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# The materialization of an iconography: a LBA/EIA metallic representation of an "anchoriform" or "anchor idol" (?) from the Fraga dos Corvos habitat site (Eastern Trás-os-Montes, Portugal)

Uma materialização de um símbolo iconográfico: a representação metálica do Bronze Final/Primeira Idade do Ferro de um "ancoriforme" (?) do habitat da Fraga dos Corvos (Trás-os-Montes Oriental, Portugal)

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Centro de Ciências e Tecnologias Nucleares (C2TN), Instituto Superior Técnico, Universidade de Lisboa amsoares@ctn.tecnico.ulisboa.pt https://orcid.org/0000-0001-7112-0649 ABSTRACT: A metallic artefact recorded in a LBA/EIA context in Northern Portugal, which can be one of the first known material representations of the so-called Southwestern Bronze Age "anchoriform" or "anchor idol", is presented. The artefact comes from an intrusive LBA/EIA context into a MBA level at the hilltop settlement of Fraga dos Corvos (Macedo de Cavaleiros, Bragança, Northern Portugal). It is made of a ternary bronze alloy (Cu-Sn-Pb), consequently integrating the impressive Fraga dos Corvos collection of bronze artefacts currently known, whose affiliation, whether typological or in terms of chemical composition, should be mostly sought in Southwestern Iberian Peninsula. The significance of the presence of such artefact in this archaeological site is discussed, taking into account that it is chronologically and geographically far away from its cultural source.

KEYWORDS: LBA/EIA; Southwestern Bronze Age; Ideotechnic artefact; Radiocarbon dating; Archaeometallurgy.

RESUMO: Apresenta-se o que pensamos poder ser uma das primeiras materializações encontradas de um artefacto ideotécnico do Bronze Final/Primeira Idade do Ferro, o chamado "ancoriforme" do Bronze do Sudoeste, conhecido por representações iconográficas em lajes ou estelas existentes em contextos funerários desta época, eventualmente com um precedente anterior. O artefacto aqui em estudo tipológico e analítico provém de uma deposição intrusiva do Bronze Final/Primeira Idade do Ferro em níveis estratigráficos do Bronze Médio no sítio de habitat da Fraga dos Corvos (Macedo de Cavaleiros, Bragança, Trás-os Montes Oriental). A análise química não destrutiva a que foi sujeito permitiu verificar ser feito de uma liga de bronze ternária, integrável na importante colecção de artefactos metálicos da Fraga dos Corvos, a qual constitui, talvez, o mais importante conjunto artefactual do Bronze Final/Primeira Idade do Ferro com filiações meridionais actualmente conhecido no Norte de Portugal. O significado da presença deste artefacto situado longe, temporal e geograficamente, da provável origem cultural de seu modelo é também discutido.

PALAVRAS-CHAVE: Bronze Final/Primeira Idade do Ferro; Bronze do Sudoeste; Artefacto ideotécnico; Arqueometalurgia; Datação por radiocarbono.

#### 1. INTRODUCTION

One of the most enigmatic iconographic representations of Western Iberian Bronze Age is the so called anchoriform or anchor idol of its southwestern cultural area (Schubart 1975: 100-109). Up to now, this anchoriform was only known in Iberia from its depiction in the engraved stelae and lid slabs of cist graves of the Southwestern Bronze Age (SWBA) Culture of the Iberian Peninsula, with its core area encompassing the Portuguese South (the entire region south of the Evora parallel), the province of Huelva and part of that of Badajoz, in Spain. There are only two known representations outside the Iberian Southwest: the statue-menhir of Corgas, at Fundão, Beira Interior (Banha - Veiga - Ferro 2009), which corresponds to the northernmost known limit of this kind of depictions, and the El Torcal stela, at Córdoba province, therefore far to the east of the core region of these depictions, and whose attribution to this group of engraved stones has been the subject of some controversy (Muñiz Jaén 1995).

The finding of a metallic artefact, FCORV-1807, in north-eastern Portugal with a shape similar to the symbol in question is here published for the first time<sup>1</sup>. We present and discuss its shape, typology, metallic characteristics and archaeometallurgic analytical results, probable chronology, as well as its possible meaning and implication for our knowledge of the Bronze Age of Western Iberia and its societies.

#### 2. THE SITE, THE ARTEFACT AND RELATED ARCHAEOLOGICAL CONTEXTS

Fraga do Corvos (FCORV) is a hilltop habitat site, under study since 2003, located in the north-western

A first presentation and discussion of this artefact was held at a meeting at Uniarq, predating the actual pandemic situation, in 2018-10-16. The problems created by a bronze ternary alloy, as revealed by the chemical analysis of the artefact, which was recovered in a context then ascribed to a MBA stratigraphic unit, substantiated further reflexion and study before the artefact should be published, which led to the fact that it was only now possible to go ahead with this publication.

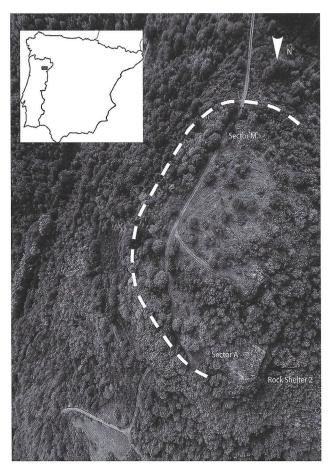


FIG. 1 Oblique aerial photograph of the site of Fraga dos Corvos (2004) and its setting in the Iberian Peninsula. The main features are highlighted, namely the Rock Shelter 2, just close to Sector A, while the white broken line indicates the wall that follows and stabilizes the slope that surrounds the archaeological site.

slope of Serra de Bornes, Eastern Trás-os-Montes (Fig. 1). With an altitude of 870 m, it rises over the modern parish of Vilar do Monte (municipality of Macedo de Cavaleiros, district of Bragança).

The site was identified as a Bronze Age settlement during 2003. The archaeological digging of its Sector A (2003-2011) – a platform with a gentle slope tilted to the northeast - brought to light a MBA occupation, documented in two areas: Area 3 with the dimension of 36 m<sup>2</sup> and Area 2 with 101 m<sup>2</sup>, only 3 meters away from each other (see also Senna-Martinez et al. 2011: Figs. 2 and 3, for a more complete geographical setting of the site).

In Area 3 only one occupation phase corresponding to a domestic context was found, which consists of two huts – Huts 2 and 4 – and a porch (Hut 6) adjacent to the western limit of Hut 4. Besides these structures, a very likely foundry facility was also recorded (Senna-Martinez et al. 2010: Figs. 10.2 and 10.3), apparently associated to Hut 4 and to the porch (Fig. 2).

