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Reviewed Article:

The Creation of an Experimental Camp of Protohistory at the Iberian Settlement of Estinçlells (Verdú, Urgell, Catalonia)

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The idea to create the Experimental Camp of Protohistory (CEP) emerged in late 2009. It was set up in a field adjacent to the Iberian Culture settlement of Estinçells (Verdú, Urgell), an archaeological site with only one phase of occupation that offers an exceptional portrait of life in the third century BC. The aim of the camp is to concentrate the main lines of Protohistoric experimental research in a single space. These lines include construction, agriculture and processing products. A special emphasis is placed on production of olive oil, livestock and the manufacture of pottery.



The CEP (...) intends to establish a space to undergo systematic testing of a number of hypotheses regarding a series of aspects of Iberian Culture that have emerged in recent years as a result of the multiplication of excavations.

Introduction

The site of Estinçells is an Iberian Culture settlement in the Municipality of Verdú, Urgell (Catalonia) dating from the third century BC (See Figures 1 and 2). Archaeological work was carried out between 2002 and 2014 under the auspices of the Regional Museum of Urgell (Museu Comarcal de l'Urgell) and the Archaeology Section of the Centre d'Estudis Lacetans in the framework of the research project entitled, "Economy and Evolution of the Iberian population in the Corb, Ondara and Sió River Valleys: Excavation of the Iberian Settlement of Estinçells, Verdú".

The site is on a promontory and is enclosed by a rampart raised over a short period during the third century BC. It comprises a series of contiguous features (21 houses or distinct constructions) leaning against the north-western, western and southern sectors of the rampart. The site also features a street along its inner perimeter and a large water reservoir in the centre of its western half. A second alignment of smaller houses, of which only five are partially preserved,

is separated from the rest of the settlement toward its north-eastern edge of the hill. The central sector, apart from the reservoir and a single house dating to the initial phase of occupation, is open and free of constructions (See Figure 3).

The settlement, associated with the Ilergetes Tribe, is relatively small, a fact that facilitated its almost total excavation. The archaeological work was funded for the most part through public entities: the Generalitat of Catalonia, the Regional Council of Urgell and the city of Verdú. Furthermore, these entities financed the site's conservation both during and at the end of the excavation. These preliminary consolidations allowed visits, hence the site formed part of a regional network of Ilergetes settlements accessible to the public.

The idea to create an Experimental Camp of Protohistory (abbreviated CEP) was conceived in late 2009 in the framework of this preliminary valorisation. The goal was to group the main lines of Iberian Culture experimental archaeology into a single space and establish didactic bridges toward the regional school system. In the same manner that the site, after excavation, is planned to be accessible for visits, the results of the experimental archaeology are also designed to reach a wide audience through information and teaching campaigns.

This scientific project was also designed to attain a deeper understanding of the essential aspects and activities of the Iberian Culture; facets that cannot be gleaned from excavations. These facets include studying ancient techniques of construction, agriculture and processing of products, notably the olive oil press, the wine press, livestock, pottery making and other crafts.

A complete archaeological project: the unique model of Els Estinçells

Catalonia in the recent past has benefitted from considerable public funding to protect its cultural heritage. Little has been invested, however, in a social function of the protected sites. The model proposed by the centre is therefore that of one in continuous interactivity with the public, researchers and administration. To achieve this goal, the project must combine official financial support with the interests of researchers, the general public and the school system.

The intention of the CEP is to serve as a complement to visits of the archaeological site. Hence the centre becomes an archaeological complex following a unique model. On the one hand it avoids falling into the role of the characteristic unattractive site "... presented by four explanatory panels above a maze of unintelligible walls, accompanied by little more than a small site plan" (Pozo et al. 1996, 89). Although it must assume the function of preserving the archaeological remains, the site's ultimate goal is to reach out to the public and encourage visitors to return.

