

## Campaniforme: chronology, pottery, and contexts of a long term phenomenon in the Portuguese Douro Basin

Maria de Jesus Sanches and Maria Helena Barbosa

### Abstract

This paper discusses the Campaniforme, or Bell Beaker, phenomenon in the lower Douro river basin, Portugal (Northwestern Iberian Peninsula) focusing on pottery. It analyses the style and respective archaeological context of the ceramics as well as their geographic distribution and presents the absolute and relative chronology of about 50 sites. We highlight here four case studies and conclude that all styles are present – classic Maritime (linear, herringbone), comb-geometric, Palmela/Ciempozuelos, AOC and mixed C/ZM styles – and that these styles have *grosso modo* the same chronology, i.e., they are dated to at least as old as the second quarter of the 3<sup>rd</sup> millennium BC. Bell Beaker pottery continued to be used in the second half of the 3<sup>rd</sup> millennium BC in this region, making this phenomenon one of long duration. This paper also emphasizes the spatial segregation of the use of Bell Beaker ceramics and its relation to ritualized social practices which would have been connected with identity management, regional conflicts, or marriage alliance.

### 1. Introduction

The last decades of archaeological research in the low Douro basin (Portugal) have brought a considerable amount of new data as a result of archaeological excavations with updated methodologies, absolute dating, and extensive studies of archaeological materials. This new data has led to new designs, discussions, and interpretative perspectives of prehistory. Studies of Campaniforme have benefited from this information increase and from new theoretical approaches. The result has been important reflections, especially regarding the transformation of the “domestic” pottery style and its relation to the processes of the establishment of identity at both the local and regional community level (Jorge 1986; Sanches 1997; Valera 2007; Rebugue 2004). Although local realities always have idiosyncrasies, in a number of studies the Bell Beaker do not appear to represent a true break from the local ceramic traditions. Furthermore, the processes of social/economic development with which the Bell Beakers have been associated actually started much earlier, between the end of the 4<sup>th</sup> and beginning of the 3<sup>rd</sup> millennium BC (Cruz 2001). Although some authors still continue to refer to the “Bell Beaker package”, this interpretative discourse has been gradually abandoned as evidence of the wide variety of combinations of its elements in different times and areas have come to the fore. In most cases, copper weapons are rare.

Instead, greater attention has been directed to questions related to the different roles that “domestic” or “funerary” ceramics and/or

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weapons as well as rare raw materials may have played in the social strategies and performances concerning interaction between individuals and discrete groups (Jorge 1986; Sanches 1997; Sanches et al. 2017).

All of this is associated, in the case of Campaniforme, with the emergence and consolidation of local leadership of peninsular communities during the 3<sup>rd</sup> and 2<sup>nd</sup> millennium BC; this is visible in the high standardization of artefacts (mainly forms and decorative stylistics of pottery and ornaments of rare/distant raw materials) (Jorge 1986; Valera 2007; Bueno et al. 2017; Bettencourt 2011) which were displayed on special occasions (Guerra Doce/Liesau 2016; Garrido Pena 2007).

With regard to the wide, or even regional scale, circulation of Bell Beakers, the majority of the authors express nuanced explanations anchored in the social exchange systems (of marriage or other ones) proposed by Clarke long years ago (Clarke 1976, as cited in Garrido Pena 2007, 8). Recent studies did not find direct genetic links ("steppe ancestry") between Chalcolithic Iberia and contemporaneous Central Europe populations (e.g. Bell Beaker users), but rather continuity/homogeneity within endogenous Chalcolithic populations. However, the authors of this paper are cautious in accepting these results and suggest that further studies focused on the comparison of individuals from the beginning and the end of the Chalcolithic period (about 3000–2200 BC) would be needed (Szécsényi-Nagy et al. 2017, 9).

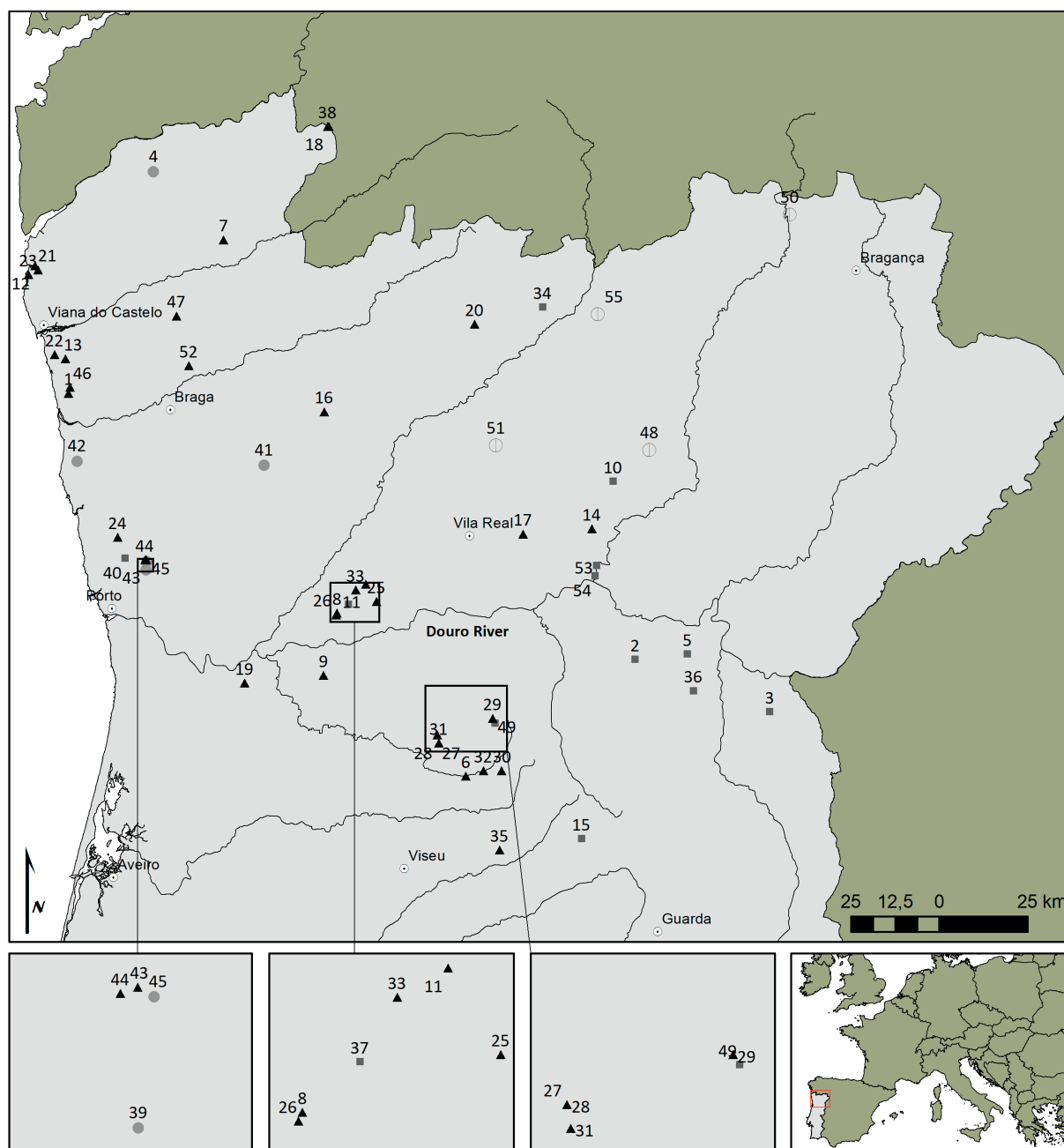
Since the metals related to the "Bell Beaker research problem" are extremely rare in this region, we decided to approach this archaeological entity through the material that came to light both more frequently and in a much higher quantity – pottery. These ceramics can be studied through a number of complementary prisms: (i) the type of sites in which the ceramics were found, an element which showed a wide range of variation, as can be seen in Fig. 1; (ii) the particular context in each site where the ceramics were abandoned or even intentionally deposited - this aspect will be discussed through four case studies; (iii) the shape and stylistic relationship between Bell Beaker pottery and other materials (including other types of ceramic) which accompany them in the same functional/contextual areas; (iv) the shape and decorative variety of Bell Beaker ceramics; (v) the chemical and mineralogical characterization of clays and fabrics in order to identify local and/or regional fabrics allowing suggestions of exchange systems, etc.; and, lastly, (vi) chronology.

There are defenders of both short and long term presence of the Campaniforme. Within the short duration proposals, (i) Susana Jorge (Jorge 2002b) considers that there is no way to clearly establish the diachronic relationship between the various Bell Beaker styles in Northern Portugal due to the small number of dated context but admits, as in 1986, that it may have been a short-lived phenomenon, "somewhere in the 3<sup>rd</sup> millennium BC." (Jorge 2002b, 41); (ii) António Valera and Domingos Cruz defend a chronology between the second half of the 3<sup>rd</sup> and the beginning of the 2<sup>nd</sup> millennium BC (Cruz 1997; 2001; Valera 2007); (iii) Ana Bettencourt, on the basis of the absolute dates of the Crasto de Palheiros walled enclosure/precinct, Buraco da Pala rock shelter and ditched enclosure of Forca, situates the use of the Bell Beaker pottery in the first half of the 3<sup>rd</sup> millennium and assigns the period between the third quarter of the 3<sup>rd</sup> and the beginning of the 2<sup>nd</sup> millennium BC to the use of metals and other kinds of pottery in the funerary contexts of Northern Portugal (Bettencourt 2011).

Here we propose and discuss the multifaceted character of the Campaniforme and its long term use over circa eight centuries in the lower Douro basin, between the second quarter of the 3<sup>rd</sup> and the beginning of the 2<sup>nd</sup> millennium BC, as it has been proposed for

Galicia-Spain (Prieto Martinez et al. 2013) and Portuguese regions of Estremadura/Alentejo (Cardoso 2014), and even for more inland Iberian regions such as Toledo, although the latter case refers to the Ciempozuelos style (Bueno et al. 2017).

Fig. 1. Map of the North of Portugal and the Douro basin showing archaeological sites with Bell Beaker ceramics. Triangles: funerary sites; Squares: non-funerary sites; Full circles: uncharacterizable sites; Circles: other sites.



#### Sites:

▲ Funerary

1 - Antela da Portelagem; 6 - Castonairas 1 (Orca das Castonairas); 7 - Mamoa de Chã de Arcas 1; 8 - Mamoa de Chã do Carvalho 1/Cruz de Ferro 1; 9 - Dólmen 1 de Chão do Brinco; 11 - Dólmen 1 de Chã Parada; 12 - Dólmen da Barrosa; 13 - Dólmen da Pedreira/S. Romão do Neiva 1; 14 - Estante 2/Anta 2 da Estante; 16 - Lugar de Vargo; 17 - Mamoa 1 de Madorras; 18 - Mamoa 1 da Portela do Pau; 19 - Mamoa 1 de Carvalho Mau; 20 - Mamoa 2 de Carvalhelhos; 21 - Mamoa de Aspra; 22 - Mamoa de Chafé; 23 - Mamoa de Eireira; 24 - Mamoa de Guilhabreu; 25 - Mamoa de Vale de Juros; 26 - Monte Maninho/Mamoa de Chã do Carvalho 3; 27 - Monumento 1 do Rapadouro; 28 - Monumento 3 do Rapadouro; 29 - Orca das Seixas/Orca do Padrão; 30 - Orca de Forles; 31 - Orca de Pendilhe; 32 - Orca do Porto Lamoso ou dos Moinhos de Rua; 33 - Mamoa de Outeiro de Ante 2; 35 - Penedo do Com; 38 - Alto da Portela do Pau 3; 43 - Mamoa 2 do Leandro; 44 - Mamoa 5 do Leandro; 46 - Dólmen da Bouça do Rapido 3; 47 - Mamoa do Alto da Maronda; 52 - Mamoa do Carreiro da Quinta.

■ Non Funerary

2 - Castanheiro do Vento; 3 - Castelão I; 5 - Castelo Velho de Freixo de Numão; 10 - Crasto de Palheiros; 15 - Fraga da Pena; 34 - Pastoria; 36 - Tambores (Castelo Velho III); 37 - Tapado da Caldeira; 39 - Bouça da Cova da Moura (ritual precinct); 40 - Recinto da Forca; 49 - Chã das Lameiras; 53 - Regadas; 54 - Pedreira.

● Non Characterizable

4 - Castelo de Fraiã; 41 - Monte da Penha; 42 - Estela; 45 - Leandro 3.

○ Other

48 - Buraco da Pala; 50 - Lorga de Dine; 51 - Castelo de Aguiar; 55 - São Lourenço.

## 2. The Bell Beaker pottery in the lower Douro basin: contexts and geographic distribution

The region under study is a relatively extensive one that includes very diverse ecosystems which can be roughly organized into two areas: the Atlantic shoreline and the continental interior. There are 55 known sites with Bell Beaker pottery (Table 1.1 and 1.2; Fig. 1), which

Tab. 1.1. Archaeological sites with Bell Beaker ceramics in northern Portugal and the Douro basin. Mamoa = barrow.

