

## The earliest evidence of Phoenician presence in Lisbon: the Sommer Warehouses interventions (Rua Cais de Santarém, Lisbon, Portugal)

*Las evidencias más antiguas de la presencia fenicia en Lisboa: las intervenciones en los almacenes Sommer (Rua Cais de Santarém, Lisboa, Portugal)*

Elisa de Sousa<sup>a</sup>, Ricardo Ribeiro<sup>b</sup>, Paulo Rebelo<sup>b</sup> and Nuno Neto<sup>b</sup>

Submitted: 31-10-2023; accepted: 20-02-2024; published online: 08-07-2024

**Abstract:** Archaeological excavations carried out at the ancient Sommer Warehouses, in Lisbon (Portugal), have allowed the identification of a complex phasing related to the Iron Age occupation, incorporating distinct construction phases. In this study, architectural, stratigraphic, and material data from the earliest moments of this occupation (phases II to IV) are analysed. Their chronology seems to span from the second half of the 8th century BC to the beginning of the following century. Elements of both defensive and port-related character were identified. The associated archaeological material is significant, including handmade ceramics and wheel-thrown vessels, with possibly an exogenous origin for the latter. This constitutes a body of evidence of great importance in the context of urban archaeology in Lisbon, allowing for a characterization of the early moments of Iron Age occupation.

**Keywords:** Western Iberian Peninsula; Iron Age; defensive and port-related structures; material culture; Phoenician colonization.

**Resumen:** Las excavaciones arqueológicas realizadas en los antiguos almacenes Sommer, en Lisboa (Portugal), han permitido la identificación de una compleja secuencia relacionada con la ocupación de la Edad del Hierro, que incorpora distintas fases de construcción. En este trabajo se analizan datos arquitectónicos, estratigráficos y materiales de los primeros momentos de esta ocupación (fases II a IV), cuya cronología abarca un periodo desde la segunda mitad del siglo VIII a. C. hasta el comienzo del siglo siguiente. Se identificaron elementos de carácter defensivo y relacionados con estructuras portuarias. El material arqueológico asociado es significativo, incluyendo cerámica a mano y a torno, esta última posiblemente de origen exógeno. Todo ello constituye un conjunto de evidencias de gran importancia en el contexto de la arqueología urbana en Lisboa y permite caracterizar los primeros momentos de la ocupación de la Edad del Hierro.

**Palabras clave:** occidente de la península ibérica; Edad del Hierro; estructuras defensivas y portuarias; cultura material; colonización fenicia.

**Citation / Cómo citar:** Sousa, E. de, Ribeiro, R., Rebelo, P. and Neto, N. (2024). "The earliest evidence of Phoenician presence in Lisbon: the Sommer Warehouses interventions (Rua Cais de Santarém, Lisbon, Portugal)." *Trabajos de Prehistoria*, 81 (1): 965. DOI: <https://doi.org/10.3989/tp.2024.965>

<sup>a</sup> Universidade de Lisboa / Uniarq – Centro de Arqueologia. ORCID iD and e-mail: <https://orcid.org/0000-0003-3160-108X>  
e.sousa@edu.ulisboa.pt (corresponding author).

<sup>b</sup> Neoépica – Arqueologia e Património. ORCID iD and e-mails: RR <https://orcid.org/0000-0002-7118-9985> ricardoavilaribeiro@gmail.com; PR <https://orcid.org/0000-0002-4584-1562> neoepica@gmail.com; NN <https://orcid.org/0000-0002-0552-7181> neoepica@gmail.com

## 1. INTRODUCTION

The settlement located on the hill of São Jorge Castle (Lisbon, Portugal) is one of the most significant sites of the Iron Age on the Portuguese Atlantic coast. However, the characterization of its various occupation phases, especially the earliest one, is strongly limited by its continuous urban nature. Nevertheless, the data recovered during multiple preventive archaeology interventions in the city, especially in the last two decades, have substantially increased the elements available for its study (Fig. 1).

In this context, archaeological excavations carried out at the foot of the hill, in the spaces of the former Sommer Warehouses (currently Hotel Áurea Museum), conducted by the archaeological company Neoépica, revealed data of exceptional importance.

The most extraordinary finding undoubtedly lies in the stele dating back to the 7<sup>th</sup> century BC, containing a funerary inscription in Phoenician language and characters (Neto *et al.*, 2016). Unfortunately, this unique discovery was not found in its original context as it was reused as construction material for a Roman structure.

No other funerary elements were documented. The works carried out by Neoépica allowed for the recovery of other evidence associated with the Iron Age occupation (Ribeiro *et al.*, 2020), with particular emphasis on the earlier horizons of this period.

The interventions were constrained by the current construction project of Hotel Áurea Museum and took place in 11 sectors (Fig. 2). Three of them, specifically sectors 1, 11, and 4, provided contextual data from the Iron Age. Given the volume of data obtained and to timely disseminate the most relevant contexts, it was decided to prioritize, within the scope of this work, the earliest occupational phase of the Iron Age identified in the adjacent sectors 1 and 11.

## 2. STRATIGRAPHIC AND ARCHITECTURAL DATA FROM THE EARLIEST IRON AGE PHASE IN SECTORS 1 AND 11

The work carried out in sectors 1/11 identified well-preserved levels from the Iron Age at approximately 3 m below the current ground surface. In total, twelve

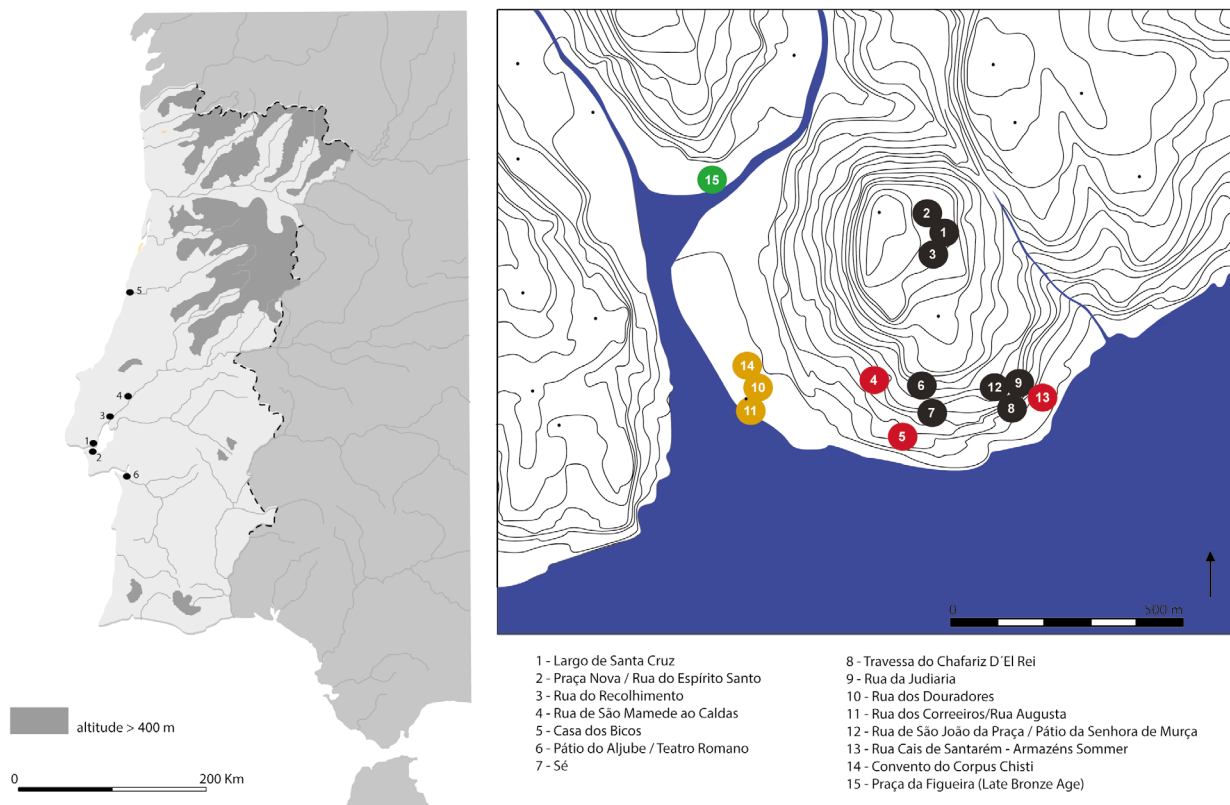


Fig. 1. Left: Portuguese sites mentioned in the article. 1. Lisbon; 2. Quinta do Almaraz (Almada); 3. Santa Sofia (Vila Franca de Xira); 4. Alcáçova de Santarém; 5. Santa Olaia (Figueira da Foz); 6. Abul (Alcácer do Sal). Right: Detail map of the Lisbon peninsula showing its protohistoric occupation. The numbers below correspond to: Late Bronze Age occupation (in green); sites with contexts or materials integrated in a late 8<sup>th</sup> century BC chronology onwards (in red); sites with materials from the 7<sup>th</sup> to the 4<sup>th</sup>/3<sup>rd</sup> century BC (in black); sites with contexts only from the mid 1<sup>st</sup> millennium BC onwards (in orange).