To develop this project we benefitted from the fact that Estinçells, due to its location, is not subjected to the consequences of significant urban growth. It is, nonetheless, affected by the

Segarra-Garrigues Canal, a large irrigation project that resulted in a rearrangement of a number of parcels of land prior to construction. These workings led the site to fall under (and benefit from) the local administration. In this sense, the project is comparable with other comprehensive experimental models such as that at Algaba (Ronda, Málaga) in southern Spain (Brown et al. 2007, 38).

In developing the CEP project, ideas were drawn from similar scientific experimentation undertaken in 1972 by Peter J. Reynolds in Hampshire (UK). The Buster Ancient Farm project, based on evidence gleaned from archaeological work, reconstructed long-term prehistoric structures and working methods. Furthermore, Buster farm, in 1976, allocated a space for didactic demonstrations. Another early project, dating to 1990, was the LEAF experiment at the Medieval l'Esquerda at Roda de Ter (Barcelona). This project, greatly influenced by Butser Ancient Farm, focused on medieval agriculture techniques undertaken on land adjacent to the archaeological site. Moreover, grains identified during the excavation were cultivated in four different plots and later stored in replicas of a granary and silos. In addition to the farming this project also included experimentation on iron working.

The CEP therefore proposes a project with feedback as a major goal resulting from intense research and dissemination of the results of the scientific process. Another goal focuses on analyses of the role of experimental archaeology and scientific knowledge in Protohistory. This has therefore resulted in the convergence at the camp of a variety of separate experimental initiatives undertaken in other parts of Catalonia (i.e. work with silos at Sant Esteve de Olius, Solsonès; the Iberian settlement of Calafell; the experimental kiln of Verdú). In this regard, the CEP attempts to develop a polysemic project (Moreno et al. 2007, 38) combining experimentation with the education system and the values of defence, preservation and promotion of cultural heritage. Furthermore, the project aims to establish a delicate balance between scientific knowledge and diffusion of information, and when in doubt, prioritise the initial reason that motivated the first excavations at this site: expand knowledge of the Iberian Culture ([See Figure 4, PDF](#)).

The value of experimental archaeology

The most common means for historians to attain knowledge of early cultures is through studying and analysing the material culture unearthed in archaeological excavations and surveys. Experimental archaeology, in this general framework, is a sub-discipline that is now in steady growth and development. Replicating ancient technologies and traditions and reconstructing ancient architectural features and production technology lead to new understandings of human groups and behaviour that often go unnoticed by an archaeology oriented toward the description and classification of artefacts. More and more archaeologists therefore resort to experimental work to refine their interpretation of the archaeological record.

The CEP therefore intends to establish a space to undergo systematic testing of a number of hypotheses regarding a series of aspects of Iberian Culture that have emerged in recent years as a result of the multiplication of excavations. At the same time, as mentioned above, experimentation can be applied as a tool of first order for the dissemination of information about the past.

Although experimental archaeology is today a well-established method of research (Coles, 1973; Reynolds, 1988, 1989; Bioul, 1996), in Catalonia little of this type of work has taken place. The few exceptions are the medieval agriculture project at Esquerda at Roda de Ter (Osona) (Ollich et al. 1998), reconstructions of Protohistoric architecture at the Iberian settlement of Calafell (Tarragona) (Pou et al. 2001) and house reconstructions at Barranc de Gàfols (Ginestar, Tarragona) (Morer, 2000). From these different projects, we can conclude that experimental archaeology has emerged as an essential tool or sub-discipline charged with the task of raising questions about past cultures and stimulating the process of structuring archaeological hypotheses. Thus, experimental archaeology is related to the process of understanding human activity, in particular by confirmation or refutation of archaeological interpretations. Its application leads to improving methods of interpretation, excavation and analysis.

Since it is possible to replicate archaeological data, experimentation can be subject to scientific controls that determine whether their interpretation is viable or not. That is, it is possible to test a hypothesis empirically, comparing and observing the correlations with archaeological evidence, both in the design of the experiment and in the analysis of results.

