpin Mediterranean trade. The founding took place at a time of other lagoon port establishments such as Le Cailar in the valley of the Vistre, an old tributary of the Vidourle (fig. 6). However, the Etruscan trade was in decline as early as this period. The progression of Massalian trading, and the development of its vineyards, ceramics workshops and demography, probably fuelled by the contribution of the Phocaean population, explains the decline of Etruscan imports. Marseille developed a large commercial area from the Alps to the Herault in which it ensured a monopoly of wine imports, clearly visible thanks to the amphorae and tableware. Its rule required the installation of anchor points in order to defend this area of economic domination, but also to redistribute goods. The indices of the Greek presence in the ports of Arles, of Espeyran and Le Cailar could point in that direction.

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All these changes in the forms of land occupancy do not seem to have altered burial practices. Although there are still some dating problems, few changes can be found in the map of burial monuments, still centred on tumuli. It is however important to stress the reduction in distance between burial places and dwelling places. The settlement process undoubtedly lies behind this reduction which is also found in the fifth century BC.

-transition from first to second iron age (fifth century BC)-

Transition from First to Second Iron Age (fifth Century BC)
With 30 sites of occupancy and two tombs recorded, there were hardly any more settlements in the transition phase than during the previous century. The process begun in the sixth century BC continued with population clusters in port sites and oppida, while scattered dwellings were more numerous on the left bank of the middle Vidourle valley (fig. 7).

The coastal population could be found clustered into large dwelling sites but the oppida in the hinterland still had a focal effect. Despite the creation of the Plan de la Tour oppidum (Dedet 1987), the number of occupied settlements declined slightly and the number of new ones dropped sharply, even being overtaken by the number of abandoned sites. The new settlements however were larger than the vacated ones, ranging in size from 0.5 to 1 hectare. This could indicate a new factor of population concentration into nucleated settlements.

In order to control the territory better, there was a network of scattered dwelling places, dependent or otherwise on the oppida, over the plains and bottom of the hills in the middle valley, particularly on the left bank. While the territory of these upland districts is not easy to ascertain, what sort of relations existed between them? As the crow flies, the distance separating them ranged from 8-11 kms and their position gave them wide visibility. Having visited most of them, I know that, in clear weather, the settlements had visual contact with each other, by means of fire for example. This theory also holds for sites between the coast and the southern oppida, because the sea is visible from Ambrussum and Puech des Mourgues. Even if each community had its own subsistence and political territory, the valley could have been under common control by a system of visual communication, such as the routes leading inland from the Vidourle valley to the Cévennes hinterland and the Hérault and Gardon valleys, which also facilitated contact with the outlying dwellings.

Though the overall organisation of these communities seems well understood, the structure of their dwellings is much less so. According to a recent summary of the eastern Languedoc, the differences with the sixth century BC seem minimal. Only the use of stone, evidenced in the Plan de la Tour oppidum, shows any real change in building methods.
Mortuary processes also changed, with the abandonment of tumuli practices and the adoption of individual interment tombs, on the edge of the settlements but also within them, as can be seen at Plan de la Tour. This system was carried on into the next century.

The commercial dynamic is dominated by Massalian trade during the first half of the fifth century BC, but Etruscan imports are not excluded and would now come via the Massalians. Nevertheless, during the second half of the fifth century BC, for settlements for which we have quantified the ceramic, we have recorded a significant decline of Etruscan amphora proportions in relation to Massalian amphora. This marks the full integration of the eastern Languedoc into the economy of Marseille.27

Second Iron Age (4th-3rd centuries BC): Gradual Desertion of the countryside and urban concentration

Though the oppida seemed to hold their own at the start of the second Iron Age, most of the scattered dwellings were abandoned. Eleven settlements were occupied in the first half of the fourth century BC, including four new ones, half the number as in the previous century. On the coast, the urban areas of Lattara and Le Cailar, as well as the oppida of Substantion and La Roque, were the focus of occupancy, while a new oppidum was built at Ambrussum between the late fourth and early third centuries BC28 (fig. 8). This trend had become stronger by the mid-fourth century BC and throughout the third when the oppida and most of the plain settlements were deserted for the Ambrussum oppidum and the Vaunage and coastal settlements (fig. 9).