In the area inside the oval structure corresponding to the Hut 4, which is defined by several postholes (Senna-Martinez et al. 2010), a negative structure was recorded, also with an oval configuration (88 cm  $\times$  77 cm) (Fig. 2: A), while remains of a hearth or firepit (Fig. 2: B) were identified inside the porch area. This negative oval structure was interpreted as a "sand box" where metallurgical moulds were placed to be filled with molten metal from the firepit. In the space around the "sand box" and between it and the firepit, three metallic nodules of binary bronze, 71 vitrified stone fragments without any metallic remains, one crucible fragment with traces of Cu and Sn, two fragments of stone moulds for awls, and a fragment of a bronze blade were recorded. The vitrified remains were identified as pieces of shale that solidified after melting at a temperature higher than 1100 °C (Geirinhas et al. 2011), temperature high enough to melt bronze. It should be noted that bronze was the alloy identified in the aforementioned metallic artefacts, as well as most likely to correspond to the alloy whose remains were also identified adhering to the crucible wall (Senna-Martinez et al. 2010: 383).

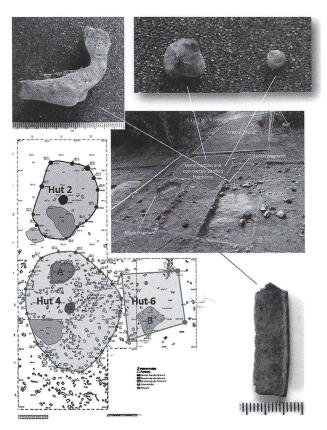


FIG. 2 Final plan and photograph of MBA Area 3 of Fraga dos Corvos with the main features and recorded locations of some archaeometallurgical finds. A - "sand box"; B - hearth or firepit

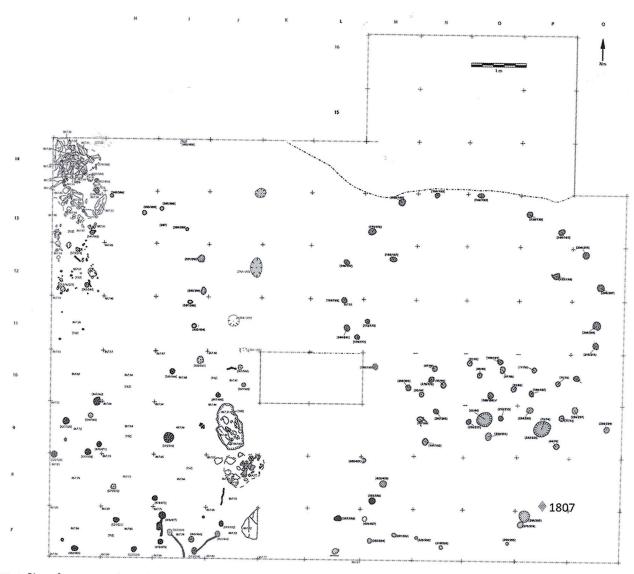


FIG. 3 Plan of upper interface of SU [152] (Area 2). The numbered red diamond indicates the location of the anchoriform finding.

All the other archaeological artefacts and faunal remains recovered from floors of these two structures, Huts 2 and 4, can be related to a simple domestic MBA environment.

Just 3 meters north from this Area 3, another survey was opened, **Area 2**, that showed a more complex stratigraphy encompassing six levels. Unfortunately, it was not possible to relate the occupation phase of Area 3 to any particular level of Area 2, due to the similarity of the material assemblage of these contexts.

In Area 2, it was possible to identify a total of 6 levels of occupation, each of them cut by postholes and, sometimes, shallow pits, defining 19"hut" floors in association with pits, fireplaces and archaeological materials related to domestic environments, which present small variability along the stratigraphic sequence, namely with regard to pottery (Luís 2010; 2016: 239-244).

In the area where the artefact here under consideration comes from (Fig. 3), the stratigraphic sequence, in spite of being clear, seems as being compressed being each stratigraphic unit (SU) reduced to a few centimetres of thickness. Also, near the artefact a blue glass bead with a probable LBA/EIA chronology was found, clearly an intrusion from the site later occupation.

The artefact FCORV-1807 (Fig. 4) was first identified as a sort of "spatula" and was previously studied in the context of the local MBA metallurgy (Senna-Martinez et al. 2011: 384-385). However, during the installation, in 2016, of Coronel Albino Pereira Lopo's Municipal Museum of Archaeology, at Macedo de Cavaleiros, and after a more careful examination and a stratigraphic revision of some contexts of Area 2, the inference arises that the artefact could indeed represent a LBA/EIA materialization in metallic material

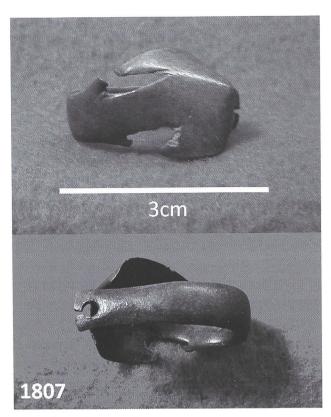


FIG. 4 The anchoriform after cleaning.

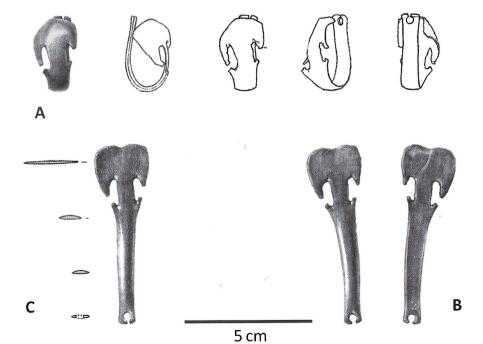
the well-known iconographic symbol of the SWBA or, at least, a late survival of its symbolic meaning.

As the artefact was found folded over itself, a flattened view of FCORV-1807 was needed in order to clearly review its shape. We asked our colleague Artur Ramos (Faculty of Fine Arts, Lisbon University) to provide us with a series of accurate drawings of such a view (Fig. 5). Accordingly, in its reconstructed original shape

(Fig. 5C) the dimensions of this artefact would be:

Total length -7.1 cm Head length -3.0 cm Head width -2.1 cm Shaft length -4.1 cm Shaft width -0.7 cm

As can be seen in Fig. 4, the shape of the anchoriform seems to have been obtained by cutting through the sheet of metal and will not simply result from fragmentation of the edge of previous hollowed parts. Given the dimensions of the artefact and the presence of a hole at the end of the shaft, the artefact can be interpreted as a pendant, as is the artefact FCORV-252, recorded in Fraga dos Corvos Rock-Shelter 2, located close to Area A (see Fig. 1), which has dimensions (total length 5.5 cm) similar to the anchoriform, also featuring a circular hole at the end of the shaft (Figueiredo et al. 2009: Fig. 2; Senna-Martinez et al. 2012: Figs. 5 and 6). So, although the artefact FCORV-1807 has a shape similar to the anchoriform depicted on Southern Iberia stelae, it was placed upside down if used as a pendant, contrary to what is observed in those ones. Nevertheless, the small hole at the extremity of the shaft opens the possibility the artefact could be used attached to the end of a wooden rod. However, if the object is to be used attached to a wooden stick, perhaps as a symbol of status or power, the ensemble formed by the metallic anchoriform and the wooden rod seems too small and



**FIG. 5** Drawings of the anchoriform by Artur Ramos: A - condition in which it was found; B - simple extended view; C - probable original shape.