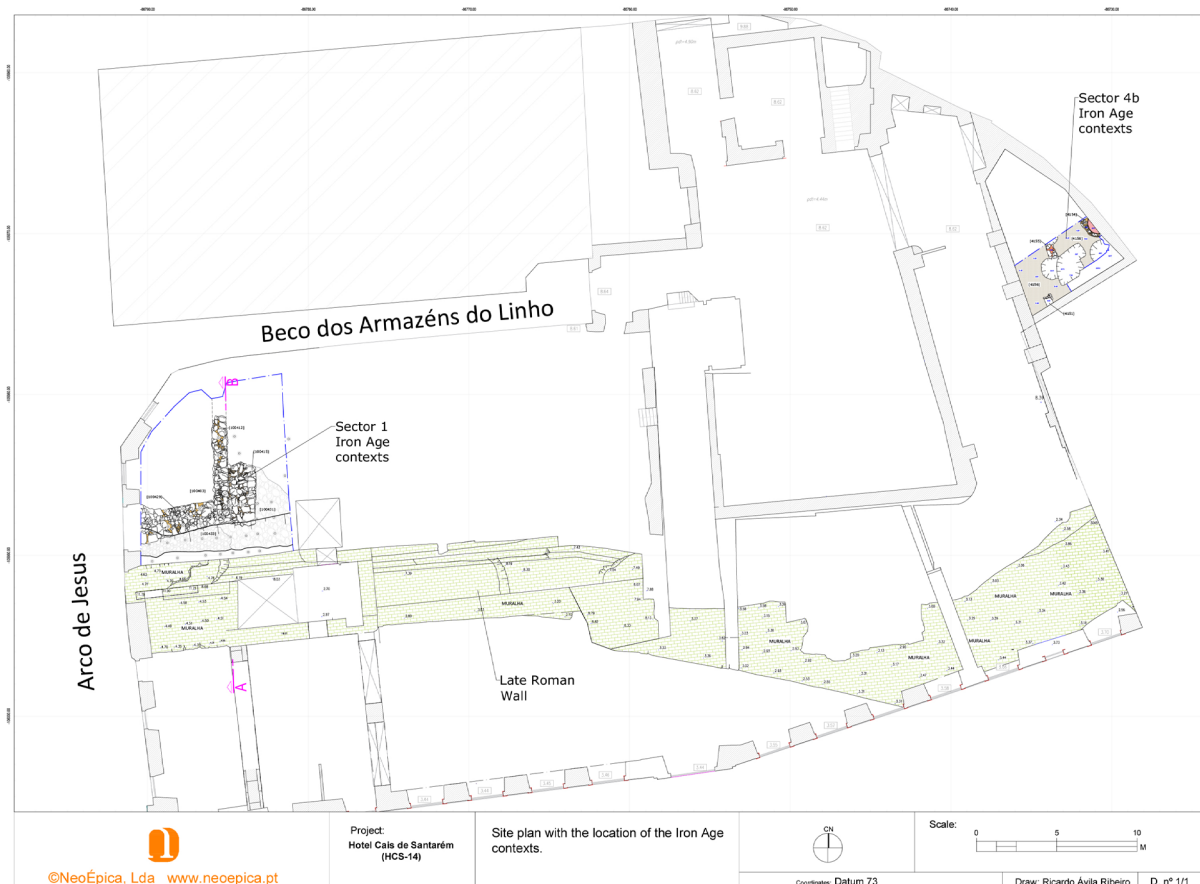


Fig. 2. Plan of the area excavated in the ancient Sommer Warehouses, indicating different sectors and Iron Age structures from Phases II and III. The line between A and B indicates the projected section. In green, different construction phases of the Roman defensive wall.

construction phases were distinguishable, chronologically reflecting three major occupation periods. Among these, the oldest stands out due to the architectural remains recovered.

The earliest detected Iron Age levels were deposited directly on the limestone geological substrate, which is slightly elevated in this area. Only a grayish-toned alluvial sediment (S. U. [100403]) was observed in some areas, which still yielded some archaeological materials at its higher levels.

The first construction phase (Phase II) built on this stratum incorporates two perpendicular structures (Fig. 3). The oldest one (S. U. [100441]), oriented north-south, was the most challenging to characterize as it was identified near the western profile of the excavation area, partially beneath the facade of the current building. Consequently, only its eastern face was visible. Structure [100440] is attached against it, forming an essentially right angle (Figs. 4 and 5) with an east-west orientation nearly parallel to the Tagus River. Its thickness is approximately 1.20 m, with a preserved length of 5.90 m. In terms of masonry, it was built using local raw materials (limestone and calcarenite). The larger

blocks were generally sub-angular and sub-rounded in shape and were molded both internally and externally. They were primarily arranged on the structure's faces and bound together by clayey sediment. Inside there is a greater prevalence of small and medium-sized blocks. Presumably, this wall would have continued westward toward the present Arco de Jesus. On the eastern side, there is an alignment that roughly corresponds to the line of this structure but at a considerably lower elevation as it was partially dismantled by later constructions (S. U. [100438]) (Fig. 3).

The considerable thickness of both structures, which has no parallel to other Iron Age constructions documented in the Lisbon area, may indicate that they served as defensive equipment and possibly also as space delimiters (Ribeiro *et al.*, 2020). In this regard, it is interesting to note that the best-preserved structure is practically parallel to the one built later in the Roman period, suggesting the retention of certain defensive criteria in the history of the city of Lisbon, at least in this riverside area.

In addition to S. U. [100403], the only other level associated with this phase corresponds to a sandy





Fig. 4. Photograph of S. U. [100440], ancient Sommer Warehouses (Lisbon).

It is characterized by a sequence of three strata that were used, at least in part, as fill levels in preparation for the subsequent construction phase (Phase V), when a significant redevelopment of this riverside area is observed. The layers from Phase IV consist of a greenish clayey sediment (S. U. [100417]), on which a sandy layer with traces of combustion was detected (S. U. [100430]), and finally, a sandy deposit with a greenish tone and coal inclusions (S. U. [100425]) (Figs. 8 and 9).

### 3. MATERIAL CULTURE

Although the artifact assemblages collected in Phases II to IV are not particularly abundant, they exhibit unique characteristics within the framework of material culture known so far for the Orientalizing phase of the São Jorge Castle Hill. Wheel-thrown productions stand out while the typical manufactures from the Tagus estuary area seem to be entirely absent (Sousa, 2014;



Fig. 5. Photograph of S. U. [100441], ancient Sommer Warehouses (Lisbon).

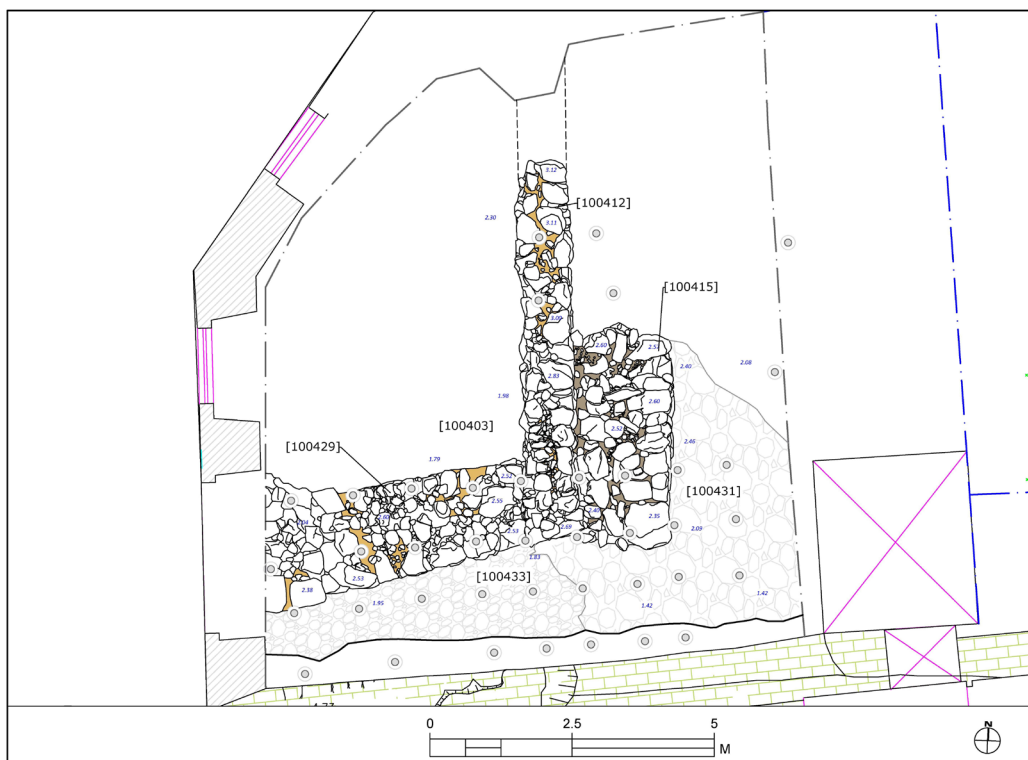


Fig. 6. Plan of the structures identified in Phase III, ancient Sommer Warehouses (Lisbon).

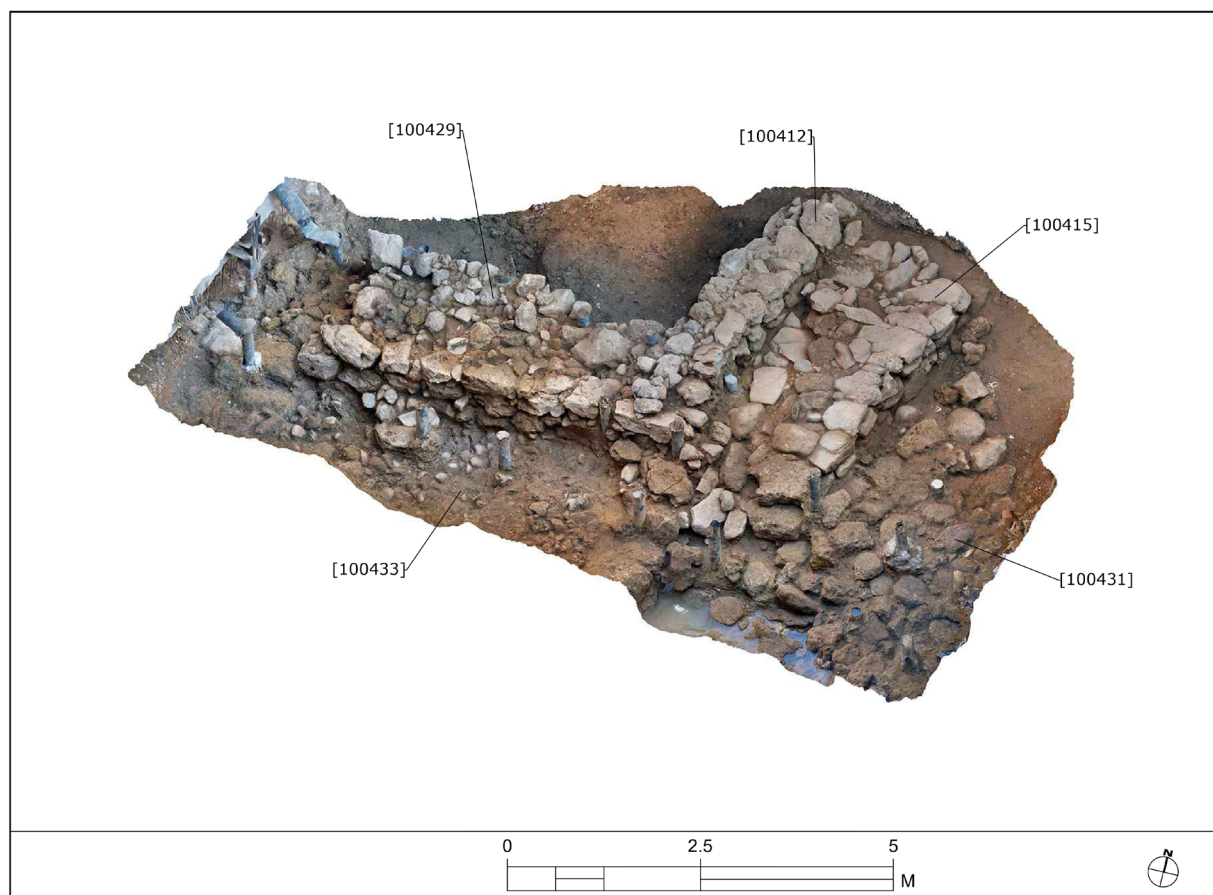


Fig. 7. Photograph of the structures identified in Phase III, with indication of the different stratigraphic units (S. U.), ancient Sommer Warehouses (Lisbon).

Sousa and Pimenta, 2014; Ferreira *et al.*, 2020; Sousa *et al.*, 2020).

