

Istituto Italiano di Preistoria e Protostoria

Rivista di Scienze Preistoriche

fondata da Paolo Graziosi

LXV - 2015 - Firenze

Between the Atlantic and the Mediterranean: the Late Bronze Age around the Tagus estuary (Portugal). Economic, social and cultural aspects

SUMMARY – BETWEEN THE ATLANTIC AND THE MEDITERRANEAN: THE LATE BRONZE AGE AROUND THE TAGUS ESTUARY (PORTUGAL). ECONOMIC, SOCIAL AND CULTURAL ASPECTS – This paper deals with the importance, quantity and diversity of Late Bronze Age sites known around the Tagus estuary. The material culture points out to the existence of cultural stimuli from very different origins: from the Iberian Peninsula inner, the North Atlantic and the Mediterranean basin, related to the social organization and the economy of the populations that inhabited this region between the XIII century BC and the IX century BC, according to the available radiocarbon data. These populations interacted with the first Phoenicians that arrived to the region at the end of this period, after episodic relations of trading with their antecedents, from Central Mediterranean region.

Keywords: Late Bronze Age; Tagus estuary; Portugal; Atlantic; Mediterranean

Parole chiave: tarda età del Bronzo; estuario del Tago; Portogallo; Atlantico; Mediterraneo

THE GEOGRAPHICAL CONTEXT. REASONS FOR A SYNTHESIS

The riverside region of the Tagus estuary, the largest river of the Iberian Peninsula, due to its natural conditions, especially its fertile soil, good solar exposition, soft reliefs, water abundance and small hydrographic basins, to which one can also add its climate amenity and privileged geographic position, constitutes from a very early age an area of intense human settlement (fig. 1). During the Late Bronze Age, such geographical position assumed crucial importance, allowing for the arrival of tin and copper ores from within the territory along the Tagus and the Sado rivers, which would be further manufactured in the region. Metal artifacts of well-standardized forms were then manufactured, which later would be redistributed, thanks to the broad access offered to ocean navigation, both towards the north Atlantic, as towards the Mediterranean. Thus, this region has assumed the role of a true hub between the North and the

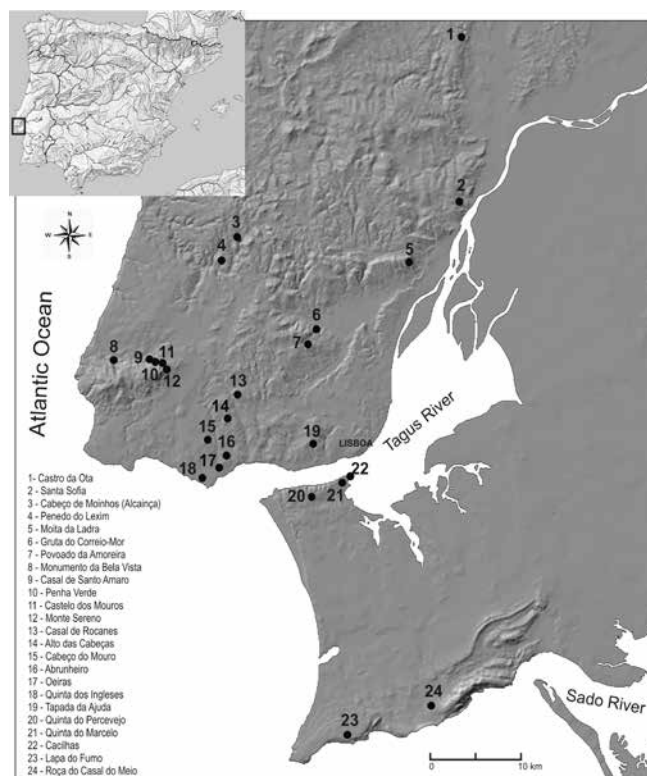


Fig. 1 - Geographical distribution in the region adjacent to the Tagus estuary of the main Late Bronze Age sites referred to in the text.

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Fig. 2 - The high settlement of Penedo do Lexim, located on top of a basalt volcanic chimney. Photo by João Luís Cardoso.

South, the interior of the Iberian Peninsula and the Atlantic coast, becoming one of the most notable areas, at European level, for knowing the processes that governed the formation of the Late Bronze Age society, between the XIII and IX centuries BC (Cardoso 1999/2000; Cardoso 2004).

HIERARCHY OF SETTLEMENT IN THE TIME OF THE LATE BRONZE AGE SOCIETY

Due to the natural conditions already mentioned, especially the high agricultural potential of the basaltic soils that lay from Loures to Cascais and on the south bank of the Tagus estuary (and in spite of the later being less prone agriculture, due to its geological origin, Miocene marine deposits), family-based settlements, or small open villages, devoted to intensive and extensive agro-pastoral exploitation throughout the year, have multiplied, as it had been seen, although to a lesser extent, in the Beaker complex, that coexisted with sites situated on the top of the hills (fig. 2).

To date, the best-known site of the first type – serving as a paradigm to other sites found in the outskirts of Lisbon, is the settlement of Tapada da Ajuda, in Lisbon. This site is implanted on a gentle slope, between 100 and 115 m above sea level, facing south, towards the Tagus estuary, which can be seen from the site, and near a small rivulet that flowed into the river.

This community inhabited ellipsoidal plant houses with irregular masonry foundations, consisting of basalt blocks (fig. 3), which have lo-



Fig. 3 - Partial view of the basement of the Late Bronze Age I hut from Tapada da Ajuda, with its ellipsoidal shape plan. Photo by João Luís Cardoso.

cal antecedents, corresponding to the Beaker huts from the fortified Chalcolithic settlement of Leceia. The community thrived on cattle breeding (sheep, cows and suids), intensive recollection of shellfish, and also on fishing, in the adjacent estuary. Exceptionally, deer hunting in the nearby woods was also practiced (Cardoso *et alii* 1986; Cardoso 1995). The most important economic activity, however, was the cereal production, which is significantly documented by hundreds of jagged elements of sickles, made of chips of flint. Such artifacts are also abundant elsewhere in the region (Cardoso & Cardoso 1996; Cardoso 2010/2011a) (fig. 4), representing an intensive production of cereals (mainly wheat), which far exceeded the consumption needs of these small communities.

The practice of intensive and extensive cereal agriculture is indirectly documented by the existence of underground silos used for grain storage. Two recent excavations have identified a pair of these structures in the western part of the region under study. The first one is located at the foothills of the Cabeço do Mouro (fig. 5), and it is related to the cultivation of the land that was directly dependent of the inhabitants of that settlement (Cardoso 2006). The second, identified in Quinta Nova de Santo António, near the coast, is related to a small settlement nearby. Here, a sub-circular plant hut was excavated, partly dug in the marly geological substrate (Neto *et alii* 2013).

The two situations referred above illustrate the coexistence of the two main types of housing sites, small farms of family nature, which depended on the most important nuclei such as Cabeço do Mouro, which were implanted in high places.

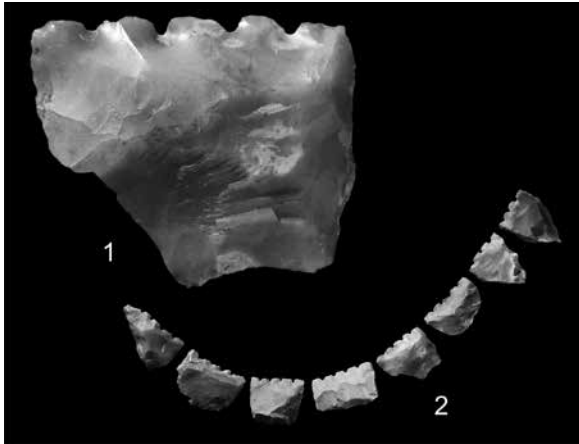


Fig. 4 - Flint sickle elements, with serrated edge, from the Alto das Cabeças site (after Cardoso 2011).



Fig. 5 - A silo excavated in the geological substrate of the agricultural farmhouse located at the foothill of the Cabeço do Mouro high settlement (after Cardoso 2006).

There would be, therefore, an emerging political power structure, within each set of agricultural settlements or small villages, linked by kinship. Such political and administrative structures could be located in sites from which it would be possible to

manage the corresponding territories. Therefore, the emergence highly placed villages during the Late Bronze Age in the region under study – a phenomenon also generally observed in other regions of the country – is associated with the development of economic and political power centers in this region.