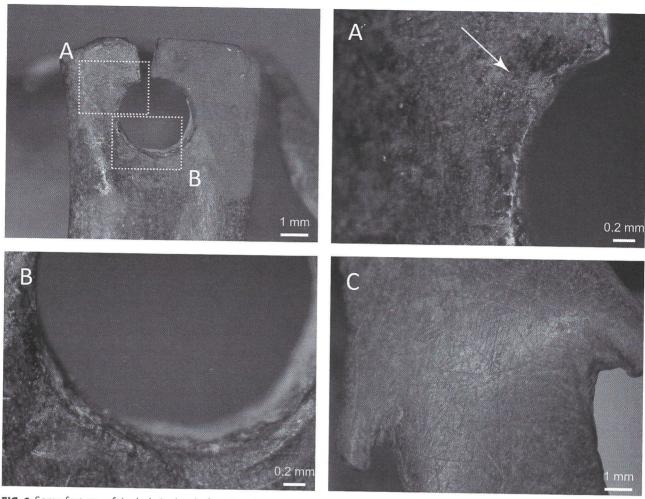


FIG. 6 Some features of the hole in the shaft end and on the surface of the anchoriform using optical microscopy.

fragile to have that function or that meaning of power.

In an attempt to identify any signs that would indicate how it had been used, its surface was observed under an optical microscope. Some use-wear marks seem to exist around the "suspension" hole, namely thin scratches in the form of incised concentric circular lines (marked by a white arrow in Fig. 6A). These marks possibly resulted from rotational movements of an element (perhaps a bead?) that was in contact with the *anchoriform* if used as a pendant on a necklace. On the other hand, there are many superficial and thin scratches with a chaotic disposition made on the corrosion layer (Fig. 6C), most likely produced by post-depositional events after the artefact has been folded.

The artefact FCORV-1807 comes from unit [152] (cf. Luís 2016: 241) (see Fig. 3). The folded condition in which it was recorded hints at a deliberate deposition, perhaps as a sacrificed metal offering. However, the compression of the stratigraphic units of habitational layers sequence in the Area 2, notwithstanding the carefully trowel excavation of all area, makes possible

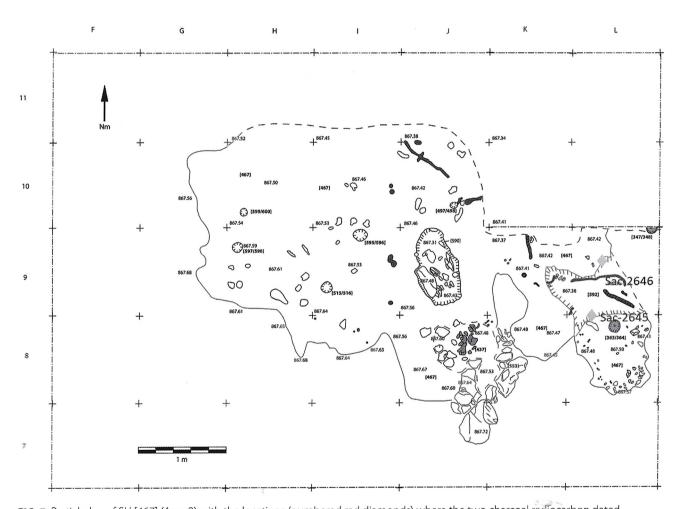
that the deliberate deposition of FCORV-1807 is a LBA/EIA intrusion (perhaps in a very small pit, which was probably undetected during the archaeological digging due to the mentioned stratigraphic conditions). The same situation could account for the LBA/EIA glass beads intrusion in Area 2, as for two charcoal samples that were radiocarbon dated.

#### 3. RADIOCARBON DATING AND CHRONOLOGIES

Two charcoal samples collected near the place where the artefact FCORV-1807 was found (Fig. 7) were dated at the ITN Radiocarbon Dating Laboratory (Lisbon) using the liquid scintillation technique. Results are presented in Table 1 and plotted in Fig. 8. Radiocarbon dates were calibrated using the IntCal20 curve (Reimer *et al.* 2020) and programs CALIB (Stuiver – Reimer – Reimer 2021) and OxCal v4.4.4 (Bronk Ramsey 2009) to build up Table 1 and Fig. 7, respectively.

TABLE 1 14C DATES FROM CONTEXTS IN AREA 2 OF FRAGA DOS CORVOS

LAB. REF.	SAMPLE REF.	ТҮРЕ	δ13C (‰)	AGE (BP)	CALIBRATED DATE
Sac-2645	FCORV UE467	Charcoal	-26,61	2440±45	1σ: 741-692 cal BC (0.241783); 664-647 cal BC (0.086712; 547-414 cal BC (0.671505)
					2σ: 756-680 cal BC (0.232275); 670-607 cal BC (0.15542); 596-405 cal BC (0.612306)
Sac-2646	FCORV UE467/552	Charcoal	-24,72	2580±45	1σ: 808-754 cal BC (0.791503); 681-669 cal BC (0.09323); 629-626 cal BC (0.010613); 609-593 cal BC (0.104654)
					2σ: 823-734 cal BC (0.612823); 695-663 cal BC (0.104045); 650-545 cal BC (0.283132)

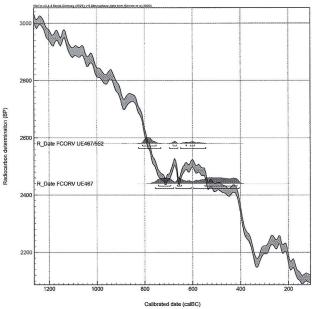


**FIG. 7** Partial plan of SU [467] (Area 2) with the locations (numbered red diamonds) where the two charcoal radiocarbon dated samples were recorded. These locations are near the place where the *anchoriform* was found - see Fig. 3.

As can be seen in Fig. 8 the calibration of the two radiocarbon dates, given their values, uses the horizontal section of the calibration curve, the so-called "Hallstatt plateau", which leads to obtaining calendar age intervals with a very low precision. Thus, the calibration of Sac-2645 leads to a time interval

between mid 8th century BC and the end of the 5th century BC, while the calibration of Sac-2646 produces a time interval between the late 9th century to mid 6th century BC, i.e. dated archaeological contexts must belong to the Late Bronze Age or already to the Early Iron Age. The chemical compositional analysis

of artefact FCORV-1807 may help to specify the time interval in which the context to which the artefact in question belongs should be integrated. On the other hand, it must be taken into account that these dates fit the relative chronology (8th - 6th centuries BC) provided by the LBA/EIA fibulae sequence found at Sector M (Senna-Martinez – Luís – Mendes *in press*).