Indeed, all the identified wheel-thrown materials appear to be predominantly of exogenous origin, even if these observations are derived, so far, from macroscopic study. Given this particular situation, it was decided to proceed with the analysis of all collected fragments, classifiable and unclassifiable, to confirm the observed trends among diagnostic elements. Their quantification followed the criteria proposed by the Mont Beauvray protocol (Arcelin and Tuffreau-Libre, 1998), establishing the minimum number of individuals (MNI).

The locally produced items consist solely of fragments of handmade production, which are still relatively expressive in the artifact assemblages analyzed here.

### 3.1. Fabrics

Eleven manufacturing groups, eight of which correspond to wheel-thrown productions (amphorae/plain ware

– AMP/PL.; red slip ware – RSW; grayware – GRAY) and three to handmade productions (HM), were distinguished (Fig. 10; Tab. 1).

#### 3.1.1. Handmade productions

Fabric HM. F1: Moderately compact pastes with irregular fracture and sparsely levigated (10-20 % non-plastic elements). Macroscopically, frequent small-sized calcites, occasional small and medium-sized quartz, and occasional black, slightly shiny particles, also small and medium-sized, can be observed. Their color is predominantly dark (Munsell 3/1 10YR *very dark gray*), although in some cases, the surfaces show more reddish hues (Munsell 5/4 5YR *reddish brown*). The surface finish varies, with larger pieces being either simply smoothed or even rough, while smaller vessels may have a polished surface.

Fabric HM. F2: Moderately compact pastes with irregular fracture and limitedly levigated (10-20 % non-plastic elements). Macroscopically, there are

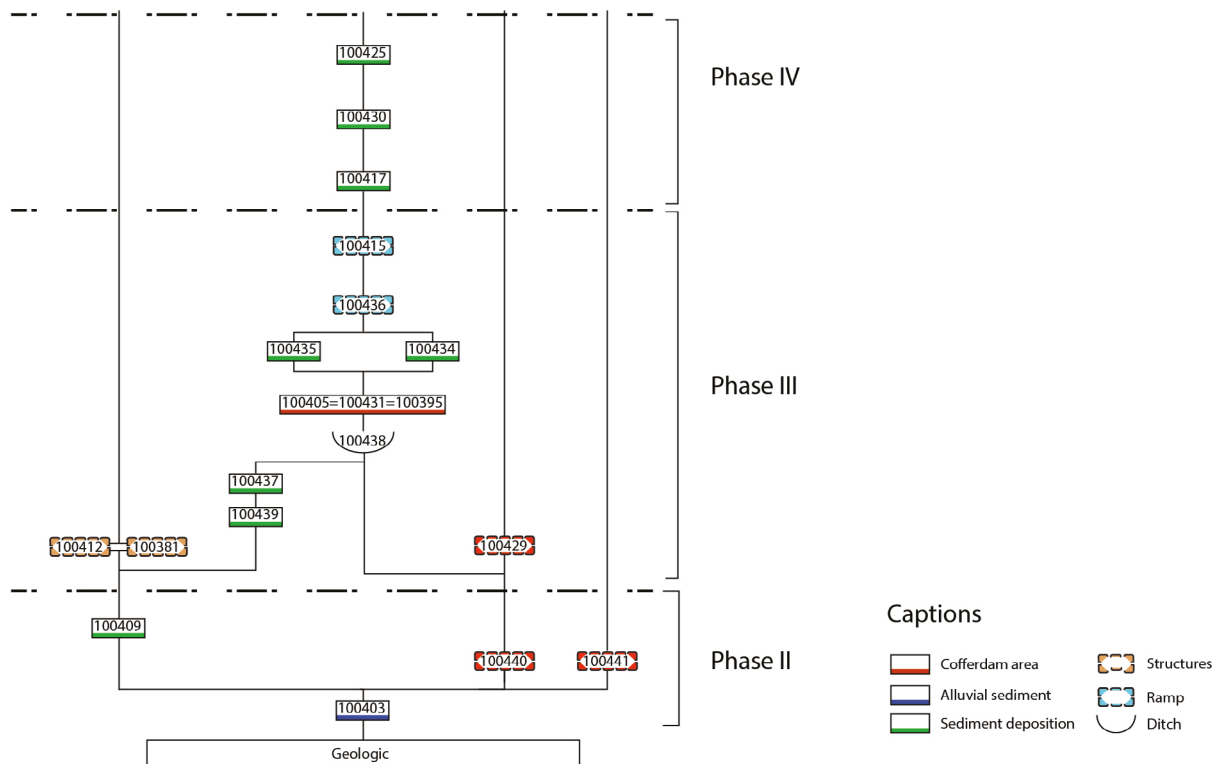


Fig. 8. Harris Matrix of stratigraphic units from Phases II, III, and IV, ancient Sommer Warehouses (Lisbon).

frequent small and medium-sized calcites, occasional medium-sized quartz, occasional black minerals, and abundant small and medium-sized golden mica particles, which are mainly visible on the surfaces. Their color is dark (Munsell 2.5/1 7.5YR *black*), with the external surface being reddish-brown (Munsell 6/6 7.5YR *reddish yellow*), and they have either poorly finished or polished surfaces.

Fabric HM. F3: Relatively compact pastes with irregular fracture and limitedly levigated (10-20 % non-plastic elements). Macroscopically, there are only frequent small-sized calcites and rare small and medium-sized quartz. The color is generally dark (Munsell 2.5/1 5YR *black*), with only one case being reddish (Munsell 4/6 5YR *yellowish red*). The surface finish can be smoothed or polished, with the latter being more frequent on smaller pieces.

### 3.1.2. Wheel-thrown productions

Fabric AMP./PL. F1: Relatively compact pastes with regular fracture and sparsely levigated (10-20 % non-plastic elements). Macroscopically, there are frequent small and medium-sized calcites, irregularly shaped black particles (possibly schist), occasional small shiny mica particles, and some small-sized quartz. Their color varies, often exhibiting grayish tones in the cores

(Munsell 5/1 10YR *gray*) and becoming more brownish or orangish near the surfaces (Munsell 6/4 7.5YR *light brown* or 5/6 5YR *yellowish red*). Possible origin: Málaga area.

Fabric AMP./PL. F2: Pastes with somewhat heterogeneous compaction, sometimes porous, with regular fracture and limitedly levigated (10-20 % non-plastic elements). Macroscopically, there are abundant small, medium, and occasionally large-sized quartz, some iron-bearing elements, irregularly shaped black particles (possibly schist), and occasional small-sized calcites. Their color is orangish (Munsell 6/6 5YR *reddish yellow*), with cores sometimes exhibiting grayish tones (Munsell 6/1 5YR *gray*). Possible origin: Málaga area.

Fabric AMP./PL. F3: Compact pastes with regular fracture and moderately levigated (5-10 % non-plastic elements). Macroscopically, there are a few small-sized calcites, rare small and medium-sized quartz, and occasional small and medium-sized iron-bearing elements. Their color is orangish (Munsell 7/6 5YR *reddish yellow*). Undetermined origin.

Fabric AMP./PL. F4: Moderately compact pastes, quite porous, with regular fracture and levigated (about 5 % non-plastic elements). Macroscopically, only occasional small-sized quartz, some small-sized shiny mica particles, and rare small and medium-sized iron-bearing elements are observed. Their color is homogeneous,



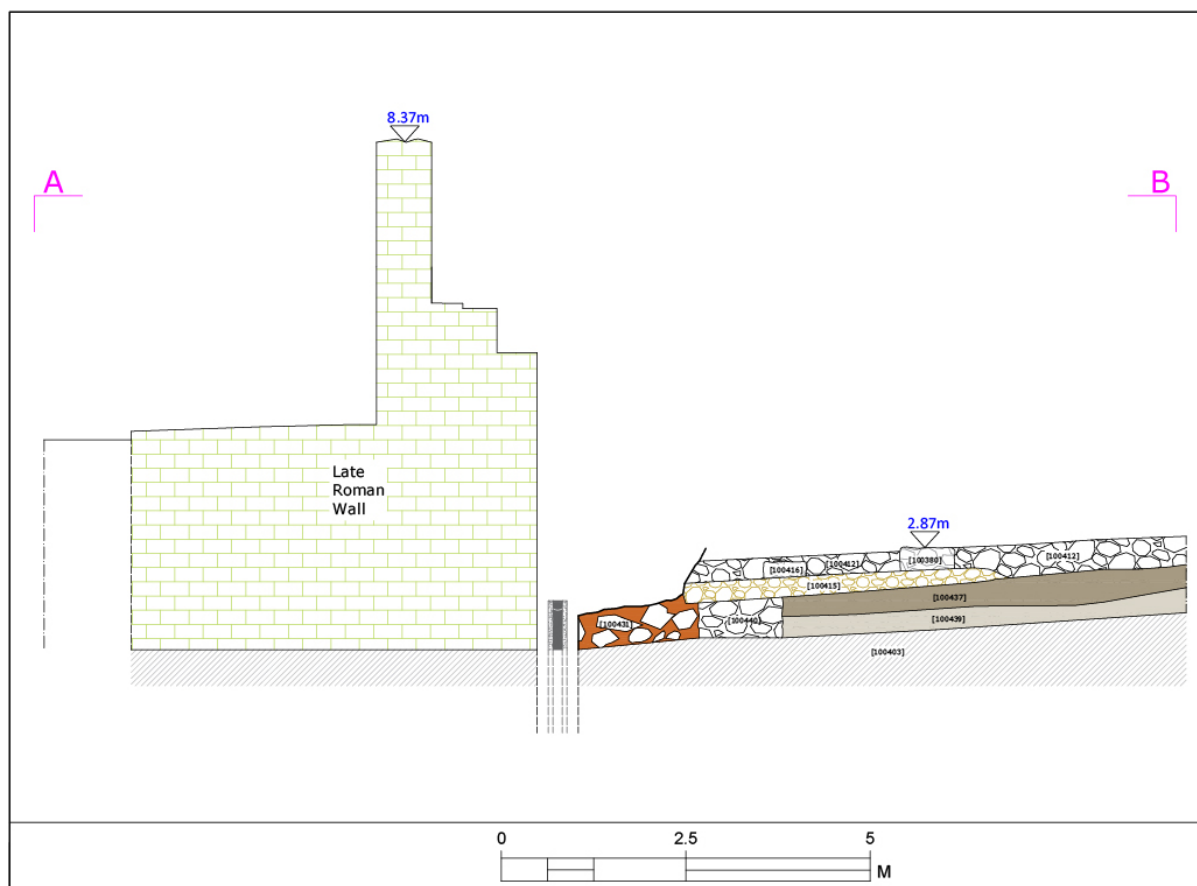


Fig. 9. Projected section indicated on Fig. 2 (A to B), ancient Sommer Warehouses (Lisbon).

yellowish (Munsell 7/2 5Y *light gray*). Possible origin: Cádiz area (?).

Fabric AMP./PL. F5: Compact pastes with regular fracture and moderately levigated (5-10 % non-plastic elements). Macroscopically, there are some small and medium-sized quartz, occasional small shiny mica particles, elongated black particles of small and medium size (possibly schist), and rare medium and large-sized iron-bearing elements. Their color is yellowish (Munsell 7/2 10YR *light gray*). Possible origin: Málaga area.