Those highly placed sites, which have known human occupation in the Late Bronze Age are, in most cases, still poorly understood. The most of them corresponds to small areas, where only a scarce number of inhabitants could live; this situation was also observed in the Beira Interior region (Vilaça 1997). One can cite, in this region, Penedo Lexim (Kalb 1980; Sousa 2000), Castro da Ota (Barbosa 1956), Castelo dos Mouros (Cardoso 1997/1998; Cardoso and Sousa 2014), Penha Verde (Cardoso 2010/2011b), Cabeço dos Moinhos (Vicente and Andrade 1971) and Cabeço do Mouro (Cardoso 1991). In some of these sites, fine ceramic fragments were collected with geometric burnished ornaments (fig. 6), which, in addition to being associated with the daily life of elites, constitute a last stage of the regional Late Bronze Age, and can be placed between the X and IX centuries BC (Late Bronze Age II). These findings are consistent with the chronology of the high villages from the same epoch in the Beira Interior region, where fragments of such ceramics were also collected. Indeed, in Tapada da Ajuda, settlement dating from the Late Bronze I (between XIII and XI centuries BC), such productions are unknown. Nevertheless, they could occur, exceptionally, in open sites of the same age like Quinta do Percevejo (Barros and Espírito Santo 1991).

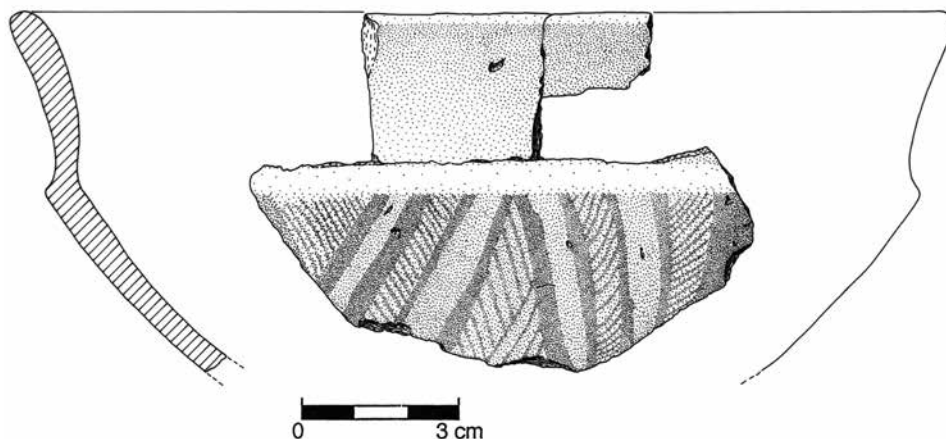


Fig. 6 - Carinated cup with burnished geometric decoration from the Late Bronze Age site of Castelo dos Mouros, Sintra (after Cardoso 1997/1998).

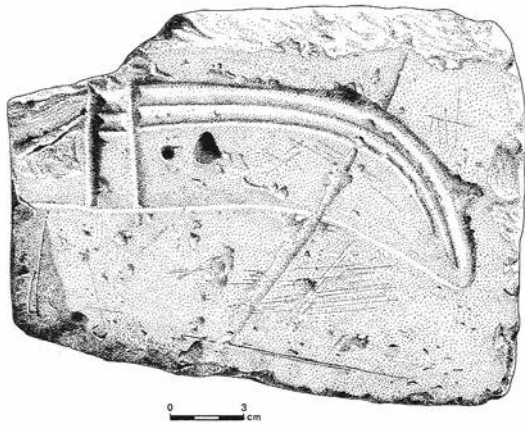


Fig. 7 - Sandstone from the eponyme site mold for manufacturing Rocanes-type talon sickles (after Cardoso 1999/2000).

Such occurrences remain exceptional in open settlements from the Late Bronze Age II (Cardoso 2010/2011a), like Abrunheiro, where, in spite of the thousands of samples carefully examined, none featured burnished ornamental decorations.

THE BRONZE METALLURGY

The dispersion of Extremadura's ceramic burnished ornaments over the entire hydrographic basin of the river Tejo can be put in relation with the tin route, which originated the Beiras region, and arrived at Extremadura by waterway. Some decorated ceramics from the Late Bronze Age of the Meseta, found at Correio-Mor cave, illustrates the existence of relations with even more interior regions of the Iberian Peninsula (Cardoso 2003, p. 255, fig. 48, n. 1).

Likewise, copper coming from the Pyrite Belt iron hats and the numerous disseminated deposits of Alto Alentejo, could also be transported along the Sado river to the Extremadura. The most striking example of the conjunction of the two components of bronze in the latter region is the presence of sandstone molds for casting bead sickles, found in Rocanes (fig. 7). Indeed, this finding confirms the commercial status then assigned to Lower Extremadura, concerning the transformation of tin ores and copper, which were brought to the region for the making of bronze artifacts, only partly to be used locally. Special cases, such as the set of artifacts collected in Mata do Urso, Leiria, already outside the geographical area in question, were likely to belong to the tooling gear of an itinerant craftsman (Kalb 1998).

The Rocanes mould is very important. In fact, as the remains found in settlements of Beira Interior and Beira Alta have demonstrated, bronze metallurgy was a domestic activity and was primarily intended for local use, in those very sites, even if the models could have been copied. But this reality was not strong enough to prevent the emergence of a markedly regional production, as it will be seen below.

The riverside area of the Tagus and Sado corresponds to the occurrence of Rocanes-type sickles, plus the said mold (Serrão 1966), which contrast with the rarity of the socketed sickles, with a clearly North Atlantic connotation, otherwise unknown in this region. Only by then would the wooden sickles with jagged elements of flint been replaced, which remain in use until the end of the Bronze Age, given the easy access to local nodules of flint, and, above all, the high cost involved in obtaining the copper and tin necessary for making this type of artifacts.

The supply to the region, especially from the X century BC onwards, of both of tin and copper has allowed for the production of other bronze articles, also markedly regional in nature, such as two-looped socketed axes and the singled-faced palstave, during the Late Bronze. Indeed, this area shows the largest concentration of socketed axes the entire Portuguese territory (Coffyn 1985; Monteagudo 1977; Kalb 1980). The distribution map for the three artefacts groups in question – which have coexisted in time – shows that the only area where there is an overlap of them all is the Extremadura region (fig. 8).

These costly produced artifacts, whether or not they were locally manufactured, which was only proven in the case of Rocanes sickles, reveal, by their presence when compared to other geographical areas, the economic capacity achieved in the Late Bronze Age II of Lower Extremadura by people who lived here.

THE SUPRA-REGIONAL TRADE OF BRONZE ORE PRODUCTIONS

As part of the Atlantic-Mediterranean trade solidarities established in that period, the importance of the riverside region of the Tagus and Sado follows immediately from its exceptional geographical location, served by excellent anchorages. This

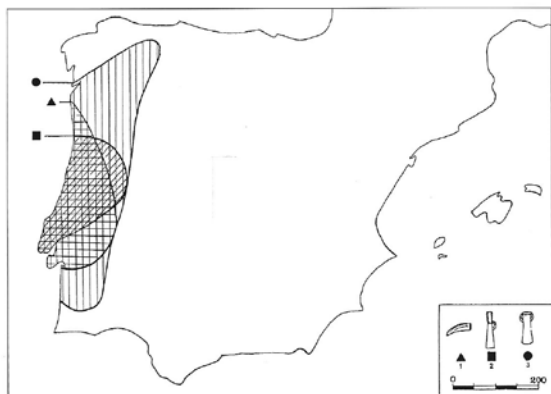


Fig. 8 - Distribution area of Rocanes-type talon sickles, of double-ringed socketed axes and univalve single-ringed talon axes (after Coffyn 1985).

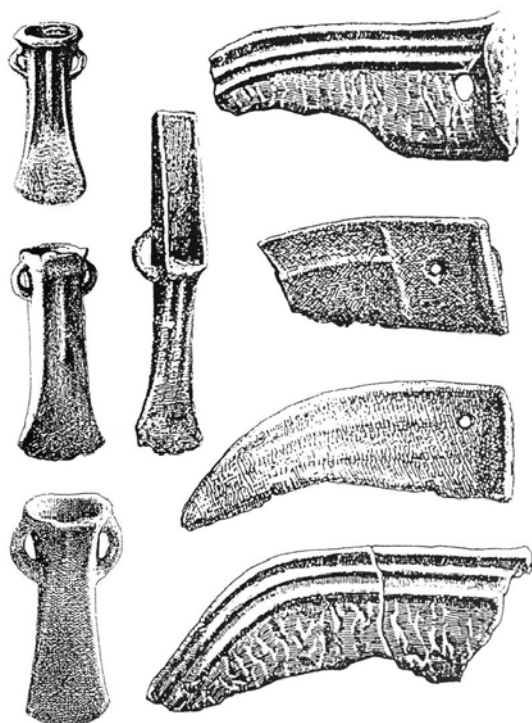


Fig. 9 - Rocanes-type talon sickles, double-ringed socketed axes and univalve single-ringed talon axes, from the Monte Sa Idda deposit (Cagliari) (after Taramelli 1922, modified).

explains the numerous pieces found in Central Mediterranean sites (Italy, Sardinia and Sicily), inventoried by Lo Schiavo (1991, 2008), particularly the famous deposit of Monte Sa Idda, Cagliari (Sardinia), containing, among others, the three types of the aforementioned artifacts: Rocanes-type sickles, socketed axes and two-looped single-faced palstaves (Taramelli 1921) (fig. 9).