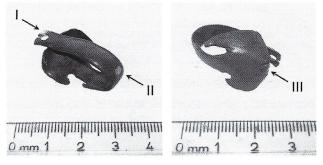


**FIG. 8** Plot of calibrated radiocarbon dates (with the IntCal20 calibration curve plot) for the Protohistoric occupation of Fraga dos Corvos.

#### 4. ARCHAEOMETALLURGICAL STUDY

#### 4.1. Material and methods

The preparation of FCORV-1807 for microanalyses involved the removal of the superficial corrosion layer in three selected areas. The cleaning process comprised the polishing of these small areas (c. 3-5 mm in diameter, Fig. 9) with diamond pastes of increasingly smaller grit size (6  $\mu$ m, 3  $\mu$ m and 1  $\mu$ m). The efficiency of the cleaning process was ascertained by optical



**FIG. 9** Location of small areas on the *anchoriform* subject to archaeometallurgical analysis.

microscopy observations made with a Zeiss Discovery V20 stereomicroscope, which was also used to identify the possible existence of use-wear marks.

The chemical composition of FCORV-1807 was obtained by micro-EDXRF analyses in an ArtTAX Pro spectrometer with a 30 W Mo X-ray tube, focusing polycapillary lens and an electro-thermally cooled Si drift detector (FWHM of 160 eV at 5.9 keV - Bronk et al. 2001). Each selected area was analysed in four spots (about 0.1 mm diameter) to account for heterogeneities with 40 kV, 600 µA and 120 s of live time. Quantifications were made with WinAxil software, comprising experimental calibration factors calculated with the British Chemical Standards Phosphor Bronze 551 and BNF Metals Technology Centre Leaded Bronze C50.01. The relative uncertainty of quantification is lower than 10 %, while the quantification limits of identified elements are 0.05 % Fe, 0.10 % Ni, 0.50 % Sn and 0.10 % Pb (Valério et al. 2015).

#### 4.2. Results

The areas analysed in *anchoriform* FCORV-1807 originated analogous results, establishing a homogenous composition along the artefact length (Table 2). In fact, the object is composed of a leaded bronze alloy with a relatively high tin content (*c.* 13.7 % Sn) and a significant amount of lead (*c.* 4.3 % Pb). It is acknowledged that the tin and, especially, the lead additions to copper provide an increased castability to the metal, making it easier to cast objects with massive size or intricate decorations. However, this does not seem to be the case of FCORV-1807 given its small size and relatively plain shape.

As mentioned before, the MBA contexts of Area 3 at FCORV provided evidence of onsite production of binary bronze alloy artefacts (3 bronze nodules, 1 bronze blade fragment and a crucible with traces of Sn and Cu). Furthermore, the small set of local Orientalising artefacts already known (Figueiredo *et al.* 2009) comprises leaded bronzes and unalloyed copper items, apart from the common binary bronze alloys with somewhat lower contents of tin (Table 3). During the LBA, the copper-based metallurgy in Northern and Central Portugal was dominated by binary bronze alloys with *c.* 12 % Sn and very low amounts of other metallic elements, such as lead, arsenic, nickel or iron. Some good illustrations of this LBA metallurgy

TABLE 2 CHEMICAL COMPOSITION OF THE ANCHORIFORM FCORV-1807 (average ± standard deviation of n analyses)

ANALYSIS AREA	Cu (%)	Sn (%)	Pb (%)	Ni (%)	Fe (%)
I (n=4)	82.3 ± 1.5	13.5 ± 0.3	4.1 ± 1.4	<0.10	<0.05
II (n=4)	81.3 ± 1.7	14.1 ± 0.1	4.5 ± 1.6	<0.10	<0.05
III (n=4)	81.8 ± 1.3	13.6 ± 0.2	4.4 ± 1.4	<0.10	<0.05
Global (n=12)	81.8 ± 1.4	13.7 ± 0.3	4.3 ± 1.4	<0.10	<0.05

TABLE 3 COMPOSITION OF PROTOHISTORIC COPPER-BASED COLLECTIONS FROM NORTHERN AND CENTRAL PORTUGAL (LBA: Coles de Samuel, Canedotes, Baiões, Freixianda and Vila Cova de Perrinho)

	BINARY BRONZE				
	Frequency	Sn (%)	n	n	· n
FCORV (Orientalising items)	70 %	10.2 ± 1.3	7	1	2
LBA collections	96 %	12.2 ± 2.4	47	2	
Medronhal	100 %	13.1 ± 1.5	37	-	

are the artefact collections of Coles de Samuel (Coffyn 1985), Canedotes (Valério – Araújo – Canha 2007), Baiões (Figueiredo et al. 2010), Freixianda (Gutiérrez-Neira et al. 2011) and Vila Cova de Perrinho (Bottaini et al. 2012) (Table 3). Additionally, the LBA/Orientalising transition period collection of Medronhal follows the same trend (Figueiredo et al. 2013), evidencing the slow adoption of technological innovations by indigenous communities. Overall, this set of artefacts displays mostly binary bronzes; however the tin content of artefacts from Medronhal, perhaps coeval of LBA/EIA artefact FCORV-1807, is similar to that one of the anchoriform, although its composition, a leaded bronze, is therefore a rarity among the metallurgy of this region, at this time, being in line with its singular typology and suggested southern affiliation.

Regarding the possible meaning of the unusual aloy composition of FCORV-1807, it is widely known that high tin contents provide a golden colour to the branze alloy. However, quite a different issue is to

determine if the colour of this particular alloy stood out from coeval bronzes. Mecking (2020) measured the CIELAB colour parameters (L\* - lightness; a\* - red/ green; b\* - yellow/blue) in a wide range of Cu-Sn-Pb alloys. These measurements can be used to assess the human perception of a colour difference between two alloys (ΔE, Equation 1 – Mecking 2020). The human eye begins the differentiation at  $\Delta E = 2$  and a clear difference between two colours occurs from a value of 3.5 (Mokrzycki – Tatol 2011). The ΔE value for the typical LBA bronze alloy (Cu-12 % Sn) compared to a Cu-14 % Sn alloy is only 1.2. However, the  $\Delta E$  value increases to 3.2 when comparing a Cu-12 % Sn alloy to an alloy close to FCORV-1807 (Cu with c. 14 % Sn and c. 5 % Pb). The anchoriform FCORV would therefore have a more golden colour than most LBA bronzes, while such colour distinction supports a prestige character which may perhaps be assigned to this unique item.

$$\Delta E = \sqrt{(L_1^* - L_2^*)^2 + (a_1^* - a_2^*)^2 + (b_1^* - b_2^*)^2}$$

### 5. DISCUSSION: ANCHORIFORM OR ANCHOR IDOL – A SYMBOL OF POWER OR A SIMPLE IDEOTECHNIC PENDANT

The iconographic representation known by Iberian archaeologists as the *anchoriform* (Fig. 10) is actually known from 31 engraved slabs, most of them of schist, and two granite statues-menhirs, all of them constituting the so called *Estelas Alentejanas* (Almagro Basch 1966) or Type I stelae. The former were mostly found (66% – 21 schist slabs) in the southern Portuguese region of Lower Alentejo (Díaz-Guardamino 2010; Serra – Porfírio – Soares 2014: Fig. 6; Gomes 2015).

