

AN INSCRIBED PUNIC AMPHORA STAMP UNEARTHED AT THE SITE OF MAS CASTELLAR DE PONTÓS (GIRONA, SPAIN)

MONICA BOUSO*

Abstract: The aim of this article is to present a stamp seal on the handle of a Punic amphora manufactured originally in the Central Mediterranean and recovered in the fill of an abandoned silo at the Iberian site of Mas Castellar de Pontós (Girona, Spain).

Keywords: Amphora stamp, Punic, inscription, Iberian Peninsula, Protohistory, trade

1. INTRODUCTION¹

The purpose of this study is to describe and interpret a Punic inscription on a stamp seal on the upper part of an amphora handle manufactured in the Central Mediterranean region. The fragment was recovered in the fill of a silo abandoned in about 350 BCE² at the Iberian settlement of Mas Castellar de Pontós (Alt Empordà).

Stamping ceramic containers has its roots in the eastern Mediterranean Levant in the 17th or 16th century BCE. Finds of this type at the site of Gezer are described as «single letters incised on storage jars before firing, which indicated either their contents, their owners, or their place of origin».³ The practice spread throughout the Mediterranean, especially during the Hellenistic period.⁴ The seal examined in this study thus corresponds to the practice of stamping Punic containers intended for trade, most often on their handles. These seals generally comprise two letters despite cases with more and at times accompanied by symbols, as well as cases bearing no inscription. The letters are interpreted as abbreviations, specifically of personal names.⁵

A catalogue of these types of stamps compiled by Joan Ramon⁶ lists about 350 linked to Punic amphorae from regions of the Central and Western Mediterranean. A more recent study by Jose Ángel Zamora⁷ assembled about 60 inscriptions on stamps specifically in the Iberian Peninsula and the Balearic Islands.⁸

* Universitat de Lleida; monica.bouso@udl.cat; mbousog@uoc.edu; <https://orcid.org/0000-0001-6232-8878>.

1 My deepest appreciation goes to those who have lent me assistance for this article. Dr. Enriqueta Pons, director of the excavations of Mas Castellar de Pontós, requires special recognition for allowing me to study and publish the artefact. I am likewise grateful to Ramon Buxó, director of the MAC-Girona, for allowing access to the object, and to the staff of the Museum for the photograph. I also wish to thank Pietro Buscema for his help with the drawing and the final version of many of the figures. Finally I highly appreciate the constructive comments of the two anonymous reviewers.

2 Although this article represents the first detailed analysis of this stamp, a drawing of it appeared in an article by Ferrer *et al.* 2014-2016 focusing on Iberian inscriptions discovered at the site of Mas Castellar de Pontós.

3 Peckham 2014, pp. 8-9.

4 Zamora 2010, p. 337; Tremoleda – Santos 2013.

5 Amadasi Guzzo 1990, pp. 26-27 and see Israel 1995 for the structure of Punic personal names.

6 Ramon 1995, p. 245.

7 Zamora 2010, p. 337.

8 See Zamora 2022 for a general overview of Phoenician epigraphic finds in the Iberian Peninsula and see Sáez – Ferrer 2018 for the study of anepigraphic stamps on transport containers from Cadiz.

Ramon's research indicates that the stamping took place in Punic workshops of western Sicily and/or around the area of Carthage-Tunis, as well as on the island of Malta. Although this practice appears to have begun in the last quarter of the 5th century BCE, most of the evidence is from the second quarter of the 4th century BCE. It spread to the south of the Iberian Peninsula, more specifically to the pottery workshops in the region of Cadiz, as well as to those of the Island of Ibiza.⁹ An Ebusitan amphora with a seal dated to the 4th century BCE unearthed at the Iberian site of Puig de la Nao de Benicarló (Castellón) is one of the oldest examples found in the Iberian Peninsula and the earliest from an Ebusitan workshop.¹⁰

Recent specific research on Punic stamp finds in the Iberian Peninsula suggest that they date to the first half to the 4th century BCE and that their number grew in the 3rd century BCE. It appears, based on the few cases from the 1st century BCE, that they disappeared just before the change of Era,¹¹ a moment that coincides with the disappearance of Phoenician inscriptions and when Punic personal names begin to appear in Latin alphabet.¹²

The study of these types of stamps obviously yields valuable information both on ancient trade throughout the Central and Western Mediterranean as well as on linguistic (scripts and language) and evolutive aspects in specific areas and timeframes. This is nonetheless a complex task due to the partial nature of the record. In the first place, as these amphorae were stamped prior to their firing, the action was carried out in the workshops that produced them. Hence the need of identifying the centres of production of each amphora type, the lifespan of each production, their respective stamps as well as determine their contents of the containers and specify where they were destined.