According to Lo Schiavo, this set dates from, essentially, the tenth and eleventh centuries BC,

the same period to which belong the peninsular counterparts productions, well represented in this deposit by pieces either imported or locally copied from prototypes originating in the Iberian Peninsula.

Another item that denounces western peninsular production is the “tranchet”, also present in the Monte Sa Idda deposit, even if only by a single fragment (Taramelli 1921, fig. 77), and considered to be of “Portuguese” type (Lo Schiavo 1991). It is a rare type of artifact, represented in the Portuguese territory by scarce examples only and with very specific characteristics, namely, featuring the leaked handle. Their distribution area corresponds essentially to the height settlements with evidence of metal production, located in the inland center region and extending to the coastline, and dated from between the eleventh and the ninth centuries BC (Vilaça 2008/2009). The only recorded artifact of this type in this area was collected in Quinta do Marcelo (Barros 1999).

Without natural resources of their own to justify by itself the emergence of elites by way a wealth accumulation process – the agricultural potential mentioned before was not sufficient for this process – the economic blossoming of these communities has been enhanced by the practice, on a regular basis, of bronze metallurgy and subsequent marketing by sea of the manufactured products, or the marketing of raw materials, either as raw ore or in the form of ingots.

Some of these bronze ingots are, in fact, known, like those collected in the very extraction area, namely the deposit of Ervedal, Castelo Branco, featuring a discoid, flat-convex shape (Villas-Boas 1947; Vilaça 1998), which were subsequently remelted in residential areas for the production of various artifacts. Thus, the power-holding, regional elites would act as intermediaries in the circulation of such goods, obtaining from this activity the corresponding capital gains.

Auriferous artifacts, like the necklace of Casal de Santo Amaro, mentioned below, show the economic success of these elites. They are associated with the culmination of the establishment of a vast exchanging network, based on the complementarity of interests expressed by solidarity pacts.

Knowing that, at this time, the importance of mining in the Peninsula was based on the presence of copper, in the South, and tin, in the Centre and North of the Portuguese territory (fig. 10)



Fig. 10 - Distribution of tin and copper mines in Portuguese territory, based on the exploitation concession up to 1929 (according to A. Vianna).

– the gold being more widespread throughout the territory – the alliances signed by the respective regional elites should have had played a key role in enabling the exploitation of mineral resources. Further spread of manufactured products ensued, as well as their local and regional consumption, with a consequent increase in production, subject, of course, to the respective demand. The widespread diffusion of Villena/Estremoz-type bracelets throughout the Iberian Peninsula confirms this reality (Ruiz-Gálvez Priego 1995), without having to admit, contrary to this author, the intervention of exogenous traders to space to Iberian Peninsula.

WEAPONS, JEWELRY AND SOCIETY

The elites, based in the height sites of the region under study such as those mentioned before, were in charge of the administration of well-defined territories, occupied by small and scattered

communities, dedicated to intensive and extensive agro-pastoral activities, from which those elites collected the most relevant gains. These gains resulted from the redistribution of cereal production, probably by exchanging them for minerals and bronze, raw or in the form of ingots, which was then transformed into various articles, some of which would be exported. Such was the origin of the economic success of the elites that in the Late Bronze Age occupied this region. Several artifacts are related to this economic and social reality and embody it. This is the case of weapons, whose presence, in addition to prestigious functions, externalizing the social status of those who could bear them, seemed essential to the maintenance of the established rules of coexistence. In the group of tongued daggers with rivets of the “Porto de Mós” type, three cases have been recorded (Coffyn 1985). These are regional productions, also present in the Sardinian deposit of Santadi (Lo Schiavo 1991). Concerning spearheads, two socketed-type items have been registered, coming height settlements (Sousa 2000; Barbosa 1956), belonging to the Venat type (Coffyn 1985), which is common in the northern coast of the Iberian Peninsula and in Aquitaine.

To the arguments put forward to explain the economic success of the populations of the Late Bronze Age II of the Estremadura region, one can also add the exploitation of high value products, potentially available in the Tagus estuary area: this is the case of the salt, whose exploitation in the Final Bronze has not been demonstrated yet, but that would seem to be likely, as it occurred in the Southeast, in the salt mines of the Alicante region, and in Galicia (Mederos Martin 1999), using the warming of seawater in large open vats, like it already occurred in the same area since the Chalcolithic. It is also the case for gold, probably already explored from the Tagus’ auriferous sands since the middle of the third millennium BC, in the Chalcolithic.

Indeed, the site of Quinta do Marcelo, of the Late Bronze Age II and dated by radiocarbon from the eleventh to tenth centuries BC (pit 1) and the ninth century BC (pit 2), was interpreted as a camp or a settlement specialized in the mining of gold-bearing sands from river Tejo (Barros 1999).

In support for this metallurgical activity at the site, chemical analysis revealed gold and mercury waste at the bottom of a vase. The exploitation of



Fig. 11 - Gold necklace from Casal de Santo Amaro (after Pereira 1894).

gold would have been held on both banks of the Tagus estuary and possibly also in the adjacent ocean shoreline, in Adiça (Choffat 1912/1913), knowing the quantities that were still obtained in the first decades of the nineteenth century (Eschwege 1830).

With this or with some other gold, jewelry was made, another indicator of the presence of elites at the end of the Late Bronze Age in Lower Extremadura. The most remarkable example is the necklace of Casal de Santo Amaro, or Penha Verde, near Sintra (fig. 11) (Pereira 1894; Vasconcellos 1896; Armbruster 1995). According to J. Leite de Vasconcellos, this exemplar was in a grave, which was built taking advantage of the space formed by two limestone benches, covered with irregular slabs.

The outstanding amount of gold available and circulating in this region is significantly stressed by the weight of this piece, with 1262 g, unfortunately today in exhibition at the British Museum in London. At the time, gold abounded in Asturias, in the alluvial form. The latter region was identified as the likely source of the Villena treasure, in Alicante (Mederos Martín 1999), the most important European prehistoric set of golden vessels, both in number of pieces as in gold weight, immediately after the entire gold collected in Mycenae. However, the absence of systematic compositional analysis for gold deposits in the Peninsula makes it difficult to discuss the issue of the gold origins, enhanced by the possibility of re-melting (Perea 1991).

Notwithstanding the abovementioned caveats, the results from the analysis of a large set of jew-

elry dating from the Atlantic Europe Late Bronze (Hartmann and Sangmeister 1972) may serve as a basis for reflection: one of the gold-bearing isolated groups (Group N) on the west facade of the Iberian Peninsula is extremely abundant in the Denmark and in the Ireland regions, from which it could have originated (cfr. Kalb 1980, note 21).

The North-to-South gold-bearing stream would find its evidence in some artifacts used in daily life, as the already mentioned socketed sickles. In the opposite sense, one may refer the peninsular productions of socketed axes, single-faced palstaves and the “Reguengo Grande” type (Types 30, 36 and 42 of Monteagudo 1977), all found in northern areas of Atlantic Europe. The necklace of Penha Verde reveals, in fact, clear Nordic inspiration, integrating the auriferous jewelry group of the “Halskragen” type, along with other northern specimens of the Portuguese territory (Kalb 1990/1992). The high weight of this specimen, along with its small internal diameter (only 14 cm) would make it difficult to use in any practical way (Ruiz-Gálvez Priego 1995). Accordingly, its connotation with women’s dowry, within a social wealth accumulation framework, is not incompatible with the funeral character assigned to the finding.

This insistent presence of golden jewelry implies a craft production. This situation has recently been illustrated by the identification of a weighing system for valuable products, which naturally includes gold, consisting of bronze weight units, with a flattened shape and, in general, with a two-body conic section and circular borders (Vilaça 2003). In this region, four specimens of these weights were collected in Penha Verde (fig. 12). The systematic study of the weights of these objects led to the hypothesis that, in that time, which can be placed somewhere between the X and the IX centuries, they belong to a weighing system that followed an international standard based Syrian shekel, with 9.3 / 9.4 g, featuring multiples and dividers (Vilaça 2011).

Naturally, given the gold jewelry, the occurrence of bronze ornaments such as bracelets, rings and brooches (*fibulae*), is of less social significance. This is the case of the six small bracelets coming from the Cabeço de Moinhos. Once again, this is an isolated finding, having up the pieces been picked up “between stones” in that hill (Vasconcellos 1920; Vicente and Andrade 1971; Kalb 1980).