Seven of the known engraved schist slabs only depict the *anchoriform*, in three other the *anchoriform* is associated with a sword, and in another five it goes with a sword and a halberd (Serra – Porfírio – Soares 2014). Some researchers, taking into account the available chronology for the Iberian Bronze Age halberds and swords proposed a chronology for the *Estelas Alentejanas* between the last quarter of the 3rd millennium BC and the middle of the 2nd millennium BC, encompassing the EBA and part of the MBA in the Iberian Southwest (Senna-Martinez 2013a; Senna-Martinez *et al.* 2017). However, a more recent date for

the disappearance of these stelae can be suggested since the geographic distribution of these stelae overlaps the dispersal of some ceramic types, namely Odivelas and Santa Vitória cups, as well as bottles and pots with vertical ribs, corresponding to the Southwest Bronze II (following Schubart 1975). Soares *et al.* (2021) also proposed that the use of the *Estelas Alentejanas* covered the entire 2nd millennium BC, due to the depiction of a LBA shaft-hole axe in association with an *anchoriform* on a covering slab from a stone cist at Ervidel (Gomes – Monteiro 1976/1977: Fig. 3).

One of the founding fathers of Portuguese Archaeology and its National Archaeology Museum, José Leite de Vasconcelos, thought the *anchoriform* should be the depiction of an axe (Vasconcelos 1906; 1908), but its coexistence with hafted axes in several occasions (namely in the schist slab from Assento, Beja – Almagro Basch 1966: Lâm. XXVI) makes this interpretation, largely followed during the first half of the 20th century (Almagro Basch 1966), difficult to sustain.

A few years ago, Leonardo García Sanjuán and collaborators (García Sanjuán *et al.* 2013) published a large set of ivory pieces from a Chalcolithic funerary megalithic monument of the PP4-Montelirio Sector of Valencina de la Concepción (Seville, Spain). In one

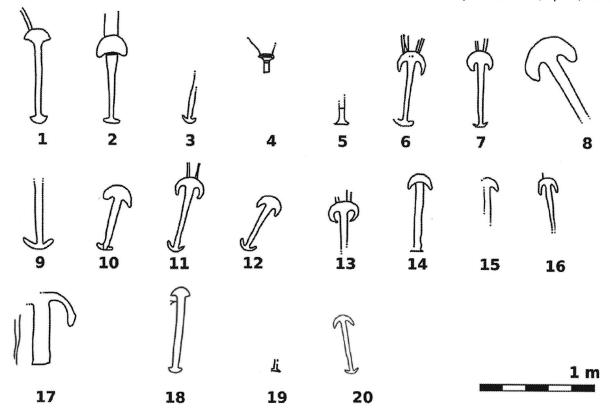


FIG. 10 SWBA anchoriforms following Serra – Porfírio – Soares (2014: Fig. 6).

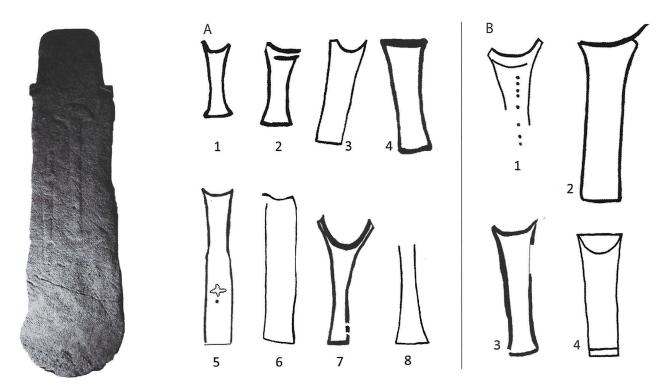


FIG. 11 The Tapada da Moita stele.

FIG. 12 A - Front skeuomorphs following Senna-Martinez (2018: Fig. 7); B - back skeuomorphs following Senna-Martinez (2018: Fig. 8).

of the chambers of the monument several fragments of carved ivory and a rock crystal blade of a dagger were found, allowing the reconstruction of what was probably its crescent-shaped ivory hilt and dagger sheath. The set of these artefacts (dagger blade, hilt and sheath) is perhaps the prototype for the symbol under discussion here (see reconstitution by Miriam Luciañez Triviño according to García Sanjuán et al 2013: 622, Fig. 11). This artefact is clearly a prestige item, eventually associated to the single young male burial recorded in the same chamber where the dagger was found, but in different stratigraphic units.

From 1995 onwards, following the exhibition "A Idade do Bronze em Portugal. Discursos de Poder", in the National Archaeology Museum (Lisbon), the prevalent interpretation for the Estelas Alentejanas tends to see them as being part of the first of the successive "power discourses" that gave shape to the development of the Iberian Bronze Age (Jorge 1995). Within this line of interpretation the anchoriform is invested with a symbolic meaning as "a symbol of power", which was probably used suspended from a collar worn around the neck. Stelae of Tapada da Moita, Castelo de Vide (Fig. 11) (Oliveira 1986), Passadeiras, Silves (Gomes 1994: 86-89) and, at least, another eight specimens (Serra – Porfírio – Soares 2014: Fig. 6) show the depiction of a hanging object. This object is the anchoriform precisely.

Transition from the Chalcolithic to the EBA occurs at different places in each of the areas belonging to the cultural mosaic of Western Iberia. However, a common characteristic of this cultural phase seems to be a generalized disinvestment in the construction and maintenance of various architectural structures used for burial and/or ritual that developed from the Middle Neolithic onwards. Reuse of older structures or construction of other more economic architectural solutions seems to be the rule from the EBA onwards. It is in this context that the first masculine power figures emerge, together with a new panoply of arsenical copper artefacts, privileging "male items", namely weapons and gold jewellery (Senna-Martinez 2013a; Senna-Martinez - Luis 2016).