The drop in the number of plain settlements does not, however, imply total desertion of the countryside, which was still in use under the control of the oppida and lagoon urban areas. With each of these large communities being liable to take over the political and administrative management of a territory, the question is on what scale could this control of the countryside have been? At the core of this question is the issue of territory and scope of influence of the centres of population. Given that there were few installations in the third century BC, can it be assumed that most of the farming land in the Vidourle valley was actually farmed? This seems unlikely in view of the size of the catchment area, but the political importance gained by the urban areas could have led them to widen their territory, as could the neighbouring oppida in
the valley such as Vaunage Maressip, Nages or the urban area of Nîmes further away. In this context, territorial management took on another dimension and small farms were somewhat irrelevant compared to the newly founded or reorganised centres of population. What were the reasons for this restructuring? Was it simply the evolution of a system established two centuries earlier? Was it for political or economic reasons? Several theories have been put forward.

The process of population concentration in the eastern Languedoc definitely intensified over the third century BC, with a network of urban areas spread evenly over the low plains and foothills. The hinterland was less involved in this occupancy, apart from two upland places still occupied in the Gardon valley. The importance of this tributary of the Rhone as a route into the Cévennes was established and increased by the maintenance of some settlements. The Mus oppidum, unfortunately poorly preserved for the period, could be the missing link between this valley and the Vidourle valley in the sub-Cévennes hinterland (fig. 9). While this sector belonged to a smaller network and settlement system, the means of occupancy were clearly evolving owing to a range of factors.

During the fourth and third centuries BC, most local economies underwent a period of recession, highlighted by inequality in the amount of imports between the coast and the hinterland and by a drop in farming output. The regional economy was increasingly under Massalian power with its omnipresent amphora and fine pottery equipment on the lagoon sites, and the installation of colonies all along the coast of the Mediterranean Gaul. There is no equivalent for this development in the lands towards the Cévennes, where imports sharply declined in the first half of the fourth century BC, especially in the Vidourle area. The reason for this must be related to the development of oppida as independent political entities, that could have adopted new practices allowing them to raise the cost of imported goods and make a profit. However, this rise could also be the reason for the drop in imports to the hinterland from the early fourth century BC leading to the disappearance of settlements in this sector.

Politics should not be ignored either, specifically the disruptive events of the Punic wars in the western Mediterranean in the third century BC. In this respect, it should be
remembered that basalt balls were found at the foot of Ambrussum ramparts, implying that it could have been besieged.32

End of the Iron Age: Redistribution of Scattered Dwelling Places in the Plain during the second century BC (200-125 BC)

There was a turning point in land occupancy in the second century BC with the creation of sixteen new small settlements (usually less than 1000 sq m), few of which were occupied for more than a century (fig. 10). The preference for summits and promontories found in the first and early second Iron Age gave way to a new preference for lowlands and new methods of land use. This redistribution of dwelling places did not affect the development of existing urban areas that expanded and were restructured.

Indeed settlement developed round older seats such as Ambrussum and Lattara, which continued to hold a large portion of the concentrated population. Rebuilding went on in these urban areas with restoration work done on the Ambrussum ramparts and earth platforms made for a port in Lattara, along with the building of new suburbs.34 This was not a local feature as can be seen, for example, in the Vaunage where the Castels oppidum in Nages underwent urban development and had a new wall built. All this work, along with the rise in the number of homes and farms, was the outcome of population growth and perhaps economic growth too with the development of Italian trade to the detriment of the Massalian monopoly.35 Indeed, early in the second century BC, there is an intensification of trade flows that comes from the Italian peninsula, with increased imports of Campanian A and Greco-Italic amphorae to most communities. This amplification of Italic trade is linked to the important business of the ports of Marseille and Fos, but also to the conquest of Spain, which became a Roman province in 197-196 BC.36 Following this event, the Ibero-Punic commercial field in Gaul, encompassing the Aude and Garonne valleys, became now dependent on the Romans who could also distribute their goods.