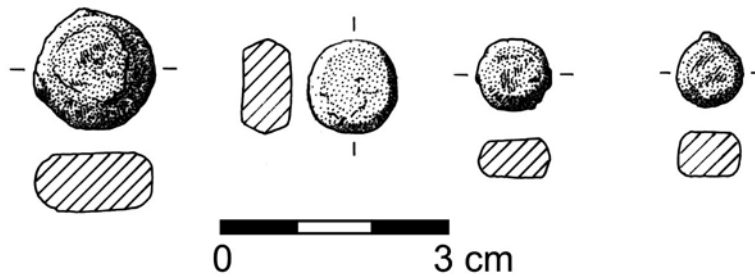


Fig. 12 - The four ponderals from the high settlement of Penha Verde (after Cardoso 2010/2011 b).

The elbow and double-spring *fibulae*, evidently from Mediterranean origin, also form part of the clothing of the Late Bronze II elite. The site of Quinta do Marcelo, Almada (debris pit 2) provided one of each type (Barros 1999, fig. 60 and 61). In the farming settlement of Abrunheiro, another elbow *fibula* was collected (Cardoso 2011). This one has been intentionally sawed to obtain bronze for the production of other articles, thus documenting successive reuse of bronze (Fig. 13). The elbow *fibula* from Quinta do Marcelo is of Cypriot model, having their closest parallels in the set found in the Ria de Huelva (Almagro 1958, Ruiz-Gálvez Priego 1995) and, like this set, was also dated from the IX century BC. Thus, the double-spring *fibula* from Quinta do Marcelo seems to be one of the oldest dated specimens. This is model that A. Coffyn (1985, p. 267) attributed a Mediterranean peninsular origin, through a local evolution of elbow *fibulae*.

As mentioned by R. Vilaça (1995, p. 418), citing Renfrew, “The exchange of these goods (...) is done at a horizontal level, that is, between equals (...). Thus one can understand the great dispersion of certain items, primarily metal, of trans-European features and that could be included in that which Earle called the “elite style” or “international style”.

It is also this context of intense contacts, where exotic products were also present, that explains the presence in the Quinta do Marcelo of an amber bead (Barros 1999), which, since it has not been analyzed, cannot be safely ascribed to the Baltic region, like the beads collected in the Late Bronze Age settlements of Beira Interior (Vilaça, Beck and Stout 2002). Occurrences of amber artifacts were also signaled in Penedo do Lexim settlement, Quinta da Bela Vista grave and Correio-Mor cave.

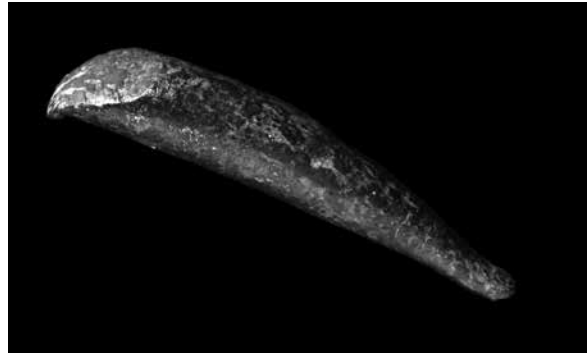


Fig. 13 - A portion of the elbow fibula from the Abrunheiro site, intentionally cut for reuse as raw material (after Cardoso 2011).

Another product exogenous to the region is the carnelian, of which beads of various types and sizes were made and whose presence in the Late Bronze Age is remarkable, showing the trans-regional circulation of this raw material. In this region, a specimen was collected in the small farming settlement of Alto das Cabeças (Cardoso and Cardoso 1996).

Much more interesting are the three small iron knives from the Quinta do Marcelo (fig. 14), of which the only one with a recognized form is similar to both from the settlement of Moreirinha, Idanha-a-Nova, corresponds precisely to “the most frequent artifacts occurring in the Eastern Mediterranean, in Cyprus and in Greece, during the Bronze/Iron transition period, in the twelfth century BC” (Vilaça 1995, p. 351). In fact, some of the Eastern specimens (Bucholz and Karageorghis 1973, fig. 23) appear to be identical to the Portuguese ones. Although the artifacts of Quinta do Marcelo can be dated from the IX century BC, radiocarbon dates available for other sites in central and northern Portugal indicate that the introduction of iron in the west of the Peninsula dates back to the XI century BC (Vilaça 2013a). However,

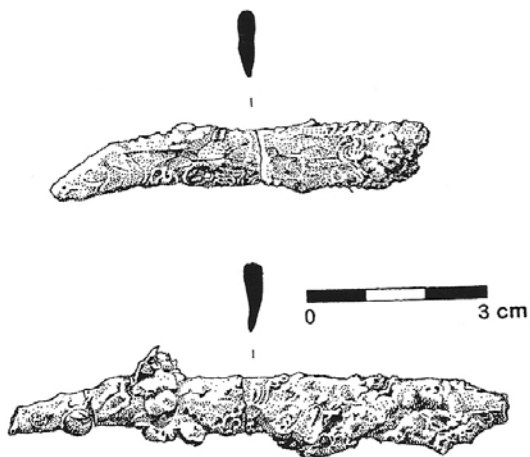


Fig. 14 - Two iron knives from the Quinta do Marcelo site (after Cardoso 2004).

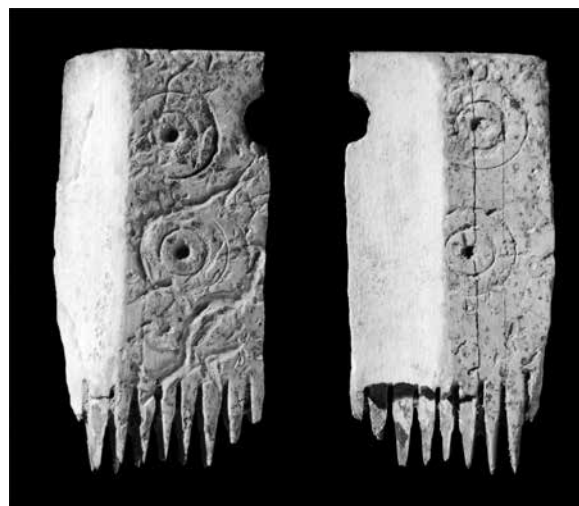


Fig. 15 - Ivory comb fragment from Oeiras (after Cardoso 2011).



Fig. 16 - The “carp-tongue” sword found in the Tagus river at Cacilhas (after Cardoso 2004).

no traces of iron metallurgy were ever identified, which reinforces the conclusion of their being imported. Although they have a functional character (knives, saws), since they do not have obvious advantages over their bronze equivalent as they are made of soft iron, it is possible to admit that these small objects have social and symbolic purposes. The presence of iron artifacts in the Central Mediterranean dates back to the Middle Bronze Age, about 1500 BC, as evidenced by the artifact from Castelluccio di Noto (Sicily) (Giardino, in Vilaça 2013a), so it is possible to admit that it may have been the case that populations of traders coming from that region were responsible for its introduction in the Peninsula.

Finally, the presence of ivory imported objects in this region is documented by two combs, one

collected in the grave of Roça do Casal do Meio (Spindler *et alii* 1973/1974), other in a domestic context belonging to the Late Bronze Age/Iron Age of Oeiras (Cardoso 2011) (fig. 15) and hereinafter discussed.

RITUAL PRACTICES

A “carp’s tongue” type sword (fig. 16), collected during dredgings made in the left bank of the Tagus estuary (Gomes 1992), may be associated with offerings to aquatic deities, as seen in other occurrences recorded in estuarine or coastal peninsular areas (Ruiz-Gálvez Priego 1995, fig. 10). Alternatively, it can be treated simply as lost object or resulting from a shipwreck.

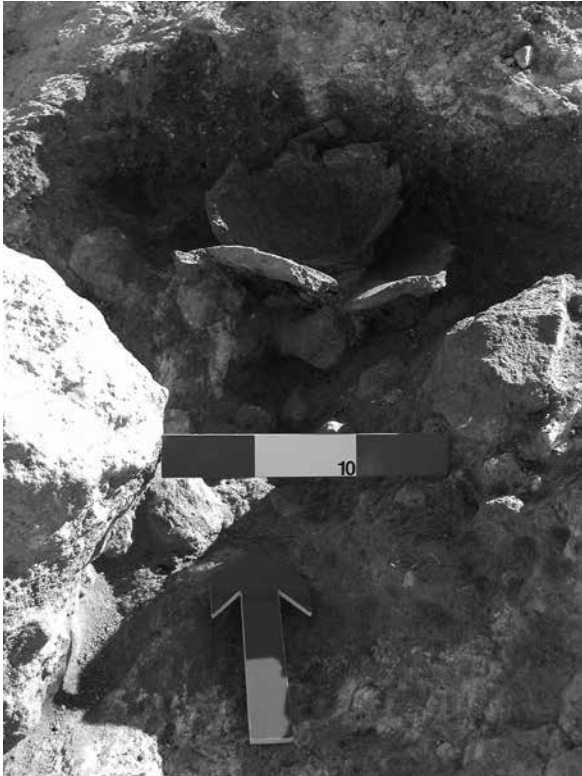


Fig. 17 - Detail of one of the Late Bronze Age ritual pits of Moita da Ladra (after Cardoso, 2013).