Fabric RSW. F1: Compact pastes with regular fracture and well-levigated (less than 5 % non-plastic elements). Macroscopically, only a few small-sized calcites and quartz are present. Their color is beige (Munsell 8/3 10YR *yellow*). The slip is fine and adherent, with a reddish color (Munsell 5/8 10R *red*). Undetermined origin.

Fabric RSW. F2: Compact pastes with regular fracture and also well-levigated (less than 5 % non-plastic elements). Macroscopically, there are only a few small-sized calcites and occasional dark particles (biotites) of small size, along with rare medium-sized iron-bearing elements. Their color is orangish (Munsell 6/6 7.5YR *reddish yellow*). The slip is fine and relatively adherent,

with a reddish color (Munsell 5/6 10R *red*). Undetermined origin.

Fabric GRAY. F1: Very compact paste with regular fracture and well-purified (less than 5 % non-plastic elements). Macroscopically, there are frequent mica, occasional small-sized calcites, and rare quartz particles, all small sized. The core is orangish (Munsell 5/6 5YR *yellowish red*), while the surfaces are gray (Munsell 4/1 10YR *dark gray*). Local origin (?).

### 3.2. Ceramic assemblage from Phase II

The only strata that yielded diagnosable materials in the earliest phase documented in these excavations were S. U. [100403] and [100409] (Fig. 11).

The most ancient (S. U. [100403]) provided 44 ceramic fragments, corresponding to 11 MNI. Hand-made pottery includes 22 fragments (5 MNI), of which two certainly belong to small open forms, specifically a semi-hemispherical bowl with a small protrusion on the rim (1 MNI – Fig. 11.1) and a carinated cup (1 MNI – Fig. 11.2), both with polished surfaces. The remaining fragments appear to belong to medium or large-sized containers, but unfortunately, their morphological

characterization is not possible. In the wheel-thrown productions, 22 fragments were counted (6 MNI). There are at least three large containers (3 MNI), possibly amphorae, although no preserved elements allow for their typological classification. Red slip ware is represented by three fragments (3 MNI), two of which are flat-profiled bottoms (Figs. 11.4 and 11.5), and one fragment of a carinated cup (Fig. 11.3), generally assignable to Rufete Tomico's Type C-3 (1988-1989) and covered with slip on both surfaces.

Regarding S. U. [100409], the assemblage comprises only four fragments (3 MNI). Three of them are handmade, with two being smoothed wall fragments (1 MNI), and the other a rim of a small carinated cup with carefully polished surfaces (1 MNI – Fig. 11.6), which

left marks on the inner zone. The remaining fragment corresponds to a wheel-thrown piece, possibly from an amphora (1 MNI), that did not allow for a specific typological classification.

### 3.3. Ceramic assemblage from Phase III

The materials from this phase are slightly more abundant compared to the previous one (Figs. 11 and 12). Some were recovered during the dismantling of associated structures, illustrating the respective construction phase. In the case of the ramp (S. U. [100415] = [100436]), 23 ceramic fragments were collected (7 MNI). Handmade pottery includes seven fragments

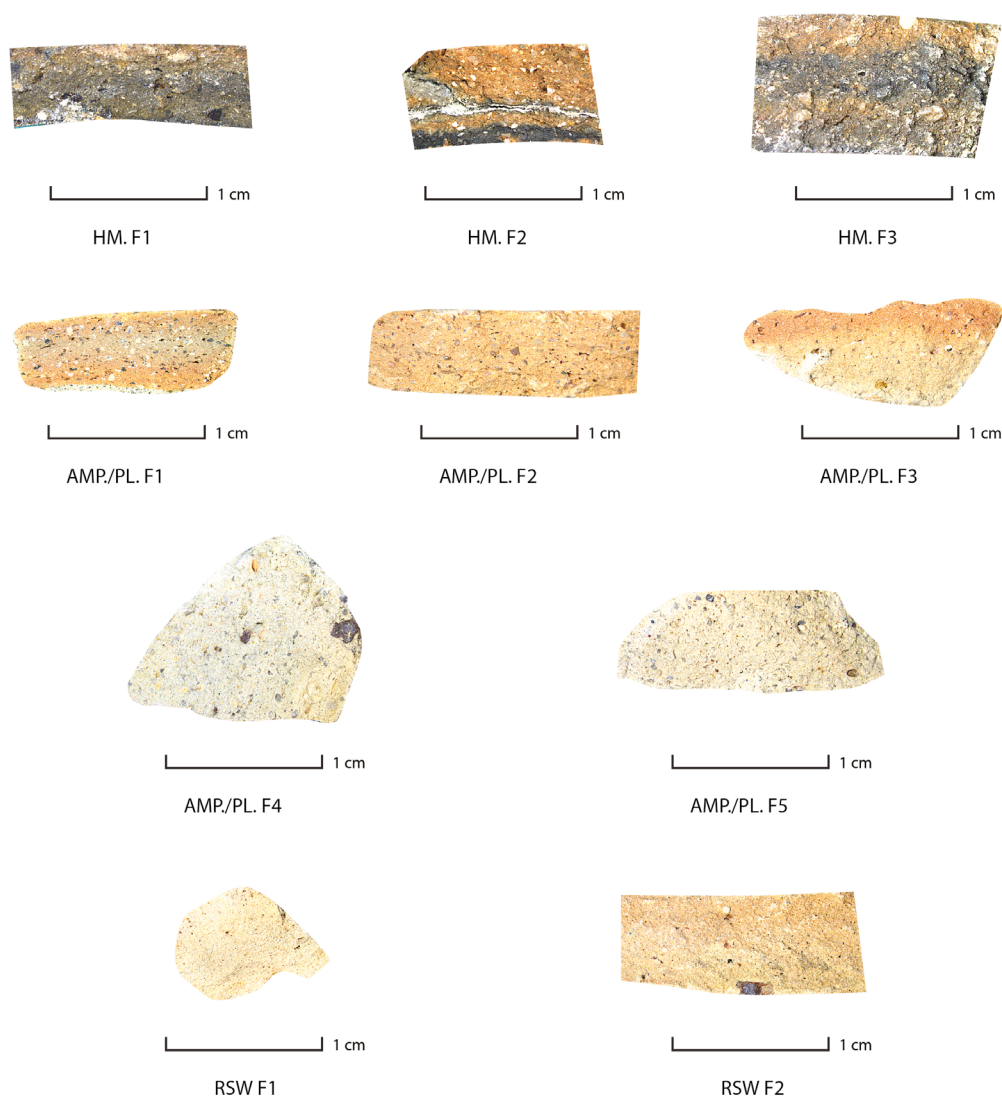
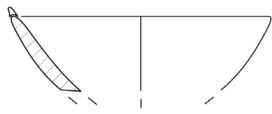


Fig. 10. Photographs of pottery fabrics (HM – Handmade ware; AMP/PL. – Amphorae/Plain ware; RSW – Red Slip Ware), ancient Sommer Warehouses (Lisbon).

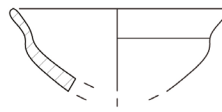
S.U.	Phase	HM. F1		HM. F2		HM. F3		Amp./Pl. F1		Amp./Pl. F2		Amp./Pl. F3		Amp./Pl. F4		Amp./Pl. F5		RSW F1		RSW F2		GRAY F1		Intrusion		Total
		Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	Frag.	MNI	
100403	II	13	3	1	1	8	1	4	1	2	1	13	1					1	1	2	2					
100409	II	2	1			1	1					1	1													
100412 = 100381	III			5	1																					
100415 = 100436	III	5	3	2	1			4	1	2	1	10	1													
100429	III																					1	1			
100431 = 100405 = 100395	III	2	1			12	1	16	1			7	1					2	1	2	1					
100434	III							4	1				1	1												
100435	III							1	1											2	1					
100439	III	24	2			12	3	14	1			5	1	4	1			1	1	4	1			1	1	
100417	IV	2	1					5	1	1	1									2	1					
100425	IV	1	1			9	1	9	1			2	1					3	1							
Total NFR		49	8	8	3	42	7	57	8	5	3	39	7	4	1	2	7	10	1	5	4	1	1	1	225	
Total MNI			12																						53	

Tab. 1. Table of fragments collected in Phases II, III, and IV, by stratigraphic unit and fabric characteristics.

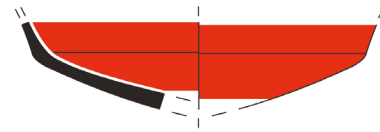
## Phase II - Sector 1 - S.U. [100403]



1 (100403.5231) - HM F3



2 (100403.5231) - HM F1



3 (100403.5231) - RSW F1

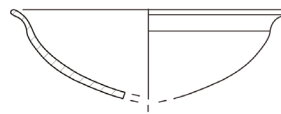


4 (100403.5231) - RSW F2



5 (100403.5231) - RSW F2

## Phase II - Sector 1 - S.U. [100409]



6 (100409.5246) - HM F3

## Phase III - Sector 1 - S.U. [100439]



7 (100439.5293) - HM F3



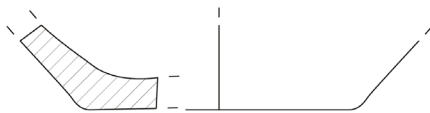
8 (100439.5293) - HM F3



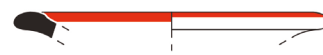
9 (100439.5293) HM F1



10 (100439.5293) - HM F3



11 (100439.5293) - HM F1



12 (100439.5293) - RSW F1

## Phase III - Sector 1 - S.U. [100431=100405=100395]



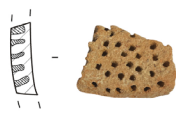
13 (100431.5280) - HM F3



14 (100431.5280) - HM F3



15 (100431.5280) - AMP/PL F1



16 (100431.5281) - HM F3



17 (100431.5280) - RSW F1

10 cm

Fig. 11. Ceramic materials from Phases II and III, ancient Sommer Warehouses (Lisbon).

(4 MNI), two of which are carinated cups with polished surfaces (Figs. 12.18 and 12.19). The fragment of an omphalos base (Fig. 12.21) may correspond to one of these pieces. The remaining two are of undetermined form but possibly from medium or large-sized containers with rough and smoothed surfaces (Fig. 12.20). The 16 wheel-thrown pottery shards (3 MNI), all probably from large containers, only include a fragment of an amphora rim (Fig. 12.22) Type 10.1.2.1 (Ramon Torres, 1995). The fragment of a circular-section handle (Fig. 12.23) might also correspond to the same piece, although it is considerably worn.

The dismantling of the cofferdam area (S. U. [100431] = [100405] = [100395]) yielded 41 ceramic fragments (6 MNI). The 14 handmade ware shards (2 MNI) include a slightly convex base fragment (1 MNI – Fig. 11.13), a wall decorated on the outer surface with nodules (Fig. 11.14), and a more peculiar fragment, also from a wall but with multiple impressions on the outer zone, which, however, do not reach the interior of the vessel (1 MNI–Fig. 11.16). It partly resembles the impressed decorations of the Late Bronze Age Mesetian traditions that have been identified in Late Bronze Age levels at Alcáçova de Santarém, upstream of the Tagus River (Arruda and Sousa, 2015). Yet, the fragmented state of the vessel does not allow us to confirm this relationship. Wheel-thrown pottery consists of 27 fragments (4 MNI). Among the large containers (2 MNI), a probable amphora from the Málaga area (Fig. 11.15), which can be integrated into Type 10.1.1.1 (Ramon Torres, 1995), is present. The rest remains undetermined. Red slip ware is represented by a Rufete Tomico's Type C3a carinated bowl (1988-1989) (Fig. 11.17).