Therefore, it is worth mentioning that two major types of experimentation are planned at the CEP. The first is an outdoor laboratory for agricultural experiments while the second comprises both rigorous reconstruction of architectural features (Houses 15 and 16) and craftwork (replica of the ceramic kilns from the site of d'Hortes de Cal Pons).

Obviously all CEP experimentation follows a process of observation and recording in order to not distort the data and conduct further work stemming from new hypotheses. For this process we must acknowledge the backing of Servei Assessoria de Fertilització, SL (SAF), a company based in Verdú that has advised us on the proper use of modern agricultural technology.

As a result of these theoretical ideas, experimentation at the CEP could be described as a learning process founded on original data: archaeological evidence generates hypotheses that lead to initiating an experiment. The experiment then generates further objective evidence, the experimental data, which will undergo a process of control and correlation with the original data. As a result of this record and control, the CEP will generate a corpus of new data.

It is noteworthy that a second line of research followed by the CEP is borrowed from ethnography. Ethnographic comparisons have generated a body of data that serve the needs of experimental archaeology. Thus, the CEP aims to promote a precise, direct and controlled interaction between archaeological and ethnographical data.

The different areas of experimentation

The CEP, like the archaeological site, as mentioned above, is the property of the authorities. The CEP's activities, however, are separate from those of the archaeological site and take place on a large adjacent plot of land. The major fields of experimentation are twofold. The first is centred on architecture (house reconstruction) and crafts (metallurgy and ceramics) while the second focuses on agriculture (cereals, livestock, wine and oil making) and textiles.

Each area is designed to be an independent outdoor laboratory based on archaeological evidence gleaned from sites excavated with modern methods, for the most part in Catalonia. It will be from this archaeological data and these interpretations drawn from excavations, mostly from the Iberian Culture, that the CEP plans to undertake empirical and controlled experimentation.

The priority of the experimentation will be marked both by hypotheses emanating from sites of the Iberian Culture elsewhere in the Mediterranean, as well as local questions stemming from the settlement of Estinçlells. In this respect, some work is already in progress by means of experiments in agriculture carried out by a team from the University of Lleida and the reconstruction of buildings carried out by the Section of Archaeology of the Centre d'Estudis Lacetans in collaboration with the private company Món Iber Rocs SL. It is noteworthy that this research group, assisted by Ibercalafell, has also in the last three years worked with Iberian pottery.

Architecture

Experimentation on architecture at the CEP is based on archaeological observations from Estinçlells itself, as presented in a previous article. Houses 15 and 16 were reconstructed with the same materials as those identified during the dig. Furthermore, ethnographic work conducted in the Moroccan Atlas and Anti-Atlas Mountains between 2008 and 2009 complemented the archaeological data. A specificity of these houses is that they sheltered the well-preserved remains of an olive oil and wine press. This project benefited from a grant by the RecerCaixa 2011 (See Figure 5).

Crafts

Regarding craft experimentation, the CEP aims to replicate a ceramic kiln to deepen the understanding of the manufacture and development of Iberian pottery. Experimentation is based on evidence from the recently excavated settlement of Hortes de Cal Pons in the

Municipality of Pontons (Alt Penedès), a site with its seven pottery kilns specialised in producing amphorae. The kilns comprise circular firing chambers above circular combustion chambers. A central pillar with an elliptical section supported a perforated grid or grate that was repaired on a number of occasions. This experiment benefitted from the reconstruction of the kiln of La Casa Grande (Alcalá de Júcar; Albacete). This project, within the framework of research grants awarded by RecerCaixa 2011 and described in a previous article, was conducted in Verdú at the workshop of the potter Enric Orobitg.