Ritual nature may also be granted to the Porto de Mós-type dagger collected in the natural cave of Lapa do Fumo, on top of the southern slope of the Arrábida mountain crest (Serrão 1959), since it was not associated with human remains.

The same was also found to be true with some metallic utilitarian bronze objects. This is the case of the univalve palstave collected in a small granite cave of Monte Sereno, on the outskirts of Sintra mountain crest (Pereira 1957). This fact underlines the ritual character played by several of these natural caves. The flat axe found in the cave of Correio-Mor (Cardoso 2003) could also be added to such type of occurrences.

Indeed, in these natural caves, the abundant presence of geometric burnished ceramics, configure an intense use of natural underground sites, perhaps related to the cult of chthonic deities, an alternative preferred to the hypothesis of funerary use, as no association with human remains has been registered. The Nuragic sanctuary caves of Sardinia, in which bronze artifacts have been collected, some of them of probable Peninsular origin (Lo Schiavo 1991, fig. 7), may constitute a worthy element for comparison, involving the use of caves with water circulation (Coffyn and Sion 1993).

The presence of large containers, said to be used for storage, might suggest the use of these underground caves as barns, which is not incompatible with the concomitant, symbolic or ritual weight that they could have assumed, as it occurs in other regions and times like the Buraco da Pala, Mirandela (Sanches 1997), a natural cave used during the Chalcolithic as barn and, at the same time, as ritual space, as it is evidenced by gold beads that were collected in that site.

Another type of the Late Bronze Age ritual manifestations hitherto unknown in Portugal and even in the peninsular territory was recently identified near Lisbon in Moita da Ladra (Cardoso 2013; Monteiro and Pereira 2013). Adjacent to an extensive inhabited area, occupying the highest part and the south-facing slope of a hill, two ritual places were identified, just a few dozen meters away from each other. The first of these places is composed of several shallow depressions opened in limestone very altered by the contact metamorphism resulting from a volcanic chimney installation. The base of these depressions were found to be covered by fragments of large containers, upon which intense fire has been produced, as it is evidenced by the presence of carbonized animal bones. This suggests incineration *in situ*, being such sets covered in some cases by smaller vessels (fig. 17). Such area where ritual practices took place were accompanied by other, corresponding to the formation of a votive deposit with an approximate area of 4.0 by 3.0 m and maximum depth of 0.70 m. This deposit is formed of about 50 vases, associated with intense combustion and the deposition of animal bones, in some cases still partly conserving the anatomical connections, along with other offerings, such as pins, brooches (*fibulae*) and bronze rings (Monteiro and Pereira 2013) (fig. 18). The typology of the vases clearly points to the Late Bronze Age, reinforced by the *fibula*, of the type Ponte 1 (Ponte 2006), which can be dated from the XI to IX centuries BC. Therefore, it was not surprising the occurrence of two iron fragments of indeterminate use. Everything indicates that this is a space where the spoils of community ceremonies that took place nearby were accumulated (“bothros”), probably involving also the ritual consumption of food.

Another ritual set was identified in the farmhouse of Abrunheiro, where a container was identified, covered with a fine limestone plate, en-



Fig. 18 - Overview of the Late Bronze Age ritual deposit of Moita da Ladra (after Monteiro and Pereira 2013).

closing the remains of a young-age sheep or goat (Cardoso 2010/2011a), which may constitute a practice of propitiatory character.

FUNERARY PRACTICES: THE MONUMENT FROM THE ROÇA DO CASAL DO MEIO, CALHARIZ (SESIMBRA)

This is the most important evidence of the Late Bronze Age funerary practices in the region under discussion.

The architectural complexity attributed to the monument for their excavators (Spindler *et alii* 1973/1974) has been revised and substantially simplified in the light of a new interpretation of the excavation data (Cardoso 2000, p. 245), an hypothesis later defended by others (Harrison 2007). This monument would have been a *tholos* with a long corridor (*dromos*), sealed at the entrance by a large limestone block. The sub-circular chamber would

have been covered by *tumulus* superficially coated by a layer of slates, protecting the compacted earth core, and constituting the central part of the artificial mound, which was delimited at its periphery by a circular crown of vertical slates fixed on the ground, still well preserved today (fig. 19). The chamber would have been covered by a false vault, made up of limestone slabs, as it is observed in any Chalcolithic burial of the same type. It was possible to identify a whitish clay coating on the wall of the burial chamber, regulating the surface formed by the overlapping slabs, which would continue until the top of the vault.

Given this interpretation, the existence of a gallery inside the structure, as it was originally indicated (Spindler *et alii* 1973/1974), is not confirmed. In fact, it would be meaningless, since it would be blocked at both ends by the walls of the corridor, forming an enclosed space that it would be impossible to access.

The architectural typology of the monument is, therefore, remarkably simpler than that described by the excavators and this is the source of its chronological reevaluation. The fact that not a single Chalcolithic artifact has been found, can be explained by the possibility that a complete cleaning of the monument had occurred immediately before the occupation of the Late Bronze Age. The example of the *tholos* of the Cerro Malhanito, Alcoutim, excavated under the author's supervision, strongly suggests it and may be invoked in support of this hypothesis (Cardoso 2004; Cardoso and Gradim 2007).

The reuse hypothesis of a Chalcolithic monument gains credibility when bearing in mind the



Fig. 19 - Overview of *tholos* of Roça do Casal do Meio (files of O. da Veiga Ferreira/J.L.Cardoso)

stratigraphic observations of the monument diggers, including the observation that “the floor had been cleaned beforehand to put there the skeletons bodies and that the earth had been swept up to the southeastern part”¹ (Spindler *et alii* 1973/1974, p. 117), added to the review monument’s architecture, absolutely comparable to the Chalcolithic *tholoi* from the Extremadura region.

These results appear to be of extreme interest to reassess the time of the construction of the funerary site of Roça do Casal do Meio. Indeed, some authors, starting with the excavators themselves, admitted that this is a reused monument (Spindler *et alii* 1973/1974, p. 117), based on empirical evidence that they describe and evaluate. This view was further adopted by various authors (Belén, Escacena and Bozzino 1991, p. 237). The authors are explicit in that regard, when discussing the age of the monument “[t]he information we examined also gives us examples of reuse of monuments with much older chronology and construction technical features, which we can call megalithic” (our translation). Two of the authors of that article later changed their position, stating that “the architectural features of the building (...) have no known parallel in Portuguese megalithic world from the Neolithic or from the Copper age” (our translation). Their statement results certainly for not knowing other Extremadura *tholoi*, such as the ones of Tituaria, Mafra, or Pai do Mogo, Lourinhã (Belén Deamus and Escacena Carrasco 1995, p. 108), or for having following too literally the architectural reconstruction of the monument presented by K. Spindler and his colleagues.

The position of M. Almagro Gorbea (1986, p. 363) was more nuanced, presenting the burial of the Roça do Casal do Meio as dolmen-inspired (“inspiración dolménica”), an expression that, in any case, appears to be inconsistent because it does not explain how such an “inspiration” could have won the long period between the end of the megaliths, from about the middle of the 3rd millennium BC, and the chronology of the tomb. More recently, the said author (Almagro Gorbea 1998) admitted that it was a local creation from the Late Bronze Age, having parallel cases both

in graves with circular chamber and *dromos* from both the Central and the Eastern Mediterranean, where these features became widespread from Final Helladic II-III onwards, and in which they have directly inspired, in the absence of other similar occurrences in Western Europe.

The fact that this is the only Iberian tomb of its kind, in the case for it having been built in the Late Bronze Age, is right away a reason for careful consideration. However, this was exactly the reason why the origin of its builders was looked for in other extra-peninsular geographical areas, as it has been already suggested by the excavators, when they established a parallel with the Nuragic architecture (Spindler *et alii* 1973/1974, p. 71). Indeed, among the archaeological remains, along with ceramic goods of domestic production, two clearly exogenous artifacts stand out: The *fibula*, with an obvious Sicilian parallel (Bernabò Brea 1972, fig. 34), and the aforementioned ivory comb.

In fact, the typology of the fibula, with winding arch, whose closest parallels take us back to Sicily (fibulae of “serpeggiante” arch, cfr. Ruiz-Delgado 1989), is from the Pantalica II/III stage, and it is compatible with a X century BC dating; it can be integrated, as the exemplar recently recovered in Moita da Ladra 2, in the Ponte 1 A type, which the author assigns to the same time (Ponte 2006).