Additionally, five unclassifiable fragments of handmade pottery (1 MNI) were recovered during the dismantling of structure [100412].

The dismantling of structure S. U. [100429], which seems to have strengthened the defensive structure during this phase, yielded only one fragment (1 MNI). Interestingly, this is the only shard in the currently analyzed assemblage that fits into the gray ware productions (Fig. 12.25). It corresponds to a small bowl with tententially oblique walls, reminiscent of Type 3Fc from the Tagus estuary. This morphology appears in regional contexts, specifically in the earliest Iron Age levels at Alcáçova de Santarém (Sousa and Arruda, 2018), dated between the late 8<sup>th</sup> and early 7<sup>th</sup> centuries BC, and used until the 6<sup>th</sup> century BC (Sousa, 2021, p. 144).

Regarding the deposits associated with the structures, only three of them yielded ceramic materials. In S. U. [100439], 65 fragments were collected, corresponding to 11 MNI. Among the 36 fragments of handmade pottery, three are larger vessels (3 MNI), possibly used for storage or food preparation, with rough (Fig. 11.11), smoothed (Fig. 11.8), and even polished external surfaces (Fig. 11.10). The two rim fragments have

an everted profile, with one of them showing traces of red paint on the inner surface and signs of repair (Fig. 11.10). Handmade ceramics also include a bowl with truncated-conical walls (1 MNI – Fig. 11.7), with a slight inflection in the medial zone as well as a perforation near the rim, possibly for suspension, and a slightly convex omphalos base fragment from another small vessel, the morphology of which could not be specified (1 MNI – Fig. 11.9). Both have carefully polished surfaces. Wheel-thrown pottery, with a total of 29 fragments, includes large containers (3 MNI) of undetermined form and red slip pottery (2 MNI). The latter consists of a Rufete Tomico's Type P1 (1989-1990) short-lipped bowl (Fig. 11.12), while the rest remain undetermined. Finally, an intrusive fragment (1 MNI) of a Roman Republican Italic amphora was identified.

In S. U. [100434] and [100435], located between the cofferdam area and the ramp, other wheel-thrown ceramic fragments were also collected. In the former, there are five fragments (2 MNI) of undetermined large vessels and in the latter, in addition to a single unclassifiable fragment from a large container (1 MNI), there are two red slip pottery fragments (1 MNI), one of them a Rufete Tomico's Type P1 plate (1988-1989) (Fig. 12.24).

### 3.4. Ceramic assemblage from Phase IV

In the final phase of the stratigraphic sequence analyzed in this study, marking the abandonment of some of the previously used structures, only two stratigraphic units yielded ceramic materials, specifically [100417] and [100425] (Fig. 12).

In the first case, handmade ceramics are represented by two fragments (1 MNI), one of which is from a cup with a carinated profile and polished surfaces (Fig. 12.26). Wheel-thrown ceramics include eight fragments (3 MNI), two of which are large undetermined vessels. The rest correspond to a peculiar type of red slip ware (Fig. 12.27). It is a shallow piece with a short rim, followed by a well-defined carination from which concave walls develop. Its specific features make it difficult to find parallels, but in terms of morphology and size, it bears similarities with a red slip ware specimen from Phase II of Tyre (Lebanon), dated to the second half of the 8<sup>th</sup> century BCE (Bikai, 1978, tab. XI-19), or even with another specimen from Phase II of Castillo de Doña Blanca (El Puerto de Santa María, Cádiz) (Ruiz Mata and Pérez 1995, fig. 17-4), roughly contemporary with the former.

The stratigraphic unit [100425] contains ten fragments of manual ceramics (2 MNI), with the only classifiable piece being a medium-sized cooking or storage vessel with an everted rim and smoothed surfaces (Fig. 12.28). Wheel-thrown ceramics include 14 fragments

## Phase III - Sector 1 - S.U. [100415]



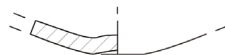
18 (100415.5260) - HM F1



19 (100415.5260) - HM F1



20 (100415.5259) - HM F1



21 (100415.5259) - HM F1

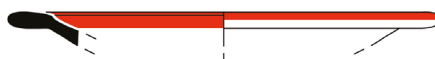


22 (100415.5259) - AMP/PL F1



23 (100415.5259) - AMP/PL F1

## Phase III - Sector 1 - S.U. [100435]



24 (100435.5291) - RSW F2

## Phase III - Sector 1 - S.U. [100429]

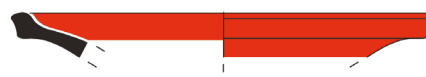


25 (100429.5279) - GRAY F1

## Phase IV - Sector 1 - S.U. [100417]



26 (100417.5262) - HM F1



27 (100417.5262) - RSW F2

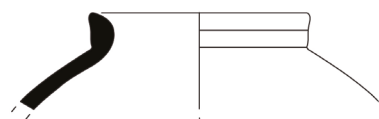
## Phase IV - Sector 1 - S.U. [100425]



28 (100425.5276) - HM F3



29 (100425.5276) - RSW F1



30 (100425.5276) - AMP/PL F1

10 cm

Fig. 12. Ceramic materials from Phases III and IV, ancient Sommer Warehouses (Lisbon).

(3 MNI). Two of them correspond to amphorae, one of which is of Type 10.1.1.1 (Ramon Torres, 1995) (Fig. 12.30). The rest comprise a red slip plate, although its fragmented state does not allow for specific typological determination (Fig. 12.29).

#### 4. DISCUSSION

The artifact assemblage collected from the three oldest phases of the Iron Age in sectors 1 and 11 of the former Sommer Warehouses consists of 225 ceramic fragments, amounting to 53 MNI, among which one corresponds to an intrusive piece found in S. U. [100439].

In terms of production, manual (42 %) and wheel-thrown wares (58 %) are quite balanced. However, when the evolution of different categories throughout the three phases is observed, there is a certain trend towards a reduction in manual productions in favor of a more recurrent use of wheel-thrown specimens (Fig. 13). Nevertheless, the limited sample here analyzed calls for further corroboration of these scenarios taking into account more substantial data from contemporary contexts.

The most distinctive aspect of our assemblage concerns the fabrics of wheel-thrown specimens, including amphorae and possibly also large storage containers, and tableware, specifically those covered with red slip. Even though these observations were based on macroscopic analysis, all these groups (including the non-diagnostic fragments) exhibit the absence of specimens with the typical fabric characteristics of the Lisbon area, which have already been established, both macroscopically and archaeometrically (Sousa, 2014; Sousa and Pimenta, 2014; Ferreira *et al.*, 2020; Sousa *et al.*, 2020).

Indeed, all the wheel-thrown fabric groups identified significantly differ, at least in macroscopic terms, from local/regional productions. The most prominent, AMP/PL. F1 manufacturing (15.1 % of the total assemblage), appears to correspond to productions from the Málaga area, encompassing all the diagnostic fragments (amphorae of Types 10.1.1.1 and 10.1.2.1; Ramon Torres, 1995). AMP/PL. F2 (5.7 % of the assemblage) and F5 (1.9 % of the assemblage) may also belong to the Málaga area, albeit from different zones. As for AMP/PL. F4 (1.9 % of the assemblage), the characteristics of its pastes suggest a southern origin, maybe from the Cádiz area, considering the similarities it shares with the typical productions of this region, though with slightly later chronologies. It is currently not possible to attribute any specific provenance to AMP/PL. F3 (13.2 % of the assemblage) (Fig. 14).

In the case of red slip wares, the degree of refinement in the two identified fabric groups makes it challenging to identify specific features that could point to more specific provenance areas. Nevertheless, the disparity with known local productions (Ferreira *et al.*, 2020), which

typically have a higher number of inclusions, also larger in size, stands out. Therefore, these pieces may also come from the southernmost regions of the Iberian Peninsula, although for the time being it is not possible to pinpoint more specific origins.

Regarding the single fragment of gray ware (GRAY. F1), the quality of manufacturing prevents making concrete considerations about its origin. While bicolored pastes are typical in artifact assemblages from the Lower Tagus area (Sousa, 2021, pp. 129-130), it should not be ignored that these characteristics also occur in other areas of the Iberian Peninsula (Sala Sellés, 2007, p. 200; Furtado, 2013, p. 27-29; Sáez Romero, 2014, p. 81; among others).

The manual pottery assemblage also exhibits some heterogeneity in terms of manufacturing groups (HM F1, F2, and F3). The production technology itself suggests, to some extent, a local or regional origin, although the possibility of at least some specimens having a more distant provenance cannot be entirely ruled out. Certainly, further archaeometric analyses are needed to confirm or refute this hypothesis. In fact, the presence of exogenous handmade wares in early Phoenician contexts in ancient Iberia has been recognized in several sites such as Cádiz (Torres *et al.* 2014, p. 63), La Rebanadilla (Málaga) (Sánchez-Moreno *et al.*, 2012, pp. 72-73), Cabezo Pequeño del Estañó (Guardamar del Segura, Alicante) (García Menárguez and Prados, 2014, p. 117), Sa Caleta (Ibiza) (Ramon Torres, 2008), as well as in other areas of the Mediterranean, like for example Utica (Tunisia) (López Castro *et al.*, 2016, pp. 77-80).

Handmade wares' morphologies, nonetheless, are in line with the known repertoires of well-preserved contexts from the Late Bronze Age of Lower Tagus (Cardoso and Silva, 2004; Neto *et al.*, 2013; Arruda and Sousa, 2015; among others), for instance the assemblages recovered at Praça da Figueira (Lisbon) (Silva, 2013), located only about 800 m away from the Sommer Warehouses (Fig. 1).

Most of the 22 individuals recognized in this group likely belong to medium or large-sized containers used for food preparation or storage. Their diameters range from 17 to 28 cm. Among the morphologies used for individual consumption, which always exhibit polished surfaces and smaller diameters (between 10 and 14 cm), the most recurrent form is the carinated cup, while bowls are relatively rarer. Decorations are sparse, with only one fragment of a wall showing indentations on the external surface and another with impressed decoration that somewhat recalls the Mesetian traditions, as mentioned previously.