This situation, conductive to the expansion of farming seems to have been accompanied by the founding of settlements dependent on urban areas, or larger communities such as the
port site of Mas Desports in the Vidourle delta (fig. 10). The location of the site, on the east Horn of the Mauguio lagoon, placed at the head or at the outlet, appears to favour a commercial centre dedicated to wine and perhaps salt in the Vidourle valley. The rise of Italic commerce, whose impact is significant in the Mas Desports with 76% of ceramics, has certainly motivated the creation of a new port between Lattara and Le Cailar\textsuperscript{37} (fig. 11 and 12).

While the coastal plain regained some of its strength, the upper valley of the Vidourle and the garrigue scrubland round Montpellier do not seem to have had much settlement. What could be the reason for the apparent desertion of the hinterland? Conversely, Nîmes and the Gardon valley do not seem to have suffered like this. The continued existence of centres that had withstood time could offer some explanation, with oppida such as Castelvielh and Serre de Brienne constantly occupied since the fourth or even fifth century BC.\textsuperscript{38} New settlements grew up round these centres of population. In the upper valley of the Vidourle, the only site of reference could be Mus, but the data gathered so far do not allow us to assert that the site was occupied during the first three-quarters of the second century BC.

It thus seems that a process similar to the one found in the sixth century BC was marked by new economic growth in the coastal plain, later gradually reaching the uplands, from the second or early first century BC.

\textit{The Late-Republican Period (late second century BC - Third quarter First Century BC): Between redeployment of Scattered Settlement and the Development of Urban Areas}

The decades following the annexation of southern Gaul to the empire of Rome in 118 BC marks a development in the number of settlements both on the coast and in the hinterland, as well as a re-occupation and / or a restructuration of protohistoric origin agglomerations.\textsuperscript{39} In the Vidourle valley, this new dynamic shows itself in the creation of 105 settlements
between the late second century BC and the third quarter of the first century BC (fig. 13). While nearly half of them have been occupied for less than 100 years, it should be recalled that, like the previous century, some datings are approximate due to the scarcity of relevant chronological information. Therefore, most of the settlements can be dated between the end of the second century BC and the first century BC or during the first century BC overall.

In the coastal plain, the current map has a dynamic that develops gradually around three main institutions: Ambrussum, Le Cailar and Mas Desports. However, the continued occupation of some sites for several centuries constitutes the beginnings of the development of the occupation and exploitation of the soil that will continue during the Early Empire and that we found in other lagoon areas such as the edge of the Thau lagoon and Saint-Blaise lagoon. The latter hypothesis is supported by the creation of a land registry in the coastal plain, during the first century BC, for the planning and the development of land, essentially for economic and geopolitical purposes. This landscape subject to the Land Registry would be adapted to new production targets, and would allow the conquest and control of agricultural land against the action of running and stagnant water and a better integration of local communities into the Roman world.

From Ambrussum, at the start of the middle Vidourle Valley (fig. 13, n° 1), a network of towns develops along the river, but this network is absent in the coastal plain except for the presence of Lattara. We can make out five of those towns that are at an average distance of 10 kms from one another and that have a protohistoric origin, except Prouvessa. These clusters have a surface between 5 and 10 ha, except Villevieille which is over 15 ha, and are encircled mostly by a rampart (Ambrussum, Villevieille, Mus). Ambrussum’s urban development has been clarified by the excavations, just like Villevieille’s urban development (fig. 13, n° 2). It shows a change in town planning and in domestic architecture as early as the first century BC. However, we cannot be specific for the other establishments which only have occasional items enhanced by comparison.

This analysis suggests a territory dominated by a network of settlements inherited from the Iron Age, strengthened by the creation of Prouvessa. This also makes us question the reasons that led to the reoccupation, then the embellishment of ancient oppida. They most
likely left traces (rampart, dwellings), marking the landscape of their footprints and their past. It also suggests the possibility of an occupation of these oppida without break from their establishment until the Roman conquest, but whose traces remain for now vestigial. The strategic location of these oppida, dominating rivers and land routes, is another argument in favour of this post-conquest reoccupation. In parallel, the reoccupation or intensification of the occupation of those settlements is accompanied by the creation ex nihilo of a new smaller settlement centre, Prouvessa.

