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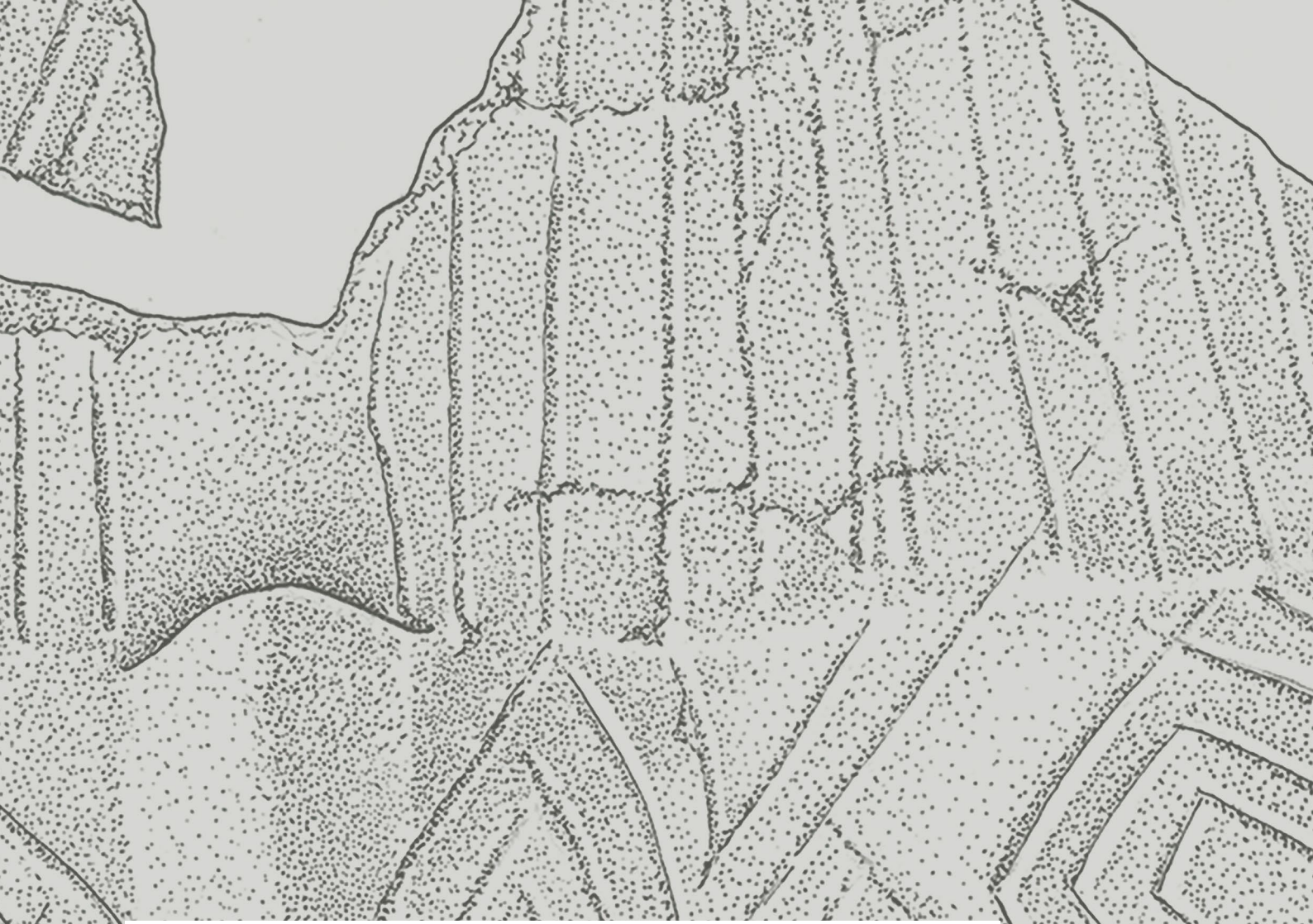

ABSTRACT

Cabecinho da Capitôa (Mafra, Lisbon, Portugal). An Amber Necklace and Ceramic Vessels in Votive Contexts of the Western Iberian Late Bronze Age/Early Iron Age

Ana Catarina Sousa – Carlos Pereira – Marta Miranda – António M. Monge Soares – Carlos P. Odriozola – Ana Margarida Arruda

The site of Cabecinho da Capitôa (Lisbon, Mafra) was identified and excavated in the context of a preventive archaeological intervention carried out during the construction of the A21 Highway in 2006. The archaeological investigations enabled us to identify stratigraphic contexts and material assemblages rarely found from this period (Late Bronze Age/Early Iron Age) in this region, including ceramic vessels and one amber necklace. The site and its features are discussed in the context of their surroundings (Estremadura). The interpretation of the data is complemented with an evaluation of the human settlement at the regional level during the aforementioned chronological periods. Supra-regional dynamics are explored by considering amber circulation in Iberia during proto-historic and historic times. The nature of the use of the site also contributes to an understanding of the ritual deposition of artefacts and networks of product circulation in the Mediterranean.

KEYWORDS

Late Bronze Age/Early Iron Age, Portuguese Estremadura, votive contexts, amber

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Cabecinho da Capitôa (Mafra, Lisbon, Portugal). An Amber Necklace and Ceramic Vessels in Votive Contexts of the Western Iberian Late Bronze Age/ Early Iron Age

1 The Site

1.1 Location

1 The site of Cabecinho da Capitôa (Mafra, Portugal) is located in Portuguese Estremadura (Fig. 1), a long narrow swath of land between the Lower Tagus and the Atlantic Ocean. Its geographical coordinates are WGS84 – latitude 38º.9198246502, longitude -9º.33976315484.

2 The site is in the basin of the Cheleiros creek, a rivulet that flows into the Atlantic Ocean on the left bank of its small tributary, Muchalforro. It lies on a low hill (195 m), which is part of the Serra do Pipo, yet hardly noticeable in the landscape. The geological substratum consists of sandstone and clay of the ›Almargem layers‹. Approximately 10 km away from the Atlantic Ocean, its sea view is poor and restricted to a few spots. The surrounding landscape is characterised by the floodplains of the shore platform north of the Serra de Sintra, marked by old volcanic chimneys. Human occupation dating to the 3rd and 2nd millennia BCE is well documented and includes the sites of Penedo do Lexim, Cabeço de Alcainça, Anços, at the shore platform, or Penha Verde and Castelo dos Mouros, in the Serra de Sintra.

1.2 Description of the Archaeological Contexts

3 The site was identified by Carlos Costa during archaeological rescue works which accompanied the construction of the A21 Highway, in February 2006. Excavations lasted from February to August 2006, under the supervision of Ana Catarina Sousa,

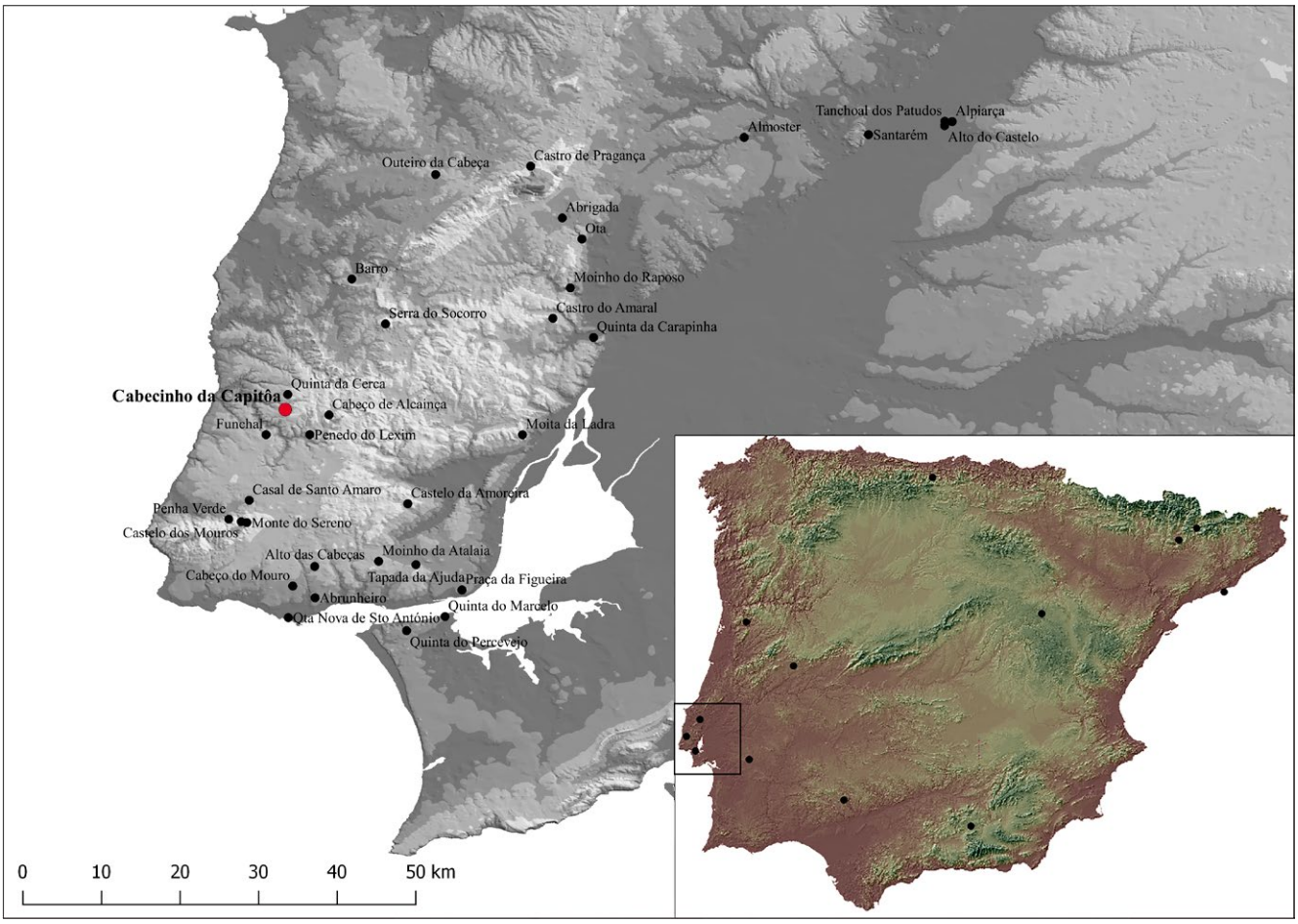

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Fig. 1: Location of Cabecinho da Capitôa and Late Bronze Age settlements in the Portuguese Estremadura. In the lower right corner, sites cited with amber finds in the Iberian Peninsula.

Marta Miranda, Carlos Pereira, with the collaboration of a large team (Ana Patrícia Magalhães, André Pereira, Marco Andrade, Sandra Leitão).

4 The archaeological works covered the entire hill, not only the summit, with excavations in the affected area (492 m^2) but also the monitoring of every earth movement in the adjacent areas.

5 In a first phase, before the construction works began, 18 test trenches (2 m × 2 m) were dug, revealing only 40 cm of stratigraphic preservation, possibly due to the erosion that affected the hill. In a second stage, the soil was mechanically cleaned as part of the road building, which probably removed some of the superficial sediment, and the geological substratum became visible at the surface in large areas.

6 Nevertheless, since the Cabecinho da Capitôa was excavated in its totality, the recovered material sample may be very close to the whole sample.

7 Archaeological remains, although scattered, were concentrated in two different areas, corresponding to the two main sectors of intervention. At the southern top and slope of the hill (Sector 1), only Bronze Age (BA) contexts were found (432 m^2 excavated). At the north end of the hilltop (Sector 2), occupation levels of the Roman period (Late Empire) were found, which correspond to a small rural structure (60 m^2 excavated), whose data will not be presented in this paper.

8 In Sector 1, a wide variety of sediments was found on the surface, as the ground had been mechanically scoured as part of the roadworks. This, however, helped to reveal the preserved contexts (Nuclei 1 and 2), which were essentially located in depressions of the outcrop, or in negative structures opened in the virgin soil, mostly devoid of stone structures.