Agriculture

Agricultural and archaeobotanical experimentation consist of cultivating various species, mainly cereals, and ultimately, in a near future, vines and olive trees. Work with cereals is reserved to the western area and is divided into two plots. The first plot is part of a scientific experiment while the second is run by an educational project. Dressed barley and durum wheat are the main cereals identified in archaeobotanical samples of the western plain of Catalonia. The varieties grown in the CEP are relatively old, dating from the first half of the 20th century (common wheat, of the xeixa variety and six-row barley of the Hatif de Grignon variety). This work will lead to a better understanding of the methods of grain flailing and threshing, probably closer to those used in Protohistory than those used in recent periods. Reconstruction of silos of different shapes, as well replicas of different varieties of wooden and metal agricultural tools, are done in parallel with this agricultural activity.

Iron working

The aim of the CEP iron working experimentation is to replicate the operational sequence of metal production based on finds of iron artefacts and slag from excavations. The project will attempt to explain the reduction process and other questions such as the technique of tempering iron. Although some activities related to ore reduction are planned in parallel with the agriculture project, the analyses of metal farming tools and weapons is planned for the longer term.

Textile work

Textile experimentation at the CEP involves reconstructing the conditions necessary to obtain textiles from wool fabrics similar to those from the Iberian Iron Age. This involves reconstructing the process of dyeing fabrics and fibres, spinning techniques, removal of impurities, as well as the techniques of lubrication (interaction with oils coming from the press). This aspect of the project, for economic reasons, it is planned for the longer term.

The CEP's layout

Access and signs

The CEP is easily accessible, located about 5 km from the city of Verdú and in the heart of a vast network of local roads and regional highways well-connected with other regions and provinces. Its main entrance is between km 7 and 8 of the LV-2021 linking Tarrega to Sant Martí de Maldà.

Parking and visitor reception area

Visitor parking designed to accommodate both private vehicles and coaches is at the site's entrance and currently consists of an area of 1200 m².

Visitor reception building

A visitor reception building is planned inside the experimental site next to the parking. The originality of this reception building is that it will be housed in reconstructed Houses 1, 15 and 16. After completion of three years of experimentation, these buildings will be equipped with sustainable systems of energy. A restroom (WC) is planned outside House 1. An important area of the reception will be the adjacent porch where educational workshops and other activities for school groups will take place.

Itinerary and stopping points

After exiting the reception area, the visitor will initiate the itinerary by visiting the archaeological site by means of a path scheduled between Houses 1, 15 and 16.

Organisation of the experimental areas

After visiting the archaeological vestiges, the visitor will initiate the visit of the CEP. The spatial distribution of the 6.000 m² of the experimental area will depend on the different types of research taking place at any given time. In any case, the different experiments will always be arranged to leave an empty central area so as not to block the view of the archaeological site. Since experimentation will take place in peripheral areas, a natural path is created towards the centre leading toward the archaeological site. The idea is that visitors have free access to the different zones. In any case, the reception building will be equipped with indications of the general paths of the complex.

Itinerary through the site and the different stopping points

The itinerary through the complex comprises a series of stopping points along a path determined both by the settlement's archaeological features (marked in red) and different viewpoints of natural landscapes beyond the site (marked in green) ([See Figure 6, PDF](#)).

Itinerary of natural and scenic landscapes (stopping points marked in green)

Point 1. TRADITIONAL AGRICULTURE AND THE SEGARRA-GARRIGUES CANAL. This point focuses on traditional farming and architecture, as well as explaining the concept of archaeological surface finds and narrating the tale of the discovery and partial destruction of the site as a result of agricultural work. It also describes the Segarra-Garrigues Canal and the construction of the Urgell Canal, a feature that transformed the regional landscape in the 19th century. Its construction altered traditional agriculture from dry land farming to a system of fields of irrigated crops. A similar process is occurring today with the construction of the Segarra-Garrigues Canal and several water reservoirs near the CEP.

Point 2. THE CURRENT ECOSYSTEM. This point explores the typical regional flora and fauna. Part of the region around the site is in the Belianes-Ondara dry lands. The town of Verdú, for example, is situated entirely within the unit, along with part of the Municipalities of Tàrrrega, Anglesola, Vilagrassa, Belianes, Bellpuig, Preixana, Granyanella and small areas of Plans de Sió, Maldà, Sant Martí de Riucorb, Vilanova de Bellpuig, Ciutadilla, Nalec and Arbeca. At this stop one can clearly view the extension of the agricultural plots and their crops, marked by dry stone walls and specific foliage that grows along their edges. Most of the landscape, nonetheless, is now the result of the reshuffling of the land that took place in the framework of construction of the Segarra-Garrigues Canal.