A split occurring on the Portuguese Central Massif (highlands of Lousã, Açor and Estrela) between cultural areas seems to arise during the EBA/MBA. Northwards from the Sabugal area (in the transition from the Beira Interior to the Beira Alta regions) the anchoriform is replaced by another representation: the skeuomorph. This representation, depicting a skinned hide, occupying a large area either in the front or in the back of a male figure (Fig. 12), constitutes a probable cultural

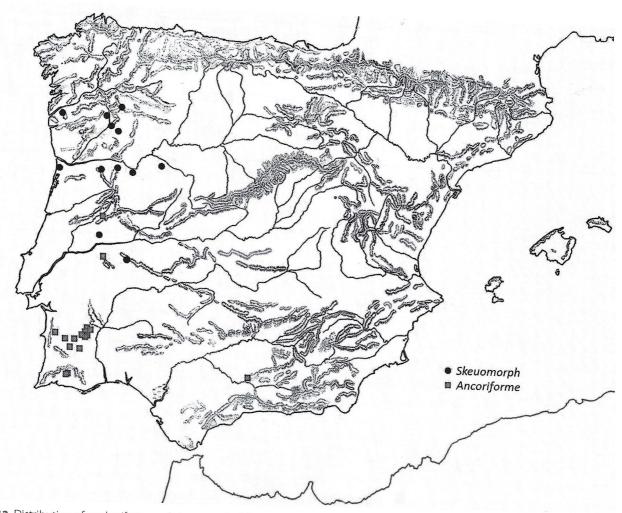


FIG. 13 Distribution of anchoriforms and skeuomorphs following Marta Díaz-Guardamino (2010: Fig. 92).

conservative trend<sup>2</sup> recuperating the Elizabeth Shee Twohig Neolithic symbol present in the "megalithic art" of the northern half of Western Iberia (Twohig 1981: 23). Concerning these two representations, the distribution analysis proposed by Marta Díaz-Guardamino (2010: 143) shows that the *anchoriform* is present from the Southwest to the Beira Interior, while to the north of this region the *skeuomorph* is predominant or the only one that exists (Fig. 13).

Together, the *anchoriform* distribution follows mostly what we have been calling the "stelae route" (Senna-Martinez 2011: 291-293; 2013b; 2018). Of course, in prehistoric times, we are thinking not of something like a Roman road but of a series of traditional passways generally following what, in modern times, become the main delineation of the so called IP2 in the Portuguese road system (Fig. 14).

to be a valid interpretation of the available evidence.

## 6. CONCLUDING: THE POSSIBLE SURVIVAL OF THE ANCHORIFORM AS A SYMBOL OF POWER OR ITS SURVIVAL AS A SIMPLE IDEOTECHENIC PENDANT

The iconographic representation known as the *anchoriform* depicted in engraved slabs in SWBA funerary contexts has usually been considered with a symbolic meaning - a symbol of power. A symbol of power often associated in the same slab, in a realistic

In 2018 we already argued that "...various tensions and balances pass through the neo-chalcolithic system of beliefs that underlies the megalithic art in Beira Alta. For us, the symbolic oppositions / complementarities present in its iconography reflect the characteristics of the regional Neolithic, a world where hunting and pastoralism are associated with winter-fruits collecting (mainly acorns), in societies not yet fully agricultural, and in which andriarchal values and representations remain structural (Senna-Martinez and Ventura 2008: 328-332). In the new EBA system, male power legitimation can thus be seen in continuity with earlier, Neolithic, social beliefs adding and transforming what was needed to fulfil the new power agenda and legitimate the new power actors." (Senna-Martinez 2018: 296). We still think this

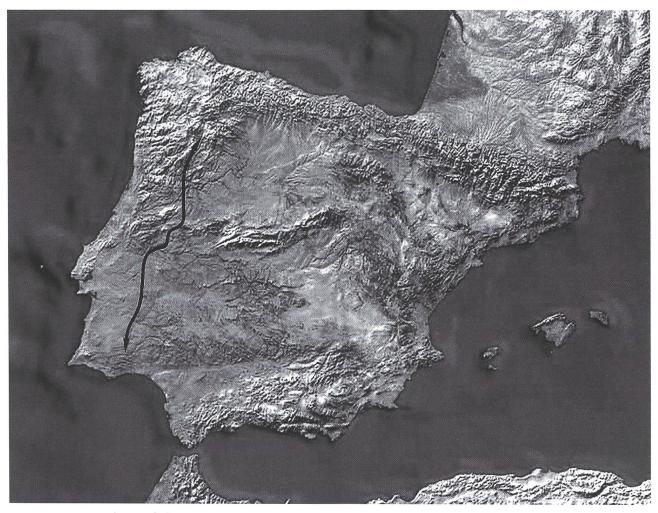


FIG. 14 Approximate layout of what we have been calling the "stelae route" (Senna-Martinez 2011; 2013b; 2018).

style, with weapons and tools, namely swords, halberds and axes and, more rarely, a bow, a chisel and a pair of sandals or feet. All these weapons and tools engraved on the stone strongly indicate its connection to male individuals, who would wear the *anchoriform* suspended over their shoulders or from a collar worn around the neck as the straps associated with it, which depart from the larger crescent of the object, also indicate.

The bronze anchoriform from Fraga dos Corvos certainly has a southern affiliation, but is much smaller than any of the stone depictions and it is very probably more recent than the last funerary manifestations ascribed to the SWBA. Its use may be reminiscent of the function it had at that time, but seems to have changed over time. The dimensions it presents prevent it from being interpreted as a symbol of power and it is also not plausible that it could be used as a sceptre, even if attached to a wooden rod, for instance. The typology of the artefact, as well as some apparently

use-wear marks next to the shaft hole, makes much more plausible that it was used as a pendant on a necklace, perhaps as a mere ideotechnic object. Also, the position in which the *anchoriform* symbol is shown on the pendant, contrary to that shown in its depiction in the *Estelas Alentejanas*, indicates that something of its function or symbolism would have already been lost. However, the raw material (a ternary bronze with a golden glow) with which it was manufactured as well as its shape, a pendant, leads to consider it as a prestige object, possibly indicative of the social status of the owner. It is also indicative of an exchange of materials and, of course, of concepts and ideas between north and south on the Atlantic facade of the Iberian Peninsula.

If we accept the Montelirio dagger, hilt and sheath as an early possible explanation of the origin of the *anchoriform* symbol and consider the FCORV one as a late expression of the same, these hypotheses open the possibility of further discussion, namely about the

permanence and transmission of symbolic meaning and the change or no-change over time of the symbolic significance inland and in more conservative societies.

#### **Final note**

This paper is the result of a team work led by Professor João Senna-Martinez, the first author. Sadly, he passed away before it was published. The other authors have finished this work, hoping that it stays true to his thought and line of research, and in order to keep alive the important contribution of Senna-Martinez to the Iberian Prehistory.

#### **Acknowledgments**

The support of Fundação para a Ciência e a Tecnologia (FCT) to C2TN (UIDB/04349/2020) is gratefully acknowledged. Authors also acknowledge the use of the micro-EDXRF spectrometer from Department of Conservation and Restoration (DCR/FCT-NOVA).