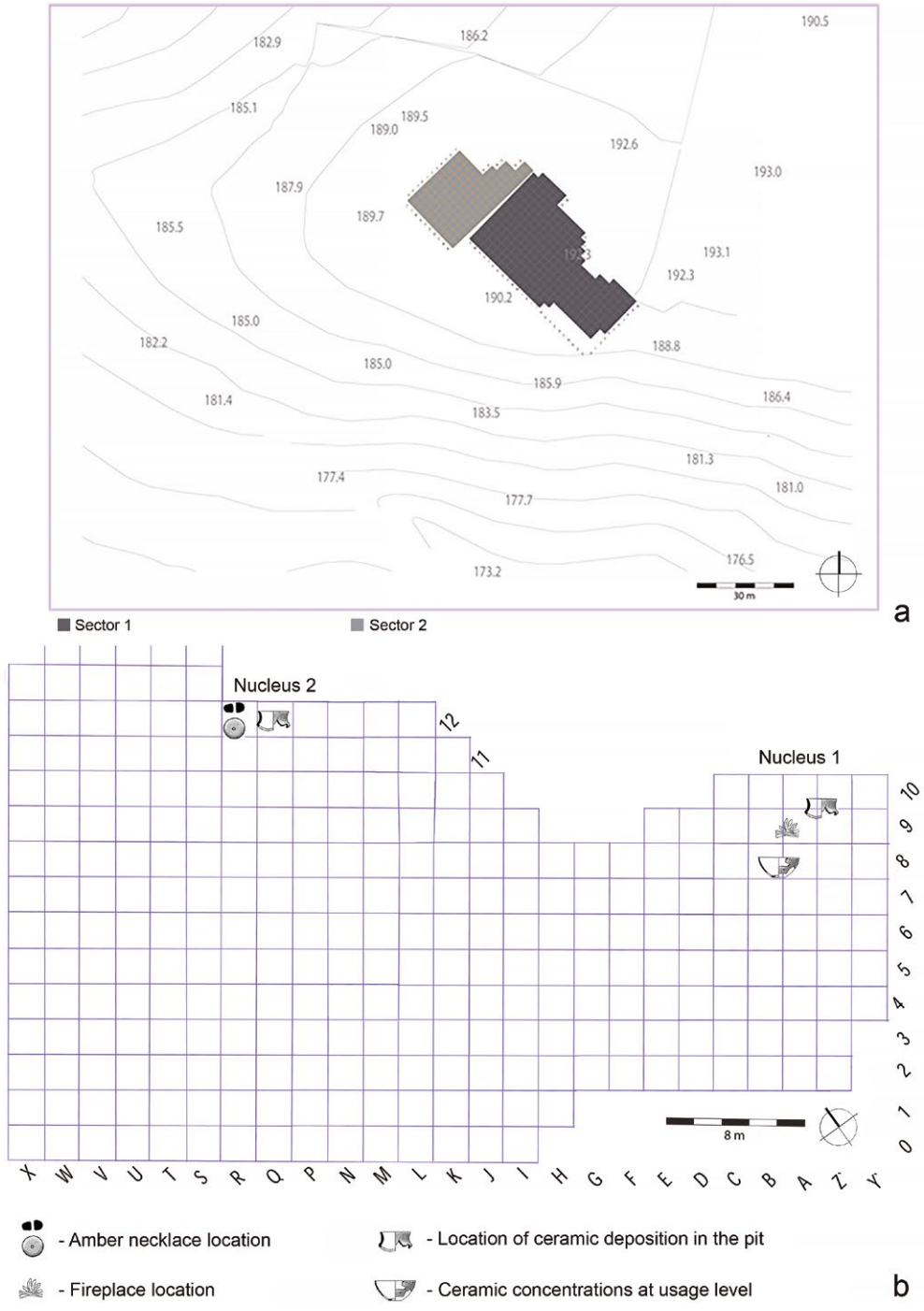

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Fig. 2: General plan of the site with intervention sectors: a. topographic survey with the two sectors (Sector 1 with Late Bronze Age occupation and Sector 2 with Roman occupation). – b. location of nuclei 1 and 2 in Sector 1.

9 The two nuclei of Sector 1, in which preserved archaeological contexts were recorded, were approximately 20 m apart (Fig. 2. 3).

10 In **Nucleus 1**, two pits were found, S.U. [13] and [10], the second bearing marks of combustion. There was also a probable clay coated structure (S.U. [7]) associated with S.U. [8], the soil of which included many joining ceramic fragments, which in turn may be linked to S.U. [2], the upper level of which was detected during preliminary surveys (Fig. 4. 5. 6).

11 In **Nucleus 2** (grid squares M, R 8 to 14), excavations focused on S.U. [22] and [23], in which 44 amber beads of a necklace were deposited, closely associated with a structured pit fill with fragmented pottery [16] and [14]) (Fig. 7. 8. 9).

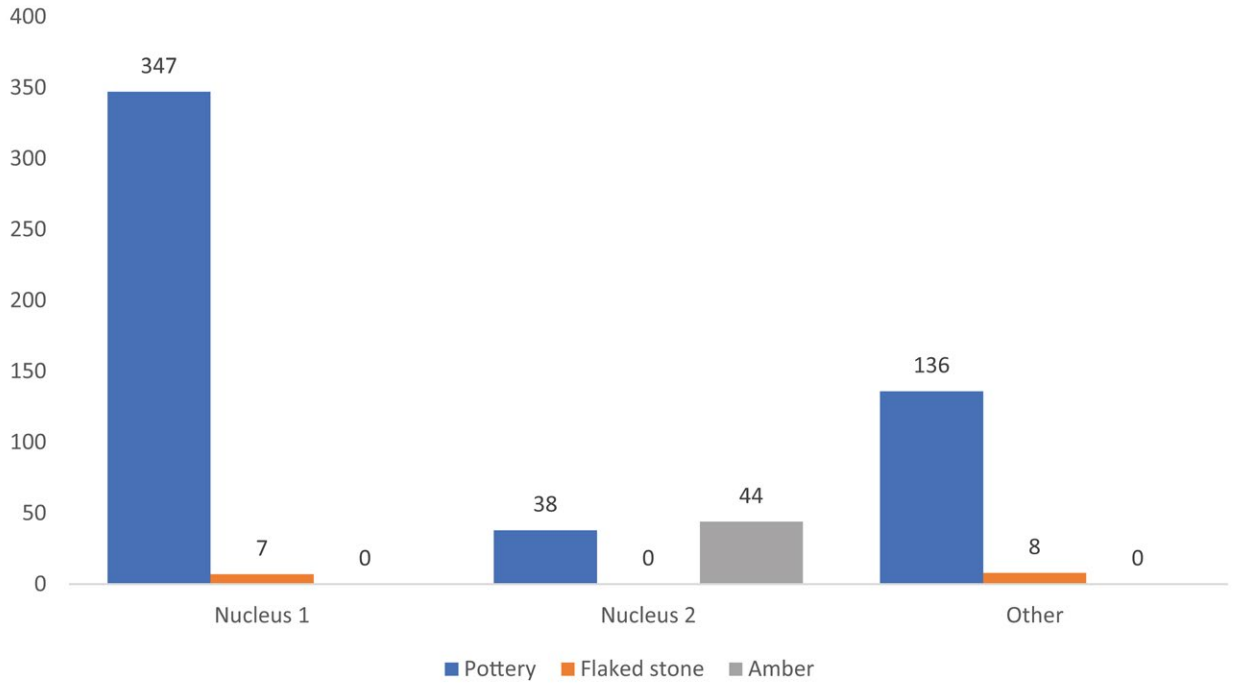

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Fig. 3: Distribution graph of the materials collected in nuclei 1, 2 and in the outer area (materials collected in the first phase of the intervention probably associated with nucleus 1).

12 The examination of the density plan of the archaeological materials, which were concentrated in the two nuclei, reveals the short-term nature of this occupation.

13 We could not properly assess the chronological relationship among the identified contexts due to the site's poor stratigraphy. As regards Nucleus 1, contexts are close to each other, and the fact that they are covered by the same layer makes it possible to consider them contemporary. As regards Nucleus 2, the data is not sufficient to understand the stratigraphic relationship between the different identified features. We only have organic material for Nucleus 1 (charcoal), and its radiocarbon date will be discussed below.

14 The way the nuclei are structured and the state of conservation of the excavated materials point to ritual depositions.

1.3 The Materials

15 Ceramic vessel fragments represent 90 % of the artefacts, 73 % of which were collected in the two nuclei.

16 Only 22 items of flaked stone (flint) were recovered, and these were either found in Nucleus 1 or scattered over the site. Among these materials, we highlight the presence of three denticulated tools on flakes, a tool type recorded in most Late Bronze Age (LBA) settlements, for example at Tapada da Ajuda[1]. In terms of debitage products, elongated products (two blades) and one flake were found, a trend also present in other Bronze Age contexts, such as Casal da Torre[2]. There are also two cores, one core flank, and 14 residues.

17 Special reference should be made to a few unusual artefacts among the archaeological materials collected at the site of Cabecinho da Capitôa, in particular the complete amber necklace (Fig. 3).

18 We must also highlight the absences. There were no carved stone components (milling elements or hammerstones), which would indicate domestic activity. Metal ar-

1 Cardoso 1999/2000.

2 Carvalho 2009.

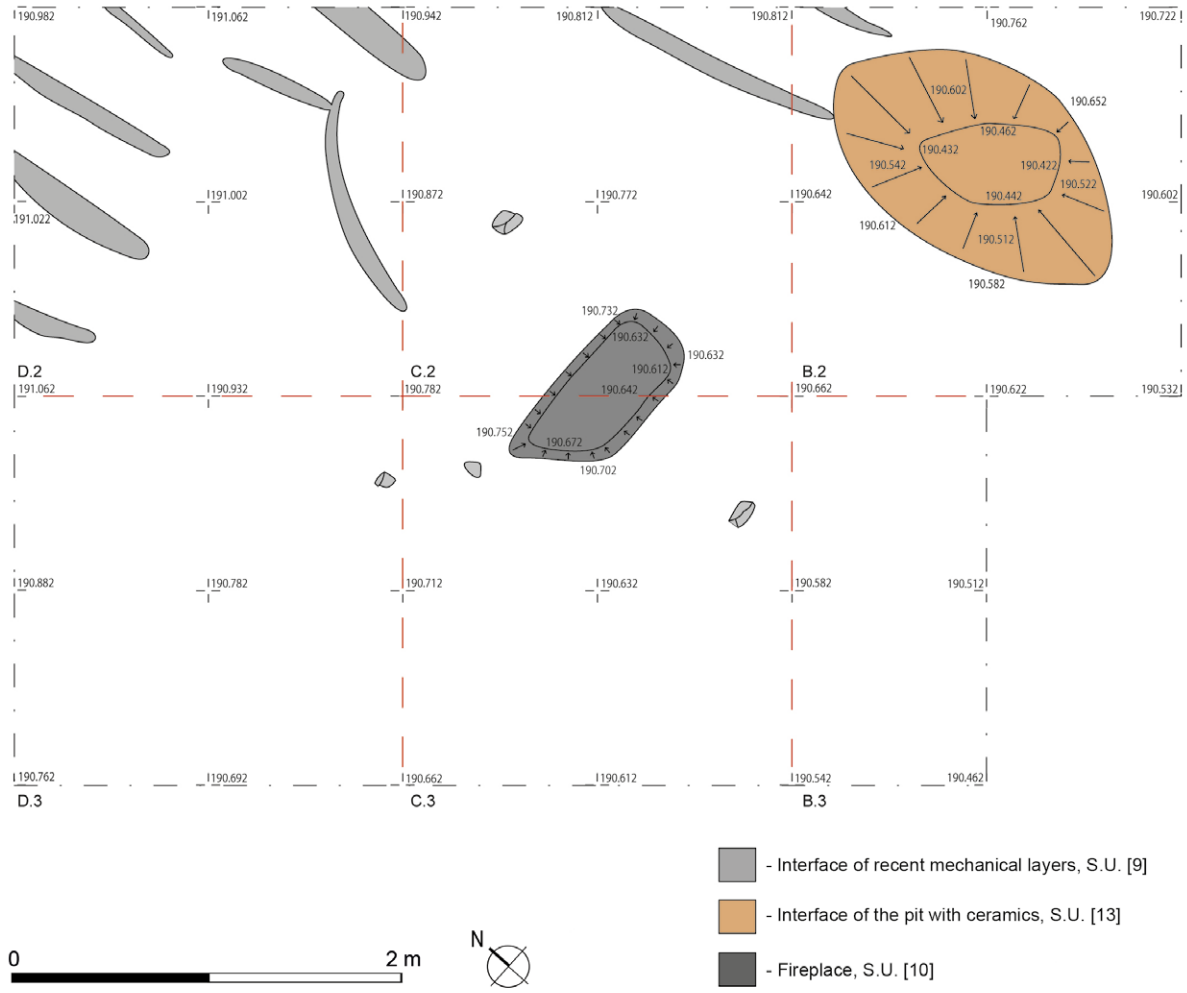

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Fig. 4: Cabecinho da Capitôa: structures identified in nucleus 1 (pit and hearth).

tefacts, as well as bone remains (animal or human) were also absent, an odd finding since the geological substratum of this region favours the preservation of organic materials – even though these were also not preserved in other contemporary contexts, as in the case of the Bronze Age hut of Quinta da Cerca 2 (Mafra), approximately 10 km away from Cabecinho da Capitôa[3].

2 Nucleus 1

2.1 Archaeological Context

19 The largest concentration of archaeological materials was found in a small area covering 18 m² (Nucleus 1). These materials were directly associated with the two pits mentioned above, the combustion structure pit and a shallow pit, the latter covered by S.U. [8], which contained a very significant number of archaeological materials. This S.U. was related to a ›pit hearth‹ (S.U. [10]), an elongated pit (S.U. [12], [13]) and concentration of clay in area ([7]) (Fig. 5).

20 The hearth [10] with an oval-shaped/sub-rectangular ground plan (1.10 m × 0.48 m) is placed in a pit dug into the rocky substratum, of little depth and with a flattened base. It was filled up with a deposit containing abundant charcoal (S.U. [6]) and a small amount of ceramic fragments that cannot be classified.

3 Unpublished excavations, supervised by the authors Marta Miranda and Ana Catarina Sousa.

5

Fig. 5: View of the archaeological contexts of nucleus 1: a. and b. top and base of the hearth S.U. [10]. – c. and d. fill and base of the pit S.U. [12].

21 The pit [12] also had an oval-shaped plan (1.72 m × 1.00 m) and a depth of approximately 50 cm. It was filled up with a dark-brown coloured deposit (Munsell Soil chart 2.5Y 4/3), featuring abundant clay nodules. It is very well preserved, with many associated, although fragmented, ceramic vessels, mainly concentrated at its northeastern end. A few charcoal fragments were collected from its base, but the ceramics did not show any signs of combustion.