Archaeological site	Concelho	Tipology	Bell beaker type	Ref. bibliográfica
Mamoa 1 da Portela do Pau	Melgaço	Dolmen without corridor	Maritime: linear; geometric	Jorge et al. 1997
Mamoa 3 da Portela do Pau	Melgaço	Tumulus without megalithic structures	Geometric	Jorge et al. 1997
Dólmen da Barrosa	Caminha	Corridor dolmen	Geometric (?)	Jorge 1986; Cruz 1992
Mamoa de Aspra	Caminha	Mamoa/tumulus	Maritime: banner; geometric	Silva 1994
Chã de Arcas 1	Arcos de Valdevez	Mamoa/tumulus	Maritime: linear	Jorge 1986; Cruz 1992
Dolmen da Pedreira/S. Romão do Neiva 1	Viana do Castelo	Corridor dolmen	Maritime	Bettencourt 2009
Mamoa de Eireira	Viana do Castelo	Corridor dolmen	Maritime: banner	Cruz 1992; Bettencourt 2011
Mamoa de Chafé	Viana do Castelo	Dolmen without corridor	Maritime: banner	Jorge 1986; Cruz 1992; Silva 2003
Mamoa do Carreiro da Quinta	Vila Verde	Dolmen without corridor (?)	Geometric	Sampaio et al. 2013
Alto da Maronda	Vila Verde	Mamoa/tumulus	Maritime: geometric	Bettencourt 2011
Antela da Portelagem	Esposende	Corridor dolmen	Geometric	Bettencourt 2009; Bettencourt 2010
Bouça do Rápido 3	Esposende	Corridor dolmen	Maritime	Bettencourt 2009
Lugar de Vargo	Fafe	Funerary ???	Geometric	Bettencourt 1991/92
Mamoa de Guilhabreu	Vila do Conde	Mamoa/tumulus	Maritime: linear	Jorge 1986; Cruz 1992
Mamoa 2 do Leandro	Maia	Corridor dolmen	Maritime: banner	Valera/Antunes 2008; Bettencourt 2010
Mamoa 5 do Leandro	Maia	Corridor dolmen	Geometric	Bettencourt 2010; Bettencourt 2011
Chã do Carvalhal 1	Marco de Canaveses	Mamoa/tumulus with chamber of cist type	Maritime: geometric; incised; Palmela; undecorated;	Jorge 1986; Cruz 1992
Dolmen 1 de Chã Parada	Baião	Corridor dolmen	Maritime: linear; geometric	Jorge 1986; Cruz 1992
Mamoa de Vale de Juros	Baião	Dolmen without corridor	Geometric	Cruz 1992; Carneiro et al. 1987
Mamoa de Outeiro de Ante 2	Baião	Dolmen without corridor	Geometric	Jorge 1986; Cruz 1992
Monte Maninho/Mamoa de Cha do Carvalhal 3	Baião	Dolmen without corridor (?)	Geometric	Cruz 1987
Mamoa 1 de Madorras	Sabrosa	Corridor dolmen	Maritime: linear; geometric [Ciempozuelos/Palmela (?)]	Jorge 1986; Cruz 1992; Gonçalves/Cruz 1994
Mamoa Estante 2	Alijó	Mamoa/tumulus (with chamber of cist type?)	Maritime or geometric (?)	Nunes 2003
Mamoa 2 de Carvalhelhos	Boticas	Mamoa/tumulus	Incised	Jorge 1986; Cruz 1992
Mamoa 1 de Carvalho Mau	Castelo de Paiva	Mamoa/tumulus	Maritime or Geometric (?)	Silva 1995
Orca de Seixas	Moimenta da Beira	Corridor dolmen	Maritime: banner	Cruz 2001, 185
Monumento 1 do Rapadouro	Vila Nova de Paiva	Mamoa /tumulus with chamber of cist type	Geometric	Cruz 2001, 183–185, 196
Monumento 3 do Rapadouro	Vila Nova de Paiva	Mamoa/tumulus with chamber of cist type	Linear	Cruz 2001
Castonairas 1 (Orca das Castonairas)	Vila Nova de Paiva	Corridor dolmen	Maritime: linear; undecorated	Senna-Martinez/Pedro 2000; Cruz 2001, 185



Tab. 1.2. Archaeological sites with Bell Beaker ceramics in northern Portugal and the Douro basin (second part). Mamoas = barrow.

Archaeological site	Concelho	Tipology	Bell beaker type	Ref. bibliográfica
Dólmen 1 de Chão de Brinco	Cinfães	Corridor dolmen	Maritime	Senna-Martinez/ Pedro 2000
Orca de Pendilhe	Vila Nova de Paiva	Corridor dolmen	Geometric	Cruz 2001, 185
Orca do Porto Lamoso ou dos Moinhos de Rua	Vila Nova de Paiva	Corridor dolmen	Maritime: bannner, linear	Cruz 2001; Gomes/Carvalho, 1993
Orca de Forles	Satão	Corridor dolmen	Maritime: bannner	Cruz 2001, 185
Penedo do Com	Penalva do Castelo	Corridor dolmen	Maritime: bannner	Gomes/Carvalho 1993
Castelo de Fraião	Valença	Settlement (?)	Maritime: linear(?)	Almeida et al. 1995
Monte da Penha	Guimarães	Settlement(?)	Geometric	Sampaio et al. 2009; Bettencourt 2011
Estela	Póvoa do Varzim	Settlement	undecorated	Bettencourt 2011
Bouça da Cova da Moura	Maia	Megalithic(?) Precinct	Geometric; incised	Bettencourt 2010a; Bettencourt et al.2012
Leandro 3	Maia	Settlement(?)	Geometric	Bettencourt 2011
Forca	Maia	Ditched enclosure	Corded (AOC)	Bettencourt 2010a; Bettencourt 2011
Tapado da Caldeira	Baião	Settlement	Maritime: linear; geometric; incised (Ciempozuelos)	Jorge 1980; Cruz 1992
Pedreira	Alijó	Settlement	Maritime: banner	Unprecedented. Information courtesy of Joana Castro Teixeira
Regadas	Alijó	Settlement	Maritime: banner	Unprecedented. Information courtesy of Joana Castro Teixeira
Pastoria	Chaves	Settlement	Maritime: linear; geometric; local styles; undecorated	Jorge 1986; Cruz 1992
Crasto de Palheiros	Murça	Walled Enclosure/ precinct	Maritime: linear and international; geometric; incised; corded (AOC)	Sanches (ed.) 2008; Barbosa 1999
Chã das Lameiras	Moimenta da Beira	Settlement	Maritime: banner; geometric	Cruz, 2001, 388 and Fig.56 of vol. II
Tambores (ou Castelo Velho III)	Vila Nova de Foz Côa	Settlement (?)/ Walled precinct (?)	Maritime: linear; Incised	Museu do Côa, online
Castanheiro do Vento	Vila Nova de Foz Côa	Walled Enclosure/ precinct	Maritime: linear	Jorge et al., 2002
Castelo Velho de Freixo de Numão	Vila Nova de Foz Côa	Walled Enclosure/ precinct	Corded (AOC)	Jorge, 2002
Castelão I	Figueira de Castelo Rodrigo	Settlement (?)/ precinct (?)	Incised	Museu do Côa, online
Fraga da Pena	Fornos de Algodres	Walled Enclosure/ precinct	Maritime; printed with cane; printed with nail; printed with spatula; undecorated	Valera, 2007
Buraco da Pala	Mirandela	Others - rock shelter	Bell beaker forms and local styles	Sanches, 1997
Lorga de Dine	Vinhais	Others - cave	Local styles	Sanches, 2017 (in press)
Castelo de Aguiar	Vila Pouca de Aguiar	Others - Settlement	Local styles	Jorge, 1986
S. Lourenço	Chaves	Others - Settlement	Local styles	Jorge, 1986

were divided into 3 primary categories: (1) funerary: dolmens, miscellaneous mamoas (barrows)/*tumuli/cairn* – 34 cases; (2) non-funerary: settlements, walled enclosures, ditch enclosures, 13 cases; (3) and sites that are difficult to characterize – 4 cases. These other four cases refer to sites that do not have what we call classic Bell Beakers, but instead present local or regional stylistics (and/or forms) connectable with Bell Beaker models (or Bell Beaker-related). Like in other Iberian regions, e.g. Galicia where there are today about one hundred of sites with Bell Beaker pottery (Prieto Martinez 2013), the geographic

distribution with the highest concentration in the coast region is mainly due to discoveries motivated by excavations related to major construction projects that affect littoral areas more than the interior. Research projects and the archaeological excavation of large areas within sites are responsible for the recovering of the Bell Beaker pottery in both geographic regions.

Bell Beaker pottery was recovered in several types of archaeological sites: dolmens/barrows (65%<sup>1</sup>), open settlements (36%), walled and ditched enclosures/precincts (28%), and caves/rock shelters (9%). In a substantive number of cases (28%) it was not possible to characterize the site. Although it currently appears as if Bell Beaker ceramics were mainly found in funerary contexts, we believe that this difference would be much smaller if there was not a clear research bias; there is a tendency to excavate the (smaller) funerary sites, to the detriment of the (much larger) other sites.

We do not classify the sites in funerary, domestic, and ceremonial categories as these divisions are rather subjective. A funerary site can be easily categorized as either a funerary or a ceremonial site; in the case of settlements, precincts, and rock caves it is not the place that determines functionality, but rather the set of its archaeological materials and dwelling structures. Moreover, as this classification is quite speculative, it should only be attempted on extensively excavated and studied archaeological sites. Thus, for example, the rock shelter Buraco da Pala (Sanches 2016), the small Fraga da Pena Precinct (Valera 2007), or the Crasto de Palheiros Precinct (particularly in its Upper Enclosure) (Sanches 2016) are most likely “ceremonial” sites because no areas connected with all activities of a daily life are identified, as we shall see later. But, in the same way, some open settlements can have particular areas where activities and social performances of great relevance would have occurred, as in the case of Pastoria (Jorge 1986). Only in one case was there a perfect consonance between the individual Bell Beaker burial and the specially constructed monument/barrow built to receive it: Mamoa 1 de Chã de Carvalhal. For two other cases, cists inside a barrow were not completely proven (Estante 2 and Mamoa 2 de Carvalhelhos).

### 3. The four case studies: Mamoa 1 de Chã de Carvalhal, Pastoria, Crasto de Palheiros, and Fraga da Pena

#### 3.1. Mamoa 1 de Chã de Carvalhal/Barrow 1 of Chã de Carvalhal

##### 3.1.1. Site introduction

Mamoa 1 de Chã de Carvalhal (Aboboreira Mountain, Baião-Porto) was excavated by Domingos Cruz and published in a monograph several decades ago (Cruz 1992). This description is based mainly on that text, but also on another released several years later (Cruz 1995).

This site represents the only typical Bell Beaker funerary context in central and Northern Portugal and has been interpreted as a probable inhumation of an individual. As a megalithic cist inserted in a traditional medium size barrow (diameter of 12 m – 13 m), from a formal and conceptual point of view, the entire architectural set follows the tomb tradition registered in the Aboboreira Mountain enlarged megalithic necropolis, whose oldest monuments date back to late 5<sup>th</sup> millennium BC (Cruz 2001). The barrow is part of a group of four that are placed very close to each other, following in this way the Neolithic funerary tradition of the Aboboreira Mountain. There, new barrows were continuously added to the same area throughout the 4<sup>th</sup>, 3<sup>rd</sup>, and beginning of the 2<sup>nd</sup> millennium BC.

Tab.2. Synthesis of archaeological sites with Bell Beaker occupations in the lower Douro basin, expressed in absolute numbers.

Funerary sites	34
Non-funerary sites	13
Sites that are difficult to characterize	4
Others	4

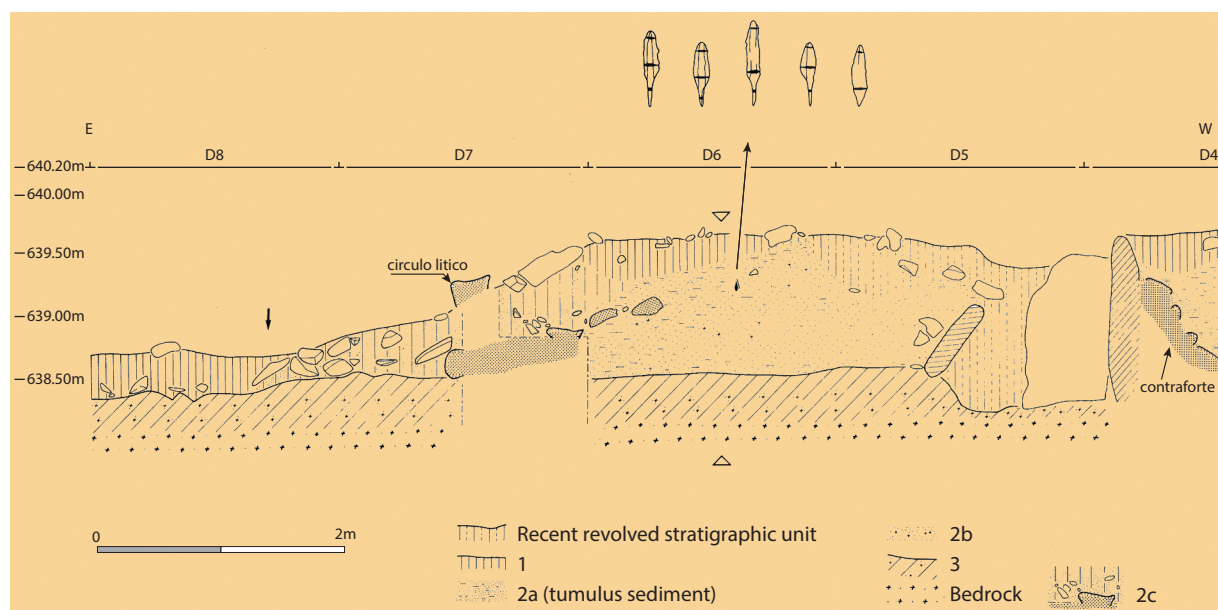
1 Percentages represent the number of that type of site with Bell Beakers on the total number of that type of site.

From an architectural point of view, we should highlight a ring/circle of large blocks (10 m in diameter) that defines the interior space of the barrow, as seen in Fig. 2. At the centre of this “stone circle” is the small rectangular chamber (1.5 m long, 1.0 m wide and 1.5 m high) and, in front of it, a block placed upright over the dense and thick stone “carapace” that covered the construction sediments of the inner barrow (Fig. 3). Except for the chamber area, the barrow was stratigraphically well preserved, that is, the sediments inside of it and those lying on the space between its entrance and the standing block. The chamber/cist was closed.



Fig. 2. Mamoia 1 de Chã de Carvalhal/ Barrow 1 of Chã de Carvalhal: megalithic cist and the standing monolith in front of its entrance (acc. Cruz 1992).

Fig. 3. Barrow 1 of Chã de Carvalhal: West-East stratigraphic profile with the location of the five Palmela points marked. Círculo lítico = ring/circle of large blocks; the package of stones is represented by the stones laying in 1 (adapt. from Cruz 1992, Fig. 11).



### 3.1.2. Archaeological context

The set of archaeological materials—pottery, arsenical copper weapons, and two spheroids of polished granite—is a typical Bell Beaker; here it is interpreted as related to the construction and use of the monument. Thus, the two clearly structured depositions—one of five Palmela points and the other of two copper daggers (Fig. 4)—in the barrow sediments, under its dense and thick stone “carapace”, occurred during its construction (Cruz 1992, 35; 45; Cruz 1995) (Fig. 4 and Fig. 5).