Point 3. REST AREA. This point is a rest area equipped with benches, tables and bins.

Point 4. THE TERRITORY AND THE LANDSCAPE. This point explores the geographical and orographic reality of the Urgell-Segarra region. The rural hilly landscape viewed from this stop is characterised by traditional dry land farming with isolated buildings (agricultural estates and farms) as well as other infrastructures that are well integrated into the landscape. Certain hills scattered throughout the territory are visual references and define the landscape of the Belianes-Ondara dry lands. The most prominent hills are those of Fonta, Estinçlells, Serra dels Molars, Montpeler, Montalbà, Tosses, Montcofre, Pericó, Mor and la Vila. From this point one can make out many of the towns of the Urgell-Segarra *comarca* (region) and neighbouring *comarca* of Segarra (Belianes, Bellpuig, Preixana, Nalec, Rocafort, Ciutadilla, Verdú and Granyena). One can also admire, in the background, the imposing Pre-Pyrenees and Montsec mountain ranges. Finally, from this point one can also distinguish between two totally different landscapes: the low plain of Lleida (Pla d'Urgell) and the hillier Segarra-Urgell region.

Point 5. THE CORB, XERCAVINS and ONDARA RIVERS. This point explores the traditional river ecosystem by focusing on the use of fluvial resources and features such as reed beds, clays and reservoirs. The rivers in the region are the Ondara, which flows through the town of Tàrrrega, the Xercavins which is a Ondara River tributary and flows to the south by Verdú and the source of the Gossalat (Reguer) River, that joins the Corb River, in the Belianes-Ondara dry lands.

The archaeological itinerary (stops marked in red)

Point 1. THE MOAT AND THE RAMPART. The archaeological itinerary begins with a visit to the defensive features of the settlement.

Point 2. ENTRY AND GATE OF THE SETTLEMENT. The second stop of the archaeological itinerary is the settlement's gate. This is the first feature of the site's urban nucleus and is typical of the Iberian Iron Age Culture.

Point 3. THE CIRCULAR STREET AND THE RESERVOIR. This third stop emphasises the importance of the settlement's water reservoir, a type of feature following a Bronze Age tradition. The stop also reveals information about the single, stone-paved circular street in the interior the settlement, between the reservoir and the house.

Point 4. QUARTER OF THE COMPLEX HOUSES. This stop, in the western area, explores the historical implications of these dwellings and their function in the Iberian Culture. It also delves into the question of the enormous strategic advantage of this location for a residential quarter.

Point 5. QUARTER OF THE SIMPLE HOUSES: This stop explores the urban character of the settlement combining houses, open spaces and footpaths. In this quarter there are large, complex houses, indicative of the prominent sectors of society, co-existing with much more simple and modest homes. These different features, typical of the Iberian settlements, reveal the marked inequalities of Iberian society.

Point 6. OIL PRESS. This stop stresses the economic importance the oil press for the settlement. It also explores questions related to the economy of the Iberian Culture based on agriculture and livestock.

Point 7. AREA FREE OF CONSTRUCTION. This point explores the role of the areas free of construction in Iberian settlements, as well as the spaces reserved for silos to store grain and basins for textile and dye workings.

Point 8. QUARTER OF THE PLAIN HOUSES. This stop, toward the eastern edge of the settlement, like that the previous simple houses (stop 5), explores the question of the urban network of large open areas and footpaths and reinforces the different dwelling types, both large and complex and small and simple; evidence of great differences in Iberian social structure.