22 Both the hearth and the pit have a shallow depth and cannot be considered storage areas; they are mere depressions in the rocky substratum (Fig. 5).

23 The two contexts, most likely contemporary, are associated with a concentration of clay coatings [7], which could be the result of a dismantled structure of unknown function, possibly related to the use of combustion. Therefore, this would be the only ›in positive‹ structure on the entire archaeological site. In this stratigraphic unit, we collected 594 fragments of clay coating, the only ones found on the entire site. In some cases, these clay fragments show sub-cylindrical slumps, corresponding to the negative marks left by the vegetable remains they once coated, thus suggesting a structure made of perishable materials. Fragments from S.U. [7] had two flat surfaces, perhaps corresponding to the base of one or several combustion structures (Fig. 6).

24 Materials collected in pit [10] were very well preserved, with countless fragmented vessels found in situ, though none complete.

25 Analysis of the dispersion pattern of the fragments of two vessels (IGN.099.0440/IGN.099.0665) allowed us to verify that some fragments were recovered inside and others outside the pit. There is no indication that such a pattern was caused by a post-deposition disturbance.

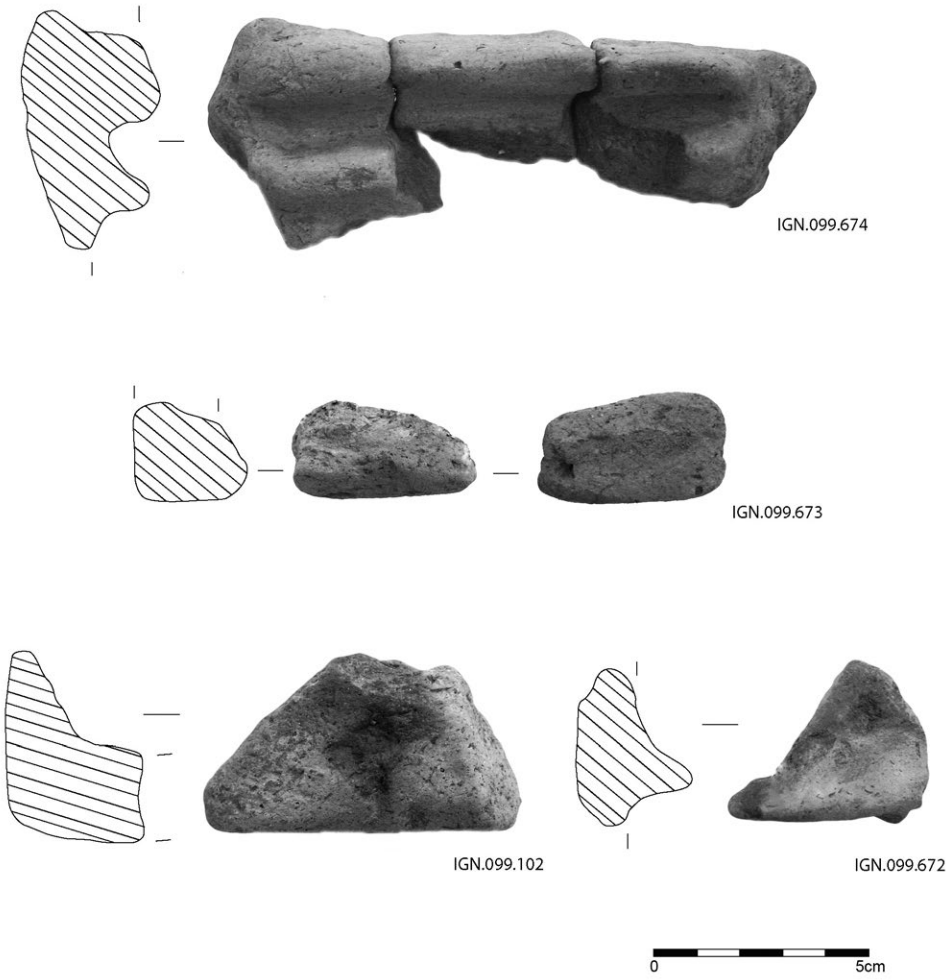

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Fig. 6: Fragments of clay coating.

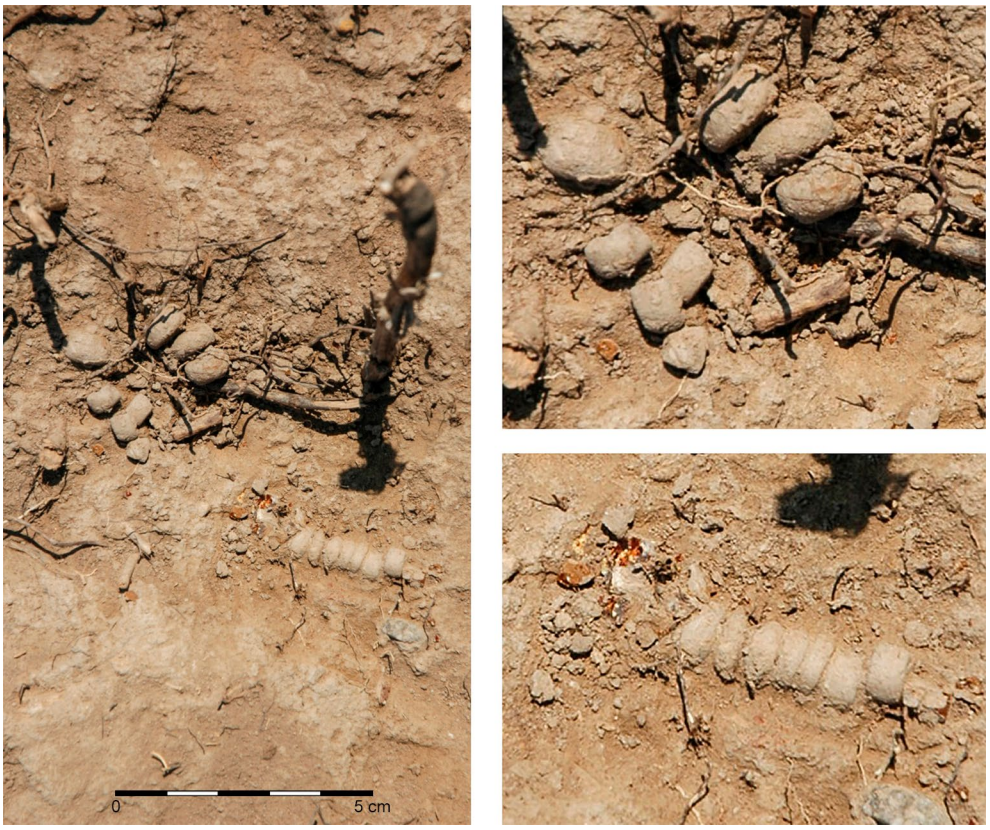

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Fig. 7: View of the amber necklace deposit ([22]) during the excavation process with details of the beads *in situ* (right).

Fig. 8: Pit identified in the nucleus 2: a. ceramic in connection. – b. interface.

8

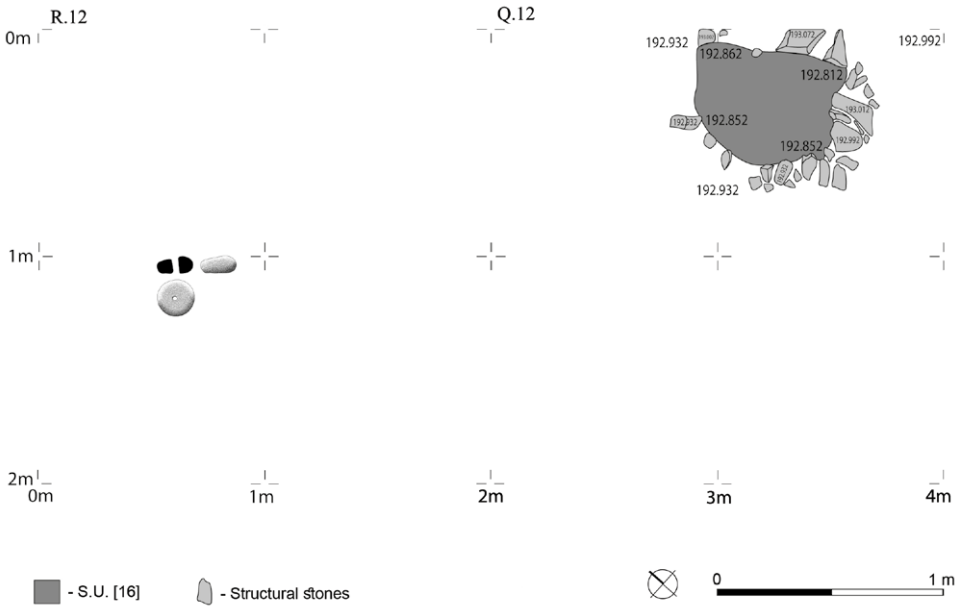

Fig. 9: Plan of nucleus 2, with pit [12] and area of amber necklace concentration [22].

9

2.2 Analysis of the Ceramic Assemblage

26 The ceramic assemblage consists of a total of 528 fragments, 451 of which were collected in Nucleus 1 and the remaining 77 in Nucleus 2. 340 were typologically classified, but it was impossible to categorize the remaining, given their small size (Fig. 10. 11).

27 Decorated fragments are scarce. The 73 fragments collected at pit [12] (Nucleus 1) and its adjacent area belong to a single large vessel (IGN.099.665). We could not reconstruct it completely, because it lacks both rim and bottom (Fig. 12). Its remains, however, tell us that it had a tall broad neck and a globular body, separated by a smooth carinated surface, where we find a handle with a triangular profile. Incisions on all the collected fragments are wide (2.2 mm), deep (from 0.3 to 1 mm) and V-shaped, so they must have been made by a sharp tool. On the neck, the incised lines run perpendicular to the rim and parallel to each other. In the upper part of the body, they form concentric diamonds. The paste is medium-coarse, with abundant small-sized inorganic inclusions (mafic elements probably of the Lisbon Volcanic Complex, micas, and feldspars), and the surface is coated with a relatively thick slip, which was subsequently smoothed. The piece, carefully manufactured, was fired in an oxidising atmosphere.

28 Three rim fragments of another container (IGN.099.064), very probably of the same type as the previous one, were recorded in the same area (Fig. 13). In this case, however, the incised lines, narrower and less deep, run obliquely to the rim. The fabric has a lower quality, and we noticed neither a slip nor any other special treatment of the surface. Reduction firing was used.

29 In S.U. [8], a deposit that, as mentioned above, contained a considerable number of ceramic fragments, we highlight a small-sized carinated cup (with a maximum diameter of 8.7 cm), with burnished decoration on the external surface, immediately above the carination (Fig. 13, 1). Its sub-triangular motifs are contoured by broken lines, filled with a trellis composed of a central line and other lines intersecting it.

30 Undecorated ceramics, the majority, are rather undiversified in morphological terms. We identified five functional types, i. e., 1 – bowls; 2 – small carinated vases; 3 – cups with carination in the middle of the body; 4 – pots; 5 – vessels with carination in the upper part of the body (Fig. 10).

31 As regards the paste, the macroscopic analysis took into account the granulometry of inorganic inclusions (small ≤ 0.5 mm; medium 0.5 to 1 mm; large ≥ 1 mm) and their frequency. As a result, we established the following groups: Group 1 – highly-compact homogeneous pastes, with rare small and well distributed inclusions of degreasing elements; Group 2 – compact pastes, with well-distributed medium degreasing elements and medium frequency; Group 3 – poorly compacted pastes with abundant large inclusions, poorly distributed; Group 4 – friable and porous pastes with many large inclusions poorly distributed, evidencing some degree of clay disaggregation (Fig. 14).

32 Most ceramic pastes belonging to this collection have orange colours, showing that they were fired and cooled in an oxidising atmosphere. A few fragments have an orangish surface and a blackened core. Pieces with dark colours (fired in reducing atmosphere), always brownish, are rarer.

33 There is some variety in the surface treatment of ceramic vessels, whose walls can be (1) smoothed, (2) polished, (3) burnished, (4) spatulated, (5) covered with a slip, and (6) brushed.

34 By crossing paste characteristics with surface treatment, we identified the existence of three fabrics, i. e., mediocre (Group 3 and 4 pastes, smoothed and brushed surfaces), medium (Group 2 pastes, spatulated surfaces with slip or wash coating) and fine (Group 1 pastes, burnished and polished surfaces).

