

Catalogue of the parallel exhibition held in the "International Symposium: Cultural Interactions and Changing Landscapes in Europe (2nd century BC / 2nd century AD)"

Catálogo da exposição paralela ao "Simpósio Internacional: Interações Culturais e Paisagens em Mudança na Europa (séc. 2º a.C. / séc. 2º d.C.)"

POVADOS FORTIFICADOS DA IDADE DO FERRO DE BOTICAS

IRON AGE HILLFORTS OF BOTICAS

CULTURAL INTERACTIONS AND CHANGING LANDSCAPES IN EUROPE

CULTURAL INTERACTIONS AND CHANGING LANDSCAPES IN EUROPE (2nd century BC / 2nd century AD)

INTERAÇÕES CULTURAIS E PAISAGENS EM MUDANÇA NA EUROPA
(séc. 2º a.C. / séc. 2º d.C.)

Proceedings book of the International Symposium:
Cultural Interactions and Changing Landscapes
in Europe (2nd century BC / 2nd century AD)
Boticas, 11/12/13 October 2018

Atas do Simpósio Internacional: Interações Culturais
e Paisagens em Mudança na Europa
(séc. 2º a.C. / séc. 2º d.C.)
Boticas, 11/12/13 outubro 2018

CREDITS CRÉDITOS

International Symposium: Cultural Interactions and Changing Landscapes in Europe (2nd century BC / 2nd century AD)
Simpósio Internacional: Interações Culturais e Paisagens em Mudança na Europa (séc. 2º a.C. / séc. 2º d.C.)

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Luís Fontes, Gonçalo Cruz e Mafalda Alves

DESIGN **Tiago Rodrigues**

PRINTING IMPRESSÃO **PUBLITO. Estúdio de Artes Gráficas**

EDITION EDIÇÃO **Unidade de Arqueologia da Universidade do Minho**

LOCAL OF EDITION LOCAL DE EDIÇÃO **Braga 2018**

LEGAL DEPOSIT (DL) N° **446081/18**

ISBN **978-972-9382-25-3**

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Cultural Interactions and Changing Landscapes in Europe (2nd century BC / 2nd century AD)

Interações Culturais e Paisagens em Mudança na Europa (séc. 2º a.C. / séc. 2º d.C.)

Luís Fontes, Gonçalo Cruz & Mafalda Alves (Orgs)

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HONOR COMMISSION 6 COMISSÃO DE HONRA 6

PREAMBLE 8 APRESENTAÇÃO 9

INTRODUCTION 10 INTRODUÇÃO 14

PAPERS ARTIGOS

From Iron Age *Oppida* to Roman Cities: The Transformation of Cultural Landscapes in Europe (2nd century BC-2nd century AD). Dos *Oppida*, na Idade do Ferro, às Cidades Romanas: a transformação das Paisagens Culturais na Europa (Séc. II a.C. - Séc. II d.C). **21**

Cultural change and landscape transformation in southern Iberia (2nd century BC - 2nd century AD). A mudança cultural e a transformação das paisagens do vale do Baixo Guadalquivir entre a República e o Império (Séc. II a.C. - Séc. II d.C). **39**

Cultural interaction in times of conflict: metals and rituals in the hillforts of north-western Iberia (2nd-1st centuries BC). Interação cultural em tempos de conflito: metais e rituais nos castros do Noroeste da Iberia (Séc. II a.C. - Séc. I d.C). **55**

Northern Portugal in the transition of Era: from the hillforts, through the *oppida*, till the roman integration. O Norte de Portugal na transição da Era: dos castros, pelos *oppida*, até à integração romana. **73**

Aerial archaeological research of Late Iron Age fortified settlements in Western Hungary (Transdanubia). A Arqueologia Aérea na investigação dos povoados fortificados da Idade do Ferro Final no oeste da Hungria (Transdanubia). **91**

'Elective Affinity' and the Iron Fist of Imperialism: Responses in Britain to the advent of Rome. 'Afinidade Eletiva' e o Punho de Ferro do Imperialismo: Respostas na Grã-Bretanha ao advento de Roma. **105**