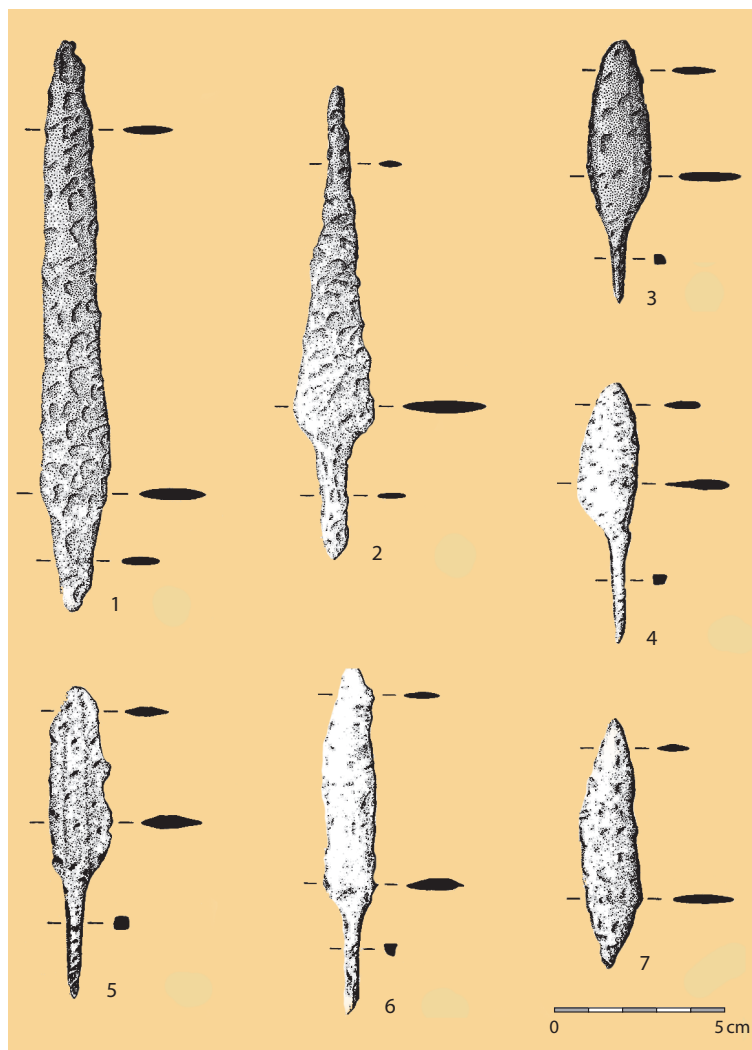
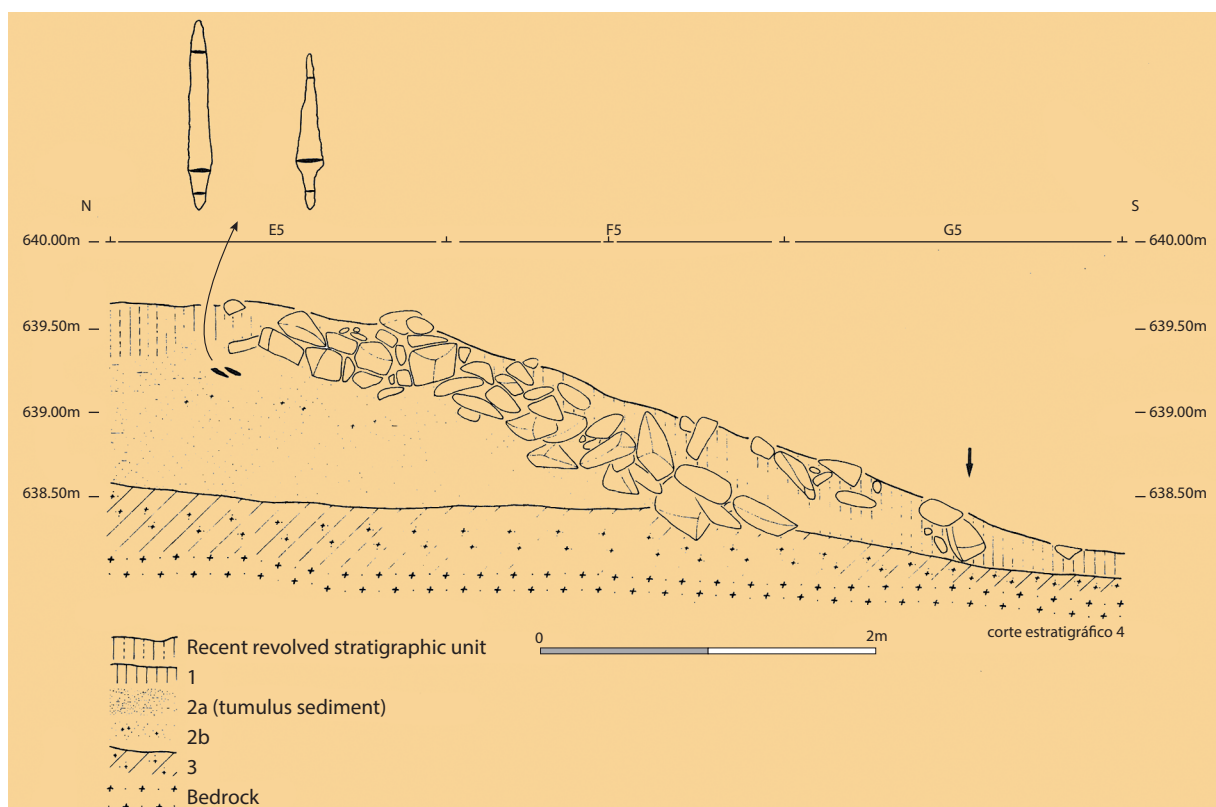


Fig.4. Copper Palmela points and daggers recovered in Barrow 1 of Chã de Carvalhal (adapt. from Cruz 1992, Fig. 24).

Fig.5. Barrow 1 of Chã de Carvalhal: North-South stratigraphic profile with the location of the two copper daggers marked (adapt. from Cruz 1992, Fig. 14).



All ceramic fragments were collected in the reworked sediment, in the space between the chamber and the “stone circle” and particularly around the base of the standing monolith. Only three fragments of a decorated Palmela cup came from the disturbed funerary chamber (Cruz 1992, 33). D. Cruz admits that, given the reduced space of the chamber and the spatial distribution of the sherds, some vessels could have been originally deposited outside the little funerary chamber. That is, like in the deposition of the weapons, they would have been placed in the construction sediment of the barrow and over the “carapace,” both in the area between the chamber and the “stone circle” and, with great concentration, near the standing monolith (Cruz 1992, 33–35). However, D. Cruz also suggests that the standing monolith could “signpost something”, indicating the location of the burial itself or, possibly, the place where the copper offerings were placed (as these latter objects were lying in its proximity) (Cruz 1992, 47).

### 3.1.3. Bell Beaker and chronology of the site

The set of ceramics comprises a minimum of ten to twelve vessels, the majority related to the Bell Beaker group – “classic” Maritime/geometric and Ciempozuelos or Palmela styles (incised), and some of them to local/regional forms, as follows. Bell Beaker: one herringbone decorated Bell Beaker (interpreted as being of local manufacture because of its clay type); one geometric-comb and incised Palmela cup; one comb-impressed and incised geometric vessel (Fig. 6); one incised vessel; one non-decorated Palmela cup; some fragments of high-foot cups (likely two cups); one base of a vase with *omphalus*; soft carination sherd (non-decorated Bell Beaker weak carinated?); one fragment of vertical rim with carination (one carinated cup?); two very low, sub cylindrical and flat bottom vessels (right-walled cups similar to a traditional “fryer”) related to the regional Palmela group. Local/regional forms: non-decorated hemispherical irregular bowl with flat-convex bottom; one flat bottom sherd. With this assemblage, D. Cruz draws connections mainly to the Palmela and “Maritime” complex.

In this monument there are only  $^{14}\text{C}$  analysis dating periods much older than the construction of the monument. These samples were taken from a palynological column in the paleosol which underlay the barrow but not the chamber (Cruz 1992, 30)<sup>2</sup>. However, D. Cruz – based on the typology of this “sub-megalithic” barrow in the context of the Aboboreira Mountain (for whose megaliths/barrows a large set of  $^{14}\text{C}$  dates is available), the copper Palmela points and daggers, and the whole ceramic set – places the construction-use of the Mamoa 1 de Chã de Carvalhal in the second half of the 3<sup>rd</sup> millennium BC, around 2600/2400–2300 BC (Cruz 1992, 98). The copper weapons fit into the regional typology around this same time period as exemplars have, until now, never been recovered from contexts dating to earlier than the second half of the 3<sup>rd</sup> millennium BC (Bettencourt 2010, 54).

We must add that the granitic and acidic soils of the Aboboreira Mountain do not allow bone conservation. This circumstance, coupled with the variability of burials and depositions found in several peninsular and European regions of this period (e.g. Fabián García 2006, Bueno et al. 2005), calls for the possibility of considering the monument as not being exclusively related to a single burial.

2 In this paleosol, superimposed by the barrow, there were no traces of anthropic occupation, contrary to what occurs in other barrows of Aboboreira Mountain.



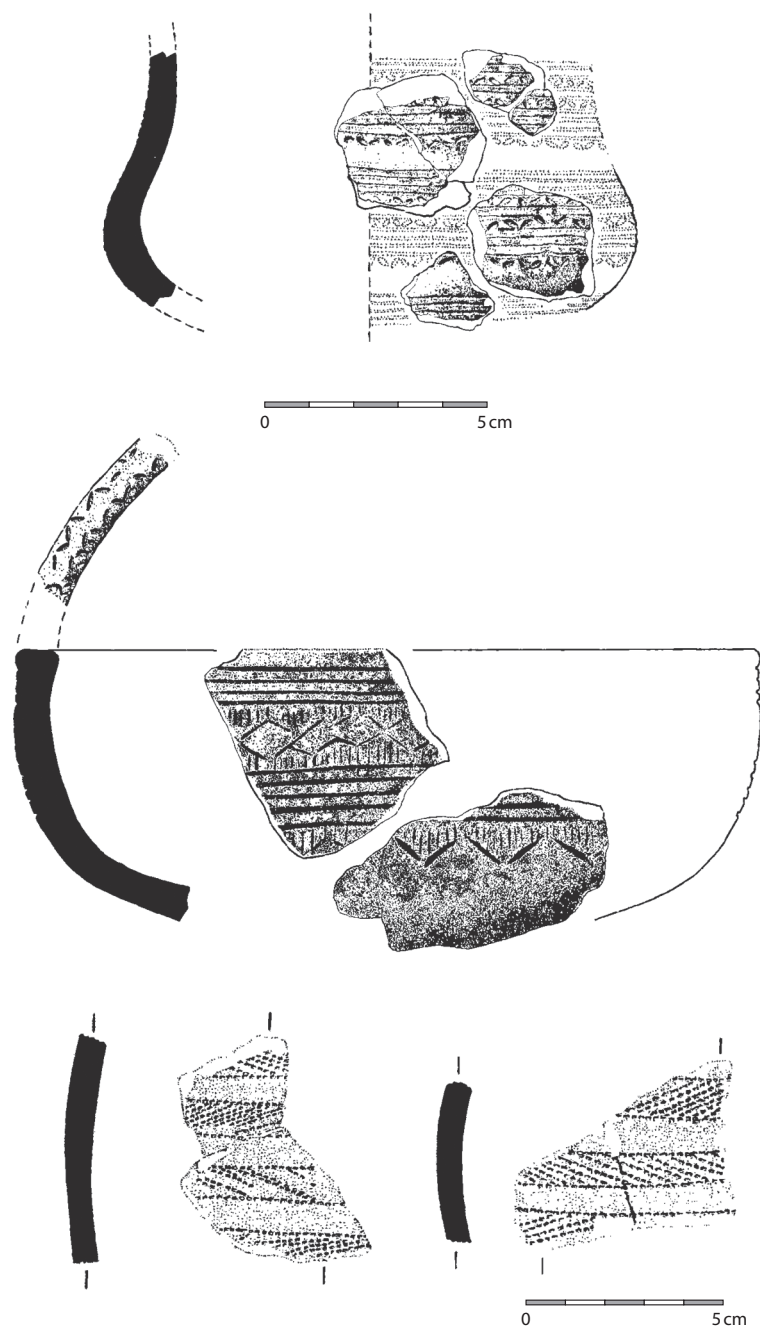


Fig.6. Ceramics from Barrow 1 of Chã de Carvalho: geometric decoration (1), Palmela (cup) (2) and herringbone styles (3 and 4) (adapt. from Cruz 1992, Fig.22 and 23).

### 3.2. Pastoria

#### 3.2.1. Site introduction

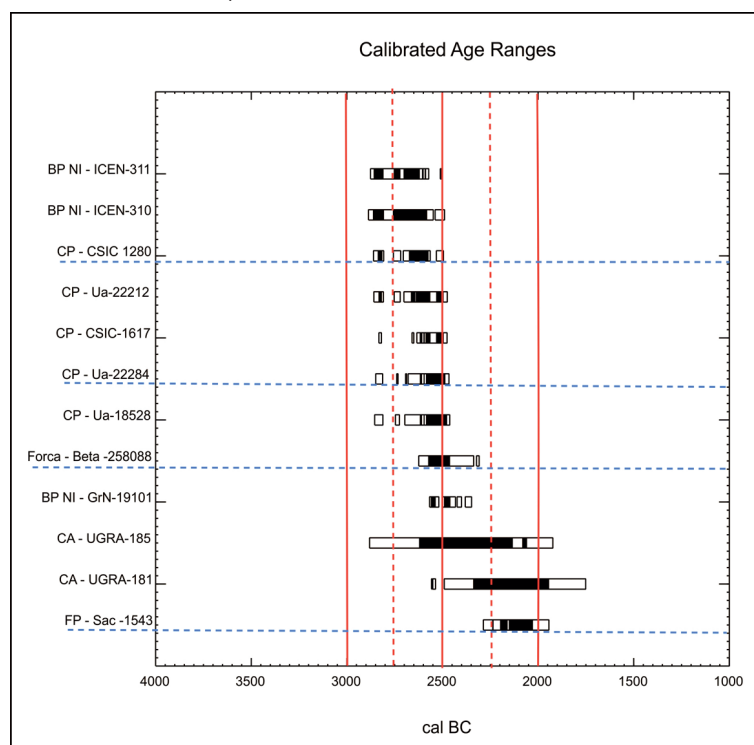
Pastoria is an open settlement in Redondelo (Chaves-Vila Real), in the Tâmega basin, near the political frontier with Galicia (Fig. 1). It was excavated by Susana Jorge in the 1980's; the monography in which it was published also includes other settlements in the region (such as Mairós, Vinha da Soutilha, S. Lourenço and Castelo de Aguiar) which allowed the author a close comparison of the style of pottery and other archaeological materials between sites in a period from the end of the 4<sup>th</sup> to the beginning of the 2<sup>nd</sup> millennium BC (Jorge 1986). We will base our exposition mainly on this publication.