#### **Bibliography**

- ALMAGRO BASCH, M. (1966) Las Estelas Decoradas del Suroeste Peninsular. Madrid.
- BANHA, C. VEIGA, A. M. FERRO, S. (2009) A Estátua-Menir de Corgas (Donas, Fundão). Contributo para o Estudo da Idade do Bronze Na Beira Interior. Associação de Estudos do Alto Tejo. *AÇAFA On Line*,2: 1-16.
- COFFYN, A. (1985) Le Bronze Final Atlantique dans la Peninsule lberique. Paris.
- BOTTAINI, C. E. SILVA, A. L. M. COVITA, D. S. MOUTINHO, L. M. VELOSO, J. F. C. A. (2012) Energy dispersive X-ray fluorescence analysis of archaeological metal artifacts from the Final Bronze Age. X-Ray Spectrometry, 41: 144-149.
- BRONK, H. ROHRS, S. BJEOUMIKHOV, A. LANGHOFF, N. SCHMALZ, J. WEDELL, R. GORNY, H. E. HEROLD, A. WALDSCHLAGER, U. (2001) ArtTAX A new mobile spectrometer for energy-dispersive micro X-ray fluorescence spectrometry on art and archaeological objects. Fresenius Journal of Analytical Chemistry, 371: 307–316.
- BRONK RAMSEY, C. (2009) Bayesian analysis of radiocarbon dates. *Radiocarbon*, 51(1): 337-360.
- DIAZ-GUARDAMINO, M. (2010) Las estelas decoradas en la Prehistoria de la Península Ibérica. PhD Thesis presented to the Complutense University of Madrid. Unpublished.
- FIGUEIREDO, E. ARAÚJO, M. F. SILVA, R. J. C. VILAÇA, R. (2013) Characterisation of a Proto-historic bronze collection by micro-EDXRF. *Nuclear Instruments and Methods in Physics Research B*, 296: 26–31
- FIGUEIREDO, E. SENNA-MARTINEZ, J. C. SILVA, R. J. C. ARAÚJO, M. F. (2009) Orientalizing artifacts from Fraga dos Corvos rock shelter in North Portugal. *Materials and Manufacturing Processes*, 24(9): 949-954.

- FIGUEIREDO, E. SILVA, R. J. C. SENNA-MARTINEZ, J. C. ARAÚJO, M. F. BRAZ FERNANDES, F. M. INÊS VAZ, J. L. (2010) Smelting and recycling evidences from the Late Bronze Age habitat site of Baiões (Viseu, Portugal). *Journal of Archaeological Science*, 37: 1623-1634.
- GARCÍA SANJUÁN, L. LUCIAÑEZ TRIVIÑO, M. SCHUHMACHER, T. X. WHEATLEY, D. BANERJEE, A. (2013) Ivory craftsmanship, trade and social significance in the southern Iberian Copper Age: the evidence from the PP4-Montelirio Sector of Valencina de la Concepción (Seville, Spain). European Journal of Archaeology, 16(4): 610–635.
- GEIRINHAS, F. GASPAR, M. SENNA-MARTINEZ, J. C. FIGUEIREDO, E. ARAÚJO, M. F. SILVA, R. J. C. (2011) Copper isotopes on artifacts from Fraga dos Corvos First Bronze Age habitat site and nearby Cu occurrences: an approach on metal provenance. In MATA-PERELLÓ, J. M. TORRO I ABAT, L. FUENTES PRIETO, M. N. CAMPO, A. N. PUCHA RIART, O. (eds.) Actas del Quinto Congreso Internacional sobre mineria y metalurgia Históricas en el Suroeste Europeu. Madrid: 177-184.
- GOMES, M. V. (1994) A Necrópole de Alfarrobeira (S. Bartolomeu de Messines) e a Idade do Bronze no Concelho De Silves (Xelb 2). Silves.
- GOMES, M. V. (2015) The Vale da Telha Necropolis (Aljezur) in the Context of the Southwest Iberian Bronze Age. Lisbon.
- GOMES, M. V. MONTEIRO, J. P. (1976/1977) As estelas decoradas da herdade de Pomar (Ervidel - Beja) - Estudo comparado. Setúbal Arqueológica, 2/3: 281-343.
- GUTIÉRREZ NEIRA, P. C. ZUCCHIATTI, A. MONTERO-RUIZ, I. – VILAÇA, R. – BOTTAINI, C. – GENER, M. – CLIMENT-FONT, A. (2011) – Late Bronze Age hoard studied by PIXE. *Nuclear* Instruments and Methods in Physics Research B, 269: 3082-3086.
- JORGE, S. O. (1995) Introdução. In JORGE, S. O. (ed.) A Idade do Bronze em Portugal. Discursos de Poder. Lisboa: 16-20.
- LUÍS, E. (2010) A Primeira Idade do Bronze no Noroeste: O conjunto cerâmico da Sondagem 2 do Sítio da Fraga dos Corvos (Macedo de Cavaleiros). MA Thesis in Archaeology presented to the University of Lisbon. Unpublished.
- LUÍS, E. (2016) Mudança e transformação. Calcolítico, Bronze Inicial e Bronze Médio em Trás-os-Montes Oriental: reflexões a partir dos recipientes cerâmicos. PhD Thesis presented to the University of Lisbon. Unpublished.
- MECKING, O. (2020) The colours of archaeological copper alloys in binary and ternary copper alloys with varying amounts of Pb, Sn and Zn. *Journal of Archaeological Science*, 121: 105199.
- MOKRZYCKI, W. S. TATOL, M. (2011) Colour difference Delta E a survey. *Machine Graphics and Vision*, 20(4): 383-411.
- MUÑIZ JAÉN, I. (1995) Nuevos descubrimiento en la estela de "El Torcal". Estela de tipo alentejano o estatua-menhir? *Antiquitas*, 6: 15-28.
- OLIVEIRA, J. (1986) A estela decorada da Tapada da Moita, Portalegre. Castelo de Vide.
- REIMER, P. J. AUSTIN, W. E. N. BARD, E. BAYLISS, A. –
  BLACKWELL, P. G. BRONK RAMSEY, C. BUTZIN, M. –
  CHENG, H. EDWARDS, R. L. FRIEDRICH, M. GROOTES,
  P. M. GUILDERSON, T. P. HAJDAS, I. HEATON, T. J. –
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  W. MUSCHELER, R. PALMER, J. G. PEARSON, C. VAN
  DER PLICHT, J. REIMER, R. W. RICHARDS, D. A. SCOTT,
  E. M. SOUTHON, J. R. TURNEY, C. S. M. WACKER, L. –
  ADOLPHI, F. BÜNTGEN, U. CAPANO, M. FAHRNI, S.
  M. FOGTMANN-SCHULZ, A. FRIEDRICH, R. KÖHLER, P.