The persistence of these forms and even of handmade productions in the early stages of the Iron Age is a phenomenon already recognized in the

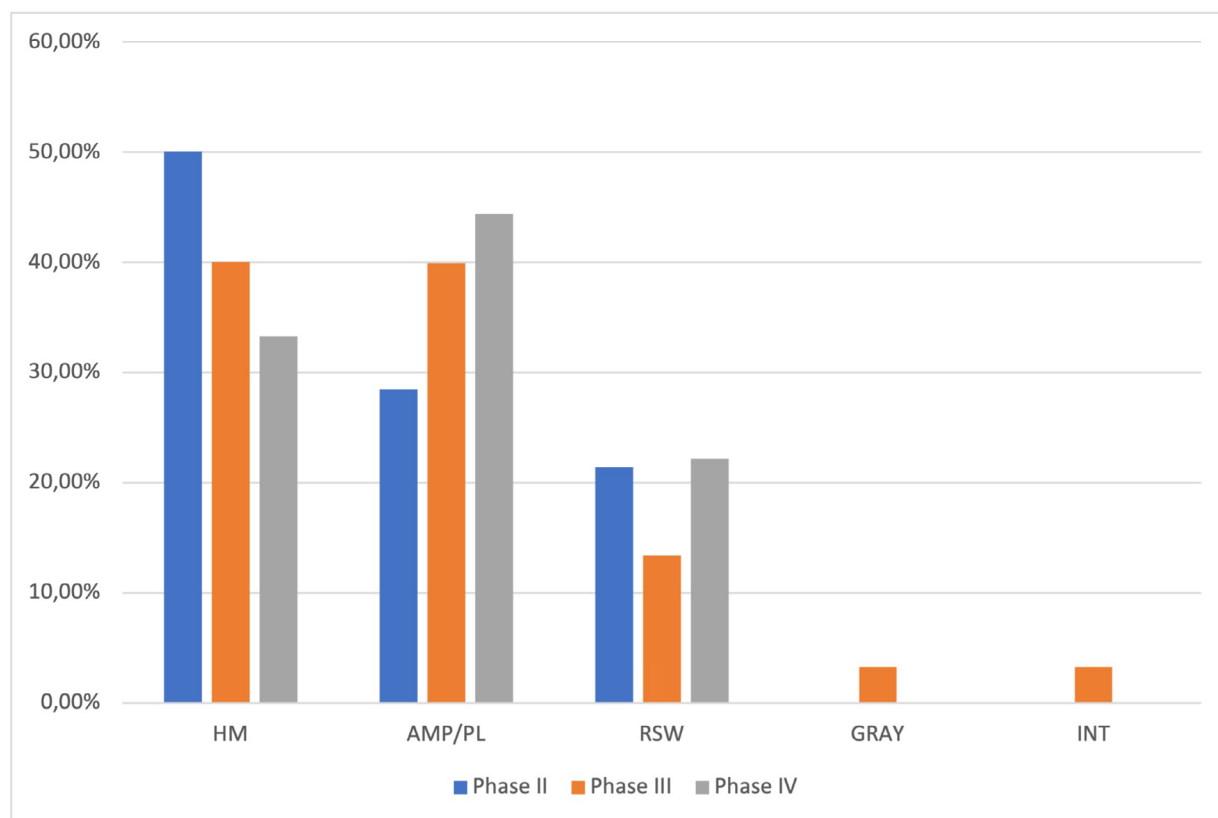


Fig. 13. Distribution of ceramic categories according to their respective phases (based on MNI).

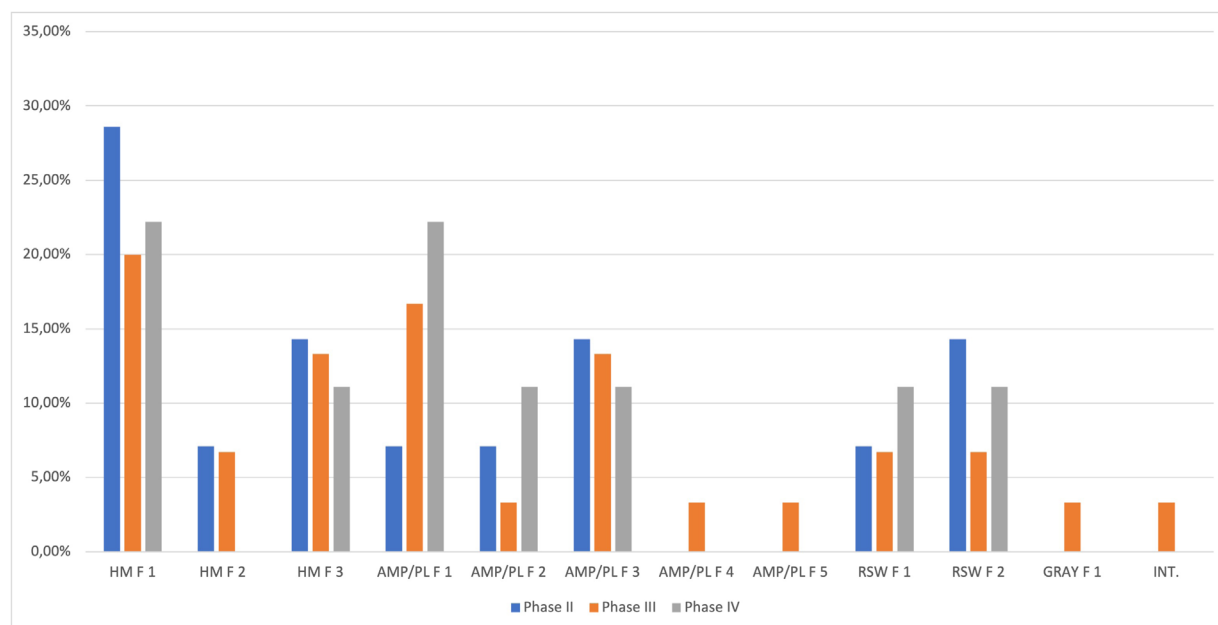


Fig. 14. Distribution of fabrics according to their respective phases (based on MNI).

Iberian Peninsula (Aubet *et al.*, 1999; Delgado and Ferrer, 2007; Rouillard *et al.*, 2007; Torres *et al.*, 2014; among others). In Lisbon, this scenario has also been identified in other interventions carried out in urban

areas (Pimenta *et al.*, 2014; Pimenta *et al.*, 2015; Sousa and Pinto, 2016; Sousa and Guerra, 2018), attesting to the symbiotic relationship that developed between indigenous communities and Western Phoenician groups



during the earliest phase of the Iron Age. However, the significant proportions of manual productions in the earlier contexts of the Sommer Warehouses, with 42 % of the total analyzed, can be interpreted as reflecting the chronological expression of this repertoire.

Indeed, the remaining associated materials, clearly of Western-Phoenician origin, exhibit morphological characteristics that are clearly archaic in the context of Iron Age occupation in Lisbon.

In the red slip wares, all plates, with short lips, can be integrated into Rufete Tomico's Type P1 (1988-1989). This production began in the second half of the 8<sup>th</sup> century BC and remained in use until the 6<sup>th</sup> century BC. The diameters themselves are relatively short, ranging from 16 to 22 cm. Even the two fragments of carinated cups, one of which is certainly a Rufete Tomico's Type C3a, are compatible with this chronological framework. In the case of the piece with a more atypical profile (Fig. 12.27) that tentatively may be classified as a bowl, the closest parallels we have been able to identify once again refer to the second half of the 8<sup>th</sup> century BC.

The amphora assemblage is also reconcilable with an ancient chronological framework, given the presence of at least two containers of Type 10.1.1.1, whose production is attested between the second half of the 8<sup>th</sup> century and the beginning of the 7<sup>th</sup> century BC (Ramon Torres, 1995, p. 230). The only element that could indicate a slightly later chronology would be the fragment integrated into Type 10.1.2.1 from Phase III, dated to the second quarter of the 7<sup>th</sup> century BC (Ramon Torres, 1995, p. 231). Nevertheless, this same morphology has recently been identified in contexts from the late 8<sup>th</sup> century BC (García Menárguez and Prados Martínez, 2014; Ruiz Mata, 2022, pp. 219-222), suggesting an earlier beginning for this production.

Finally, the limited representation of gray pottery in the assemblage, with a single fragment, could also be a chronological reflection, considering that these productions only became frequent in Iberian contexts after the late 8<sup>th</sup> century BC, and especially during the following century (Vallejo Sánchez, 2015, pp. 122-123). Even its morphology does not deviate from these chronological boundaries as attested by the stratigraphic and contextual data from Alcáçova de Santarém, where it appears associated with the earliest moments of the Iron Age (Sousa and Arruda, 2018).

Bearing in mind the enumerated elements, we propose that the three initial phases detected in the interventions of the Sommer Warehouses fit chronologically and sequentially between the second half of the 8<sup>th</sup> century BC and the beginning of the 7<sup>th</sup> century BC. Thus, they represent one of the oldest testimonies of the Iron Age occupation in the urban area of Lisbon.

## 5. THE ARCHAIC PHASE OF THE ANCIENT SOMMER WAREHOUSES IN THE CONTEXT OF PHOENICIAN COLONIZATION OF LOWER TAGUS

The establishment of the first Western-Phoenician groups in the Tagus estuary brought about structural changes in the territorial, cultural, economic, and social spheres of the region, marking the beginning of the Iron Age in the Western Atlantic area. Although the effects of this process are clearly reflected in the architectural and material evidence of various occupation centers, such as Alcáçova de Santarém (Arruda, 1999-2000), Quinta do Almaraz (Almada) (Barros *et al.*, 1993; Olaio, 2018), and in the urban area of Lisbon itself (Sousa, 2015), with the use of orthogonal plans and Mediterranean construction techniques as well as new metallurgical practices, animal species, crops, the introduction of the potter's wheel and double-chamber kilns, and even writing, among other aspects, it has always been difficult to differentiate the singular stages that integrated these dynamics.

As such the data collected in the earliest phases of the Iron Age at the ancient Sommer Warehouses take on unique importance. The material associations described above suggest a conventional chronology centered between the second half of the 8<sup>th</sup> century BC and the beginning of the 7<sup>th</sup> century BC (750/725 – 700/675 BC) for Phases II, III, and IV. In view of the data published so far from Lisbon, the only preserved context that can be considered contemporary was documented on Rua de São Mamede ao Caldas (Context 1), where the remains comprise a rim of an amphora Type 10.1.1.1 (Ramon Torres, 1995), red-slipped wares of types P1, C1, and possibly Rufete Tomico's C3, a Cruz del Negro type urn, a fragment of gray ware as well as a significant set of handmade vessels, including a fragment with burnished decoration (Pimenta *et al.*, 2014, pp. 727-730). Likely, some of the materials collected in other interventions carried out in the riverside area, specifically at Casa dos Bicos, which are similar both in fabrics and morphologies, may originally have belonged to contexts of this chronology (Pimenta *et al.*, 2015), although in this case their stratigraphic associations could not be recognized.

However, there is an apparent chronological discrepancy with the data obtained so far in the higher areas of the Castle of São Jorge hill, where several excavations that reached the bedrock have been conducted, already falling within the 7<sup>th</sup> century BC (Gomes and Gaspar, 2017; Sousa and Guerra, 2018, 2023).