The settlement covers about 0.4 hectares and extends along diverse slope platforms. The widest among these is outlined by a spur and was excavated. It is indicated in the publication by Local/Area 3

– south of the forest road, and by Local /Area 2 – north of the forest road. S. Jorge relates the second occupation of Local 3 spatially and chronologically with the occupation of Local 2; it is with this larger inhabitation (of Local 3 and 2) that both Bell Beaker ceramics and copper metals are related<sup>3</sup>.

Despite not having absolute chronology, based on the internal development of ceramics, the typology of metals, Bell Beaker ceramics, and <sup>14</sup>C-dating of Castelo de Aguiar II settlement (Table 3), S. Jorge proposes the second half of the 3<sup>rd</sup> millennium BC for the Bell Beaker occupation of the site (Jorge 1986, 559).

Tab.3. Graphical representation of <sup>14</sup>C dating (cal 2σ BC), of the following sites: BP – Buraco da Pala rock shelter; CP – Crasto de Palheiros enclosure; Forca enclosure; CA – Castelo de Aguiar settlement; FP – Fraga da Pena enclosure. Highlighted in blue are the dates from contexts directly related to Bell Beaker ceramics (Maritime groups, geometric and corded ware) (Calibration acc. Reimer et al. 2013).



Pastoria's spur, and especially the platform in Local 3, seems to be a special area of this settlement. The architectural investment required in the creation of the dwelling platform related to beaker occupation – Layers 3 and 2 – and simultaneously the archaeological evidence of disturbance of the older layer [4] should be highlighted. Among the bounding rock outcrops and over Layer 4 (first occupation), stone structures (like a stone “carapace”) made of rock and clay earth, sometimes with 40 cm height (Jorge 1986, 463) were placed in an organized manner. This presents some similarities with the “sealing” materialized in the Terminal Structure of the Upper Platform of Crasto de Palheiros (see below). In Local 3 the vestiges of dwelling consisted mainly of sub-circular arranged stones, clay floors, and remains of burnt clay (from some perishable walls?). In one case, a set of sub-circular stone structures flank a central area which contained several *in situ* vessels, hand mills and rolled pebbles. Faunal remains<sup>4</sup>, mainly domestic but also wild, were recovered in this area and probably represent consumption (Jorge 1986, 519–520).

- 3 It should be noted that in Local/Area 3, the division between Layer 2 and Layer 3 was made by artificial stratigraphy. This means that the layers actually represent a continuous occupation with no gaps. The division was created by the author only for methodological reasons: “artificial” Layer 3 at the base and “artificial” Layer 2, at the top (Jorge 1986, 463).
- 4 *Ovis/Capra; Sus; Lagomorfo; Canis; Felis catus* (?)

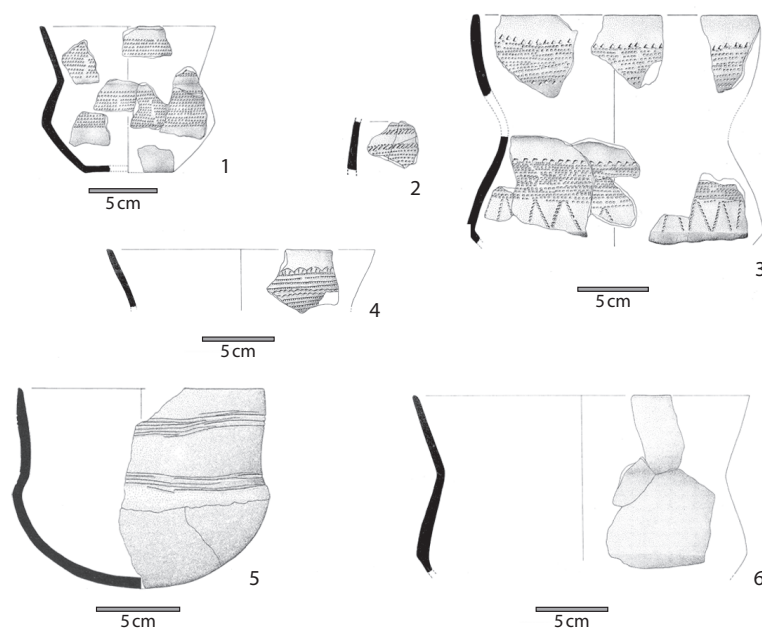


Fig. 7. Bell Beaker pottery from the settlement of Pastoria. 1: band/zoned decoration; 2: band-decoration (?); 3: zoned/geometric decoration; 4: Ciempozuelos style; 5: comb-incised-banded "Acebuchal" cup.

### 3.2.2. Bell Beaker materials uncovered on the site

From the entire archaeological assemblage of the site, we must consider the following from Local/Areas 3 and 2. From Local 3: (i) the Bell Beaker decorated and undecorated sherds (54 fragments) – recovered in Layers 3, 2 and 1 – that were refitted to a minimum of four pots<sup>5</sup>, all bell-like vessels with a very angular profile and marked carination (three of them having banded and band-geometric decoration and the other undecorated) (Fig. 7); (ii) two band-geometric decorated sherds from the same context; (iii) 1 awl, one chisel and one curved knife, all made of arsenical copper<sup>6</sup>. From Local 2: (interpretatively related to Layers 2 and 3 of Local/Area 3)<sup>7</sup> there are: (iv) a conical pot with carination, decorated with a sequence of bands made by comb-impression according to the local style "comb additive-band decoration" [V-1.i] (Fig. 7, nº 5), which is formally similar to an "Acebuchal cup" (Harrison 1977, 189); and (v) an arsenical copper dagger (found prior to excavation)<sup>8</sup>.

### 3.2.3. Bell Beaker style in the local/regional context

In addition to the lithic archaeological materials (stone mills; arrowheads of shale, flint, and corneal; axes; and adzes), a large amount of non-Beaker pottery was collected in the same stratigraphic layers as the Bell Beaker vessels. These ceramics, still assumed as domestic, are highly decorated (80%). Within this set, a large percentage of decorations are related to the beaker sequence in its additive/band-international version (especially decorative organization IV – one or more reticulated bands made with incised lines – and decorative organization V – one or more bands made of combed printed lines) (Jorge 1986). Although rare, there are also decorative organizations inspired by the Ciempozuelos style. The mineralogical and other technical analytical studies of pottery pastes<sup>9</sup> led to the conclusion that these vessels come from local manufacturing (Jorge 1986, 984; Melo/Gonçalves 1986).

Based on the study of Pastoria and the four additional settlements, S. Jorge emphasized the role of the decorative-stylistic of the ceramics, particularly the complex incised-metope one, in the affirmation

- 5 Each vessel resulted *grosso modo* from the combination of sherds from both Layers 2 and 3 and from the upper/very disturbed layer (1).
- 6 These artifacts were analyzed by XRF measurements to their surface, without previous cleaning, in LNETI and contain less than 1% of As (Jorge 1986, 554–555), (Araújo/Cabral 1986, 1095–1096).
- 7 The two Locals/areas were divided by a broad forest road.
- 8 This dagger was analyzed in LNETI by XRF and chemical analysis of a sample of its interior and contains 1.4% of As; Zn and Pb were not detected (Jorge 1986, 417; 554–555) (Araújo/Cabral 1986, 1095–1096).
- 9 Techniques of macro and microstructural characterization were also used: XRD; XRF; differential thermic analysis; TG analysis (Melo/Gonçalves 1986).

of intra-community relations at a local/regional scale (High Tâmega region) during the end of the 4<sup>th</sup> and the first half of the 3<sup>rd</sup> millennium BC (Jorge 1986, 776, 779–780). During the second half of the 3<sup>rd</sup> millennium BC, a slight stylistic transformation might have occurred, mainly visible in a simplification of the metope-decoration. At the same time, less complex themes/decorative organizations appear which repeat the same motif in additive sequences (Jorge 1986, 780). It is with this last context that the Bell Beaker pottery (in which S. Jorge observed five decorative variants within the Maritime and geometric group) and metals from Pastoria are related. This is the moment when the set of all pottery suggests a clear enlargement of ceramic “equipment” through new forms and new decorations associated with extra-local relations (Jorge 1986, 780–781). In synthesis, the Campaniforme still coincides with the “overcoming of morphological regionalism observed in the previous phase” (Jorge 1986, 544); thus, to extra-local communitarian relationships and/or to a dominant Atlantic interaction during which the Portuguese Estremadura and central Iberian interactions were still important. Beaker pottery is therefore not indicative of cultural rupture, but continuity with the previous contexts (Jorge 1986, 781–786). Its local fabric supports, in our opinion, explanations related to complex intercommunal exchange systems, like other authors have been defending (Garrido Pena 2007, 8). In Prieto Martinez’s team’s study of the Galician beaker period, the local/regional procurement of raw materials (up to 10–15 km away from the site) is also considered and largely confirmed (Prieto Martinez et al. 2015).

### 3.3. Crasto de Palheiros

#### 3.3.1. Site introduction: architecture and temporalities/chronology

The Crasto de Palheiros site (Palheiros, Murça-Vila Real) has been excavated since 1995, with the last campaign occurring in 2017, as part of a research project coordinated by one of the authors of this text, Maria de Jesus Sanches. Many publications of the results of the ten excavation campaigns can be referenced, but for the purposes of this text we highlight only the following: Barbosa 1999; Amorim 1999; Sanches 2008; Barbosa 2015; and Sanches 2016.

This site is located in the Mirandela/Tua basin and is a monumental precinct/walled enclosure built at between 577 m and 582 m above sea level, putting the complete surrounding landscape within view.

The natural prominent anticline with schist-quartzitic escarpments was totally transformed from an architectural and spatial point of view starting at the beginning of the 3<sup>rd</sup> millennium BC, i.e. during the Chalcolithic and Early Bronze Age (Fig. 8). Powerful embankments in stone and clayey earth interspersed with pre-existing schist-quartzitic outcrops, are the most prominent aspect of this archaeological site. In fact, this set of features is what gives the place such a powerful mark on the landscape. We should note that these embankments are not made of a chaotic amalgam of stones and earth. On the contrary, they exhibit an internal architectural imbrication of materials, including archaeological materials (especially quartzite hammers and ceramic fragments). This peculiar association recalls the local tradition of the construction of megalithic monuments. Its stratigraphic analysis suggests the existence of walls aligned by its top at least in some areas of the site. These walls appear to have been built of perishable materials such as branches of trees and shrubs mixed with clay.

The outcrops, powerful embankment, and possible perishable wall define the Upper (or Interior) Enclosure, which is topographically





Fig.8. Crasto de Palheiros Precinct. The Upper Precinct is highlighted at the top.

superimposed on the Lower (or Exterior) Enclosure which surrounds it (Sanches 2016, Fig. 2 – 6) (Fig. 9). It is in the Upper Enclosure that all the classic/Maritime Bell Beaker ceramics are found.

There are occupations that extend beyond the Outer Embankment/ Lower Enclosure, but they are only poorly characterized. Thus, what is considered here is only the top of the hill and its durable structures (the enclosure surrounded by embankments and the dwelling structures within it, not the entire area inhabited in prehistory<sup>10</sup>).

The site has a total occupied area that exceeds 3.5 hectares; the area circumscribed by the embankments (the two concentric enclosures) is about 2.5 hectares. Within these enclosures more than half of the space is taken up by rock outcrops. Due to the inclination of the slopes, the building of platforms/terraced areas was necessary for the construction of dwelling structures. These terraces use the outcrops as a support base. In the Upper Enclosure there are two such terraces, the Northern Platform (PSN) and Eastern Platform (PSL), which will be the subject of the remaining part of this subsection (Fig. 8 and Fig. 9).

Although Crasto de Palheiros exhibits unique features in its durable and perishable architectures, in morphological/spatial and conceptual terms it can be integrated into the so-called prehistoric monumental precincts of Northern Portugal. Like in other equally paradigmatic Chalcolithic sites such as Castanheiro do Vento (Jorge 2006), Castelo Velho de Freixo de Numão (Jorge 2002a) (both in Vila Nova de Foz Côa), and especially Fraga da Pena (Fornos de Algodres; see also Section 3.4) (Valera 2007), Crasto de Palheiros would have been subjected to diverse actions of permanent construction, reformulation, and condemnation of its architectural structures. These precincts cannot be interpreted in a single way – say, domestic, ceremonial or funerary – because archaeological structures and remains show them as multifunctional places. However, the deposition of skeletal elements only took place in Castelo Velho de Freixo de Numão (Jorge et al. 1999).

10 Crasto also has a well-preserved occupation from the Iron Age (Crasto III) which visibly affected/disturbed some Chalcolithic occupation layers. But as the hill kept its main topographical features until now, the earlier (prehistoric) architectural transformations appear to have had a more long-lasting impact.



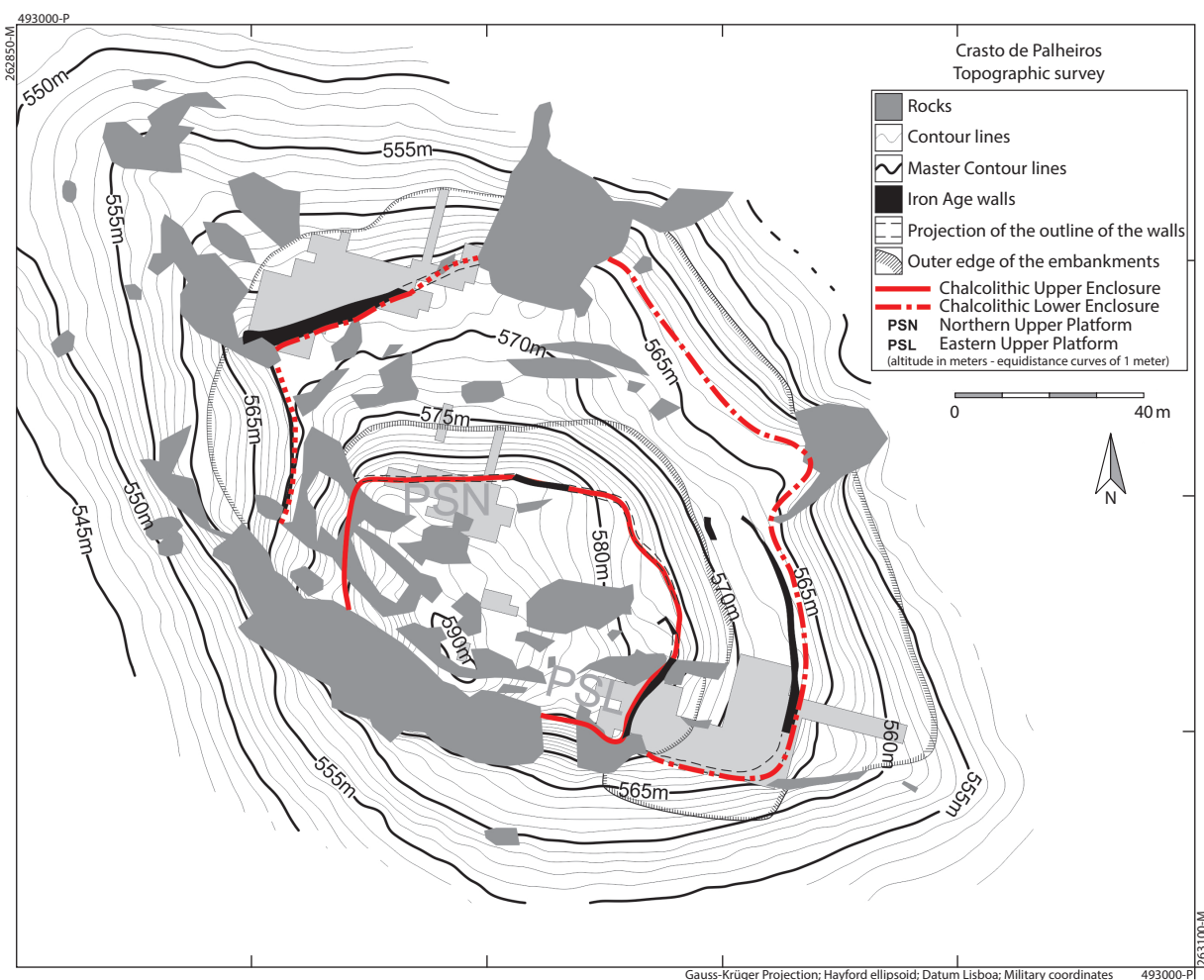


Fig.9. Topographic Survey of Crasto de Palheiros.