The Construction of the Terva Valley's Cultural Landscape between the 2nd century B.C. and 2nd century A.D.) A construção da Paisagem Cultural do Vale do Terva, entre o século II a.C. e o século II d.C. **125**

POSTERS

The "top-down" representation of plate 130 of Castelinho (Trás-os-Montes, Portugal): from creation to condemnation in the transition of the period. A representação zenital da placa 130 do Castelinho (Trás-os-Montes, Portugal): da criação à condenação na transição do período. **147**

Excavation, study and musealisation of "Casa Romana" of Castro de São Domingos: Preliminary Results of the 5th Campaign. Escavação, estudo e musealização da Casa Romana de Castro de São Domingos: Resultados preliminares da 5ª campanha. **153**

Trás do Castelo (Vale de Mir, Pegarinhos, Alijó) - a roman agricultural settlement on the verge of the first century AD. Trás do Castelo (Vale de Mir, Pegarinhos, Alijó) - um assentamento agrícola romano no limiar do primeiro século dC. **15**

Uncovering the landscape of the Romanization process of Citânia de Sanfins (Paços de Ferreira, Portugal). Primary approach for a macro and semi-micro Spatial Analysis. Descobrendo a paisagem do processo de romanização da Citânia de Sanfins (Paços de Ferreira, Portugal). Abordagem preliminar para uma macro e semi-micro Análise Espacial. **163**

Changes and continuities in the Sabor River valley between the end of Second Iron Age and early Roman times. Mudanças e continuidades no vale do rio Sabor entre o final da Segunda Idade do Ferro e o início dos tempos romanos. **169**



**UNCOVERING THE LANDSCAPE OF THE
ROMANIZATION PROCESS OF CITÂNIA DE SANFINS
(PAÇOS DE FERREIRA, PORTUGAL). PRIMARILY
APPROACH FOR A MACRO AND SEMI-MICRO
SPATIAL ANALYSIS.**

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Keywords: Landscape Archaeology; Geospatial Tools; Romanization.



Uncovering the landscape of the Romanization process of Citânia de Sanfins (Paços de Ferreira, Portugal). Primarily approach for a macro and semi-micro Spatial Analysis.

Introduction

This work is developed in the scope of a master's thesis in Archaeology at the University of Minho (Braga) entitled "A paisagem na Idade do Ferro e Romanização da Citânia de Sanfins, Paços de Ferreira. Análise macro-espacial". With this poster we present the initial data obtained through the methodology developed to characterize the dynamics occurred in the Iron Age and Roman landscape of the hillfort of Citânia de Sanfins located in Paços de Ferreira (Portugal).

Study Area

The study area is part of the geographical space of the Porto District (Figure 1) located in the north of Portugal. This territory is characterized by the long-term occupation of Iron Age hillforts that appear in a significant number in this area. At this point we are focusing on the physical area of the mountain ridges implanted in Paços de Ferreira and Santo Tirso (Figure 2 and Figure 5). In this area we can observe the existence of prominent hillforts such as Sanfins that may have had an important role as a central place (Silva, Armando 1986) and Monte Padrão (Santo Tirso) that is close to the hillfort of Sanfins and is well characterized by its roman occupation (Dinis, António 1993).

The hillfort of Sanfins has 15 hectares of extension and is surrounded by four lines of wall that circle the settlement (Figure 3, right image), it also has several trenches. The excavations allowed the identification of two main axes of circulation inside the settlement, as well as 33 habitational units and a bath (Silva, Armando 1986). It has also traces of medieval/Christian occupation associated with a necropolis and a potential chapel from the XII

century dedicated to S. Romão. In terms of chronology it's estimated that the site was occupied between the V and III centuries b.C. and it was abandoned around the IV century a.C. (Silva, Armando 1986).