Another suggestive detail provided by the analysis of the ancient Sommer Warehouses' assemblage, that must be corroborated archaeometrically in the future, is the absence of wheel-thrown fragments resembling

the typical productions of the Lisbon/Almaraz area, which become the majority in all Lower Tagus from the 7<sup>th</sup> century BC onwards (Sousa, 2016) and were also documented in the subsequent phases of the Iron Age assemblage. This probably indicates that the archaic phase of this occupation occurred at a time when the productive structures associated with the manufacture of ceramic vessels were not yet operational in the Lower Tagus, so the supply of wheel-thrown vessels related to tableware, transportation, and storage would necessarily have been imported from outside the region. Such a scenario could also explain the significant quantities of handmade wares in the analyzed set, which would thus meet daily needs, while simultaneously indicating the active involvement of indigenous groups in these early moments of Phoenician presence.

Therefore, it is likely that the archaic phases of the ancient Sommer Warehouses' occupation correspond to the first moment of the establishment of Western-Phoenician communities in Lisbon. The archaeological evidence suggests that this initial phase would have favored the lower areas in terms of altitude, near the banks of the Tagus River, and that the actual expansion of the nucleus, which in the Orientalizing period would cover about 15 hectares, only took place at a later stage. This first phase of occupation may even have been essentially emporial in nature and evolved, decades later, into an urban entity, incorporating a series of more specialized productive activities, such as ceramic production (Sousa, 2015).

In this context, the associated wheel-thrown materials take on added importance, as they may shed light on some aspects of the origin of these communities. As such, we must note the expressiveness of the productions that seem to originate from the Malaga area, which may have been essential not only in terms of supplying food products and manufactured goods but perhaps also in the dynamics of the colonization of the westernmost areas of the Iberian Peninsula.

In Lisbon, these exogenous groups chose, in this initial phase, a low-lying area in terms of elevation, near the banks of the Tagus River, apparently without any previous occupation, having nonetheless the concern to build defensive and/or delimiting structures (S. U. [100440] and [100441]–Phase II). These constructions seem to correspond to a “doble paramento” wall Type M.0 (Montanero Vico, 2020), although the size of the intervened area as well as the associated stratigraphic complexity do not exclude the possibility that these structures may have supported other buildings inside. Their relatively small thickness, with only 1.20 m in Phase II, reaching a maximum of 1.60 m in Phase III, contrasts with other known cases in the West (summary in Montanero Vico, 2020, pp. 359-367). They are, nonetheless, unique evidence in

the context of Iron Age occupation in Lisbon, where the remaining identified structures are about half a meter in thickness (Sousa, 2014; Sousa and Guerra, 2018 and 2023). Structures with these characteristics also appear in other areas of the Portuguese territory, specifically in Santa Olaia (Figueira da Foz), where they reach a thickness of 2 m (Pereira, 1997).

In the case of the structures identified in the ancient Sommer Warehouses, their geographical location near the riverbank is rather unusual. Therefore, it is suggested that these constructions should be considered also as delimiting elements of the occupied space, with their protective nature possibly more directed towards fluvial dynamics than to potential human incursions. This concern may have persisted throughout the 1<sup>st</sup> millennium BC, up to the Roman era, as the wall from that period is located only a few meters to the south (Filipe *et al.*, 2020; Ribeiro *et al.*, 2020). However, it is also important to consider the symbolic and ideological significance of Iron Age constructions, serving as both deterrents to potential attacks and tools for the appropriation of physical spaces. Unfortunately, there is currently no data available to reconstruct the originally delimited area by these structures or to determine if they were built only along the coastline or also in more inland areas. Further archaeological urban studies are required to uncover additional elements that will enable a more detailed characterization of these realities as well as their main function.

The later phase of occupation, Phase III, demonstrates an alteration in the urban plan of the space, closely related to port activities. At some point in the second half of the 8<sup>th</sup> century BC, possibly close to the end of the century, there was a need to create an access area to the Tagus River. This involved dismantling the eastern part of one of the walled structures to create a ramped area surrounded by a cofferdam, which could extend the ramp's length during low tide. The preserved width of this structure, at 1.80 m, indicates that its use was limited to small-sized vessels, which would later likely interact with larger ones, anchored nearby. Once again, this represents an exceptional finding in the context of Iron Age architectural elements in Portuguese territory, illustrating the significance of fluvial and maritime networks, not only in terms of communication and economic activities but also within the internal spatial organization of this earliest nucleus in the Lisbon area.

The final phase of this sequence includes deposits related to the abandonment of this zone, concurrently serving as preparation for a new construction phase, perhaps within the framework of urban reform affecting also other areas of the city, which will be analyzed in future works.

If the proposed interpretations mentioned above are confirmed, this scenario could offer new insights into distinct phases of intercultural contacts that occurred regionally at the mouth of the Tagus estuary during the early 1<sup>st</sup> millennium BC. This specifically refers to material evidence of Mediterranean origin found in locations with distinctly indigenous traditions, such as Santa Sofia (Vila Franca de Xira) (Pimenta and Mendes, 2010-2011; Pimenta et al., 2013), or even a wheel-thrown pottery fragment from the late Bronze Age levels of Alcáçova de Santarém (Arruda and Sousa, 2015, p. 183), originally considered intrusive but possibly related to this early chronological horizon. The dissemination of these materials may not have resulted from sporadic contacts (Non-Hegemonic Contact Mode–MCnH, Alvar Ezquerro, 2008) but rather from the effective presence of the first Phoenician groups in the territory, which were now establishing more systematic relationships with local communities. Despite their deeply asymmetric nature (Alvar Ezquerro, 2008; Wagner, 2001), these contacts, which involved negotiations, pacts, and distinct types of agreements, appear to have been successful judging by the presence of handmade products within the artifact repertoires of these early Iron Age moments, particularly in the ancient Sommer Warehouses, reflecting in turn an active collaboration by indigenous groups in the process of fixation of these exogenous communities in the Lower Tagus area. The Western-Phoenician foundation space at the mouth of the estuary would become, if it not already, a focal point of attraction and aggregation for these preceding communities, considering that the previous habitation spaces, dispersed throughout the territory, eventually disappeared at a contemporary or slightly earlier time to this phenomenon (Cardoso, 2015; Sousa, 2019).

The data gathered from the early phases of the Sommer Warehouses, along with those from Rua de São Mamede ao Caldas, correspond, in strictly contextual terms, to the oldest evidence of a permanent presence of Phoenician groups on the western Iberian facade, perhaps reflecting the initial stages of the effective colonization of the Far West. These findings appear to precede, by a few decades, the occupations of other important Phoenician coastal sites like Santa Olaia or Abul (Alcácer do Sal), indicating that the colonization process followed meticulously planned agendas which were established earlier on. Such agendas were undoubtedly linked to strategic resources enhanced by the Tagus River, encompassing both its natural resources and its facilitation of communication with more inland areas, whose wealth in metallic resources is widely known. This colonization strategy appears to have yielded success during the first half of the 1<sup>st</sup> millennium BC, evidenced by the growing importance of Lisbon within the regional context.

## ACKNOWLEDGEMENTS

We express our appreciation and gratitude to the editorial team of *Trabajos de Prehistoria* and the evaluators of this article for their insightful comments and corrections.

## DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## FUNDING SOURCES

Funded by FCT (Fundação para a Ciência e a Tecnologia, I.P.), through projects UIDB/00698/2020 (doi.org/10.54499/UIDB/00698/2020) / UIDP/00698/2020 (doi.org/10.54499/UIDP/00698/2020).

## AUTHORSHIP CONTRIBUTION STATEMENT

Elisa de Sousa: conceptualization, formal analysis, investigation, methodology, visualization, writing – original draft, writing – review & editing.

Ricardo Ribeiro: formal analysis, investigation, visualization, writing – review & editing.

Paulo Rebelo: formal analysis, investigation, visualization, writing – review & editing.

Nuno Neto: formal analysis, investigation, visualization, writing – review & editing.

## BIBLIOGRAPHY

- Alvar Ezquerro, J. (2008). “Modos de contacto y medios de comunicación: los orígenes de la expansión fenicia.” In: Celestino, S., Rafel, N. and Armada, X. L. (Eds.). *Contacto cultural entre el Mediterráneo y el Atlántico (siglos XII-VIII a.n.e.)*. La precolonización a debate. Madrid: CSIC, pp. 19-25.
- Arcelin, P. and Tuffreau-Libre, M. (Dirs.) (1998). *La quantification des céramiques. Conditions et protocole. Actes de la table ronde du Centre Archéologique Européen du Mont Beauvray (Glux-en-Glenne, 7-9 avril 1998)*. Glux-en-Glenne: Centre Archeologique Européen.
- Arruda, A. M. (1999-2000). *Los Fenicios en Portugal. Fenicios y mundo indígena en el centro y sur de Portugal (siglos VIII-VI a.C.)*. Barcelona: Universidad Pompeu Fabra.
- Arruda, A. M. and Sousa, E. (2015). Late Bronze Age in Alcáçova de Santarém (Portugal). *Trabajos de Prehistoria*, 72 (1), pp. 176-187. DOI: <https://doi.org/10.3989/tp.2015.12150>
- Aubet, M. E., Carmona, P., Curià, E., Delgado, A., Fernández Cantos, A. and Párraga, M. (1999). *Cerro del Villar. I. El asentamiento fenicio en la desembocadura del río Guadalhorce y su interacción con el hinterland*. Sevilla: Junta de Andalucía.
- Barros, L., Cardoso, J. L. and Sabrosa, A. (1993). “Fenicios na margem sul do Tejo. Economia e integração cultural do povoado de Almaraz – Almada.” *Estudos Orientais*, IV, pp. 143-181.
- Bikai, P. M. (1978). *The Pottery of Tyre*. Warminster: Aris and Phillips.