35 - **Type 1** includes a total of 21 hemispheric containers, with a flattened or bevelled rim. The rim width varies between 30 and 45 cm and they may have concave

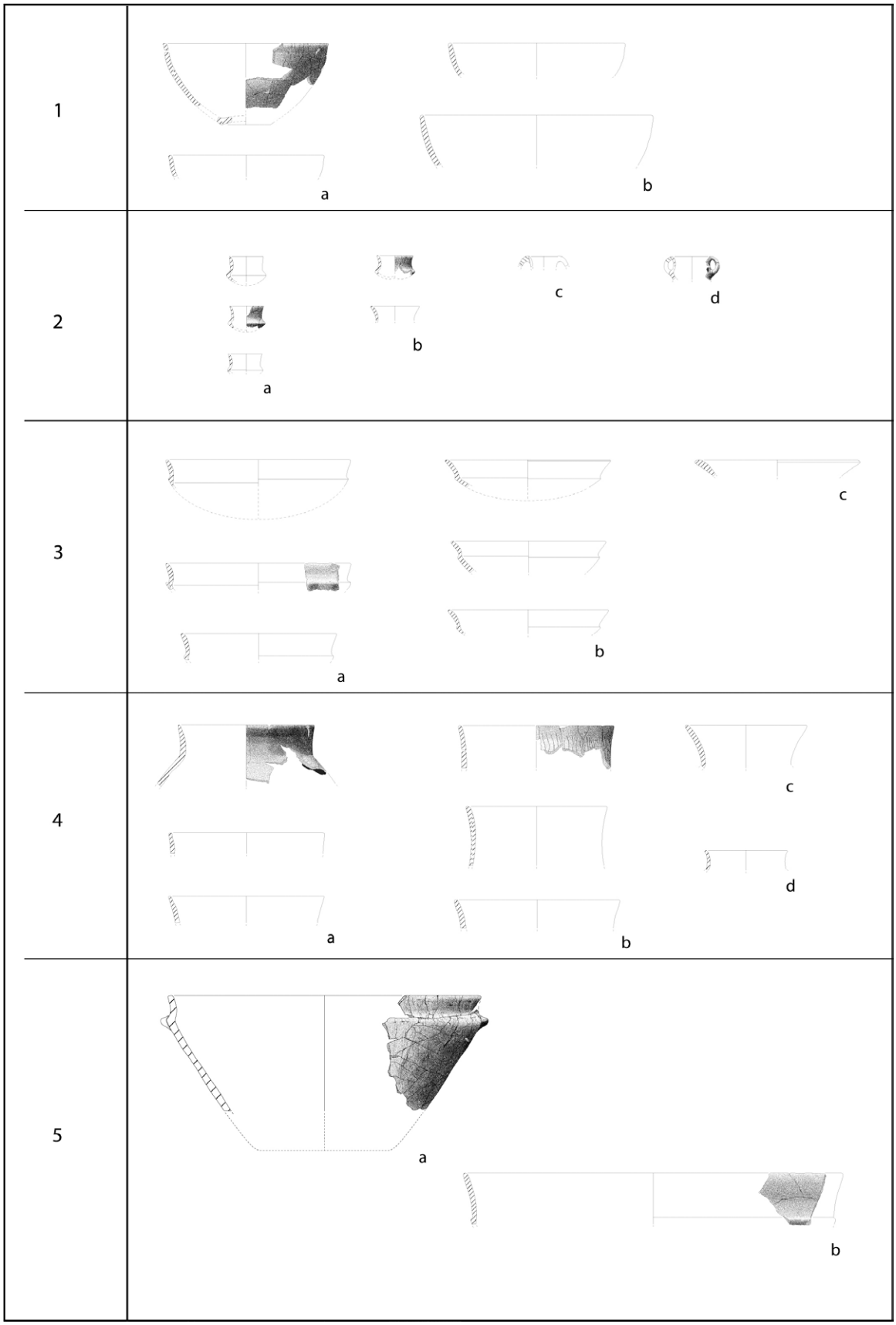

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Fig. 10: Typological table of the pottery forms identified at Cabecinho da Capitôa.

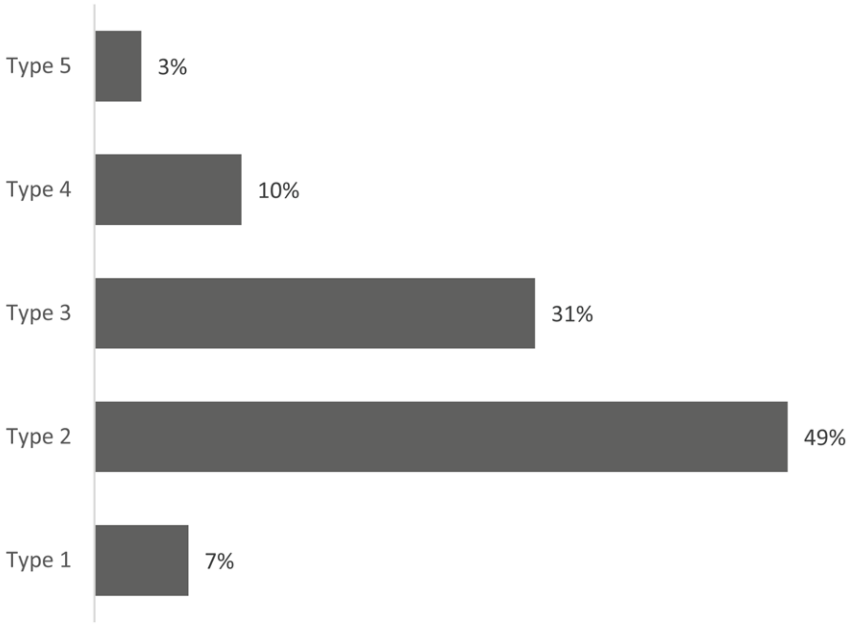

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Fig. 11: Graphic showing the relative quantification of the ceramic types from Cabecinho da Capitôa.

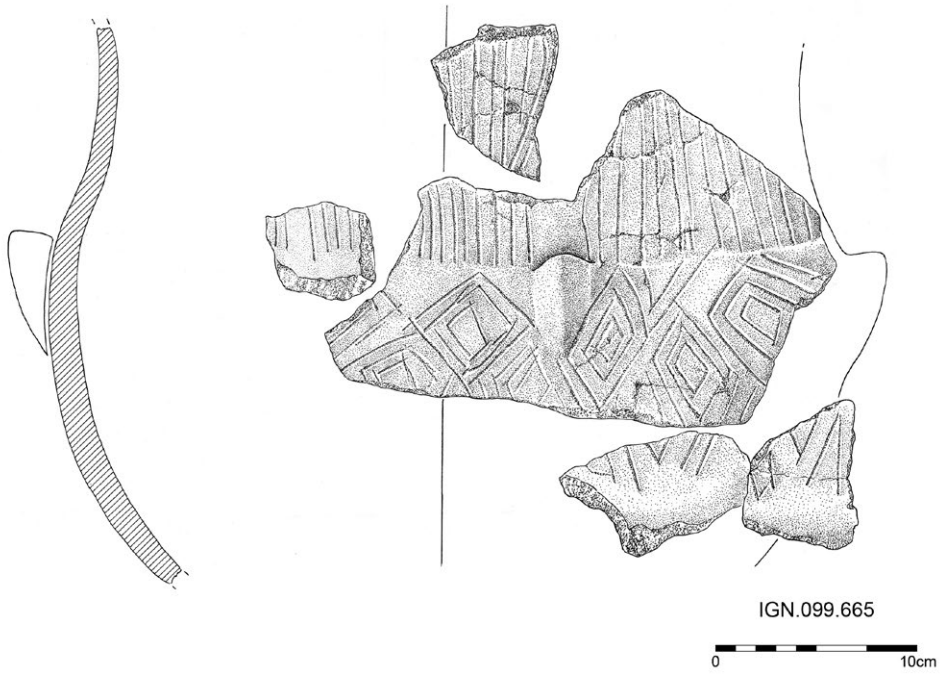

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Fig. 12: Decorated ceramic from Cabecinho da Capitôa.

or convex bottoms (with *omphalos*). In 16 fragments potentially belonging to this morphology (seven of which were recorded in Nucleus 2), we found smoothened, polished, or burnished surfaces (Fig. 10. 15), although the latter are not very frequent. Two separate variants of this type were identified, one having a slightly everted or bevelled rim (variant a), and the other with a flattened rim (variant b). Fine and medium types of manufacture prevail, with only one coarsely manufactured specimen.

36 - **Type 2** includes small carinated vessels, probably meant for ingesting liquids. Their rims can be either vertical or everted, a feature that enabled us to differentiate between variants a and b. Diameters vary between 5 and 10 cm. Carination is low or

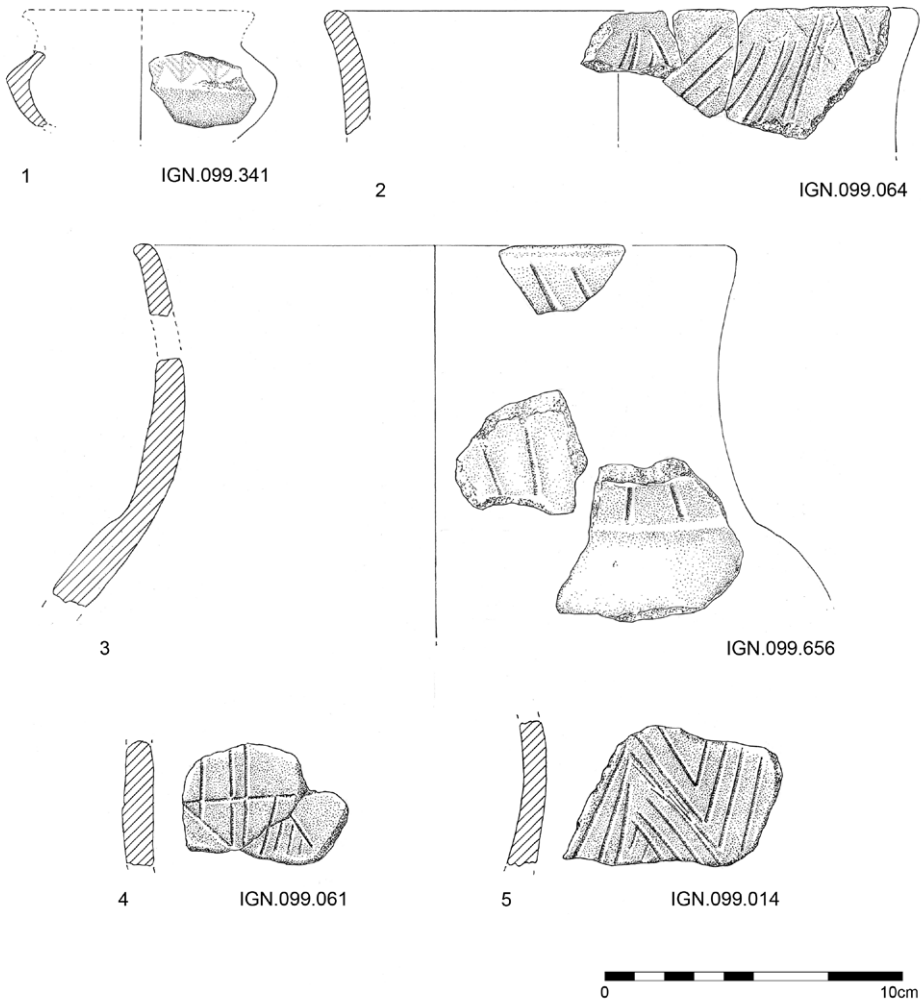

Fig. 13: Decorated ceramics from Cabecinho da Capitôa.

13

medium, angular, or rounded. Bottoms may be convex, or with *omphalos*. The 131 fragments of this type (10 of which are from Nucleus 2) generally have smoothed, polished, or burnished surfaces, typical of fine and average fabrics (Fig. 10. 15). Variants c and d were considered separately because they have a handle, which begins on the rim and ends at the carination. Variant c is quite similar to variant a, with a vertical rim that follows the direction of the neck. Variant d is identical to b, with everted or bevelled rims and a narrower neck. Also, special reference should be made to one piece of variant b, which presents burnished decoration on the carination.

37 - **Type 3** comprises a wide variety of carinated cups with different capacities. Rims may be vertical, everted, or bevelled, with diameters varying between 14 and 40 cm. Carination is medium, angular, or rounded, sometimes forming a small shoulder. Unfortunately, we found no fragment of the bottom that would enable us to obtain a full characterisation. Of the total number of classified fragments (80), most pieces are of fine or average manufacture and have smoothed, polished, or burnished surfaces. Nonetheless, the other types of surface treatment were also recorded, except for brushing (Fig. 10. 16). By taking into account the direction of the walls, we established three variants. Variant a) has a more vertical upper wall, slightly everted or bevelled rim, and protruding carination. Variant b is more open, resulting in more everted walls. In this type, carination is more rounded, and bottoms appear to be thicker. Finally, variant c is represented by a single piece, which makes it impossible to characterise it in more detail. Its rim is highly everted and thickened on its inner surface, forming a small pending flap.

Type 1							
Group		**Surface**		**Fabrics**		**Decoration**	
A	9	Smoothened	6	Fine	7	Incision	5
B	6	Polished	7	Medium	8	Burnished	0
C	1	Burnished	3	Mediocre	1		
D	0	Spatulated	0				
		»Cepillada«	0				
		Covered	0				
Type 2							
A	118	Smoothed	29	Fine	29	Incision	1
B	9	Polished	49	Medium	33	Burnished	1
C	0	Burnished	30	Mediocre	2		
D	1	Spatulated	0				
		»Cepillada«	0				
		Covered	10				
Type 3							
A	46	Smoothed	10	Fine	55	Incision	0
B	32	Polished	29	Medium	22	Burnished	0
C	1	Burnished	32	Mediocre	3		
D	1	Spatulated	1				
		»Cepillada«	0				
		Covered	3				
Type 4							
A	6	Smoothed	11	Fine	6	Incision	2
B	13	Polished	11	Medium	15	Burnished	0
C	6	Burnished	0	Mediocre	5		
D	1	Spatulated	1				
		»Cepillada«	2				
		Covered	0				
Type 5							
A	1	Smoothened	2	Fine	3	Incision	1
B	6	Polished	3	Medium	5	Brunished	0
C	1	Burnished	2	Mediocre	1		
D	1	Spatulated	0				
		»Cepillada«	1				
		Covered	0				

14

Fig. 14: Distribution of paste and surface treatment characteristics and decorations by type.