The interaction of the CEP with the community

The comprehensive nature of the project is designed in a manner to assure a constant interaction between the site's different subjects of research and the community so as to

assure that the strengths of each project have a far reaching impact. At the same time, the centre aspires to link its work with the ancient tradition of pottery work of neighbouring Verdú. Following the same line of thought, experimentation with future wine projects at the CEP could draw on regional wine production (near Verdú) protected by the *Costers del Segre* designation of origin.

The value and impact on the local population must also proceed from other sources. The development of this project and some experimentation has benefitted from private companies and organisations from Verdú such as the SAF (Servei Assessoria de Fertilització, SL), a company specialising in agriculture and livestock diagnostics and production. This company also assists application of new technologies and questions regarding irrigation, soil surveying, geographic information services and land surveying. An example of its collaboration is its monitoring of some CEP experimentation.

LAB-FERRER is a company based in Cervera specialised in consulting and analysis of foodstuffs. It owns the Spanish rights of the American company DECAGON DEVICES INC. (Pullman, WA, USA). It manufactures water gauges (AW) and other devices for soil analysis, plant and environmental parameters. The CEP project has already applied their technology and is expected to implement their sophisticated control systems in several future experiments.

The Tekhnikos Foundation, established in Verdú in 2002, develops technical programs and services with the objective of presenting its own research projects and hosting other regional projects. Collaboration with this foundation is projected through its PLANETARIUM program that applies new technology to improve teaching and dissemination of knowledge of a number of different fields. Their specialty is the study of outer space. Contacts with them are leading to the use in the future of their Planetarium to project the film *El Cel dels Ibers (The Heavens of the Iberians)* and spread information about of the activities of the CEP.

The Centre d'Interpretació de l'Escola Rural (CEIER) in Verdú is an organisation founded to develop and promote education among rural schools. It integrates institutions rooted in the territory and the culture in the framework of modern society and new technologies. The CEIER is an autonomous research centre of study and interpretation given that 70% of the schools in the Province of Lleida are rural, this educational project, already accepted, serves to link the CEP to the school system.

The Open Workshop of Enric Oorbitg. This workshop is an interdisciplinary educational organisation in Verdú designed a few years ago for students of all levels with the goal of developing creativity and "magic" in the world of pottery. The workshop focuses on three sectors: studying the traditional black pottery of Verdú, displaying the use of a potter's wheel and manufacturing pottery by students. Its collaboration with the CEP began in 2009 with the

construction of a replica of an Iberian pottery kiln based on one excavated at La Casa Grande (Alcalá de Júcar).

Regional Museum of Urgell. This museum in 2010 scheduled a series of educational activities, including a workshop related to traditional games. They also edited a didactic text entitled *Descobreix l'Urgell Ibèric* (Discover the Iberian Culture of Urgell) and organised guided tours of the settlement of Estinçlells. Although the workshop of traditional games was intended for all ages, it was particularly appreciated by students from the last years of primary school and the first year of secondary school.

Other organisations

Organisations in Verdú that have collaborated on specific projects are the following: The Art Centre of Cal Talaveró, the Association of potters of El Vilar, the Cultural Association of Xercavins and others.

Attachment(s)

Fig 4. Plan of the site of CEP indicating the different areas of experimentation. (563.88 KB)

Fig 6. Plan of the different stopping points of archaeological, natural and landscape interest. (680.86 KB)

📖 **Keywords** experimental archaeology
settlement
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Gallery Image



FIG 1. MAP OF VERDÚ.



FIG 2. AERIAL VIEW OF THE ESTINCLELLS HILL WITH THE ARCHAEOLOGICAL SITE.



FIG 3. AERIAL VIEW OF THE IBERIAN CULTURE SETTLEMENT OF ESTINCLELLS WITH HOUSES LEANING AGAINST THE RAMPART.



FIG 5. EXAMPLES OF EXPERIMENTAL WORK AT THE CEP AT VERDÚ.



FIG 7. AERIAL VIEW OF THE EXPERIMENTAL CAMP OF PROTOHISTORY (CEP).