Set on the southern flanks of the Bois des Lens, in the middle of the first century BC, it participated in the structuring and use of the Combas-Montpezat basin but also of the Bois des Lens resources (fig. 13, n° 3). But how to explain the enthusiasm of people for this geographic area on which an agglomeration is implanted as well as many settlements, while it remained almost uninhabited since the late seventh century BC? Research by Elise Fovet highlights the characteristics and soil qualities and the important water resources of this sector that make it favourable for farming and agriculture. In contrast, she highlights the constraints of that environment and notably the plains of the basin, where waterlogged soils have very low drainage capacity, that would result in excess water. This therefore justifies the position of most facilities on the hills and terraces on the Cambroux site for the construction of housing and the cultivation of the land. In addition to the agronomic potential, this region has many natural resources: clay, iron ore and stone.

These agglomerations demonstrated the power of a native oligarchy supported by a large, mostly rural, customer base, as indicated by the development of scattered settlements. These are small (between 100 and 2000 sq m) and have, generally, little ceramics and building materials. This, however, does not exclude that the most important habitats have gathered some communities and participated in the structuring of space and population. Nevertheless, the creation of urban areas doesn’t necessarily mean the development of scattered settlements as is the case in the high valley of Vidourle, where Mus seems very isolated compared to other population centres (fig. 13, n° 5). Incomplete surveys in the northeast of the watershed, as well as in the ubiquitous scrubland areas, combined with the often difficult search conditions may be responsible. Moreover, lack of arable land in some areas is not conducive to human settlement. As a result, the hypothesis of habitats established on hills covered with scrub, like those to the southeast of the Bois des Lens, is suggested. Nevertheless, the lack of knowledge about the evolution of Mus associated with a small number of occupied points in the high valley, makes it difficult to assess the importance and influence of the agglomeration when it was created. The defensive wall as well as
centralization of agricultural activities, suggests a concentration of population in Mus. Ultimately, while agriculture, exploitation of natural resources, and the gradual integration of Transalpine Gaul into the grip of Rome justify this increase of scattered habitat, the thesis of an Italic immigration is not excluded.\textsuperscript{44}

Economically, the Roman conquest and the direct intervention of \textit{negotiatores} in trade circuits, due to increasing demand from local populations, have generated a considerable increase in import volume from the late second century BC to the mid-first century BC. This resulted in the massive influx of Campanian dishes, and especially Type 1 Dressel wine amphorae flooding the market in all of Gaul, displaying an overwhelming dominance compared to Hispanic and Punic production.\textsuperscript{45} The increase in the competition by Italic wine, heralds the progressive decline in Massalian imports, which are interrupted in the last quarter of the century. It is from this period that Italic containers replace Greco-Italic amphorae. While Marseille doesn’t distribute the wine anymore, the city might still be an intermediary in the spread of these products.

Trading patterns show new changes from the third quarter of the first century BC., with a steady decline of Mediterranean imports. If Italic amphora and dishes remain the majority, wine, oil and fish-sauce from Baetica and Tarraconensis grow gradually.\textsuperscript{46} However, the increase of the trade with Catalonia and Baetica could signal the abandonment of the Italic market in favour of the Hispanic market, but the smallness of these imports is not enough to compete with the Italic trade. This finding can be explained by a drop in demand in Italic wines in connection with the development of viticulture in southern Gaul.

Indeed, the vineyards continue to grow in Languedoc, as we can see in \textit{Lattara} and Nimes, where traces of Late-Republican vineyard plantations were excavated.\textsuperscript{47} The analysis of land use also reveals the proliferation of dozens of rural settlements linked to a frontier, some of which might have been devolved to viticulture, perhaps at the instigation of the original Italic settlers. The emergence of workshops for the production of wine amphorae in western Transalpine Gaul and in the Rhone Valley supports this idea, although there are none of those structures in the Vidourle valley.\textsuperscript{48} So it is a Gallic wine that is implanted permanently and becomes stronger and stronger, and whose production takes a growing share of the market in the early Roman Empire.