38 - **Type 4** contains pots with different forms and capacities. Rims may be vertical, flattened, or slightly everted, with diameters varying between 27 and 40 cm. We may find long or short, more or less narrow, developed or elongated necks. Bottoms generally are flat. Most of the 28 fragments included in this group (five of which were collected in Nucleus 2) have a medium fabric and smoothed or polished surfaces (Fig. 10. 16. 17). The presence of pieces with a brushed surface is residual. As regards the criteria adopted for differentiating variants, we considered rim and neck characteristics and the relationship between them. Variant a consists of pots with a globular body, a short neck, and vertical bevelled rims, with a small shallow groove on the inner part of the rim. Pieces with flattened and everted rims, with long and developed necks, were included in variant b.

39 Unfortunately, no fragment of this variant allowed an approximation of the morphology of the piece's body. In variant c, rarer, we grouped pieces with an everted

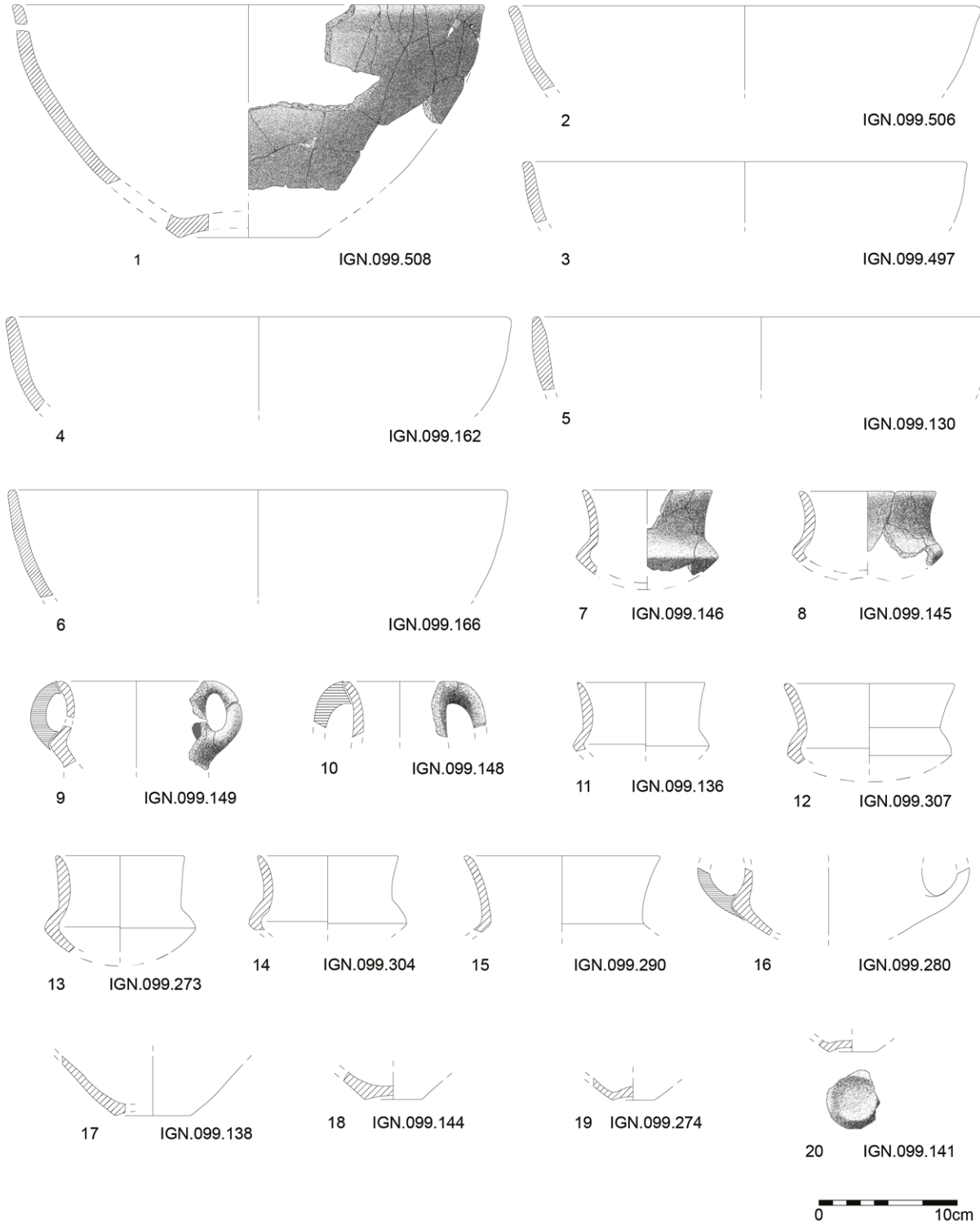

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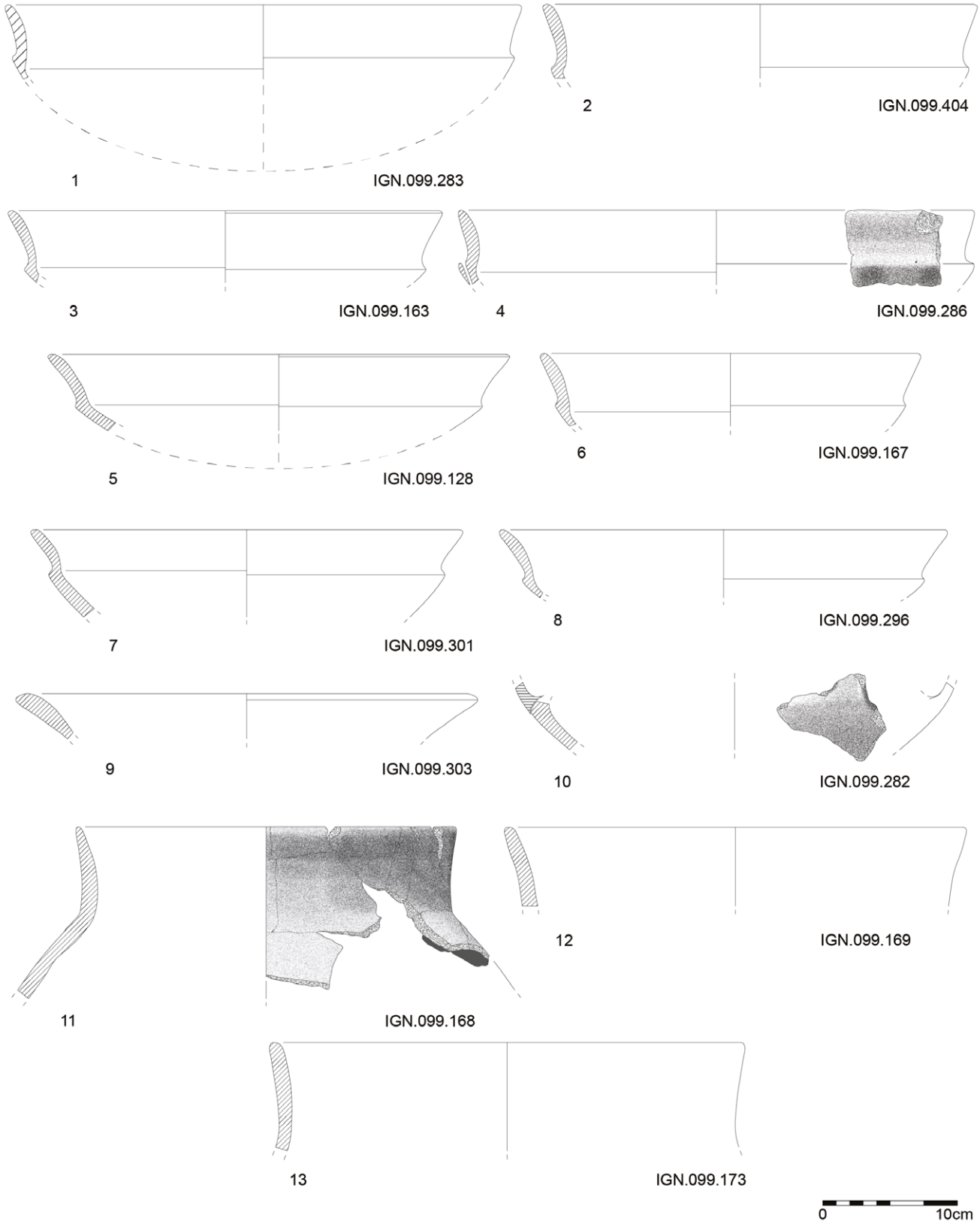
Fig. 15: Ceramics from Cabecinho da Capitôa: nos. 1 to 6, Type 1; nos. 7 to 20, Type 2.

rim and a rather narrow neck. Lastly, variant d corresponds to small pots with a low neck, bevelled rim, and globular body. A few recipients of this type are decorated with incised motifs, as in the case of vessel (IGN.099.665) already described and commented above.

40 - **Type 5,** less abundant and with only one variant, groups large-capacity carinated vessels, with rim diameters varying between 52 and 77 cm. Group 2 pastes prevail among the ten fragments included in this type, most of them having a polished



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surface. Medium manufacture is the most common (Fig. 10. 18). The vertical rim is slightly everted, the upper wall convex, and the carination rounded. One should also stress the presence of gripping elements in the carination. The body has a truncated cone shape, and the bottom is generally flat.

Fig. 16: Ceramics from Cabecinho da Capitôa: nos. 1 to 10, Type 3; nos. 11 to 13, Type 4.

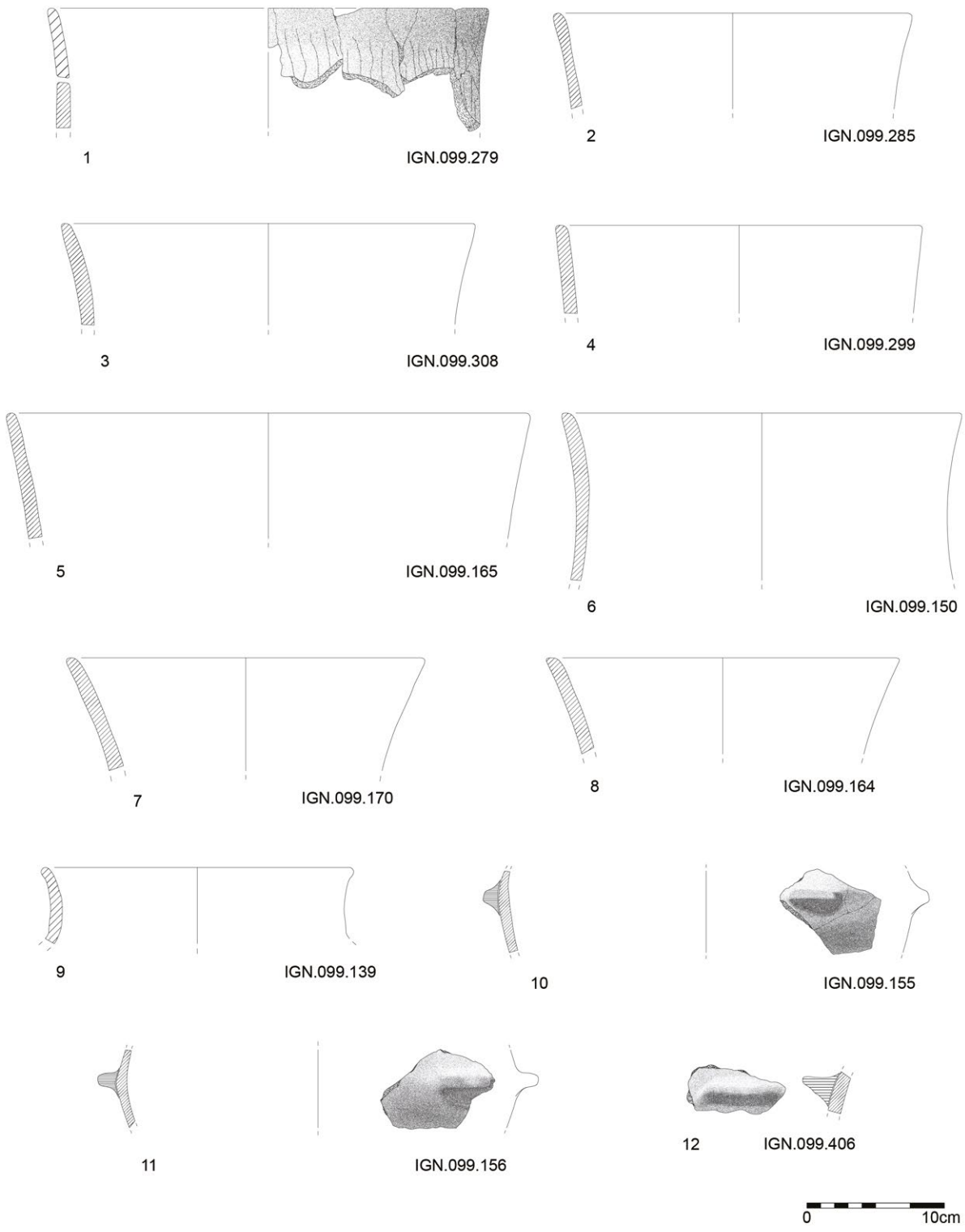

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Fig. 17: Ceramics from Cabecinho da Capitôa: nos. 1 to 9, Type 4; nos. 10 to 12, handles of indeterminate type.