It is impossible to establish discrete phases of construction and re-construction referring to the entire inhabited space of Crasto (the whole hill) due to the continuous process of inhabiting, building, and closing of its different spaces. In the same way, and despite  $^{14}\text{C}$  dating (Sanches/Pinto 2008; Sanches 2016), it is not possible to establish a narrow and safe age/chronology for the various areas and architectural structures. But, we believe that construction and reformulation happened at different temporal rhythms.

The stratigraphic disconnect between the different areas compels us to assess the stratigraphic/contextual analysis of archaeological materials and their stylistics, in parallel with the respective dating by  $^{14}\text{C}$ . Thus, we have established the different construction phases of each area and, in a second moment from the interpretative point of view, the possible chronological connections between them. In this way, we focus only on the chronological relationship between the Upper Enclosure, the only place where Bell Beaker ceramics were recovered, and the Lower Enclosure, particularly in its eastern area which is the most well-known. Both have been dated using the radiocarbon method.

For the purposes of this text, we can say that the monumentalization of the site took place at the beginning of the 3<sup>rd</sup> millennium BC, possibly during the transition between its first to the second quarter, with the construction of the large embankment of stone and clayey sediments that enclosed the highest part of the site. This gave rise to the Upper Enclosure. The already published  $^{14}\text{C}$  dates (Sanches 2008, 45; Sanches 2016) support the interpretation that it was during the construction of the Upper Enclosure that the permanent

occupation of the lower platforms of the hill began, and in particular that of the so-called Eastern Lower Platform. Although the absolute dates place the occupation of both enclosures—Upper and Lower—in the second quarter of the 3<sup>rd</sup> millennium BC (the sum of probabilities of the <sup>14</sup>C dates – 1 $\sigma$ , is 2740–2480 BC), the Upper Enclosure appears to have been intentionally closed earlier than the Lower, around 2600/2500 BC. Contrastingly, the Lower Enclosure seems to have been sealed around 2400/2300 BC. The occupation of Crasto continued in other areas; for instance, it is in this period that the Northern Lower/Outer Embankment was constructed (Fig. 9).

The small habitation structures, mainly hearths, of the Lower Enclosure and the ones lying beneath the Northern Outer/Lower Embankment can be interpreted as traces of occupation left by small groups who possibly would have maintained the existing structures of Crasto de Palheiros.

However, all the architectures, and in particular the embankments and walls, required great collective effort with regard to the transport of raw materials, whether from the surrounding area or from the base of the hill to the top (Fig. 8). Thus, the dwelling structures of the site, the remains of consumption (domestic seeds and domestic animal bones), the large number of sherds and stone mills (and a small quantity of lithic instruments, with the exception of hammers used on the construction) could also be related to the presence of large groups of people who occupied the site for much shorter periods of time rather than to those who were permanent residents (Sanches 2016). As such, the temporary occupation of the site, whether ceremonial or scheduled, must be considered.

### 3.3.2. Bell Beaker sherds, their context and chronologies

Palheiros Crasto is today the site with the largest set of Bell Beaker fragments in northern and central Portugal. 157 sherds belonging to the “Maritime” group<sup>11</sup> all come from the excavated areas in the Upper Enclosure (Northern and Eastern Platforms). There are also a few sherds of the Ciempozuelos/Palmela style. The specific context and chronology of the Bell Beaker sherds deserve some comments, as follows.

In the Upper Enclosure we have two trustworthy dates from an undisturbed context. The one from the Eastern Platform—CSIC 1280–4087  $\pm$  34 BC, 2860–2495 BC (cal 2 $\sigma$ )—was collected in the upper half of the occupation Layer [20], the same layer in which the Bell Beaker “Maritime” ceramics were found. This was a restricted area with a hearth and a polygonal structure filled with sterile sediments, a slab engraved with cups, and a little vase buried upright in the soil and covered with clay (Barbosa 1999, Fig. 9; Sanches 2016, Fig. 7). One carapace of condemnation made of stones and clay earth sealed this layer. The 60 Bell Beaker sherds came from an area of 88 m<sup>2</sup> made up of the stratigraphic sealed unit [20] plus Layer 1 as these layers are spatially continuous. Three incised sherds also came from Layer [20] and one excised-like fragment from Layer 1 [cam. 1]. These additional sherds are all stylistically connected to the Palmela/Ciempozuelos complex (Sanches 2008, Fig. II.24). A fireplace, other structures, and remains of the consumption of domestic animals (sheep/goat, cattle), cereals, and legumes are found in both of these layers (Sanches 2016, Table 1).

In the Northern Upper Platform (PSN), although the upper levels of an area of about 180 m<sup>2</sup> were dug, the lower levels were only excavated in a restricted area of 38 m<sup>2</sup>, and bedrock was reached in an even smaller area (24 m<sup>2</sup>). In some areas the upper levels were very

11 We include in the “Maritime group” the following main groups of impressed/stamped-comb decorations: herringbone, linear, zoned/banded and geometric.



Fig. 10. Crasto de Palheiros Upper Precinct: Northern Platform. Terminal Stone Structure (sealing carapace). The area below which we found the Sub-circular Stone Structure is highlighted in blue (EP2-SS2 [39]).

disturbed by the occupation of the Iron Age and by erosion. But, in the sealed area, the carapace of stones had protected the underlying levels of prehistoric occupation reasonably well (Fig. 10).

PSN is a relatively narrow platform, partially created by thick and heavy schist-quartzitic blocks that line the top of the Embankment and thus define the outer contour of the Platform, as could be seen in Figures 10, 11, and 12 (UE [34]). Between that – [34] – and the rock outcrop, we define an uninterrupted occupation layer that is formed by the stratigraphic layer [41] and by the top of [43], and these layers surround and follow a destroyed Sub-circular Stone Structure [EP2/SS2 = 39]<sup>12</sup> (Fig. 10 and Fig. 12), this one being of continuous use and intentional concealment. From the interior of this latter structure, some ceramic fragments were recovered, among them a low and wide incomplete broken recipient (with sub cylindrical profile, decorated by traditional comb and incised lines according to the [I2/metope] organization, “comb-metope”)<sup>13</sup>. Burned sediments of [41] surrounded and are contemporaneous to this Sub-circular Structure. It was from them that we obtained the date Ua-22284: 4035 ± 45 BC, 2850 to 2469 BC (2σ cal.). These burned sediments relate to several fireplaces that were have been carried out over time around the rock outcrop and around the Sub-circular Stone Structure [EP2/SS2 = 39]. The sample was collected from the middle of this layer. We are waiting for the results of an additional three <sup>14</sup>C datings of this area.

As SS2 was successively used and condemned (see [39] in stratigraphic Profile 2 – Fig. 12 – and in Fig. 11), the outer carapace increased in height and thickness [33], eventually covering the entire available area at the terminal moment. We named as Terminal Structure – ETS/TS<sup>14</sup> – this architectonic set that seemed similar in its structure to a barrow, and that sealed completely this area. This TS was similar to the terminal condemnation carapace that covered both large areas of the Lower Enclosure and a substantial area of the Eastern Upper Platform in the Upper Enclosure. The Terminal Structure [33] was formed by slabs of different sizes, clayey earth, many ceramic fragments, hammers, quartzite flakes and pebbles, and small broken and unbroken mill stones (Fig. 10 and Fig. 12). The surrounding area of the SS2 revealed hearths and a large quantity of remains, principally sherds, small mill stones and hammers, scrapers and arrowheads (both in quartz), and polished axes or hoes in a very small number. Carbonized seeds (wheat, barley) were recovered from the hearths in layers both with and without Bell Beaker ceramics; this archaeological material is still being studied.

12 In Portuguese – EP2; in English SS2 means Sub-circular Stone Structure 2.

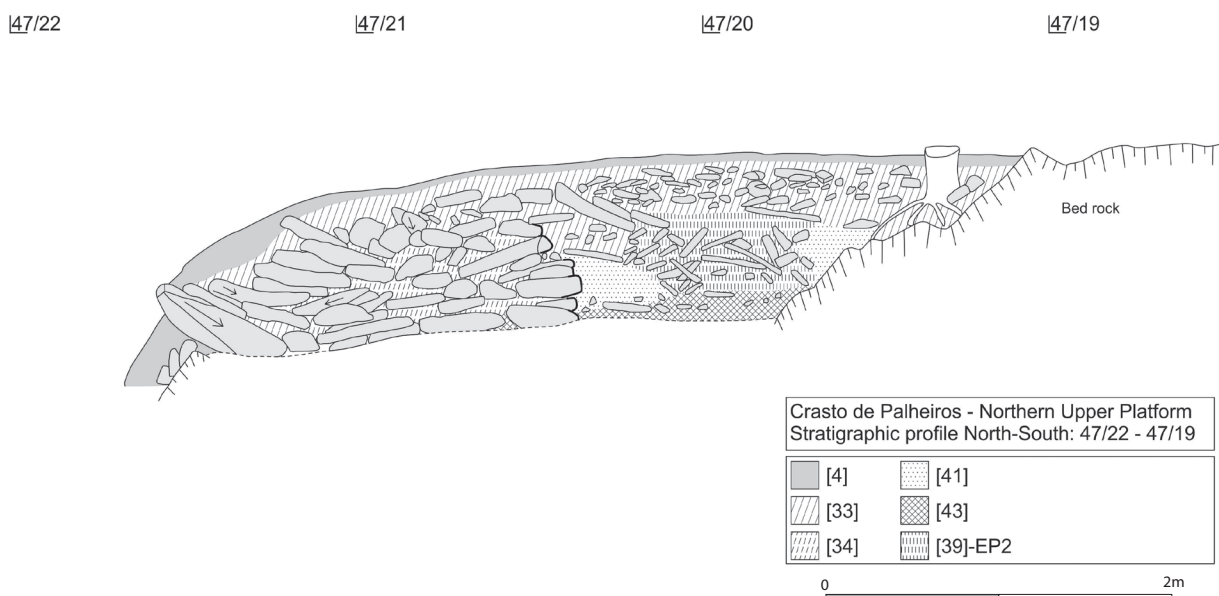
13 Three sherds of this vessel were inside the Sub-circular Structure and the other two in the interior of the Terminal Structure (TS, see the next note). These latter sherds were separated from the first ones by a distance of between 2 m and 3 m, which points to a contemporaneous deposition.

14 In previous papers (Sanches 2016; Sanches et al. 2017) it was named Terminal Sub Circular Structure (ETS/TS) because its outline seemed to be sub circular. However, the excavation campaign of 2017 demonstrated that its contour had not yet been defined and that the “sub-circular” aspect was conferred by the effect of the Iron Age intrusions. For this reason it was renamed Terminal Structure only.





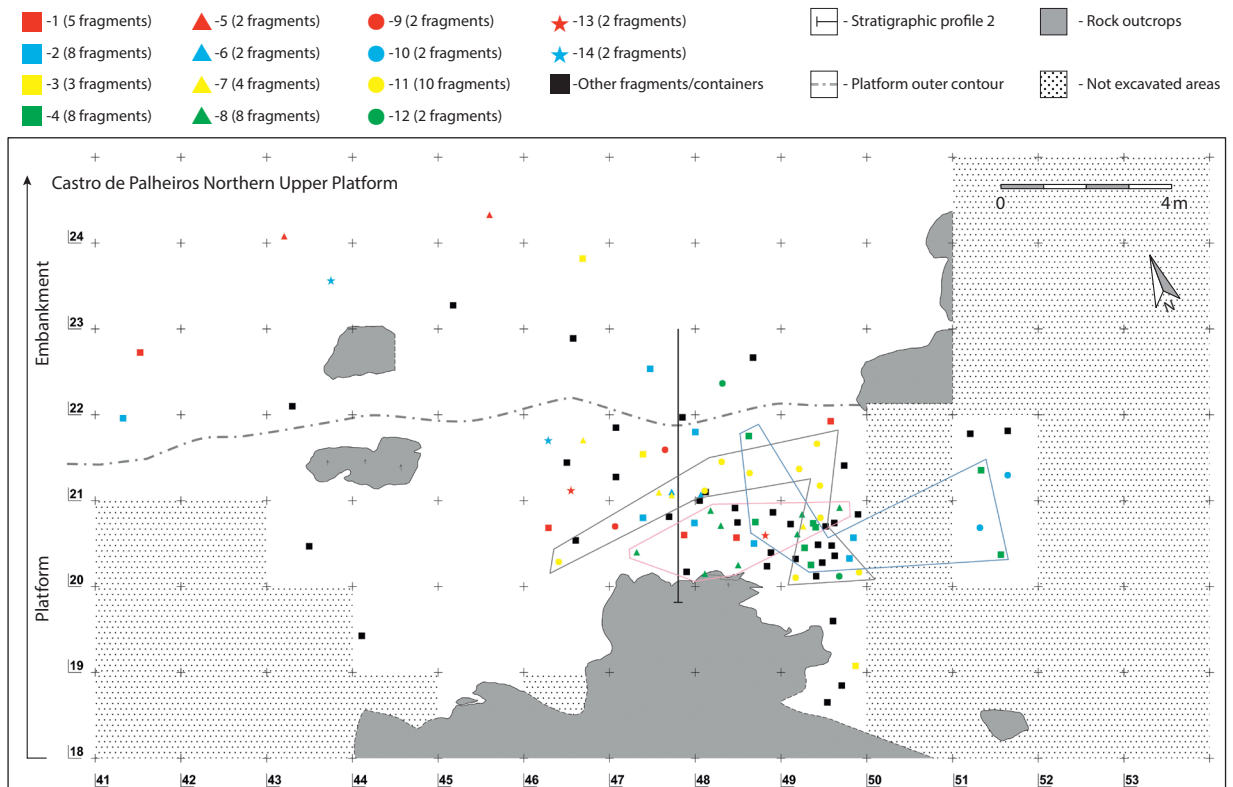
Fig. 11. Crasto de Palheiros Upper Precinct: Northern Platform. North-South stratigraphic profile which crosscut the Terminal Stone Structure (carapace).