Such occurrences are, justifiably, the fundament for the hypothesis of the tomb being the result of the activity of traders originating from the Central Mediterranean. To this end, it would be important to ascertain to what extent exist in this geographical area other similar tombs that could have served as a model, since the latest Mycenaean *tholoi* date back to the XIII century BC (Mylonas 1957) and are therefore about 200-300 years older than the two graves identified in the chamber of the monument in cause. References to real, Late Bronze Age *tholoi* are known in Sicily (Blasco Bosqued 1987, p. 25; Malone, Stoddart and Whitehouse 1994, p. 177) and, in some ways, they can relate with Mycenaean prototypes (Bernabò Brea 1972, p. 162). But the general architectonic features of this tombs seems not to be comparable with the Roça do Casal do Meio monument.

In the chamber, two adult male burials were made (Vilaça and Cunha, 2004).

One of the individuals was placed in supine position (grave 1) (fig. 20). The other was deposited sideways with legs and arms in a flexed

¹ “(...) le sol avait été nettoyé préalablement pour y mettre les squelettes et que la terre balayée avait été mise dans la partie sud-est”.



Fig. 20 - Partial view of the Roça do Casal do Meio *tholos* chamber where an individual can be seen buried in dorsal decubitus position, partly cut by a later intrusion (grave 1) (files of O. da Veiga Ferreira/J.L.Cardoso).

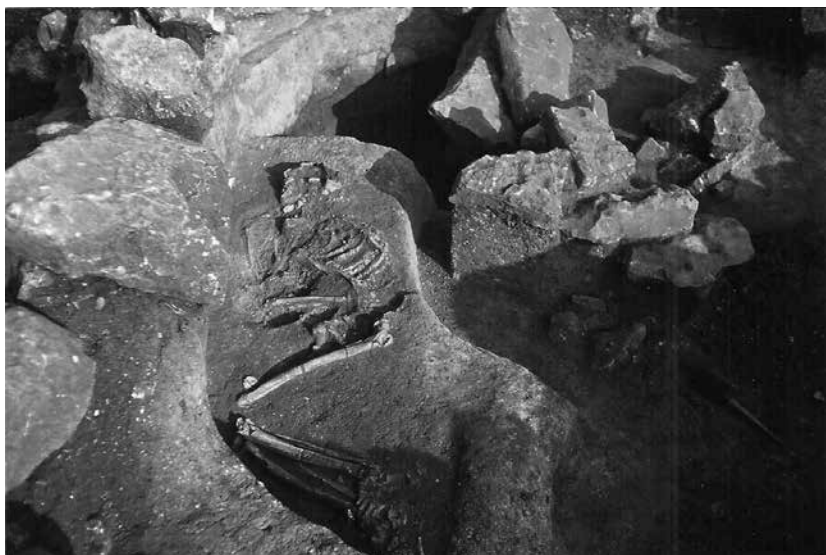


Fig. 21 - Partial view of the Roça do Casal do Meio *tholos* chamber where an individual can be seen buried in lateral decubitus position, with the arms and legs flexed (grave 2) (files of O. da Veiga Ferreira/J.L.Cardoso).

position, over a small clay stool placed against the wall of the chamber (grave 2) (fig. 21). At the feet of the two burials four juvenile sheep/goats remains were ritually placed.

The high social rank of the two individuals buried there is underlined by the spoils deposited with them: for the first individual, an ivory comb already mentioned, a tweezer and a bronze ring; for the second, another but tweezer, a belt staple and the *fibula* mentioned above. Two containers – a high-neck vase, with geometric burnished decoration, and a carinated cup, both typical Late Bronze Age productions – completed the spoils, being the only examples of clearly local or regional origin. The fine clothing worn by the two individuals is revealed by the belt staple, much as by the fibula, which require the use of fine fabrics, given their fragility and small size.

The care put in the very presentation of the two individuals is illustrated by the comb and by the depilatory tweezers. The comb is one of the few pieces of ivory previous to the Phoenician imports, like the Peña Negra I bracelets, Alicante (González-Prats 1990). The tweezers are much more than a simple cosmetic object, and may be associated with the care of the beard, as a symbol of age and hierarchy (Ruiz-Gálvez Priego 1995, p. 139), so cultivated in the societies of the Eastern Mediterranean Bronze Age. It is also interesting to note that these attributes – comb, tweezers and fibulas – all occur in the so-called “warrior *stelae*”, dating from the southwestern Late Bronze Age of the Iberian Peninsula (Celestino Pérez and Salgado Carmona 2011).

The high status of both burials, together with the absence of weapons – that have never been

part of the monument's spoils, since, in that case, it would have justified the raking of the entire chamber, and not just the limited violation that it bears evidence – is compatible with the existence, in the Late Bronze Age, of elites that were not necessarily only composed of warriors.

The assimilation of some of cultural practices of Western origin by these elites that lived at the time in Estremadura explains the presence of clothing objects of obvious exogenous origin, given the undeniable social prestige that its use gave among the local populations. It is in this way that the evidence supplied by the Roça do Casal do Meio gains its interest, even if it is not possible to exclude the hypothesis of their actually being exogenous individuals. In this regard, it is worth recalling the discovery of Mycenaean «altars» in the lower Guadalquivir (Martin de la Cruz 1992). Mycenaean ceramics have also been found in Llanete de los Moros, Cordoba, and elsewhere in Andalusia, whose origin in the eastern Mediterranean is well established (Arruda 2015).

ABSOLUTE CHRONOLOGY

The absolute chronology of the dated sites of the Late Bronze Age situated in the area of this study is shown in fig. 22.

The dates shown in “grise” are those of sea shells. These were calibrated with Marine13 curve (Reimer *et alii* 2013) for a $\Delta R = 95 \pm 15$ years 14C (Soares and Dias 2006). The dates performed on the terrestrial biosphere mammalian bones (in black) were calibrated with IntCal13 curve (Reimer *et alii* 2013). The OxCal software (Bronk Ramsey 2001, 2009) was used to plot chart.

In general, it can be seen that the first stage of the Late Bronze Age is documented by the settlements of Tapada da Ajuda and Quinta do Percevejo, both before the beginning of the X century BC (Late Bronze Age I), while the rest are more modern than this limit, correspond to the Late Bronze Age II. This dichotomy would be documented by the differential presence of burnished-ornamented ceramic, that would be characteristic of the sites of the Late Bronze Age II. However, this criterion can not be considered as absolute, as in Quinta do Percevejo, an farming settlement ascribed to the Late Bronze Age I, a vase with

such decoration was collected (Barros and Espírito Santo 1991, fig. 6).

In the recent excavation of Santa Sofia site (Vila Franca de Xira), in a gently slope adjacent to the old estuary of the Tagus, several housing structures from the Late Bronze Age tradition were identified, namely a sub-ellipsoidal hut, associated to an radiocarbon date:

Sac-2296: 2950 ± 35 BP corresponding to the range of 780-530 cal BC for a two sigma.

This result is interesting because, in addition to the hut typology, ceramics productions of the Late Bronze Age tradition were present, associated with Orientalizing ceramics. This situation shows that the diffusion of new production technologies introduced by the Phoenician trade have not been instantaneous at the archaeological scale of time, since the first contacts with Western Phoenician populations date from the end of the IX century BC, according to the dates obtained in the settlement of Almaraz (Barros and Soares 2004), and further upstream, in the Castelo de Santarém (Arruda 2005).

DISCUSSION

The above considerations can be summarized in the following major topics:

Determinant Role of mineral resources of Beira Interior in the establishment of trans-regional trade networks

This region concentrates the metal artifacts and the stone, clay and even bronze moulds used to manufacture them. This resulted in the systematic exploitation of abundant alluvial tin deposits (Thadeu 1965). There were also some filonian copper occurrences, which allowed for the practice of binary bronze metallurgy using only local resources: in the settlement of Castelejo a canister/oven was discovered with almost pure cassiterite, in which it was directly fused with copper (Vilaça 2013b); other signs of the local mining are the milling hammers of the Moreirinha settlement and, especially, the bronze univalve talon ax with a ring, found at 12 m depth in one of the mines of Quarta-Feira (Sabugal), exploring copperiferous vein, known since the nineteenth century (Cardoso 2006). Would it have had any ritual purpose, or would it simply be an instrument used