- Cardoso, J. L. (2015). "Between the Atlantic and the Mediterranean: the Late Bronze Age around the Tagus estuary (Portugal). Economic, social and cultural aspects." *Rivista di Scienze Preistoriche*, LXV, pp. 149-170.
- Cardoso, J. L. and Silva, I. M. (2004). "O povoado do Bronze Final da Tapada da Ajuda (Lisboa): estudo do espólio cerâmico." *Revista Portuguesa de Arqueologia*, 7 (1), pp. 227-271.
- Delgado, A. and Ferrer, M. (2007). "Cultural Contacts in Colonial Settings: the construction of new identities in Phoenician settlements of the Western Mediterranean." *Stanford Journal of Archaeology*, 5, pp. 18-42.
- Ferreira, L. F. V., Sousa, E., Pereira, M. F. C., Guerra, S. and Ferreira Machado, I. (2020). "An archaeometric study of Phoenician ceramics found at São Jorge Castle's hill in Lisbon." *Ceramics International*, 46 (6), pp. 7659-7666. DOI: <https://doi.org/10.1016/j.ceramint.2019.11.267>
- Filipe, V., Leitão, M., Leitão, V., Neto, N., Rebelo, P. and Ribeiro, R. (2020). "As muralhas de *Felicitas Iulia Olisipo*." In: Fabião, C. (Ed.). *Lisboa Romana, Felicitas Iulia Olisipo: a morfologia urbana*. Lisboa: Caleidoscópio, pp. 46-71.
- Furtado, C. (2013). *A cerâmica cinzenta do Castelo de Castro Marim*. Master Thesis, Lisbon University. Available at: <http://hdl.handle.net/10451/10943>
- García Menárguez, A. and Prados Martínez, F. (2014). "La presencia fenicia en la Península Ibérica: el Cabezo Pequeño del Estaño (Guardamar del Segura, Alicante)." *Trabajos de Prehistoria*, 71 (1), pp. 113-133. DOI: <https://doi.org/10.3989/tp.2014.12127>
- Gomes, A. and Gaspar, A. (2017). "Pavimentos da Idade do Ferro no Castelo de São Jorge." In: *Debaixo dos nossos pés. Pavimentos históricos de Lisboa*. Lisboa: EGEAC, pp. 90-91.
- López Castro, J., Ferjaoui, A., Mederos, A., Martínez Hahn Müller, V. and Ben Jerbania, I. (2016). "La colonización fenicia inicial en el Mediterráneo central. Nuevas excavaciones arqueológicas en Utica (Túnez)." *Trabajos de Prehistoria*, 73 (1), pp. 68-89. DOI: <https://doi.org/10.3989/tp.2016.12164>
- Montanero Vico, D. (2020). *Fortificaciones y poliorecética fenicio-púnica en el Mediterráneo central y occidental (siglos IX-II a.C.)*. PhD Thesis, University of Barcelona. Available at: <http://hdl.handle.net/10803/670396>
- Neto, N., González, C., Rebelo, P., Santos, R. and Rocha, M. (2013). "Trabalhos arqueológicos na Quinta Nova de Santo António ou dos Ingleses – Carcavelos. A ocupação do Bronze Final." *Cira – Arqueologia*, 2, pp. 19-39.
- Neto, N., Rebelo, P., Ribeiro, R., Rocha, M. and Zamora López, J. A. (2016). "Uma inscrição lapidária fenícia em Lisboa." *Revista Portuguesa de Arqueologia*, 19, pp. 123-128.
- Olaio, A. (2018). "O povoado da Quinta do Almaraz (Almada, Portugal) no âmbito da ocupação no Baixo Tejo durante o 1º milénio a.n.e.: os dados do conjunto anfórico." *Spal*, 27 (2), pp. 125-163. DOI: <https://doi.org/10.12795/spal.2018i27.18>
- Pereira, I. (1997). "Santa Olaia et le commerce atlantique." In: Étienne, R. and Mayet, F. (Eds.). *Itinéraires lusitaniens. Trente années de collaboration archéologique luso-française. Actes de la réunion tenue à Bordeaux (7-8 avril, 1995)*. Paris: De Boccard, pp. 209-253.
- Pimenta, J. and Mendes, H. (2010-2011). "Novos dados sobre a presença fenícia no vale do Tejo. As recentes descobertas na área de Vila Franca de Xira." *Estudos Arqueológicos de Oeiras*, 18, pp. 591-618.
- Pimenta, J., Silva, R. and Calado, M. (2014). "Sobre a ocupação pré-romana de Olisipo. A intervenção arqueológica urbana da Rua de São Mamede ao Caldas n.º 15." In: Arruda, A. M. (Ed.). *Fenícios e Púnicos, por terra e mar. Actas do VI Congresso Internacional de Estudos Fenícios e Púnicos (Lisboa 2005)*. Lisboa: Centro de Arqueologia, pp. 712-723.
- Pimenta, J., Soares, A. M. and Mendes, H. (2013). "Cronologia absoluta para o povoado pré-romano de Santa Sofia (Vila Franca de Xira)." *Cira – Arqueologia*, 2, pp. 181-194.
- Pimenta, J., Sousa, E. and Amaro, C. (2015). "Sobre as mais antigas ocupações da Casa dos Bicos – Lisboa: da Olisipo pré-romana aos primeiros contactos com o mundo itálico." *Revista Portuguesa de Arqueologia*, 18, pp. 161-180.
- Ramon Torres, J. (1995). *Las ánforas fenicio-púnicas del Mediterráneo central e occidental*. Barcelona: Universitat.
- Ramon Torres, J. (2008). "Eivissa fenícia i les comunitats indígenes del sud-est." In: García, D., Moreno, I. and Gracia, F. (Coords.). *Contactes. Indígenes i fenícis a la Mediterrània occidental entre els segles VIII i VI a.n.e. Signes, disseny i comunicació*. Barcelona: Museu de Arqueologia de Catalunya, pp. 39-53.
- Ribeiro, R., Neto, N., Rebelo, P. and Rocha, M. (2020). "Dados preliminares de uma intervenção arqueológica nos antigos Armazéns Sommer (2014-2015). Três mil anos de história da cidade de Lisboa." In: *II Encontro de Arqueologia de Lisboa. Atas*. Lisboa: Centro de Arqueologia de Lisboa e Câmara Municipal de Lisboa, pp. 222-245.
- Rouillard, P., Gailledrat, E. and Sala F. (2007). *L'établissement protohistorique de La Fonteta (fin VIIIe – fin VIe siècle av. J.C.)*. Madrid: Casa de Velázquez.
- Rufete Tomico, P. (1988-1989). "Las cerámicas con engobe rojo de Huelva." *Huelva Arqueológica*, X-XI (3), pp. 10-40.
- Ruiz Mata, D. (2022). *La ciudad fenicia del Castillo de Doña Blanca (El Puerto de Santa María, Cádiz). Historia y Arqueología. Investigaciones (1979-2003)*. Barcelona: Bellaterra.
- Ruiz Mata, D. and Pérez, C. J. (1995). *El poblado fenicio del Castillo de Doña Blanca (El Puerto de Santa María, Cádiz)*. El Puerto de Santa María: Ayuntamiento de El Puerto de Santa María (Biblioteca de Temas Portuenses, 5).
- Sáez Romero, A. (2014). "Oculto bajo el barniz. Aproximación inicial a las producciones grises de Gadir de época tardoclásica-helenística (siglos -IV/-III)." In: García Fernández, F. J. and García Vargas, E. (Eds.). *Comer a la moda. Imitaciones de vajilla de mesa en Turdetania y la Bética occidental durante la Antigüedad (s. VI a.C. – VI d.C.)*. Barcelona: Universidad, pp. 79-118.
- Sala Sellés, F. (2007). "La cerámica grise." In: Rouillard, P., Gailledrat, E. and Sala F. (Eds.). *L'établissement protohistorique de La Fonteta (fin VIIIe – fin VIe siècle av. J.C.)*. Madrid: Casa de Velázquez, pp. 199-212.
- Sánchez-Moreno, V., Galindo San José, L., Juzgado Navarro, M. and Dumas Peñuelas, M. (2012). "El asentamiento fenicio de La Rebanadilla a finales del siglo IX a.C." In: García Alfonso, E. (Ed.). *Diez años de arqueología fenicia en la provincia de Málaga (2001-2010)*. Sevilla: Junta de Andalucía, pp. 67-75.
- Silva, R. B. (2013). "A ocupação da Idade do Bronze Final da Praça da Figueira (Lisboa): novos e velhos dados sobre os antecedentes da cidade de Lisboa." *Cira – Arqueologia*, 2, pp. 40-102.
- Sousa, E. (2014). *A ocupação pré-romana da foz do Estuário do Tejo*. Lisboa: Centro de Arqueologia.
- Sousa, E. (2015). "The Iron Age occupation of Lisbon." *Madrider Mitteilungen*, 56, pp. 109-138.
- Sousa, E. (2016). "A Idade do Ferro em Lisboa: uma primeira aproximação a um faseamento cronológico e à evolução da cultura material." *Cuadernos de Prehistoria y Arqueología de la UAM*, 42, pp. 167-185. DOI: <http://dx.doi.org/10.15366/cupauam2016.42.006>
- Sousa, E. (2019). "O povoamento na área do *ager olisiponensis* em época pré-romana." In: *Lisboa Romana. O *ager olisiponensis* e as estruturas de povoamento*. Lisboa: Caleidoscópio, pp. 17-29.
- Sousa, E. (2021). "A cerâmica cinzenta do estuário do Tejo durante a Idade do Ferro: algumas precisões sobre a sua cronologia, tipologia, produção e consumo." *Cuadernos de Prehistoria y Arqueología de la UAM*, 47 (1), pp. 127-167. DOI: <https://doi.org/10.15366/cupauam2021.47.1.005>
- Sousa, E. and Arruda, A. M. (2018). "A Idade do Ferro na Alcáçova de Santarém (Portugal): os resultados da campanha de 2001." *Onuba*, 6, pp. 57-95. DOI: <https://doi.org/10.33776/onoba.v0i6.3403>
- Sousa, E. and Guerra, S. (2018). "A presença fenícia em Lisboa: novos vestígios descobertos no alto da colina do Castelo de São Jorge." *Saguntum*, 50, pp. 57-88. DOI: <https://doi.org/10.7203/SAGVNTVM.50.10636>
- Sousa, E. and Guerra, S. (2023). "A ocupação da Idade do Ferro de Lisboa (Portugal): novos dados sobre as intervenções realizadas no Largo de Santa Cruz." *Spal*, 32-2, pp. 76-114. DOI: <https://doi.org/10.12795/spal.2023.i32.13>
- Sousa, E. and Pimenta, J. (2014). "A produção de ânforas no Estuário do Tejo durante a Idade do Ferro." In: Morais, R., Fernández, A.

- and Sousa, M. J. (Eds.). *As Produções Cerâmicas de Imitação na Hispânia. Monografias Ex Officina Hispana II*. Porto: Faculdade de Letras da Universidade do Porto, pp. 303- 316.
- Sousa, E., Pimenta, J., Silva, I., Mendes, H., Arruda, A. M. and Dorado-Alejos, A. (2020). “Ânforas da Idade do Ferro e de tradição pré-romana do Porto do Sabugueiro (Muge, Portugal).” *Spal*, 29 (1), pp. 129-156.  
DOI: <http://doi.org/10.12795/spal.2020.i29.05>
- Sousa, E. and Pinto, M. (2016). “A ocupação da Idade do Ferro na colina do Castelo de São Jorge (Lisboa, Portugal): novos dados das escavações realizadas na Rua do Recolhimento/Beco do Leão.” *Apontamentos de Arqueologia e Património*, 11, pp. 59-67.
- Torres, M., López Rosendo, E., Gener Basallote, J. M., Navarro García, M. A. and Pajuelo Sáez, J. M. (2014). “El material cerámico de los contextos fenicios del “Teatro Cómico” de Cádiz: un análisis preliminar.” In: Botto, M. (Ed.). *Los Fenicios en la Bahía de Cádiz. Nuevas investigaciones*. Pisa-Roma: Fabrizio Serra, pp. 51-82.
- Vallejo Sánchez, J. I. (2015). *Las cerámicas grises orientalizantes en la Península Ibérica*. PhD Thesis, University of Cádiz. Available at: <https://produccioncientifica.uca.es/documentos/5febd9125ef7446310f940e4>
- Wagner, C. (2001). “Comercio, colonización e interacción cultural en el Mediterráneo antiguo y su entorno.” In: López Castro, J. L. (Coord.). *Colonos y comerciantes en el Occidente mediterráneo*. Almería: Universidad, pp. 13-56.