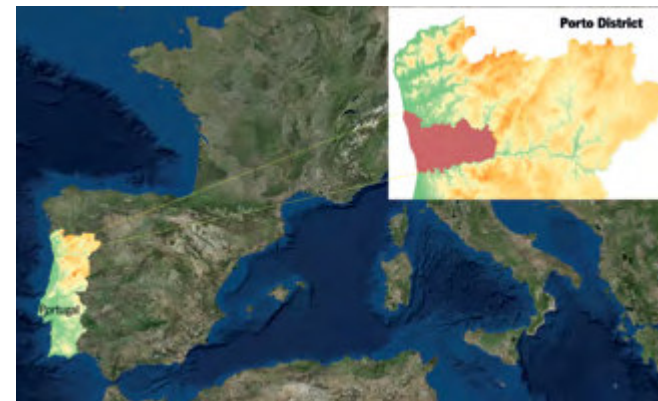


Figure 1
Location of the study area.



Figure 2
General view of the study area with the distribution of the hillforts and the roman roads (based on the study www.viasromanas.pt).

Main lines of research

Since the XIX century it has been developed a great deal of bibliography regarding the Iron Age and Roman occupation of this area. Some of the studies were structured to systemize the hillfort 'culture' while others were produced in a regional sphere. And in this context, there are some studies that we consider important for the development of our work such as the doctoral thesis of Armando Silva "A cultura castreja no Noroeste de Portugal" (1986) or the thesis of Manuela Martins entitled "O povoamento Proto-Histórico e a Romanização da bacia do curso médio do Cávado" (1990).

The research made in the last three decades has allowed us to identify different types of settlements regarding the different stages of occupation through time. And with the arrival of the romans to the territory it is noticeable the development of hillforts that are distinguished by its size, internal organization and by its economic, social and cultural importance. Based on the development of these studies we intend to apply a model of spatial analysis used in Landscape Archaeology which aims to understand spatial relationships between elements, to identify the spatial structure of the study object (Mañana Borrazás, Patricia, *et alii* 2002).

Centered in this model, our research focuses primarily on a semi-micro level (Figure 3) concerning Sanfins and Monte Padrão to understand their relationship with the territory in terms of mobility, visibility and accessibility to certain resources and the possible articulation between them and the hillforts around them. Later, we intend to apply it in a wider territory at a macro spatial level to understand its dynamics, since in this research the landscape is understood as a socio-cultural product that objective the social action on the physical environment (Criado Boado, Felipe 1996). With this approach we try to understand how this *Objectification* is represented.



Figure 3
Scales of analysis. The third image is an aerial photograph of Sanfins taken from: <http://www.portoenorte.pt/pt/o-que-fazer/citania-de-sanfins/>

Objectives

Landscape archaeology presents itself in nowadays as an important perspective to understand the communities that inhabited the territory. It allows us to study landscape in four important dimensions as the environment, the economy, the social and political context and the symbolic world (Parceró Oubiña, César 2002). In this perspective we established as a main objective to study the existing diachronic and synchronic relationships in the landscape concerning Citânia de Sanfins and the involving territory, as well as the existing settlements and resources.

Methodology

Using the preexistent information of the study area obtained by other authors (*e.g.* Jalhay, Eugénio 1944; Paço, Afonso 1952; Silva, Armando 1986) we decided to apply a different model of analysis, organized in six stages of work. We started by **gathering all the available data** concerning the bibliography, cartography, photography and the already existing inventory from the Portuguese *Portal do Arqueólogo* (<http://arqueologia.patrimoniocultural.pt/index.php?sid=sitios>).

After this, **the information is analyzed and inserted in a database 2ArchIS** (Figure 4) structured specifically for this project. This database is modular and integrated and can be used in similar projects as well as in a next stage of development of this work, such as a doctoral program.