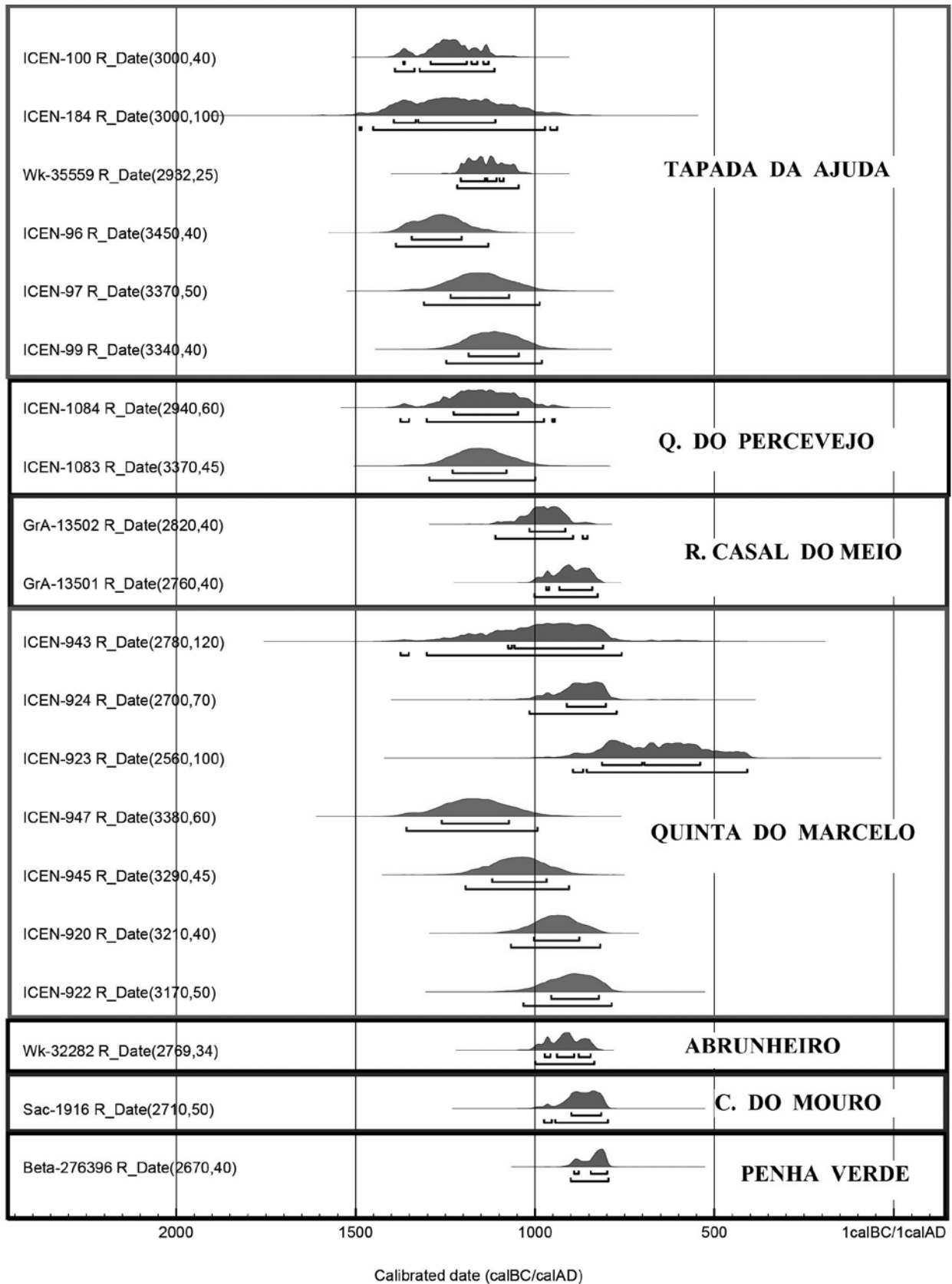


Fig. 22 - Absolute chronology of the Late Bronze Age dated sites from the riverside area of the Tagus estuary.

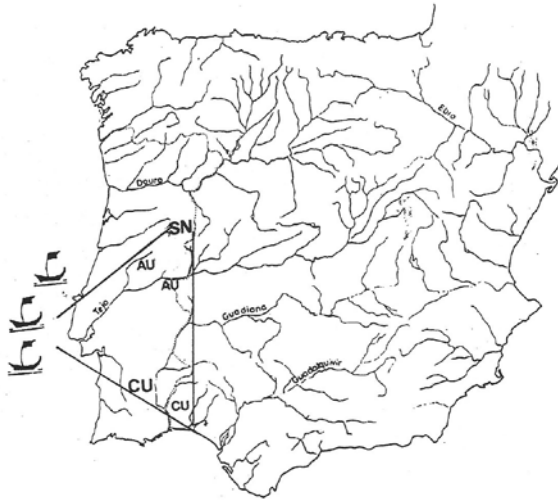


Fig. 23 - Justification, according to Weber's model, of the simultaneous influx of tin and copper to the Tagus estuary region, followed by the subsequent export of manufactured products (after Vilaça 2007).

in the construction of the mine wooden shoring?

In consequence, the circulation corridor that was the course of the Tagus river in the Portuguese territory assumed a decisive importance (Vilaça and Arruda 2004). The existence of solidarity pacts established between people who controlled this fundamental trade route allowed for the circulation of long haul mining products from Beira Interior (mostly tin) and Alentejo (mainly copper). This reality embodies one of the most interesting case studies of western Europe, in which the rental model Weber can be applied (Vilaça 2007), making the region under study the most appropriate geographic area for the manufacture of bronze objects, followed by its export by sea (fig. 23). This geographical area would be articulated with other ancient estuaries, located further north, along the occidental coast of the Iberian Peninsula, prone to the penetration inland of boats and favorable to the direct seeping of products manufactured in Beira Interior, or of its ores (Vilaça 2007).

However, we should not exaggerate the volume of these bronze artifacts production since there are few known samples, which is explained by the domestic mode of production, although it requires specialized craftsmen. Everything must be seen in the scale that at the time such changes could have (lengthy voyages, uncertain and sporadic, and only for a short period of the year).

Hierarchy of settlement

These were obvious permanent sites, although

limited in time, especially in the case of farming settlements. This model of occupation has nothing to do, as it might seem at first glance, with the domestic and self-sufficient production mode, since it is integrated into demographic networks headed by the most important settlements of the time, and situated in the top of the hills, according to the orography of the region. The deficit in the knowledge of defensive structures, if there was such structures (Amoreira? Penha Verde?), prevents us from knowing the characteristics of this high sites, which, generally, appear to be small in size and destined for the presence of a limited number of people, corresponding to the elite of each community. Also scarce are the residential structures (the ellipsoidal hut of Tapada da Ajuda, the reuse of a circular Chalcolithic hut in the settlement of Penha Verde and the sub-circular, partly dug into the rock, hut of Quinta Nova de Santo António).

Visibility from these high sites is very clear, and they can often see each other, as in happens in Beira Interior (Vilaça 2013b), Central Alentejo (Mataloto 2013) and Eastern Alentejo (Soares 2013).

The high partition of the landscape in Lower Extremadura, however, prevented the formation of large territories associated to the major settlements of the Late Bronze Age, contrary to what happened in the vast fields of Alentejo. In short, the settlement structure reflects the organization of society itself, where kinship ties were decisive. The Late Bronze Age settlement structure did not resist, as in other areas of Portuguese territory like in Central Alentejo, to the economic, social and cultural impacts produced by the forthcoming Phoenician presence in the region, from the eighth century BC (Mataloto 2013), even this impact could not to be instantaneous, but differed in time.

It is in this context that specialized sites like Penha Verde can be explained. This site is occupied by a small number of people, and it would certainly be so only seasonally. From this site, four bronze ponderals were found, which add up to the three samples from the Penedo do Lexim (Sousa and Sousa, *in press*). In this last site, an socketed bronze spearhead was also recovered, associated to amber artifacts.

The occurrence of these ponderals in highly placed sites, which could be added to other sites in Portuguese territory (Vilaça 2011), are a reflec-

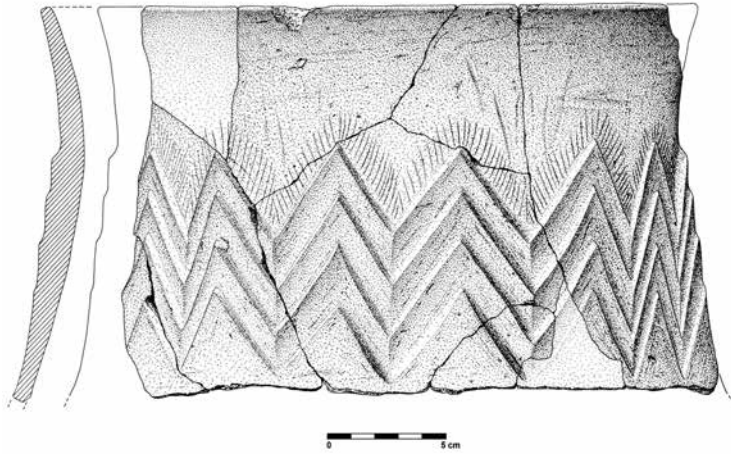


Fig. 24 - Fragment of a Late Bronze Age large vessel from Castelo dos Mouros (after Cardoso and Sousa 2014).



tion of the control imposed on the manufacture of metal products (auriferous?) and its redistribution by an elite that protected itself by the very places it chose to establish, perhaps only for a limited period of the year alone.