41 Analysis of the set of ceramic objects from Cabecinho da Capitôa showed that vessels for food and beverage prevailed over storage vessels (Fig. 11). This fact stands in contrast to what we usually find in habitation sites, in which both categories are equally represented, with a relatively well-balanced distribution between carinated cups and pots.

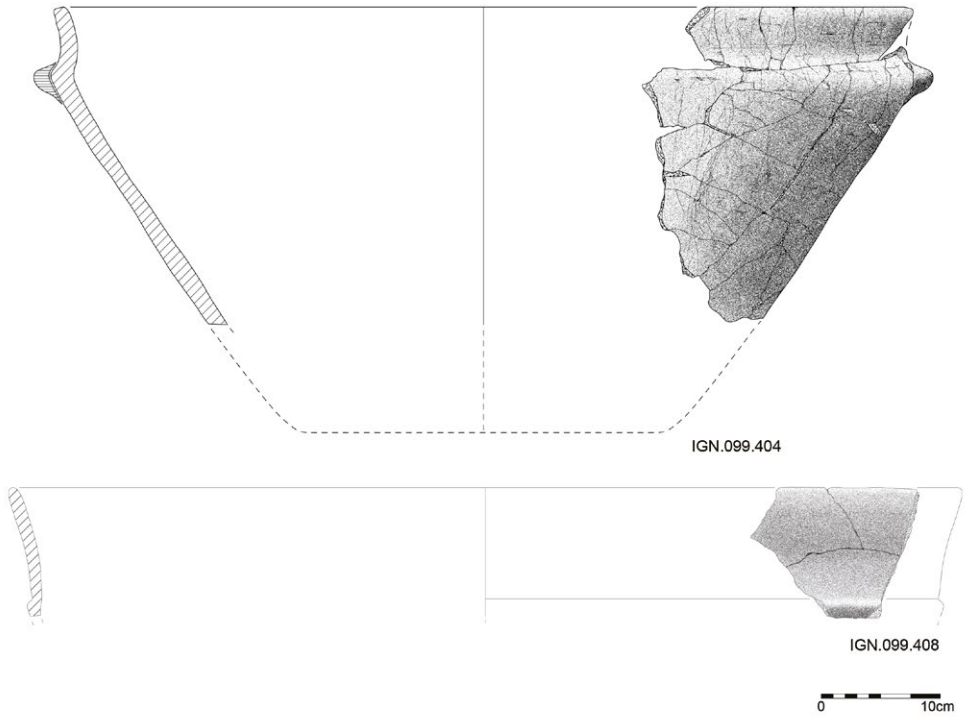

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Fig. 18: Ceramics from Cabecinho da Capitôa: Type 5.

42 As regards the identified ceramic types (Fig. 10), we should emphasise the large number of recipients meant for drinking (80 %), namely cups with medium carination (31 %), and small-sized carinated vessels (49 %).

43 Pots and large vessels are in the minority. They were certainly related to the remaining recipients and may have been used as containers for serving the vessels destined for individual use, with the set thus acquiring some functional homogeneity.

44 Surface treatment of the vessels from Cabecinho da Capitôa was not very meticulous. Burnishing is light and brushing (»cepillada«) is not deep and sometimes goes in chaotic directions. Only the small carinated vessels, the most common containers, made for drinking, show a more refined treatment.

45 Finally, it should be noted that the ceramics from Cabecinho da Capitôa were made of pastes almost exclusively manufactured in an oxidising atmosphere, generating light tones, of an orangish colour.

3 Nucleus 2. The Amber Necklace

3.1 Archaeological Context

46 The second nucleus consists of S.U. [22], corresponding to a complete necklace composed of amber beads and a pit structured with stone blocks [16]. The two contexts are two meters away from each other (Fig. 9).

47 The set of beads ([22]) was found after the mechanical removal of the upper superficial layer and was thus almost on the surface. There is no evidence of any feature, that might have been built up for the purpose of deposing the necklace.

48 The amber beads formed a group and still lay in their original position, with the larger ones placed in the center. The total number of pieces (44) and their state of conservation lead us to the conclusion that this was a complete necklace, deposited almost at the top of the small hill (Fig. 19).

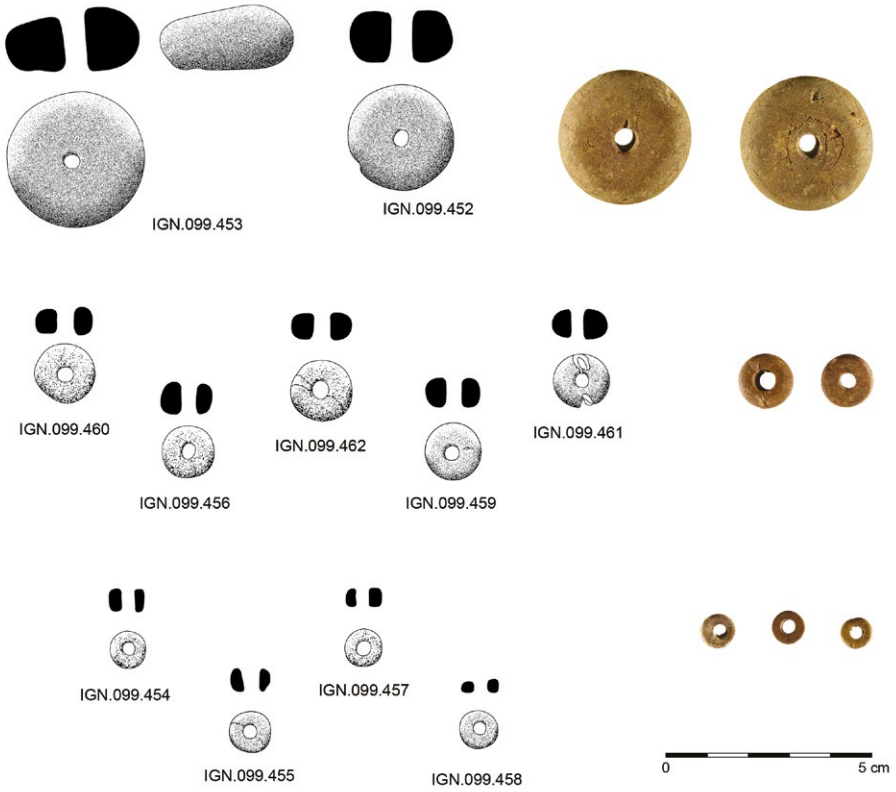


Fig. 19: Examples of large, medium and small amber necklace beads.

19

49 In a contiguous element of the grid, we found a pit structured with stone blocks ([16]). Inside it, we identified a deposition (S.U. [14]) with a significant number of archaeological materials (38 ceramic fragments). Due to the thin stratigraphic sequence, we could not safely determine the relationship between S.U. [22], where the amber necklace was found, and the structured pit (S.U. [14]).

50 Most of the 38 ceramic fragments found there belong to types 2 and 3: forms mainly destined for consuming food. Only three fragments belong to larger containers, used for storage. Considering that there is no physical connection between the two areas, it is hard to determine if they are coeval, or if they were used at different times, although close in date.

3.2 Characterisation of the Amber Necklace

51 The set is composed of 19 complete beads and 25 fragments (Fig. 19). The beads have three different shapes and sizes:

- Large discoid: seven large-sized items (diameter between 32.57 and 20 mm), with asymmetric thickness. They possibly belonged to the necklace's central section.
- Medium discoid: 30 items (the large majority), with diameters between 19 and 6 mm;
- Small spheroid: three small-sized items (diameter smaller than 6 mm).

52 We also collected four fragmented components of the amber necklace, which couldn't be classified morphologically given the degree of their fragmentation.

53 In the light of the disposition of the beads in the field (Fig. 7), we assume that the necklace had a central core composed of seven larger beads, followed by 15 identical, but smaller beads on each side. The final beads were small spheroids.

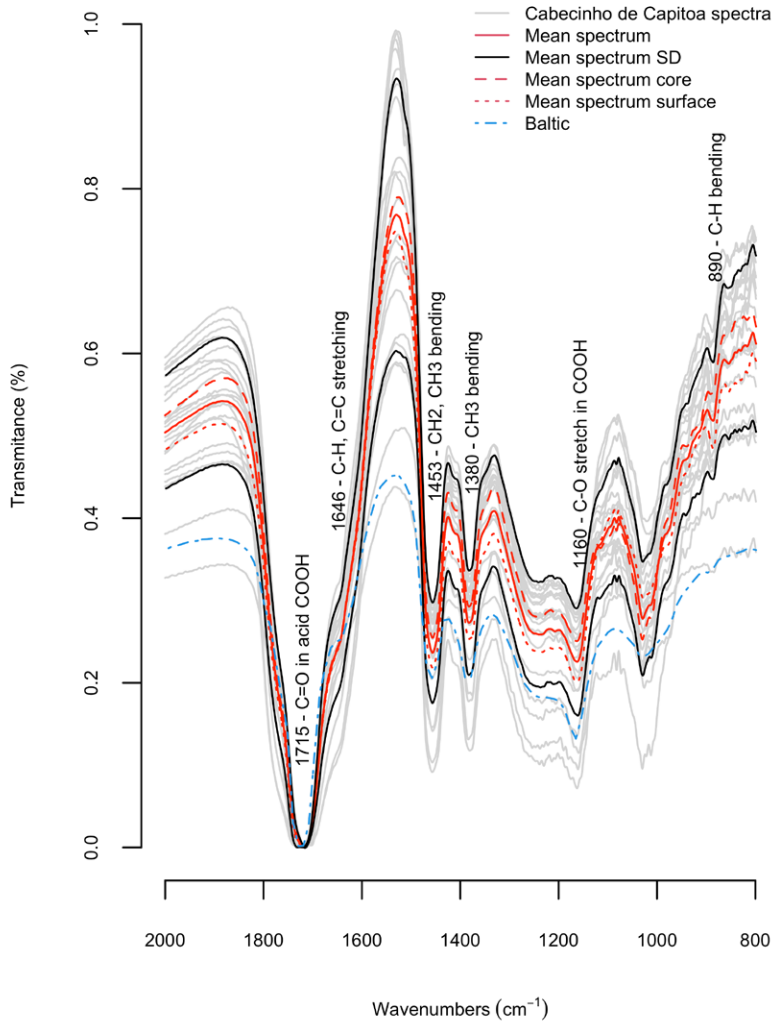


Fig. 20: Cabecinho da Capitôa bead assemblage FTIR spectra, mean spectra and standard deviation.

20

54 Similar ›ring-shaped discoid‹ amber beads have been recorded in LBA sites in Estremadura, in Pragança, Cadaval[4]. In the region of Beiras (North Central Portugal), at Senhora da Guia and Moreirinha[5] we also find this kind of bead.

55 A sample of the beads recovered at Cabecinho da Capitôa was tested by means of Fourier Transform Infrared spectroscopy (FTIR), a technique capable of satisfyingly distinguishing between resinites (for example, Sicilian, Baltic, and Iberian Cretaceous ambers, copal …) on a very small sample. This approach has by now become the standard technique applied in archaeological research to determine the origin of amber artefacts.

56 Approximately 1 mg of the sample was manually ground, using an agate mortar, and mixed with a small amount of KBr, before pressing (8 T) the mixture to produce 1 mm thick pellets. The specimens were analysed using a JASCO FT/IR-6200 spectrometer. The data were collected as infrared transmission spectra after scanning each specimen thirty-two times in the range of 4000–400 cm^{-1}, with a resolution of 4 cm^{-1}.

57 The FTIR spectrum of Baltic amber (succinite) shows one of the most typical features in the FTIR spectrum of resinites, the ›Baltic shoulder‹. Cabecinho de Capitôa FTIR spectra on the oxidized surface and the core (Fig. 20) show the typical ›Baltic

4 Odriozola et al. 2019.

5 Vilaça et al. 2003, 63.

Site	No. pieces	Region	Context	FTIR	Reference
Pragança	2	Estremadura	Settlement	Succinite	Vasconcellos 1895; Odriozola et al. 2019
Quinta do Marcelo	1	Estremadura	Settlement	Succinite	Murillo-Barroso et al. 2018
Moreirinha	3	Beiras	Settlement	Succinite	Vilaça et al. 2003
Senhora da Guia – Baiões	4	Beiras	Settlement	Succinite	Vilaça et al. 2003
Cabecinho da Capitôa	**44**	**Estremadura**	**Deposition**	**Succinite**	**This paper**

21

Fig. 21: Analysed amber artefacts from late Bronze Age Contexts in Portugal.

shoulder‹, an intense absorption band in the 1160–1150 cm^{-1} region, preceded by a typical band between 1250 and 1180 cm^{-1}[6].

58 Therefore, the Baltic origin of the amber used to manufacture these beads seems unquestionable.

3.3 The Cabecinho da Capitôa Necklace and Amber Circulation in Iberia during the Late Bronze Age

59 The present inventory of analysed amber sites in Portugal includes only 14 sites from the Bronze Age (Fig. 21). The total number of sites with amber is higher, but it will be necessary to carry out an exhaustive inventory and analysis to interpret the data. From a diachronic perspective, we can see that the social contexts change and so do the origins and networks of amber trading.

60 Amber circulation in late prehistory, which began in the Palaeolithic with local Cretaceous Iberian amber, can be divided into three major phases[7].