\textgreater\textit{INSERT FIGURE 14 ABOUT HERE}\textless

CONCLUSION
From the emergence of scattered dwellings to the gradual clustering of populations within the oppida and coastal posts, the Vidourle valley offers a view of human occupancy of Gaul in the Iron Age. The river, a north-south route inland from the sea to the hills, lent structure to the territory and, with its tributaries, conditioned the way settlement was organised. The oppida, urban centres established on the hills overlooking the Vidourle and its rivers, controlled the routes over land and water. These provided the link between the coastal ports where goods from the Mediterranean, especially wine, were landed, and the hinterland sites.

The clustering process begun in the sixth century BC came to an end in the third century BC with the gradual abandonment of most scattered dwelling places and oppida. This did not prevent the development of new centres such as Ambrussum and other settlements beyond our immediate study area. It was at the end of the second Iron Age that there was a new thrust towards scattered dwellings which expanded in the late second century BC with the annexation of southern Gaul by the Romans in 118 BC, linked to a growth in the number of settlements throughout the valley and reoccupancy and/or restructuring of urban areas dating back to protohistoric times.

The relationship between coast and hinterland, geographically different but linked by the river, lies at the core of our analysis. Our research highlights similarities in settlement forms across the entire valley. Beneath this apparent uniformity, however, there are significant differences in the population density of the coastal plain and inland areas, the latter being much lower. Why? A first response to this question concerns the Mediterranean Sea and its possibilities for commercial and cultural exchange; another response focuses on the natural resources and favourable soils that influenced the development of agricultural and crafting activities. Even if a full understanding of settlement in the high valley zone is hindered by vegetation that makes these areas difficult to survey, the levels of settlement remain, in all cases, well below those documented at lower elevations. Indeed, the scarcity of settlement dispersal in the cultivated areas of the high valley indicates limited investment in the hinterland.

As a strategic passageway from the coast to the interior, with a supply of fresh water and a fertile alluvial plain, the Vidourle and its tributaries have guided the locational choices of its past inhabitants. These demonstrate a desire to be close to the river for convenience and in order to control it; in parallel, the hills and elevated areas provided security against
flooding, particularly for urban areas, and the possibility for wider territorial control. As an axis of penetration into the hinterland, the Vidourle was also a trade route between the interior and the sea.49

The entire valley was integrated into the different dynamics of exchange observed in southern Gaul: Etruscan and Massalian trade in the Iron Age and Italic imports during the Late-Republican and Augustan periods. Nevertheless, the coastline was logically more integrated with Mediterranean trade than was the hinterland, and port facilities occupied a decisive place in the receipt, sale and redistribution of goods.

Comparing the settlement of the Vidourle Valley during the Iron Age, to other Mediterranean valleys in Spain and Italy, many similarities are noteworthy despite the different historical and political contexts. The first is the meeting of populations in cities placed at regular intervals along the river to control the route between sea and hinterland. This is particularly significant in the Francoli Valley in Catalonia, as well as between *Satricum* and *Antium* in Lazio and in the Potenza Valley (Marche), in Italy. In parallel, rural settlements occupy the plains and low-lying areas but are infrequent, especially between the fifth and fourth century BC. However, in Lazio, the sixth century BC shows a phase of development of these facilities along the rivers, in the image of what we see in the Vidourle Valley50. Finally, in Catalonia and Lazio, the Roman conquest is followed by the growth of the rural population and a development in most cities which are already occupied, which shows clear analogy to the South of France.

Ultimately, these examples illustrate a homogeneity in the structure of the Iron Age settlement, in the various valleys of the north-western Mediterranean. However, this first approach deserves further research through conducting a comprehensive comparative study paralleling the different settlement systems, their observed development and categories of sites, leading to a cross-analysis of different Iron Age societies. In addition, the valley is a rich study framework, due to different geographical contexts linked by a single entity: the river, a strategic penetration channel between sea and mountains, making it a key element in human settlement dynamics. Thus, the valley is a landscape unit that can supply many research topics concerning human/environment relationship, waterway evolution and its impact on human societies and their activities, and on planning related to fluvial risk.