Approximately half of the 97 Bell Beaker fragments of the Northern Upper Platform were recovered from the upper (disturbed) stratigraphic units. The other half were collected in the intentional condemnation stratigraphic “levels” we designate [33] (+ [34]+[8]<sup>15</sup>) and from the top of the level of occupation stratigraphically related to [41] and [39] in its last phase (Fig. 12). On both platforms (northern and eastern), Bell Beakers seems to be related only to the terminal moment of occupation of those areas. But, while in Northern Platform they are dominantly related to the sealing of the platform and, to a lesser extent, to the occupation (e.g. container nº 4, Fig. 13), in the Eastern Platform no fragment was uncovered in the condemnation level (carapace) and all sherds were found in the top of the occupation layer that underlies it ([20] and in Level 1). Because we are describing materials, it must be mentioned that copper metallurgy, although not very significant, is indicated in both areas by casting remains, spike/rivets, tiny deformed plates, slag, two axe fragments, and in PSN also by crucible fragments (not yet analyzed). These evidences occur both in layers with and without Bell Beaker pottery.

Fig. 12. Crasto de Palheiros Upper Precinct: Northern Platform. Second North-South stratigraphic profile (nº 2). For location, see Fig. 13.

15 [UE8] is not represented in the stratigraphic profile but it corresponds to [UE33].



In synthesis, the Bell Beaker ceramics are not temporally integrated into the beginning of the monumentalization of Crasto de Palheiros, but were first introduced at least when the Upper Enclosure was already intensely occupied. In this enclosure the Bell Beaker pottery is associated with contexts that have mainly artefacts linked to the regional tradition, especially the large number of decorated containers. Similarly, both the  $^{14}\text{C}$  dates and the decorations of the ceramic set, particularly those of Type 8 which we shall discuss below, indicate that the occupation of the Lower Enclosure in its eastern area was already in progress in that period and was contemporaneous with the Bell Beaker occupation in Upper Enclosure. We believe that this period falls between 2700–2500 BC. It should be noted that the beginning of the monumentalization of the Upper Enclosure occurred a little earlier than that of the lower.

Fig. 13. Crasto de Palheiros Upper Precinct: Northern Platform excavated area with the spatial distribution of Bell Beaker sherds and the areas where Containers 4, 8 and 11 were recovered marked. The location of the North-South stratigraphic profile in Fig. 12 is also shown.

### 3.3.3. The Bell Beaker pottery

The set of Bell beakers consists of 60 sherds of Maritime style uncovered in the PSL area, forming a minimum of 14 and a maximum of 18 containers (Sanches 2008, Fig. 28/a; II/24; II/25), and 97 of Maritime style fragments from the PSN area. The highly fragmented state of the sherds in this latter area only allows the suggestion that they can be reconstructed to 28 different containers. Indeed, it was only possible to identify the forms of about half of the vessels (see the main forms in Fig. 14). It should be said that type-forms 9 and 12 belong to the group of open and deep shouldered bowls (Fig. 15); Type 10 and Type 11 refer to the traditional Bell Beakers with smooth S-profile (Fig. 16); Type 8, which is a slightly closed cone shape form with a simulation of carination, does not belong to the classic Maritime Bell Beaker assemblage since its decoration, always incised and extremely standardized [that we named I1a], seems to formally mimic the decorative organization of the Ciempozuelos group (Fig. 17). Type 8



is more similar to the “Acebuchal” cup (Harrison 1977, 189). Within the Maritime Bell Beaker group there is a great decorative diversity which is distributed as follows – herringbone: 8 containers; linear: 4 containers; zoned (banded): 12 containers; geometric: 25 containers.

The presence of a higher baroque decoration in Northern Platform geometric style should be highlighted here. Within this group of decorations, the motifs that associate wide and deep circular prints with

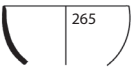



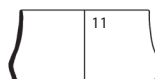
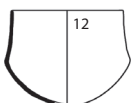


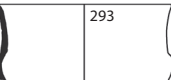

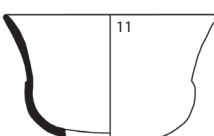
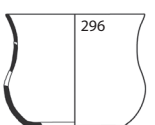


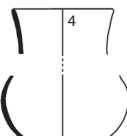
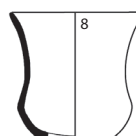
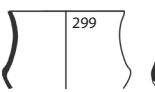

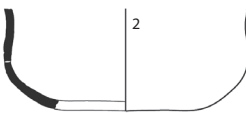

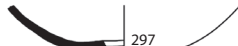
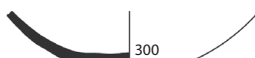
	PSL	PSN
3/4	 265  267	 3  4
8	 11  12	 8  11
9	 293  294	 11
10	 296  304  301	 4  8
11	 299  298	
12		 2
	 292  297  300	

Fig. 14. Bell Beaker pottery forms from Crasto de Palheiros. PSL=from Upper Eastern Platform; PSN=from Upper Northern Platform. Forms 3, 4 and 8 have I1a decoration (incised Bell Beaker). The omphalus bases were only recovered in Upper Eastern Platform.

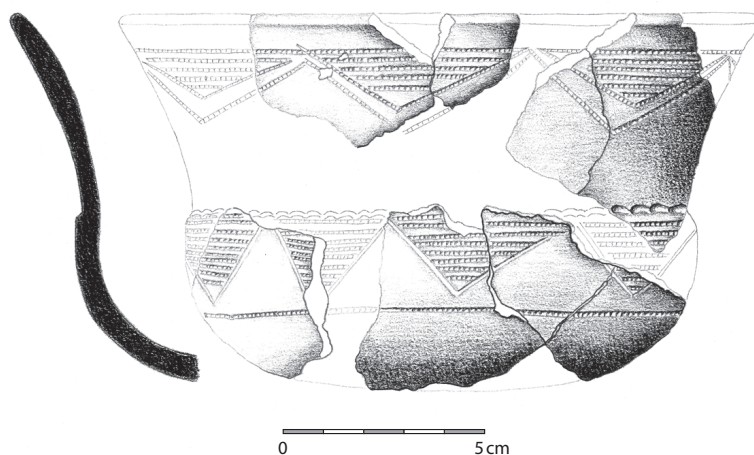


Fig. 15. Crasto de Palheiros Upper Precinct: Northern Platform beaker vessel with geometric beaker style (drawing made by Dulcineia Pinto).

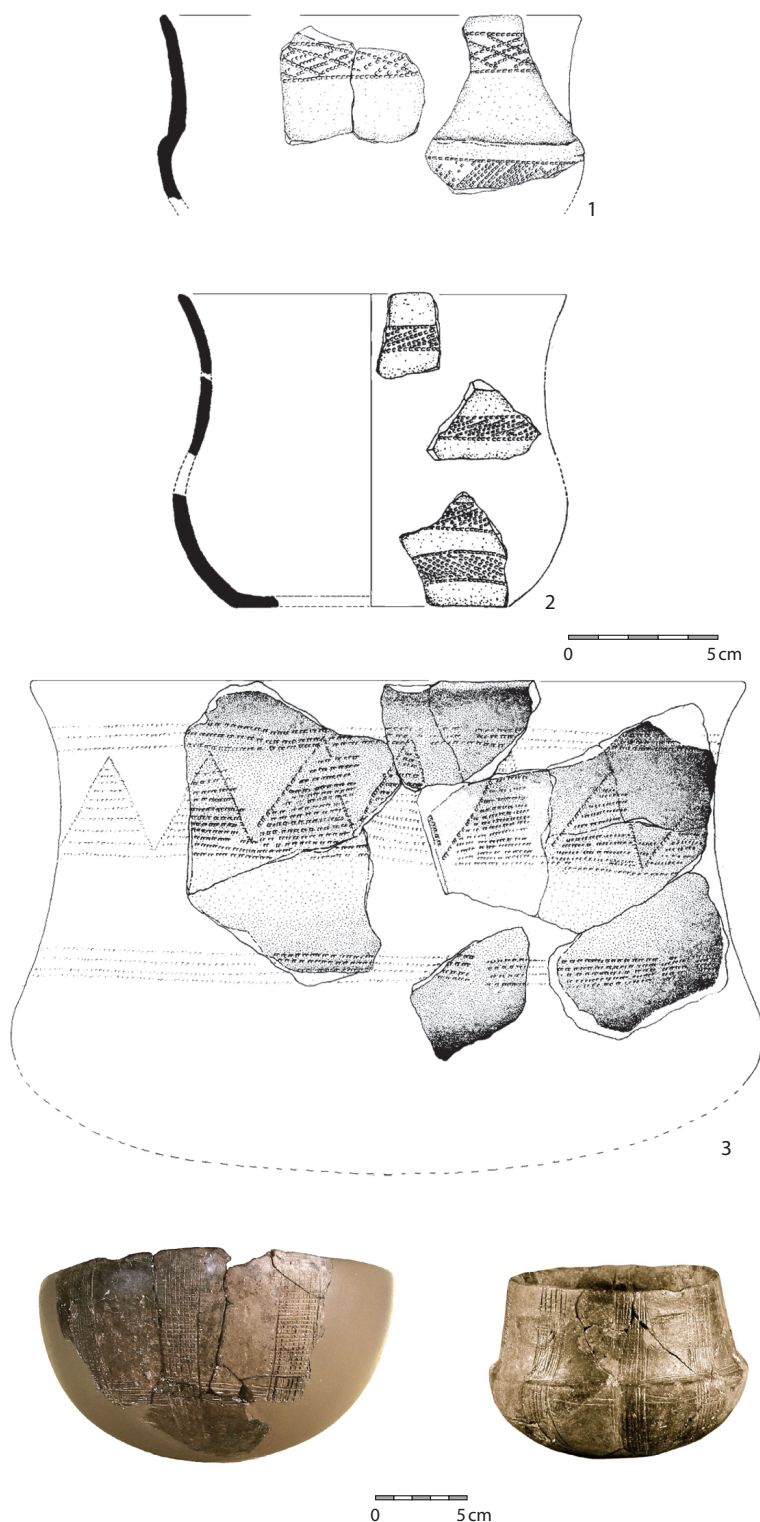


Fig.16. Crasto de Palheiros Upper Precinct: Eastern Platform beaker vessels with Maritime and geometric decoration.

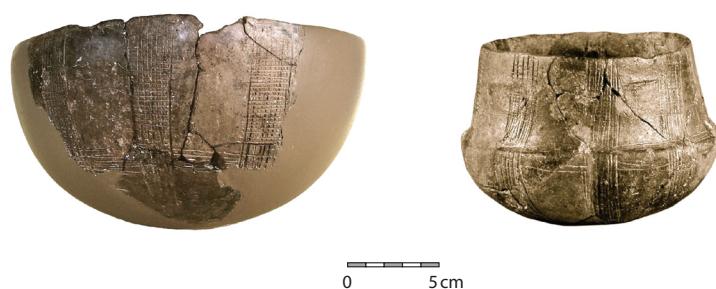


Fig.17. Crasto de Palheiros incised Type 8 and hemispheric vessels.

other elements like sequences of triangles filled with dotted lines and the motif that is constituted by a band made up of a line of very deep circular prints delimited above and below by one comb-impressed line, stand out. These decorative organizations have exclusively been found in this area of Crasto in the lower Douro basin (see the first two fragments in the upper row and the three fragments in the lower right corner of Fig. 18). This particular decoration, though rare also in a wider spatial frame, has been recorded in Hut 3 of Camino de las Yeseras, Madrid, where such a band appears in a more complex decorative organization (imitating Ciempozuelos) than in Crasto (Liseau et al. 2013, Fig. 8).



It is possible that additional non-decorated Bell Beaker sherds are in the ceramic assemblage; but the study of the pottery, though incomplete, has not yet allowed any such identifications.

The aforementioned Type 8 containers – bell-shaped with a simulation of carination, similar to the Acebuchal “cup” – should be discussed in more detail for a number of interpretative reasons. These vessels have just as good or better surface treatment than the classic Bell Beaker, although they have dark brown oxidized cooking surfaces, as opposed to the reddish brown of Bell Beakers. In one case, a decorative organization [V3] (Sanches 2008, Fig. II.28/c; II/23; II/24) replicates, in its combed printed version, the bell decorative additive bands of the Pastoria container (Fig. 7, nº 5). In these vessels, the form [8] and the decorative organization itself [I1a] – which is incised – are very rare because they imitate incised Bell Beakers. The vertical panels of alternating cross lines with space voids, join sometimes in a star design at the bottom of the container and the decorative organization is also associated with small closed globular vessels, small bowls, and high bowls (Fig. 17), i.e., traditional containers (Sanches 2008, Fig. 28/c and II/23). Together, these three types of containers appear to constitute a group of forms similar to those occurring both in Maritime and in Ciempozelos Bell Beakers. However, while the latter set (vessels with the decorative organization [I1a]) – which we call the exceptional ceramics of Crasto, but which we could also name as its incised “beaker tableware” – is found in all of the excavated areas

Fig. 18. Crasto de Palheiros Upper Precinct: Northern Platform geometric decorated sherds.

(always in very small percentages), while the printed Maritime and geometric styles are confined to the Upper Enclosure.

In the Upper Enclosure, Type 8 containers represent about 10% of the Bell Beakers. It represents a scarce minority principally in the Northern Platform. In fact, only two Type 8 vessels were identified in there; their small number of sherds represent only 0.37% of the decorated ceramics. A comparison of the dimensions of these Type 8 vessels also shows a difference between the platforms: from the Northern Platform the two exemplars range in size from 0.47 and 1.164 liters, (they look like drinking cups) whereas in the Eastern Platform, the bell-shaped variation of this type (which appears at a much higher frequency) is larger, between 0.94 and 5.75 liters. None of the Type 8 vessels have any traces of being used over a fire.