Complementarity and sociability rather than competition and enforcement

It does not appear necessary to admit the existence of coercive practices on the peasant population, whose taxes would keep a group of expert craftsmen and an elite that would coordinate the commercial activity (Kristiansen, in Mataloto 2013). There would be, of course, the need to ensure an effective control of production, both agricultural and metallurgical, but that does not necessarily require the existence of a strong social hierarchy. The relationship between highly placed settlements and broad open sites could be based on ties of solidarity, which were underlined by family relationships originating from a common ancestor. The collection of small territories

thus formed, imposed themselves as independent economic units, equal to one another (from the agricultural point of view and metallurgical activities developed in a domestic context), and self-sustained, assuming some interaction with each other, starting from the establishment of family ties that would support and give consistency to the establishment of longer distance connections.

In this way, power could be obtained in a negotiated manner and by consensus, not necessarily by coercion, even though weapons could be related to the exercise of force by the representatives of each one of those family lineages. However, these implements would have assumed mainly a function of identity and prestige. The same was true for the heavy gold jewelry, used by the women.

It is believable that potential conflicts would have existed, caused by territorial and economic influence disputes, which would have been managed by the dominant elements of the community, thus replacing generalized war – indeed impos-

sible to prove – favoring mediation, and avoiding the use of violence (Mataloto 2013).

The ability of emerging elites to coordinate domestic activities and to retrieve the consequent capital gains from the metal production and the trans-regional territorial control of circulation is the source of the wealth accumulation found at the end of the Late Bronze Age, as it is illustrated by these standardized gold jewelry, like the necklace of Santo Amaro and several imported exotic products. These were therefore communities that kept strong links with each other and with other communities based on geographic areas more or less distant. It was a society of rich and poor, of elites based on family lineages, traders, farmers, metallurgists and craftsmen.

The presence of exogenous objects

Some exogenous objects here arrived as profit from the exports to both the north Atlantic to the south Mediterranean, with increase in the Late Bronze Age II, is a fact. This is supported by the manufacture of high added value articles, destined for export, and embodied in bronze utility artifacts, of a typology specific.

This is the case of the socketed and double-ringed axes, the talon univalve axes, and the talon sickles. The geographic specificity of such productions earned them the designation of “Lusitanian Group” (Coffyn 1985). These and others artifacts arrived to France and Ireland, but also to Sardinia, mainland Italy and Cyprus (Vilaça 2007).

The exchange of such objects explains the presence of gold jewelry, with a North Atlantic imprint, like the collar of Santo Amaro, along with some artifacts of Mediterranean origin. These consist in Cypriot model elbow fibulas, tweezers, iron, amber, weights, ivory objects, and perhaps other exceptional products like the vase of Castelo dos Mouros (fig. 24) (Cardoso and Sousa 2014), which have comparable examples in Valencia region. In addition, one can also mention the glass paste beads, present in contexts dating from the Late Bronze Age of Beira Interior (Vilaça 2013c) and, in the Northwest Atlantic, in the large settlements of São Julião and Amares (Arruda 2015).

Admittedly, the amber of the beads so far analyzed in Portugal is reportedly from Baltic origin. But nothing prevents that it may have reached the

Eastern Mediterranean through the large trans-regional traffic routes formed by the main waterways. Suffices to recall that, in contents of the Bronze Age Ulu-Burun famous shipwreck (XIII century BC), on the shores of Turkey, there was Baltic amber (Pulak, in Vilaça 2011).

In the territory that matters to this study, after the Quinta do Marcelo bead (Barros 1999), an amber pendant was identified in the Correo-Mor (Cardoso 2003) cave and an amber bead was also found in the Bela Vista grave (Melo *et alii* 1961) as well as in the Penedo do Lexim (Vilaça 2012). All these sites have important high settlement Chalcolithic occupations, so such pieces in some cases can possibly be older, which, however, seems unlikely.

The ponderals, expressing the Ugaritic weighing system (Vilaça 2013a), clearly demonstrate the importance that this geographical area held on economic activities in the Western peninsula during the X and IX centuries BC, reported to the dawn of the Phoenician trade. The small amounts of products that were so weighted and exchanged, express the value of these, where gold would have been paramount.

In fact, such trade was already a reality in the late tenth century/early ninth century BC, as it is documented by the spoils found in Huelva (González de Canales Cerisola, Serano Pichardo and Llompard Gomez 2004). In this regard, it is significant the presence of an ivory comb fragment, collected in the historical center of Oeiras (Cardoso 2011, fig. 78), and similar to the one of Huelva, both decorated with concentric circles. Ivory combs with such decorations occur in coeval contexts of Andalusia, Sicily, southern Italy and Cyprus (Arruda 2015).

Speaking of the Phoenician most ancient presence in the far western parts of Europe, in such far distant times, certainly in the transition from the tenth century to the IX BC, as it is documented by the materials collected in Huelva, it is important not to forget that there are sure antecedents of this presence, corresponding to populations derived from the Central Mediterranean, which date back to the fourteenth and thirteenth centuries BC. Such presence is documented by Mycenaean materials already mentioned.

Ritual and funeral practices

The Moita da Ladra deposit, being a unique

ceremonial site (Cardoso 2013; Monteiro and Pereira 2013), embodies the interaction between participants probably from different communities living in the region, starting with the villagers of the high settlement overlooking the deposit. Some of the participants could be western Phoenician traders arrived in the Tagus estuary at the end of the late Bronze Age (ca. 900/800 BC). This deposit is the first concrete evidence that could be attributed to the practice of the banquet and ceremonies associated with it, in the western Iberian Peninsula.

Only in the monument of Roça do Casal do Meio is documented the inhumation of two adult males. By the excavations carried out at the monument chamber, already in ruins by then, the author acknowledges, for the reasons previously indicated, that this is a reuse of a Copper Age *tholos*. In fact, the last Mycenaean *tholoi* accompany the collapse of Mycenaean society, with the disappearance of Mycenaean imports in Iberia, unknown from the late XII century BC onwards (Arruda 2015). In consequence, the two identified burials being from the X or the IX centuries BC, one can easily conclude that the construction cannot be associated with that presence.

CONCLUSIONS

The chronological data available for the region under study point to a periodization of the Late Bronze Age in two phases. The Late Bronze Age I, between about 1250 and about 1100/1000 BC, with the existence of settlements naturally defended, situated on the top of the hills, and open residential sites, not fortified, which could correspond to small villages or simple farms; and the Late Bronze II, between about 1000 and 800 BC, a time by which the metallurgy of binary bronze alloys is fully bloomed, with artisanal production of artifacts specific to the west of the Iberian Peninsula. A commercial axis had been then established, whose ends were the region under study and Sardinia, clearly embodied by the deposit of Monte Sa Idda. At the geographical scale of that time, this region, making the link between the Atlantic and the Mediterranean world, assumed the role of a true center stage, and not, as at first sight one would suppose, as just simply the periphery of the Mediterranean world. The Atlantic world would be primarily

related to the presence of weapons such as the carp's tongue type sword from Cacilhas, a model that, naturally, had also penetrated the Mediterranean basin, and the Porto de Mós-type daggers, which are known in several sites throughout the region, such as the Lapa do Fumo, and also in the Mediterranean. From the Mediterranean area, adornments related to clothing and body treatment (tweezers) would come, essentially, along with objects made of exotic materials like amber, ivory, iron and glass.

It is in this last stage of the Late Bronze Age that the presence of Phoenician traders is assumed, who, from the ninth century BC onwards, interacted with the Late Bronze Age society they came to find here.

Thus, even if the increase in the interaction with the Mediterranean at that time can be justified by the activity of such traders, may not yet truly established in the territory, it leaves unexplained the mechanisms that governed in fact the spread of peninsular productions throughout Bronze Age Atlantic Europe and also throughout the Mediterranean basin. Several explanatory models have been advanced, from the long haul sea routes, advocated by some authors, to the transmission of such objects by neighboring communities, following terrestrial paths, which were the links in a continuous chain (cultural osmosis), an alternative advocated by others.

As it has been found in many other periods of prehistory, the presence of exogenous populations, in this case corresponding to Phoenician traders, would consist of very small groups. Therefore, they could not have been responsible, by themselves, to cause significant changes in the structure of Late Bronze Age societies of the region, as well as in the wider region of the west of the Iberian Peninsula. Indeed, the breakdown of the hierarchical society at the end of the Late Bronze Age, only took place probably more than a century after the first Phoenician contacts, dating from about 900 BC, for only after 750 BC one is to observe the full bloom of Iron Age in the region. One of the rare direct evidence of co-existence between indigenous Late Bronze Age inhabitants and the Phoenicians colonists was documented in Santa Sofia, on the seashore of the Tagus estuary, whose occupation was found to have taken place during the second half of the VIII century BC, and that can have lasted throughout the entire VII century BC.

Acknowledgments - To Dr. A. M. Monge Soares, for the calibration of the available radiocarbon dating mentioned in this work and to Dr. Jorge Baptista, for the translation from Portuguese to English of this paper.

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