61 The first artefacts of exogenous amber, corresponding to the Sicilian Simetite, date from the late 5th millennium (Campo de Hockey, Cadiz)[8].

62 The presence of amber in the Middle and Late Neolithic is sporadic throughout the Iberian Peninsula. The number of sites and the quantity of amber increased in the Chalcolithic, with a high density of amber found at the *tholos* of Montelírio (Seville), with 251 findings[9], and the Anta Grande do Zambujeiro (Évora, Portugal), with 168 findings[10], all from Sicily. The first Baltic amber appeared in the 3rd millennium, in the northwest (Trikualtzi I, Larrarte), and the use of local amber from the Cretaceous is confirmed in La Pastora[11].

63 In the Early and Middle Bronze Age, the number of amber artefacts decreased, giving way to an increase in the symbolic importance of metals. In the Cova de Gegant (Catalonia), amber is still of Sicilian origin[12].

64 In the Late Bronze Age, all findings indicate a provenance from the Baltic (Fig. 22) but as we have seen, the number of sites and artefacts analysed is still very small.

65 Amber is also present in some Iron Age contexts in the south of Portugal, namely in the so-called Tesouro do Gaio, as well as in other necropolises in the Alentejo. In the region of Estremadura, near Cabecinho da Capitôa, the presence of amber is not documented for this period[13].

6 Beck 1965.
7 Odriozola et al. 2019.
8 Vijande-Vila et al. 2022.
9 Fernández Flores et al. 2016.
10 Odriozola et al. 2012.
11 Murillo-Barroso et al. 2018.
12 Daura et al. 2017; Odriozola et al. 2019.
13 Arruda 1999/2000.

Site	Context	Lab. Reference	Sample	Date ^{14}C (BP)	Calibrated *(cal BC)	
					1σ	2 σ
C. da Capitôa	(S.U. 8)	Sac-2979	Charcoal	2530±40	785–748 (20,8 %), 687–666 (11,5 %), 641–568 (36,0 %)	799–541 (95,4 %)
Quinta da Cerca 2	(SU.5)	Beta-550319	Charcoal**	2670±30	891–881 (9,1 %), 834–801 (59,2 %)	900–856 (25,1 %), 851–794 (70,3 %)

* The calibrated dates were calculated using the IntCal20 curve (Reimer et al. 2020) and the OxCal v4.4.4 calibration program (Bronk Ramsey 2009) (in parentheses is the percentage probability of the time interval in question, integrated into the 1σ and 2σ confidence intervals, as appropriate).
** Short life sample (Erica scoparia/umbellate)

22

4 Absolute Chronology

Fig. 22: Radiocarbon dates for the sites of Cabecinho da Capitôa and Quinta da Cerca 2.

66 A sample of charred wood from Nucleus 1 (not subjected to anthracological analysis) was radiocarbon dated and the result is presented in Fig. 22. It should be noted that given the value that was obtained, to convert this conventional radiocarbon date into calendar years, the section of the calibration curve (IntCal20) evolves horizontally (the so-called Hallstatt plateau – Fig. 23), which leads to obtaining calendar age intervals with a very low precision.

67 This is precisely what happens to the date Sac-2979, for which calibration provides a time interval encompassing the 8th, 7th and first half of the 6th century BC. This date certainly matches the artefact collection, particularly the ceramics from Nucleus 1 to which the dated sample is linked, but the low degree of precision must be emphasised. As said above, excavations at a nearby site (Quinta da Cerca 2) yielded an assemblage, and therefore a cultural collection similar to the one found at Cabecinho da Capitôa. Here, we could also date a sample of charred wood, a short-lived sample in this case, and the result (Beta-550319), so far unpublished, is also shown in Fig. 22 and Fig. 23. As observed in Fig. 23, the section of the calibration curve that will be used precedes the ›Hallstatt plateau‹, and so the calibrated date has a higher degree of precision, pointing to a time interval within the 9th century BC. Quinta da Cerca 2's archaeological context is thus older than that of Cabecinho da Capitôa, despite the fact that the material culture at both sites is quite similar.

68 Nevertheless, the few contexts similar to Cabecinho da Capitôa recorded in Portuguese territory, with the same (or approximately the same) chronology, namely the votive depositions of Moita da Ladra[14] dated by radiocarbon[15], may contribute to establishing more accurately the chronology of the votive deposition analysed in this paper. Fig. 24 provides a graphic representation of the calibrated dates ascribed to the votive deposits of Cabecinho da Capitôa and Moita da Ladra, as well as to the habitation sites of Quinta da Cerca 2 and Santa Sofia (Vila Franca de Xira[16]). Based on the discussion about the dates of the votive deposit of Moita da Ladra[17], we can conclude that such depositions occurred during a short lapse of time, during the first half of 8th century BC, when the Orientalising influence was already felt in the Lower Tagus and its estuary. As observed in Fig. 24, there is an overlap between the time intervals of calibrated dates from the Moita da Ladra and Cabecinho da Capitôa deposits. Consequently, the latter's chronology probably also corresponds to the first half of the 8th century BC, i. e. it may also date from the EIA, although its ceramics are characteristic of the LBA.

14 Cardoso 2013; Monteiro – Pereira 2013; Valério et al. 2016.
15 Several dates in Valério et al. 2016, 597 Table 1.
16 Valério et al. 2016, 597 Table 1.
17 Valério et al. 2016, 596 f.

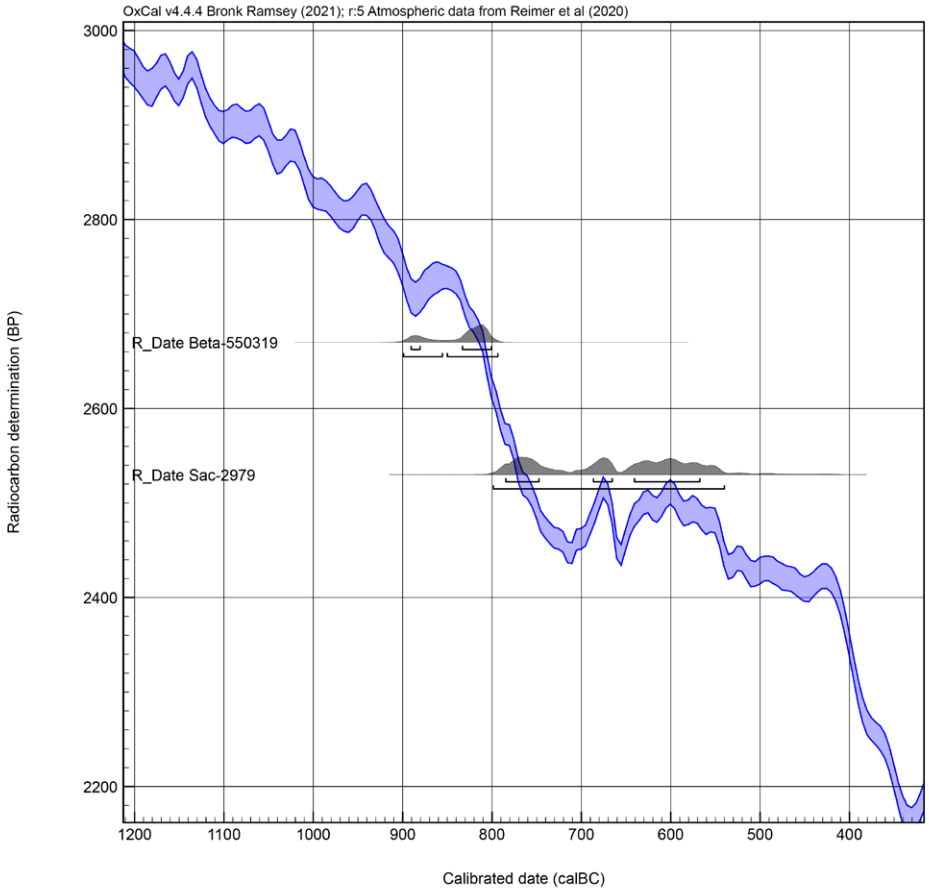


Fig. 23: Plot of calibrated radiocarbon dates (with the IntCal20 calibration curve plot) of Cabecinho da Capitôa (Sac-2979) and Quinta da Cerca 2 (Beta-550319) using the IntCal20 curve (Reimer et al. 2020) and the OxCal v4.4.4 programme (Bronk Ramsey 2009).

23

69 These late chronologies might appear incompatible with the materials collected at both sites, especially if we consider them coeval with the Iron Age levels of Santarém and Almaraz. However, we must bear in mind that these ritual contexts can be considered ›spaces of resistance‹, where indigenous communities ritually and symbolically express their control over a territory increasingly inserted in the Mediterranean orbit. This may explain why they, although late, especially incorporated local materials.

5 Cabecinho da Capitôa in the Context of the Regional LBA/EIA

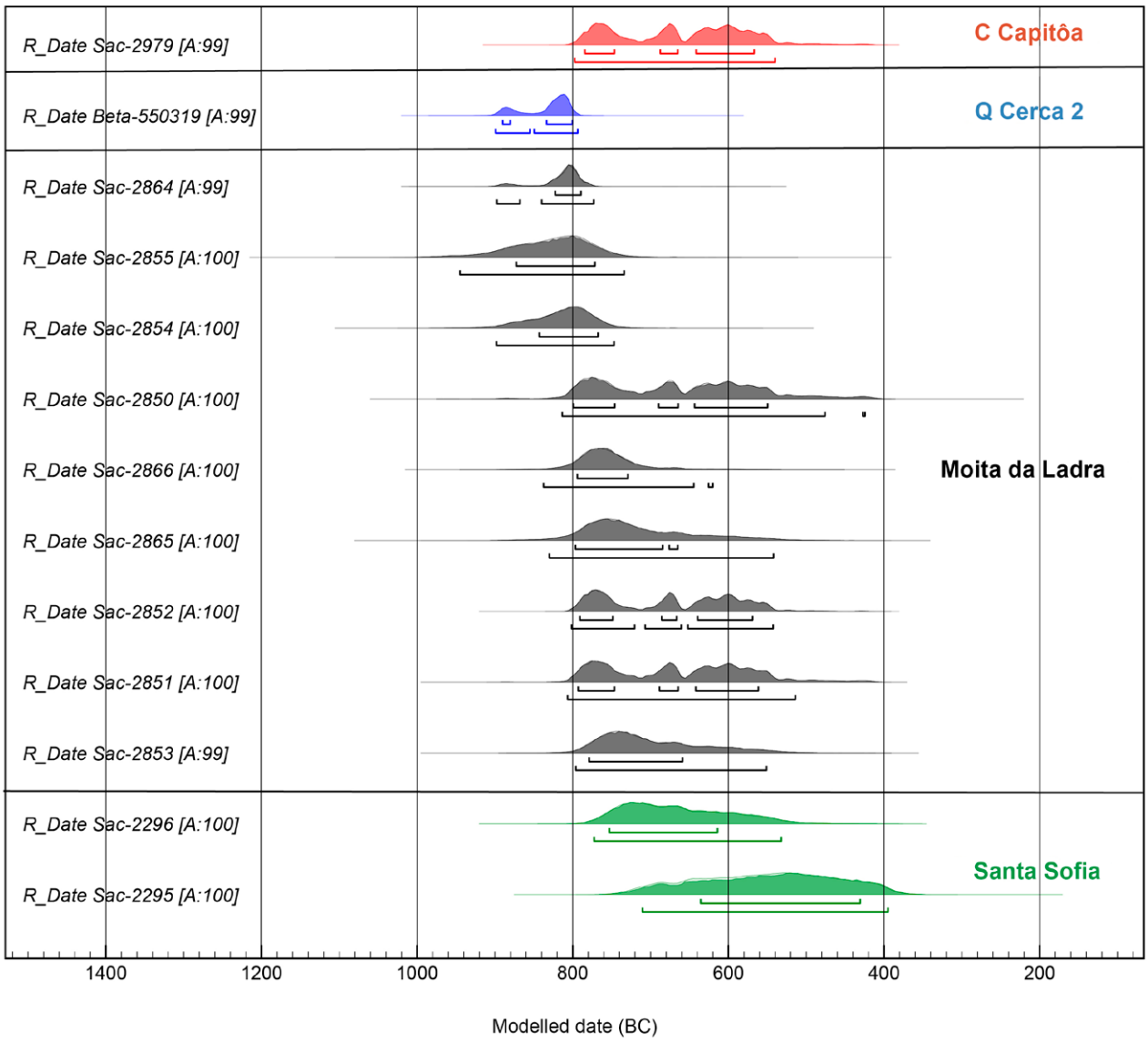
70 Cabecinho da Capitôa is located in the Lisbon Peninsula, a region with a relatively strong presence of occupations associated with the LBA, although much of the evidence comes from early field works with insufficient chrono-stratigraphic contextualisation[18].

71 Although the occurences are highly diversified, we can generally identify four different types of contexts: large ›fortified‹ settlements on hills (without previous occupation), reutilization of Chalcolithic settlements and necropolises, low-lying open settlements, and isolated finds.

72 LBA hill settlements are found at a higher altitude than their Chalcolithic counterparts, which also abound in this region[19]. Thus, we highlight the large LBA

18 Vilaça – Arruda 2004; Vilaça – Cardoso 2017.

19 Sousa 2021.



24

Fig. 24: Plot of calibrated radiocarbon dates of related sites in Estremadura using IntCal13 and Marine13 curves (Reimer et al. 2013) and the OxCal 4.4 programme (Bronk Ramsey 2001).

settlements found at highly prominent places, such as Cabeço de Alcainça[20], Serra do Socorro[21] in Mafra, Castelo dos Mouros, in Sintra[22], or Cabeço de Amoreira, in Odivelas[23]. At these sites, we found possible walled structures that are only insufficiently understood, as they were recorded during early fieldworks, or very brief excavations, as for example at Serra do Socorro[24]. We should, however, admit that such constructions may simply be embankments[25].