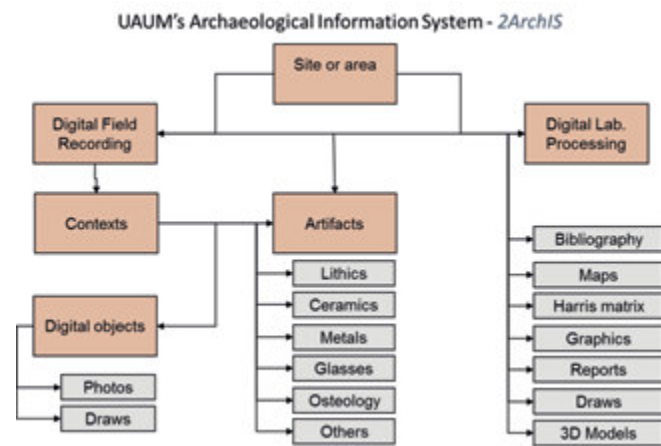


Figure 4
Back office of the database 2ArchIS.

After all the data is inserted it's needed it's **validation *in situ*** and if additional information is required it can be added at the database.

We use the Geographical Information System "ESRI ArcMap" to conduct geospatial analysis like **visibility, location and mobility**. To obtain data about these three types of analysis we can examine the topography of the settlements and area resorting to Digital Terrain Models (DTM) as well as lithology and hydrography maps. We have experimented calculating the Least Cost Path from the hillfort of Sanfins to the hillfort of Monte Padrão. In this analysis we included the hydrography, the visibility based on a 2 km range from each hillfort, and the roman roads established on a study previously made (www.vias-romanas.pt) and we came across some interesting results (Figure 5). We also made an anisotropic map with lines of 15 minutes, which indicates the time it takes to travel a certain distance on foot, considering the slopes. So, we can have an approximate calculation of the time to arrive from one site to another, to reach the main river and even to the closest possible agrarian spaces. And as in the previous map we included the 2km visibility to observe if it is articulated with the agrarian spaces (Figure 6).

Nevertheless, we are currently working on calculating the variables as smaller rivers and water mines, solar exposi-



Figure 5
Map containing Visibility Analysis of the hillforts present in this area and the Least Cost Path Analysis between the hillfort of Sanfins and the hillfort of Monte Padrão. We can see that the Least Cost Path has a similar path to the proposed roman and that the visibility of the sites in the space between Sanfins and Monte Padrão is oriented to this road.



Figure 6
Map with the anisotropic analysis and the potential agrarian spaces. We included too the Visibility Analysis (2 km) The visibility of the hillforts of Santa Margarida, Aldeia Nova, Santa Cruz and Vela is oriented, fundamentally, to the areas in which are located the soils with better agricultural aptitudes and to the main water courses. These hillforts are not located in the highest areas, but in the middle of the hillside. Sanfins and Monte Padrão are situated in the highest areas, and together with the hillforts of Salgueiros and Castro de Busto (located in the middle of the hillside), they seem to control the path of the roman route.

tion map, soil usage cartography, lithology and mining exploitation areas. We intend to match this information with other archaeological remains associated with the roman roads that have already been studied by other authors, so we can have a more approximated model.

In a final stage we will combine all the information collected and proceed to its study and interpretation hoping to obtain crucial data that will allow us to build a model of landscape analysis for this territory understanding it's dynamic in time and space. In the future, it will be necessary to carry out archaeological interventions in these sites so that we can characterize them chronologically and functionally, to better perceive the articulation of the territory in relation to the specialization of the sites in this period.

Final Considerations

This study is revealing its importance step by step as we face ourselves with relevant questions, as to why the need to create secondary roman routs that are parallel to the primary roads in the territory where Sanfins and Monte Padrão are located? It may be an indicator of the importance of these places in the romanization process and at an economic, social and political level. In a closer look we want to understand why the roman road Cale-Vimaranis and the least cost path outlined between Sanfins and Monte Padrão only coincides in three passage points. What type of relation was there and how did this road affected the development of these hillforts? And with the 2 km visibility analysis we can see that most of the hillforts have visual control of rivers, does this articulate with the soil exploitation and the solar exposition in that area? And so on, we are left with many questions at a macro and semi-micro level that we intend to explore until we are left with some answers or new questions.

With this we expect to build a model of landscape analysis in this territory and we also hope we can start to comprehend the changes that occurred in the landscape in the Iron Age and Romanization in this area. In the same way, the aim is to verify if this methodology is operational for this purpose and could be exportable to other areas of study.

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