Statistics can aid in a better understanding of the actual significance of Bell Beaker ceramic within the set of decorated ceramics. In the Eastern Platform (PSL) Bell Beakers represent 5.2% of the total and in Northern Platform (PSN), in the undisturbed contexts that integrate the Upper Terminal Structure (TS), around 7.0% of the decorated ceramics are Bell Beakers. However, if the disturbed contexts in the Northern Platform are also considered, then the decorated Bell Beaker ceramics represent only 3.6% of the total. In all cases, Bell Beakers are found in low quantities, giving them an exceptional character. Neither the context in which they are found, nor the quality of most of their pastes and surface treatments allow us to assume that they were used routinely.

As we have previously defended, the spatial distribution of ceramic fragments on the Eastern Platform suggests their use in both depositional and commensal contexts (Barbosa 1999; Sanches 2016). In the Northern Platform about half of the fragments are in contexts disturbed by the Iron Age occupation and erosion. This is the reason why in Fig. 13 several sherds of the same vessel are distributed over wide areas, separated by distances that reach 6–10 m. Those sherds that come from undisturbed levels, particularly from the Terminal Structure, show trends in their spatial distribution that allow us to interpret them as corresponding (i) to the possible intentional deposition of different fragments of the same vessel in some cases (e.g. Containers 1, 2, 3, 6, 7, 9, 11), or, (ii) to the deposition of isolated sherds, each of these belonging to a different vessel (in at least 14 containers). It is also likely that these fragments were deposited (as were other sherds from other pots and other materials) mixed with sediments, in a place nearby, and later used as a building material. The large number of fragments belonging to the same container found in the Terminal Structure makes it plausible to consider them as a result of the intentional deposition of large parts of the same pot which were broken *in situ* in the course of construction. Of these sherds belonging to the same vessel collected from undisturbed construction contexts, many were found at distances ranging from 20 cm/50 cm to 3 m/3.5 m. But, in these more spatially concentrated sherds, as in the more distant ones, the actual number of sherds which could be fitted together remained very low.

Therefore, it seems to us appropriate to defend the intentional inclusion of these sherds in the construction/sealing of the platform, whether broken *in situ* or not, as happened with other ceramics in other areas of Crasto (Barbosa 2015). It is clear to us that Bell Beaker ceramics, because they appear to have been exclusively used and deposited in a very restricted and dominant area of Crasto – the Upper Enclosure – would have social meanings distinct from those “used” and/or deposited in other areas.



### 3.4. Fraga da Pena

#### 3.4.1. Site introduction

Fraga da Pena (Fornos de Algodres, Guarda), located on the right bank of the Mondego river on the southern border of the Douro river basin, was the object of archaeological excavations between 1991 and 1998 as part of a research project coordinated by António Carlos Valera. It has been published in several forms; for the purpose of this text, the following publications stand out: A.C. Valera (2000, 2007, 2012).

The site perches on top of an impressive granite tor at an altitude of 750 m. This natural visual focal point in the landscape was transformed into a monumental Precinct during the 3<sup>rd</sup> millennium BC.

The monumental Precinct consists of two contiguous/concentric enclosures: the Inner Precinct (Precinct 1), which developed around and connected to the large central batholiths, and the Lower Precinct (Precinct 2), which attaches to the first at a slightly lower quota (Fig. 19). Both enclosures were delimited by imposing walls that sometimes exceed 3 m in width. The wall that delimits the Inner Precinct has a semicircular configuration and three small semicircular bastions attached to its external face as well as a narrow entrance framed by two granite batholiths. The lower enclosure is attached to the inner one by rock outcrops and also delimited by powerful walls reaching up to 3.40 m in thickness and a minimum height of 1.80 m. The outcrops were integrated into the construction of the walls; the bases of the walls were constructed with large blocks and their upper parts with smaller dry stone. This construction method reveals the clear framework of local Chalcolithic traditions which have also been observed in other places excavated in the region such as Castro de Santiago (Valera 2007, 82).



Fig. 19. Fraga da Pena tor with the Inner and Outer Precincts visible outlined by walls (photo: António Valera, Valera 2007).

Despite the visible collective effort implied by the construction of the walls, they actually delimit a very restricted area: about 110 m<sup>2</sup> in Precinct 1 and about 100 m<sup>2</sup> in Precinct 2. This is only one quarter of the space constituted by the granite outcrops. The prehistoric occupation took place in both precincts soon after the construction of its walls (Valera 2007, 230).

The occupation of the inner enclosure corresponds to Stratigraphic Unit [3] in which a stone alignment was identified. Despite its difficult interpretation, the alignment suggests the existence of a compartmentalization of the Inner Precinct. Access to this Precinct followed a



specific path along the Lower Precinct. The occupation of the Lower Precinct includes the Stratigraphic Units [25], [26], and [27], interpreted as the same occupational layer, from which most of the archaeological material was recovered.

On a higher point in the slope, around 80m from where the tor/Fraga da Pena Precinct is located, excavations uncovered evidence of a contemporary occupation outside of the enclosures. This open platform will not be discussed here in detail as no Bell Beaker ceramics or other exceptional materials were found there, but rather artifacts related to everyday activities, these absent or very rare in the walled enclosures.

### 3.4.2. Archaeological context of the Bell Beaker sherds

A large quantity of Bell Beaker pottery was collected in Fraga da Pena. In the Inner Precinct they have a low representativeness regarding the totality of the ceramic assemblage/collection (4.8%). They were uncovered at the base of the occupation Layer [3], associated mainly with forms of the local Chalcolithic tradition, but also with some innovative ones. In the Lower Precinct, the Bell Beaker pottery represented a much larger percentage of the ceramic assemblage (26.5%). In this area, later forms, belonging to the Early Bronze Age, assume a greater weight.

Despite the low percentage of decorated ceramics in both precincts (less than 10%), a difference can be identified between the two: the decorations of the regional Neolithic-Chalcolithic tradition are more common in the Inner Precinct and, on the contrary, in the Lower Precinct there is a greater prevalence of comb-incised decorations. It is proven that the comb decorations in this micro-region are a more recent style. In this context, then, they represent an innovation. The concentration of many beaker sherds, sometimes corresponding to several half pots, in the central area of the Lower Precinct and along the "path" leading to the Inner Precinct entrance should also be highlighted as well as the deposition of an almost complete herringbone Bell Beaker in the Inner Precinct, precisely at the end of a stone alignment that follows the entrance (Valera 2012).

Absolute dates related to the continuous occupation of this site came from the inner enclosure. A  $^{14}\text{C}$  date points to an interval of use in the last quarter of the 3<sup>rd</sup> millennium BC while the four TL/OSL dates refer to the last quarter of the third/first quarter of the 2<sup>nd</sup> millennium BC. A. Valera admits that both enclosures would be overall contemporary since there are no significant differences in their material culture (Valera 2007, 251–253). But, the author exposes and discusses other details that could point to slight chronological differences between the precincts - suggesting the Inner Precinct as being slightly older - as well as to contextual differences, namely (i) the larger thickness of the Inner Precinct occupation deposit, (ii) the higher density of its archaeological materials, and (iii) the higher relative representativeness of ceramics connected with the regional traditional Chalcolithic group. In fact, in the Lower Precinct there is a greater relative percentage of Bell Beaker and of regional comb-incised pottery, these latter considered as innovative in the regional Chalcolithic. The ceremonial Fraga da Pena Precinct (Valera 2007, 454–455) had a much shorter occupation than other monumental enclosures that are similar to it from a chronological point of view. This occupation would have occurred between the last quarter of the 3<sup>rd</sup> and the first quarter of the 2<sup>nd</sup> millennium BC.

No domestic structures or materials associated with everyday activities were identified in the intramural areas, but a copper awl, an anthropomorphic idol, and adornment elements were collected in addition to abundant pottery. The above mentioned elements, and also a schematic rock painting located on one side of the granitic tor whose pigments appear to have been milled at that site, indicate that this Precinct was spatially segregated from the surrounding area and reserved for special ritual activities. Thus, the site of Fraga da Pena is interpreted as a multifaceted prominent place which played an important role in the process of local identity formation.

### 3.4.3. The Bell Beaker decorative styles

Fragments of 34 different Bell Beaker containers were recovered from Fraga da Pena, of which it was only possible to identify the form of 21, all belonging to Type 15 of this site's typology (Valera 2007, 235). The great morphological diversity of this type is reflected in five subtypes: three of them refer to vessels with Bell Beaker-like profiles (that are the most frequent in the general set of Bell Beaker forms), one to shouldered bowls, and one to carinated bowls. Also noteworthy is Type 13, a container of slightly bell-shaped morphology, of who the investigator manifests doubts as to whether he should include it in the set of Bell Beaker containers (Valera 2007, 235).

Of a total of 34 Bell Beaker containers, 11 were decorated with nail impressions (Fig. 20, nº 3 and nº 5). This decoration has no parallel in the region nor even on the peninsular scale, thus the presence of this decoration points to a local reformulation of a supra-regional archetype<sup>16</sup>. The impressed technique is also present in band decorations with the international organization: the impression of dotted lines and lines with a spatula. The comb-impressed decoration is present

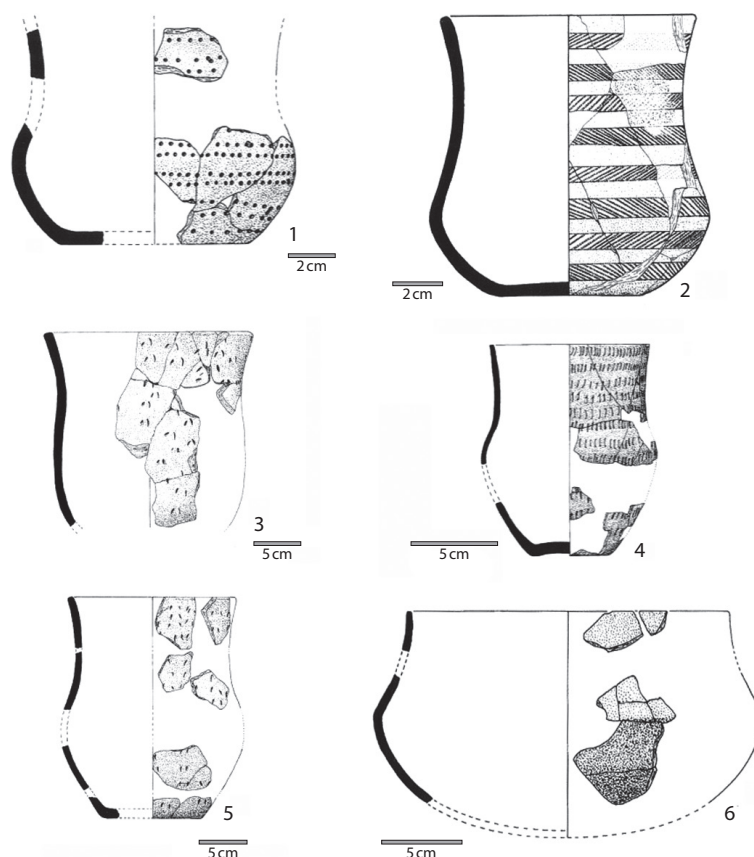


Fig. 20. Bell Beaker vessels from Fraga da Pena Precinct (adapt. from Valera 2007, Fig. 5–24, 5–25, 5–26). 1 – linear (dotted); 2 – herringbone; 3–5 – nail impressed; 6 – without decoration.

<sup>16</sup> Beaker pottery with the same shape and same decoration can be found on the British Isles (Clarke 1970).

here in its three variants: herringbone (the most representative), linear, and geometric (Fig. 20). There is thus great stylistic diversity in this Bell Beaker set, although incised Bell Beakers do not appear.

The highest percentage of Bell Beaker pottery (12 containers) recovered from the site was not decorated. In this sense, the archaeometric study of ceramic pastes (Bell Beaker and not Bell Beaker) is relevant, as it allowed the identification of four compositional groups (Dias et al. 2000, 258) and the conclusion that essentially all ceramics were produced locally, although the movement of exogenous materials is also occasionally possible. Group I is the most homogeneous and clearly differentiated from the others. It is composed only of Bell Beaker containers, mostly nail-impressed beakers. In no other category is such care taken in obtaining raw materials and in the production technology itself. It must be noted, however, that four of the Bell Beaker vessels analyzed – one herringbone, one linear, one band-dotted, one without decoration – revealed raw material of a distinct origin. These may be interpreted as foreign vessels. In this last group there are also two traditional vessels (a comb-incised and a non-decorated pot); this points to an enlarged circulation of several kinds of ceramics, not only Bell Beaker ones. In summary, this study confirmed that greater care was taken in the manufacture of Bell Beaker pottery, particularly with a Bell Beaker form and a local decorative style, which was unequivocally associated with sources of raw material close to Fraga da Pena.

## 4. Discussion

### 4.1. The decorative styles

In terms of presence/absence, sites that have classic Maritime (linear, herringbone) and comb-geometric pottery decorations dominate the Portuguese Douro basin region (about 75 % of the cases). There are no differences between burial sites and the other ones with respect to the presence/absence of this style group. The current apparent higher frequency in funerary sites is an artefact of regional research: funerary sites (mainly dolmens/barrows) are more often excavated.

The incised Bell Beakers (Palmela/Ciempozuelos) and the non-decorated vessels, as they account for about 9 % of the cases each, represent a phenomenon that cannot be neglected, especially if we consider that their geographic distribution (covering the entire region under study) and the kind of sites where they occur seem to be similar to the classic Maritime and geometric groups. We should also note that the incised Bell Beakers do not occur in isolation, but always in association with the Maritime group<sup>17</sup>.

Corded/zoned Maritime (C/ZM) vessels were registered only in one case on the coast (Forca ditched enclosure) (Bettencourt/Luz 2013), and AOC in one case (Castelo Velho F. N. monumental walled precinct) (Jorge 2002a) in the “inland.” In both instances these were the only beaker sherds recovered. However, in Northwest Iberia, to which our region belongs, and more precisely in Galicia, five cases of sites with corded ceramics have already been registered (three cases of AOC and other two of C/ZM). In two of these sites, A Fontenla and Gandaras de Budiño, these ceramics were associated with other beaker styles (Suarez-Otero 2011). In the other three cases – two megalithic tombs, Forno dos Mouros (C/ZM), Monte de Marxos (AOC), and the site of Arca dos Penedos (AOC) – the corded ceramics were found in contextual situations difficult to classify (casual finding). When this set is added to the Portuguese one, there are four

17 The only case of isolated incised sherds, from Mamoa/Barrow 2 de Carvalhelhos, was found during survey works (Nunes 2003).

cases of All Over Corded (AOC) and three of Corded/zoned (C/ZM) ceramics in the northwest Iberian Peninsula. In order to understand the relative importance of this kind of Bell Beaker in the “Atlantic façade,” the similar vessels found at Porto Torrão – Alentejo would also have to be considered (Cardoso 2014; Suarez-Otero 2011).