- KUDSK, S. MIYAKE, F. OLSEN, J. REINIG, F. SAKAMOTO, M. SOOKDEO, A. TALAMO, S. (2020) The IntCal20 Northern Hemisphere Radiocarbon Age Calibration Curve (0-55 cal kBP). *Radiocarbon*, 62(4): 725-757.
- SCHUBART, H. (1975) Die Kultur der Bronzezeit im Sudwesten der Iberischen Halbinsel. Berlin.
- SENNA-MARTINEZ, J. C. (2011) La «conexión lusitana»: contactos orientalizantes y búsqueda de estaño y oro en el Centro-Norte portugués. In DOMÍNGUEZ PÉREZ, J. C. (ed.) Gadir y el Círculo del Estrecho revisados. Propuestas de la arqueología desde un enfoque social. Cádiz: 285-296.
- SENNA-MARTINEZ, J. C. (2013a) Metals, Technique and Society. The Iberian Peninsula between the first Peasant Societies with Metallurgy and the "Urban Revolution". In GUERRA, M. F. TISSOT, I. (eds.) A Ourivesaria Pré-Histórica do Ocidente Peninsular Atlântico. Compreender para Preservar. Lisboa: 11-20.
- SENNA-MARTINEZ, J. C. (2013b) Um rio na(s) rota(s) do estanho: O Tejo entre a Idade do Bronze e a Idade do Ferro. *CIRA Arqueologia*, 2: 7-18.
- SENNA-MARTINEZ, J. C. (2018) Parasitic frequentation or cultural continuity? The re-use of megalithic monuments in the Ancient / Middle Bronze Age of the Mondego's Platform. In SENNA-MARTINEZ, J. C. DINIZ, M. CARVALHO, A. F. (eds.) De Gibraltar aos Pirenéus. Megalitismo, Vida e Morte na Fachada Atlântica Peninsular. Lapa do Lobo (Nelas): 277-302.
- SENNA-MARTINEZ, J. C. LUÍS, E. (2016) Technique and Social Complexity: Development Trajectories of Peasant Societies with Metallurgy during the Bronze Age of Western Iberia. In SOARES, J. (ed.) Social complexity in a long term perspective. Proceedings of Session B15 of UISPP 17th Congress. Setúbal Arqueológica, 16: 115-130.
- SENNA-MARTINEZ, J. C. LUÍS, E. ARAÚJO, M. F. SILVA, R. FIGUEIREDO, E. VALÉRIO, P. (2011) First Bronzes of North-West Iberia: the data from Fraga dos Corvos Habitat Site. In MARTINS, C. B. BETTENCOURT, A. M. S. MARTINS, J. I. F. P. CARVALHO, J. (eds.) Settlement and Mining in the Atlantic Western Europe. Braga: 377-390.
- SENNA-MARTINEZ, J. C. LUÍS, E. MATOS, R. VALÉRIO, P. ARAÚJO, M. F. TERESO, J. COSTEIRA, I. (2017) O Enterramento da Idade do Bronze da Gruta das Redondas (Carvalhal de Aljubarrota): Um contributo para o estudo do Bronze Antigo na Estremadura Atlântica. In ARNAUD, J. M. MARTINS, A. (eds.) *Arqueologia em Portugal / 2017 Estado da Questão*. Lisboa: 833-847.
- SENNA-MARTINEZ, J. C. LUÍS, E. MENDES, C. (in press) Between the Atlantic and the Mediterranean: The Fraga dos Corvos mountain site (Macedo de Cavaleiros) in the Late Bronze Age/Early Iron Age Transition. *Colóquio Internacional "Romper Fronteiras, Atravessar Territórios"*, September 23rd and 24th 2021. Oporto.

- SENNA-MARTINEZ, J. C. REPREZAS, J. LUÍS, E. FIGUEIREDO, E. LOPES, F. GOMES, S. S. ARAÚJO, M. F. SILVA, R. J. (2012) Metal Artefacts of Mediterranean Affiliation from Fraga dos Corvos Habitat Site (Eastern Trás-os-Montes, Portugal: a First Appraisal. *O Arqueólogo Português*, Série V(2): 241-263.
- SENNA-MARTINEZ, J. C. VENTURA, J. M. Q (2008) Neolitização e Megalitismo na Plataforma do Mondego: Algumas Reflexões sobre a Transição Neolítico Antigo/Neolítico Médio. In HÉRNANDEZ PÉREZ, M. S. SOLER DÍAZ, J. A. LÓPEZ PADILLA, J. A. (eds.) Actas del IV Congreso del Neolítico Peninsular. Tomo II. Alicante: 77-84.
- SENNA-MARTINEZ, J. C. VENTURA, J. M. Q. CARVALHO, H. A. ARAÚJO, M. F. FIGUEIREDO, E. VALÉRIO, P. (2010) "Melting the Power" The Foundry Area of Fraga dos Corvos (Macedo de Cavaleiros, North-Eastern Portugal). In BETTENCOURT, A. M. S. SANCHES, M. J. ALVES, L. B. FÁBREGAS VALCARCE, R. (eds.) Conceptualising Space and Place. On the role of agency, memory and identity in the construction of space from the Upper Palaeolithic to the Iron Age in Europe (BAR Internacional Series 2058). Oxford: 111-117.
- SERRA, M. PORFÍRIO, E. SOARES, S. (2014) A Estela da Idade do Bronze do Monte do Ulmo (Santa Vitória, Beja). *Conimbriga*, 53: 5-30.
- SOARES, A. M. BAPTISTA, L. MATALOTO, R. MELO, L. SILVA, A. M. SOARES, R. M. VALÉRIO, P. (2021) The Bronze Age of Southwestern Iberian Peninsula: endogenous evolution versus migration stimuli. *Revista Portuguesa de Arqueologia*, 24(1): 59-82.
- STUIVER, M. REIMER, P. J. REIMER, R. W. (2021) CALIB 8.2 [www program] at http://calib.org accessed 2021-12-4.
- TWOHIG, E. S. (1981) *The Megalithic Art of Western Europe*. Oxford.
- VALÉRIO, P. ARAÚJO, M. F. CANHA, A. (2007) EDXRF and micro-EDXRF studies of Late Bronze Age metallurgical productions from Canedotes (Portugal). *Nuclear Instruments and Methods* in Physics Research B, 263: 477-482.
- VALÉRIO, P. SILVA, R. J. C. SOARES, A. M. M. ARAÚJO, M. F. GONÇALVES, A. P. SOARES, R. M. (2015) Combining X-ray based methods to study the protohistoric bronze technology in Western Iberia. *Nuclear Instruments and Methods in Physics Research B*, 358: 117–123.
- VASCONCELLOS, J. L. (1906) Estudos sobre a época do bronze em Portugal. *O Archeólogo Português*, Série I(11): 179-189.
- VASCONCELLOS, J. L. (1908) Estudos sobre a época do bronze em Portugal. *O Archeólogo Português*, Série I(13): 300-313.

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