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Notes

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1 Berger et al. 2010, 29.
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6 Barker 1995.
7 Lock and Faustoferri 2008; Coarelli/Patterson 2008; Vermeulen 2012, 43-54.
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15 Py 2012, 100.
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17 Vial 2011, 100; Py 2012, 113.
18 Bats 1992, 277.
21 Lebeaupin/Séjalon 2008, 58.
22 Roure 2011, 333-341.
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24 Vial 2011, 102; Py 2012, 114.
26 Lebeaupin/Séjalon 2008, 63.
27 Vial 2011, 102.
28 Fiches/Mathieu 2002, 528.
30 Bats 1992, 277.
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32 Py 2012, 199-200.
33 Fiches/Mathieu 2002, 529.
34 Py 2012, 245.
36 Roman 1997, 339.
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41 Mauné 2001, 81-93; Trément 1999, 146.
42 Favory 1997, 114.
43 Fovet 2010, 246.
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45 Poux 2004, 96.
46 Barberan 2013, 259-263.
47 Jung 2007; Monteil et al. 1999, 67-123.
48 Mauné 2013, 335-375.
49 Scrinzi 2014, 331-395.
50 Attema et al. 2010, 55.
Figures captions

Fig. 1 : location of the Vidourle valley (map : M. Scrinzi – ASM)
'ed. print in colour'
'ed. please print at original dimensions'

Fig. 2 : the Vidourle between plain and limestone hills (photo : M. Scrinzi – ASM)

Fig. 3 : research situation in the study area, cities and different landscapes (map : M. Scrinzi and S. Sanz - ASM)
'ed. please print at original dimensions'
'ed. print in colour'

Fig. 4 : surveys in fields and vines (photo : M. Scrinzi)

Fig. 5 : land occupancy in the Vidourle valley in the 7th century BC. 1 : Arriasse ; 2 : Port-Vielh ; 3 : Tonnerre I (map : M. Scrinzi and S. Sanz - ASM)
'ed. please print at original dimensions'
'ed. print in colour'

Fig. 6 : land occupancy in the Vidourle valley in the 6th century BC. 1 : Puech des Mourgues ; 2 : Villevieille ; 3 : La Jouffe ; 4 : La Cougourlude (map : M. Scrinzi and S. Sanz - ASM)
'ed. please print at original dimensions'
'ed. print in colour'

Fig. 7 : land occupancy in the Vidourle valley in the 5th century BC. 1 : Puech des Mourgues ; 2 : Villevieille ; 3 : La Jouffe ; 4 : Plan de la Tour ; 5 : La Cougourlude (map : M. Scrinzi and S. Sanz - ASM)
'ed. please print at original dimensions'
'ed. print in colour'

Fig. 8 : Aerial view of the *Ambrussum oppidum* : its rampart and the gallo-roman bridge on the Vidourle river (photo : M. Scrinzi)

Fig. 9: land occupancy in the Vidourle valley in the first half of the 3rd century BC. (map : M. Scrinzi and S. Sanz - ASM)
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Fig. 10 : land occupancy in the Vidourle valley in the first half of the 2nd century BC. (map : M. Scrinzi and S. Sanz - ASM)
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Fig. 11 : Mas Desports : GPS plan of 2nd century BC and Late-republican period (M. Scrinzi – ASM)
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Fig. 12: Ceramics of Mas Desports (M. Scrinzi – ASM)
'*<ed. please print at original dimensions>'*

Fig. 13: Land occupancy in the Vidourle valley between the end of the 2nd century BC. and the first three quarters of the 1st century BC. 1: *Ambrussum*; 2: Villevieille; 3: Prouvessa; 4: La Jouve; 5: Mus (map: M. Scrinzi and S. Sanz – ASM)
'*<ed. please print at original dimensions>'*
'*<ed. print in colour>'*

Fig. 14: Number of new sites and abandoned sites per century in the Iron Age and late-republican period (M. Scrinzi)
Fig. 6
Fig. 10
Fig. 11
Fig. 12

1-5: Campanian A; 6: Catalan ceramic
7-8: modelled ceramic; 9: Greco-Italic amphora
10: Italic amphora
Fig. 13
Fig. 14