73 We also find reoccupations of several Chalcolithic settlements, such as Penedo do Lexim, in Mafra[26], Penha Verde, in Sintra[27], Pragança, in Cadaval[28], Ota, in Alenquer[29],

20 Ponce 2013.
21 Dias 2018.
22 Cardoso 1997/1998.
23 Boaventura et al. 2013.
24 Dias 2018; Sousa et al. 2019.
25 Vilaça – Cardoso 2017, 252.
26 Sousa – Sousa 2018.
27 Cardoso 2010/2011a.
28 Melo 2000; Caria 2021.
29 Texugo 2016.

and Moita da Ladra, in Vila Franca de Xira[30]. The nature of these reoccupations is unclear due to the scarce and diversified stratigraphic information available, basically corresponding to exceptionally untouched, namely metallic, materials. These could have been depositions of a ritual nature[31]. At Moita da Ladra, like Cabecinho da Capitôa, large sets of ceramics were identified, which have been interpreted as votive depositions.

74 Cases of small isolated sites are rare; special reference should be made to Tapada da Ajuda, in Lisboa[32], Abrunheiro, Oeiras[33], or Quinta da Cerca 2, in Mafra[34]. The absence of natural and/or man-made defence structures, combined with abundant artefacts related to farming activities, has led João Luís Cardoso to propose that these were ›farming cottages‹ directly dependent on the large hilltop settlements[35].

75 The funerary component is virtually invisible, although Late Bronze Age materials have been found in several Neo-Chalcolithic necropolises, including natural caves, such as Poço Velho, in Cascais[36], and Cova da Moura, in Torres Vedras[37]. Reused megalithic monuments have also been identified, such as the hypogea of Quinta das Lapas[38], or the Barro *tholos*, both in Torres Vedras[39].

76 In the area immediately adjacent to Cabecinho da Capitôa, we find a significant concentration of the site types described above, in particular around Ribeira de Cheleiros (Mafra/Sintra).

77 Penedo do Lexim, only 3.8 km away from Cabecinho da Capitôa, is a 223 m high volcanic pipe, with a discrete vantage point over the landscape. The archaeological site has a long research history, beginning with the pioneering work of Estácio da Veiga in the 19th century[40], the campaigns of José Arnaud in the 1970s[41], and finally the project developed between 1998 and 2004 under the supervision of the authors[42]. At this site, we find consecutive occupations from the Late Neolithic to the Late Chalcolithic, with traces of a fortified settlement, with two possible lines of walls[43]. The existence of materials dating from the Late Bronze has been documented since the 19th century, namely metallic materials with undetermined find contexts, including an axe with a heel and a socketed axe[44]. Recent archaeological works identified a ›deposition‹ context that included an arrow tip, a chisel, and a hoop; this was found under a Chalcolithic set of limestone slabs, at the top of Penedo do Lexim, along with a few isolated ceramic finds and three weights. The described Bronze Age materials, all concentrated at the top of Penedo do Lexim, as well as their type, lead us to propose that this was an occupation with a symbolic nature, with many parallels among the other Chalcolithic settlements of Estremadura.

78 There is also an important occupation of the Late Bronze Age at the hill of Cabeço de Alcainça, 2.1 km away from Cabecinho da Capitôa, which was discovered in the 19th century. This volcanic chimney has a maximum altitude of 318 m, and still preserves the hexagonal basaltic prismatic disjunctions that also explain its other name of ›Cabeço dos Órgãos‹ [Hill of the Organs]. This occupation site has only undergone

30 Monteiro – Pereira 2013.
31 Cardoso 2004; Vilaça – Arruda 2004; Arruda et al. 2017; Sousa – Sousa 2018.
32 Cardoso – Silva 2004.
33 Cardoso 2010/2011b.
34 Excavations with unpublished results, directed by Marta Miranda and Ana Catarina Sousa.
35 Cardoso 2004.
36 Gonçalves 2008.
37 Spindler 1981.
38 Marques Gonçalves 1992.
39 Madeira et al. 1972.
40 Veiga 1879.
41 Arnaud et al. 1971; Arnaud 1974–1977.
42 Sousa 2021.
43 Sousa 2021.
44 Sousa – Sousa 2018.

surface collection, thus hindering a more accurate interpretation of its nature. The first investigations date from the early 19th century, following which José Leite de Vasconcellos published a set of xorca-type necklace pendants and one fragment of a dagger[45]. Eduardo Prescott Vicente and Eduardo da Cunha Serrão subsequently published an important assemblage of ceramic and metallic materials, including ceramics with burnished ornaments (»ornatos brunidos«)[46] collected during prospections. Recent and consecutive prospection campaigns confirmed the occupation and led to the detection of possible wall embankments[47]. The vantage point over the landscape, the probable existence of walls, and the types of materials suggest that this site was an important part of the settlement network of the late 2nd millennium/early 1st millennium.

79 More recently, in 2017, 4.2 km away from Cabecinho da Capitôa, a new archaeological site dating from the same period was identified at the historical centre of the village of Mafra. Quinta da Cerca 2 is a low-lying site (c. 100 m high), a hut with an oval-shaped plan and a masonry base was found there, associated with a set of post holes and earth architecture: a hearth bottom and a pit, each coated with clay. The material assemblage includes unadorned and adorned ceramic forms like those found at Cabecinho da Capitôa, a double-spring fibula, and an important set of grinding stones (muller and quern), possibly suggesting the importance of farming activities.

80 Other sites on the left bank of the Ribeira de Cheleiros stream, currently in the municipality of Sintra, can also be included in the settlement network, namely Funchal, 3.75 km away from Cabecinho da Capitôa, also occupying a discrete vantage point over the landscape[48]. To the south, the Serra de Sintra mountains mark the line of the horizon. There, we can find traces of the Late Bronze Age, namely at Cabeço dos Mouros[49], Penha Verde[50], or re-occupations at the Monge tholos and the Bela Vista monument[51]. The gold torque of Casal de Santo Amaro, Sintra[52] suggests the presence of a funerary context[53].

81 In the interior region of Estremadura, Early Iron Age occupations are practically unknown and where they do exist they date from the 6th century BC, as in the case of Santa Eufémia in Sintra[54], or Pragança, in Cadaval[55]. By contrast, on the banks of the Tagus estuary, Iron Age settlement reaches back to the 8th century, as shown by the data collected, for example, in Almaraz[56], Lisbon[57] or Santarém[58].

6 Discussion

82 It is not easy to analyse and interprete the archaeological site of Cabecinho da Capitôa, although the excavations were extensive and covered a considerable area. It seems certain that the occupation was relatively short in time, and limited in terms of space, not exceeding 400 m^2.

45 Vasconcellos 1919/1920, 195–197.
46 Vicente – Andrade 1971.
47 Ponce 2013.
48 Sousa 1999.
49 Cardoso 1997/1998.
50 Cardoso 2010/2011a.
51 Leisner 1965.
52 Armbruster 1995.
53 Vilaça – Cardoso 2017.
54 Arruda 1999/2000.
55 Melo – Pimenta 2020.
56 Barros – Soares 2004.
57 Arruda 1999/2000; Pimenta et al. 2013.
58 Arruda 1999/2000; Sousa – Arruda 2018.

83 Although some degree of erosion and possible agricultural activities in historical times may have destroyed some deposits, it is indisputable that there are no remains of stone structures above the ground; the materials found in the two mentioned sectors represent 80 % of the total sample.

84 The fragments of clay coating associated with Sector 1, however, are an indicator that a structure made of perishable materials that were fragile and of short duration did exist.

85 Few materials were found in the area between the two sectors and they are highly fragmented. We may hypothesise that their presence resulted from post-deposition phenomena that ›dragged‹ them outside the sectors.

86 On the other hand, the complete necklace of Sector 2 obviously does not correspond to an occasional misplacement. When these occur in domestic contexts, the beads show up isolated, never together, let alone in their original position; everything seems to suggest that, in the case of Cabecinho da Capitôa, the piece was deposited intentionally. In the Iberian Peninsula, the only comparable context is that of Muricecs de Cellers, in Catalunya[59], where a necklace made of 135 amber beads, plus ten dentalium beads, two shell beads, and two glass beads was found, associated with a deposit of 41 bronze artefacts. In keeping with the relative chronology of the beginning of the Late Bronze Age, it is the largest Bronze Age amber necklace in the Iberian Peninsula, followed by Cabecinho da Capitôa.

87 The ceramics found inside the pits dug into the geological substratum of Sector 1 also provide important data for discussing the functionality of Cabecinho da Capitôa. We should remember that most vessels are meant for drinking, and we can hypothesise that the larger closed vessels contained liquid or colloidal products, before these were poured into smaller vessels. None of the pieces found was complete, but the fact that they were fragmented in situ indicates that they were placed intentionally already broken inside the pits.

88 As regards the amber necklace, we seem to be dealing with an intentional deposition with an arguably votive nature. This is a closed set, but somehow ›isolated‹, materializing as a ›single act‹. Although the so-called hoards of the Late Bronze Age, well represented in Western Iberia, and considerably frequent in Estremadura, mostly incorporate metallic finds (bronze or copper), it seems likely that the Capitôa amber necklace was a »deposit«, or a »deposits field«[60].

89 Another possible interpretation for the vessels found inside the pits is that these were dug specifically for them. They may be the remains of banquet practices[61] that took place at the site, mainly related to the consumption of liquids. As previously proposed for Moita da Ladra[62], this feature had a strong ritual component, of Potlach type[63], with a particular symbolic importance if we take into account that indigenous communities used it to express their domain over a territory increasingly controlled by groups coming from the Mediterranean.

90 In any case, the specific amortization of rare artefacts and the delimited spaces correspond to practices with high symbolic value, which also took place in Cabecinho da Capitôa.

59 Gallart i Fernández 2006.
60 Bradley 1990; Vilaça 2006.
61 Dietler – Hayden 2001.
62 Arruda et al. 2017.
63 Hayden – Villeneuve 2011.

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RESUMEN

Cabecinho da Capitôa (Mafra, Lisboa, Portugal). Un collar de ámbar y vasijas de cerámica en contextos votivos de la Edad del Bronce final/principios de la Edad del Hierro en el oeste de la península ibérica

Ana Catarina Sousa – Carlos Pereira – Marta Miranda – António M. Monge Soares – Carlos P. Odriozola – Ana Margarida Arruda

La identificación y excavación de Cabecinho da Capitôa (Lisboa, Mafra) formó parte de un proyecto de arqueología preventiva realizado durante la construcción de la autopista A21. Los trabajos arqueológicos han permitido identificar contextos estratigráficos y conjuntos materiales poco comunes para esta región y cronología. El yacimiento y sus características distintivas se abordaron teniendo en cuenta su entorno inmediato (el municipio de Mafra), rico y diverso en ocupaciones de la Edad del Bronce, y su lectura se complementó con el análisis del asentamiento a escala regional. La dinámica suprarregional se apoya en el análisis que se ha realizado sobre la circulación del ámbar a nivel peninsular, durante la Pre y Protohistoria. La naturaleza funcional del yacimiento permitió debatir cuestiones relacionadas con el depósito ritual de los artefactos, con las redes de circulación de productos en el Mediterráneo.

PALABRAS CLAVE

Edad del Bronce final/principios de la Edad del Hierro, Estremadura portuguesa, contextos votivos, ámbar

ZUSAMMENFASSUNG

Cabecinho da Capitôa (Mafra, Lissabon, Portugal). Eine Bernsteinkette und Keramikgefäße aus Votivkontexten der westiberischen Endbronzezeit/Frühen Eisenzeit

Ana Catarina Sousa – Carlos Pereira – Marta Miranda – António M. Monge Soares – Carlos P. Odriozola – Ana Margarida Arruda

Die Fundstätte von Cabecinho da Capitôa (Lissabon, Mafra) wurde im Rahmen einer archäologischen Notgrabung im Zuge des Baus der Autobahn A21 entdeckt und ausgegraben. Diese Arbeiten ermöglichten die Bestimmung von stratigrafischen Kontexten und Materialgruppen, insbesondere einer Ansammlung von Keramikartefakten und einer Bernsteinkette, die in dieser Region und mit dieser chronologischen Stellung selten zu finden sind. Die Fundstätte und ihre Charakteristika wurden unter Berücksichtigung der unmittelbaren Umgebung (die Gemeinde Mafra) betrachtet, in der es viele diverse bronzezeitliche Ansiedlungen gibt. Die Analyse wurde schließlich durch eine Untersuchung der Besiedlung auf regionaler Ebene komplementiert. Überregionale Dynamiken werden durch eine laufende Studie zu der Bernsteinzirkulation auf der Iberischen Halbinsel während prä- und protohistorischer Zeiten untersucht. Aufgrund der Nutzungsweise der Stätte konnten auch Fragen im Zusammenhang mit der ritualen Deponierung von Artefakten und den Netzwerken der Produktzirkulation im Mittelmeerraum geklärt werden.

SCHLÜSSELWÖRTER

Endbronzezeit/Frühe Eisenzeit, portugiesische Estremadura, Votivkontexte, Bernstein

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