On the other hand, if we consider the local decoration features and imitations of beaker decorative organizations added to Bell Beaker forms, only the restricted group of sites that have had extensive archaeological excavations and whose ceramics have been well studied can be discussed. The sites are thus very few and are located in the more interior regions where systematic research projects have been developed. These sites do not include burials, but are rather two walled/monumental precincts (Crasto de Palheiros and Fraga da Pena), a settlement (Pastoria), and a rock shelter used for cereal and legume storage and for communitarian (“ceremonial”) consumption purposes (Buraco da Pala) (Sanches 2016).

#### 4.2. Chronology

Regarding the chronology of Bell Beaker ceramics, neither stratigraphic contexts nor absolute dates allow us to say which are the oldest or the most recent styles, contrary to the situation in Galicia region (Spain). The Bell Beaker pottery set is marked by a considerable morphological and stylistic diversity. Prieto Martinez, while defending a long chronology for the Galician Campaniforme based on several  $^{14}\text{C}$  dates that situate it between 2800 and 2000/1700 BC ( $2\sigma$  cal.), specifies that her “Stylistic Tendency 1” of the classic Maritime group (that integrates AOC, C/ZM, LV/Herringbone and Geometric styles) seems to belong to the early part of this longer period, dating from 2800–2500 BC ( $2\sigma$  cal.) (Prieto Martinez 2013, 221–222). She argues that the other two tendencies were more recent (about 2600–2000 BC), although they continue to integrate containers with classic decorations (linear, herringbone and geometric) alongside a great diversity of organizations and decorative techniques (Prieto Martinez 2013, 221).

Our table of absolute dates of Bell Beaker sites (Table 3) does not show dated funerary contexts (dolmens/barrows), but only ditched and walled precincts, settlements, and a rock shelter (used as “storage-barn” and consumption place). The unfortunate circumstance in two of our four case studies – Pastoria settlement and Mamoa/Barrow 1 of Chã de Carvalhal – where it was not possible to obtain undisturbed  $^{14}\text{C}$  samples is visible here. In Table 3, the settlement Castelo de Aguiar lacks classic Bell Beaker pottery, having only local forms decorated according to patterns that imitate the additive sequence of herringbone Bell Beaker and the Palmela/Ciempozuelos “chevrons” with comb-incision.

In summary, the  $^{14}\text{C}$  dates suggest that all styles are *grosso modo* contemporaneous – the corded, the Maritime, the Palmela/Ciempozuelos and the imitations of forms and decorations of the Bell Beaker set – during at least the second quarter of the 3<sup>rd</sup> millennium BC (dates of Crasto de Palheiros, Forca, and Buraco da Pala). We believe that it is possible that the Castelo Velho corded (AOC) sherd could also date from this period given its contextual location and the chronology proposed for the second constructive phase of that enclosure (Jorge 2002b; Jorge/Rubinos 2002), although it could also be younger. This same chronology is defended by Suarez Otero with regard to the Galician corded decoration styles (Suarez Otero 2011). It is also possible that several of the Bell Beakers recovered in corridor or single dolmens date from this earlier period, as was discussed in

the important case of Bell Beaker findings in the dolmen of Dom-bate in Northwest Iberia – Coruña/Galicia. Here, the first Bell Beaker occupation was <sup>14</sup>C dated to between 2800–2500 BC and the second occupation to between 2500–2200 BC (Bello-Diéguez et al. 2013, 29). For the Northern Meseta region (Spain), the same early chronology for Ciempozuelos style has been defended in the last decade, as well as the long duration of the Campaniforme: 2700–1700 BC (Delibes de Castro/Val Recio 2008, 798, nota 1). In fact, it has been more by routine and by tradition, and not by the use of absolute chronology, that many scholars have systematically proposed the dating of all dolmen depositions (and of other contexts) to the second half of the 3<sup>rd</sup> millennium BC.

It is clear that Bell Beaker pottery continued to be used in the second half of the 3<sup>rd</sup> millennium BC in this region based on the absolute dates from Fraga da Pena, Pastoria, and Barrow 1 of Chã de Carvalhal. These latter two sites have, as was previously presented, copper weapons and instruments whose typology and metal composition are characteristic of this late period of the Chalcolithic/Early Bronze Age. Therefore, the “Bell Beaker package,” including ceramics and standardized weapons, was most likely a phenomenon of the second half of the 3<sup>rd</sup> millennium BC in the lower Douro basin.

#### 4.3. Variability of Bell Beaker stylistics in the 3rd millennium BC

Although the Pastoria bell forms exhibit an angular, almost carinated profile, and most of those from Fraga da Pena follow local decorative models and techniques, we cannot conclusively assert that in this more recent period of the Chalcolithic the ceramic diversity is substantially greater across the whole region. Nor is it possible to distinguish Bell Beakers as the element that triggered the formal and stylistic changes, as there are many contemporary contexts from the middle of the 3<sup>rd</sup> millennium onwards where these transformations occurred and where no Bell Beakers have been found (Jorge 1986; Sanches 1997; Valera 2007). In order to clarify these issues, it would be necessary to study the ceramic contexts of the Portuguese littoral region – where the stylistic transformation of ceramics is not yet clearly established – as well as to relate Bell Beaker pottery to its specific contexts of use and/or deposition. However, it is possible to suggest that the functionality of each place and its temporality – permanent, cyclical or scheduled – could have played a determining role in the stylistic variability both Bell Beaker and non-Bell Beaker pottery. Its “ways of doing”, from the collection of raw materials and their transformation into vases to the decoration must be related to these functionalities.

#### 4.4. Some remarks on our four case studies

Our four case studies illustrate the above discussion and, because they have relatively well preserved stratigraphies and were excavated with modern methodologies, also allow us to better evaluate the variability of the contexts at a detailed scale of analysis; that is, the specific functionality of the sites or restricted areas within each archaeological site.

Barrow 1 of Chã de Carvalhal, despite being considered a unitary/typical burial monument, contained goods not necessarily related to the presumed inhumated individual, as Bradley defended years ago (Bradley 1998, 247–24). In fact, both the Palmela points and the daggers were deposited not in the grave, but in the body of the mound



in a formally structured manner: five Palmela points were found together as if tied in a bundle with the points facing upwards and two daggers of different sizes were laid down together, but pointed exactly in opposite directions. These finds can be interpreted as “hoards” or communitarian offerings to the place that exalt warlike activity or what these activities symbolise. Likewise, the number of containers deposited seems “excessive” if compared to other monuments or graves that were used and/or built at the same time. Thus, Barrow 1 of Chã de Carvalhal and its offerings represent much more than a rich individual. It is rather a place anchored in the millenarian building tradition of local Neolithic and Chalcolithic communities wherein the “excess” of investment in deposited ceramics and copper weapons hidden in the body of the barrow reveal communities searching for a new ideology which refers to distant places and rare commodities but is nevertheless also related to warfare (mythological and/or real). These kinds of artefacts would likely have been manipulated by a social group that would tend to be more restricted than those during the 4<sup>th</sup> millennium BC.

Despite this, and contrary to what has often been defended for this very region, in this case we do not believe that such offers were instruments that the “warrior” would have possessed in life because it is difficult to accept that a single individual had, for example, such a large number of weapons. Instead, we suggest that, like the Iberian armed stele and statues-menhirs of this period (Bueno et al. 2010), the monument would symbolically represent social personages (or entities), or even lineages (Bueno et al. 2005) still anchored in traditional kinship social structures. Metal artefacts would thus be inalienable goods belonging to a community which defined the roles that these weapons, utensils or adornments would play in social networks (symbolizing links, alliances, etc.). The power to display these artefacts would certainly have been closely regulated by the community, as Díaz-Guardamino has argued (Díaz-Guardamino 2011). Since the deposition of such a large and diversified number of containers is not usual in a single burial – Barrow 1 of Chã de Carvalhal contains at least 10 vessels – we open the possibility that this barrow could be a collective burial by sum of depositions or an individual burial monument that would centralize ritualized collective activities and offerings. Both hypothesis relate to ancestral lineage support and to new ideologies, as exemplified in the case of the weapons.

We do not deny that individual burials of this period, such as those of the Northern Meseta, Spain (e.g. Fuente Olmedo, Valladolid) (Delibes de Castro/Val Recio 2008), can have very rich offerings. However, their rarity and specificity also reflect important regional asymmetries and varied ways of affirming identities, lineages, and leaderships. To give only two examples of the best studied cases from the last years in interior Iberia, we can see these notions in the variety of “collective” and/or “individualized within the collective space” burials of corpses and of packets of human bones in the Huecas–Toledo necropolis (Bueno et al. 2005) or Avila region tombs and pit burials (Fabián García 2006). Likewise, we do not deny that the increase of all productive and transformative activities is a phenomenon that has been identified since the end of the 4<sup>th</sup> and beginning of the 3<sup>rd</sup> millennium BC alongside an ever increasing manipulation of very different artefacts, many of which could only be obtained by complex exchange networks. With regard to its long duration, the Campaniforme did not “unify” communities, but rather entered in a historical regional process of socio-political and ideological development rooted in the late Neolithic. It reveals remarkable regional differences despite the notorious increase of medium and long distance exchange systems, especially from the middle of the 3<sup>rd</sup> millennium onwards.

Crasto de Palheiros and Fraga da Pena reveal some interesting common aspects: (i) they are natural conspicuous places, with an extensive command of views over their surroundings; (ii) they were monumentalized through great communitarian building efforts; (iii) a high percentage of their available space is occupied by rock outcrops; (iv) they are not residential sites in so far as instruments and remains related to daily life—particularly those related to farming, hunting, fishing, and manufacture—are not found there, as is customary in settlements of this period in these regions; (v) at both sites Bell Beaker pottery (and other kinds of pottery in Crasto) was intentionally deposited or intentionally abandoned; (vi) in Fraga da Pena it is possible that the associated settlement, temporary or permanent, was identified during excavation of the slope facing the tor; in Crasto de Palheiros the extensive area outside the Outer Precinct (not yet excavated) seems to have similar remains; (vii) in the surrounding region of both sites there are other kinds of open settlements.

The two sites are distinguishable by their size, with Crasto de Palheiros being noticeably larger, even if only the upper enclosures are considered, i.e., the area where the Bell Beaker pottery appear to have been exclusively used and deposited. Another difference to be highlighted has to do with the fact that Fraga da Pena is a precinct built by communities that possessed and used Bell Beaker ceramics. It could possibly even be an enclosure built specifically to carry out restricted (both spatially and socially), ceremonial activities related to the use of Bell Beaker ceramics, even if the natural place had already had a social meaning for the regional communities. In contrast, Bell Beaker pottery “entered” into Crasto in a later stage of its building and use after both walled enclosures (or at least the upper enclosure) were already constructed and utilized.

Both cases are interpreted on a low scale of analysis, as places where ceremonial activities of restricted social access were developed whose purposes would have had to do with identity management, regional conflicts, or marriage alliances. On the East Platform of the Upper Enclosure of Crasto these activities involved commensality; that is, the consumption of agricultural products (cereals and legumes) and livestock (sheep/goats and cattle), revealing the importance of these productive activities.

Like in Crasto de Palheiros, in the settlement of Pastoria prehistoric occupation was also already in progress (Chalcolithic occupation of Cam. 4) when the “Bell Beaker occupation” took place. But, it should be noted that here this occupation was accompanied by a complexification of Pastoria’s dwelling and domestic structures and the diversification of the use of raw materials from medium and long distances (including copper). However, due to the relatively small size of the excavated area when compared to the total area of the site, we cannot say if the presence of Bell Beaker ceramics was only restricted to this well delimited spur.

## 5. Final remarks

We have proposed and discussed the multifaceted character of the Campaniforme, focusing on its more common material—pottery—as well as on its long term presence over about eight centuries in the lower Douro basin-Portugal between the second quarter of the 3<sup>rd</sup> and the beginning of the 2<sup>nd</sup> millennium BC.

Bell Beaker pottery was found in more than fifty sites: dolmens/barrows, open settlements, walled and ditched enclosures/precincts, and caves/rock shelters. Although it apparently affected mainly funerary

contexts, this may be due to the tendency to excavate more funerary sites that are smaller in size than settlements.

We intended to highlight and discuss four of those sites that were carefully excavated and published: Barrow 1 of Chã de Carvalhal, the settlement of Pastoria, and the stone Precincts of Crasto de Palheiros and Fraga da Pena. During this description, we suggested a new interpretation for the Barrow 1.

The classic Maritime (linear, herringbone) and comb-geometric beaker styles dominate on Bell Beaker sites in the Douro basin region, but the Palmela/Ciempozuelos style (and the non-decorated styles) are still important. There is one case of C/ZM and another one of AOC which, when combined with Galician cases, increase the number of cases of these ceramics styles in the northwest of Iberian Peninsula to seven.

Although local manufacture of pottery is proven in two sites – Pastoria and Fraga da Pena – regional and possibly extra-regional exchange also existed in Fraga da Pena, where not only Bell Beaker vessels but also regional decorated and non-decorated pottery were found. The AOC and C/ZM were not yet analysed.

Absolute dates and archaeological contexts in this region suggest that the styles are *grosso modo* contemporaneous – including the imitations of forms and decorations of the Bell Beaker set – during at least the second quarter of the 3<sup>rd</sup> millennium BC. However, the Bell Beaker pottery continued to be used through the second half of the 3<sup>rd</sup> millennium BC. The supposed “Bell Beaker package”, which includes ceramics and standardized weapons, was likely present for the second half of the 3<sup>rd</sup> millennium BC in the lower Douro basin.

The Precincts of Fraga da Pena and Crasto de Palheiros deserved a special discussion during which we emphasized both the very large number of Bell Beaker vessels and their spatial relation with particular areas (proven spatial segregation) as well as their functions related to ritualized social practices. At Crasto de Palheiros, from these relationships it could be suggested these practices were of commensal nature and/or intentional deposition, depending on the specific area.

As a phenomenon of long duration, the Bell Beaker did not “unify” communities, but rather entered into a regional historical process of socio-political and ideological development rooted in the Late Neolithic. It had remarkable regional differences, despite the notorious increase of medium and long distance exchange systems (along the Atlantic but also with the interior of the Iberian Peninsula), especially from the second quarter of the 3<sup>rd</sup> millennium onwards. However, as we have seen in the Galician case, all the ceramics were of local fabric (Prieto Martinez et al. 2015), thus opening up the possibility of movement of potters and/or models of manufacture that could accompany other raw materials, utensils, weapons or adornments.

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