Unfortunately, much of this information is elusive. As most of the stamps are on sherds, mainly handle fragments, it is often impossible to determine their amphora type, hence impossible to identify either their workshop or when they were manufactured. Furthermore, many stamps are only known through old publications that offer no find-spot data. Therefore, for the moment there is not enough evidence allowing to draw up hypotheses as to the distribution of stamps based on workshop location.

Another unresolved issue is the meaning of the seals. It must be borne in mind that stamps were in use over a long period suggesting that their significance probably evolved and differed from one area to another. It is for this reason that it is necessary to define the finds accurately and link them to their areas of production. In this sense, this article only focuses on those carried out with tools on fresh clay prior to the firing, traditionally interpreted as potter's marks. This study does not take into account *post coctionem* inscriptions such as graffiti or paintings, generally interpreted as owner's marks, as there is no information as to their authorship.¹³

The stamp brought to light at Mas Castellar de Pontós can now be added to the corpus of inscriptions from the Iberian Peninsula. This article will first delve into the context of its discovery, the characteristics of the amphora and its seal, before offering a palaeographic commentary. The study will then offer parallels before examining the hazards involved in interpreting this type of inscription before advancing possible interpretations.

9 Ramon 1995, pp. 249-252.

10 Zamora 2005. Ramon and Amadasi state the following on this question: «En este punto conviene poner de relieve una diferencia mecánica obvia en relación a los talleres cartagineses o sardos y es la costumbre ebusitana, en el siglo IV aC de imprimir estos sellos, no en las asas – como contemporáneamente era práctica sistemática en los talleres del Mediterráneo central – sino cerca de ellas, pero en el cuerpo o incluso en el cuello. Esta costumbre afectaría, pero como se ha dicho, mucho tiempo después, los talleres de Gadir, donde también existen algunos tipos de recipientes – encuadrables en T.8211 y SG-12110 – con sellos en el cuerpo, mientras que en la propia Ibiza las estampillas, ya citadas, sobre ánforas del siglo II aC, T.8132, son en cartela rectangular y se imprimen sobre las asas» (2009, p. 731).

11 Zamora – Niveau de Villedary 2008, p. 75.

12 Zamora 2005, pp. 70-71.

13 Guerrero 1986, pp. 155, 175; Ramon 1995, p. 253; Belmonte – Filigheddu 2000-2001, p. 505.



FIG. 1. Map of the northeast of the Iberian Peninsula with the position of Mas Castellar de Pontós (adapted from Institut Cartogràfic de Catalunya).

2. THE CONTEXT OF THE STAMP SEAL

2.1. *The site of Mas Castellar de Pontós (Alt Empordà, Girona)*

The settlement of Mas Castellar de Pontós is located on the western edge of the Ampurdan Plain between two rivers, a tributary of the Muga to the north and the Fluvià to the south, 17 km inland from the Greek coastal colonies of *Emporion* and *Rhode* (FIG. 1). Undoubtedly, this privileged geographical location explains its evolution from a fortified settlement to a more complex open urban centre overseeing cereal storage and trade between the local Iberian communities and the two foreign colonies. Its archaeological features, extending over a surface of approximately 5 ha, can be divided into several sectors. The upper plateau (2.5 ha), yielding most of the features, is known as “Camp de Dalt” while the lower area between Ditches 1 and 2, is the second main area known as “El Camp de Baix” (2 ha)¹⁴ (FIG. 2). The site’s chronological sequence, ranging between the 7th to 2nd century BCE, can be broken down into six phases starting with Period I (850-700 BCE) and ending with Period VI (180-170 BCE).¹⁵

14 Pons 2002; Pons *et al.* 2016, p. 27.

15 Pons *et al.* 2010, pp. 105-107.

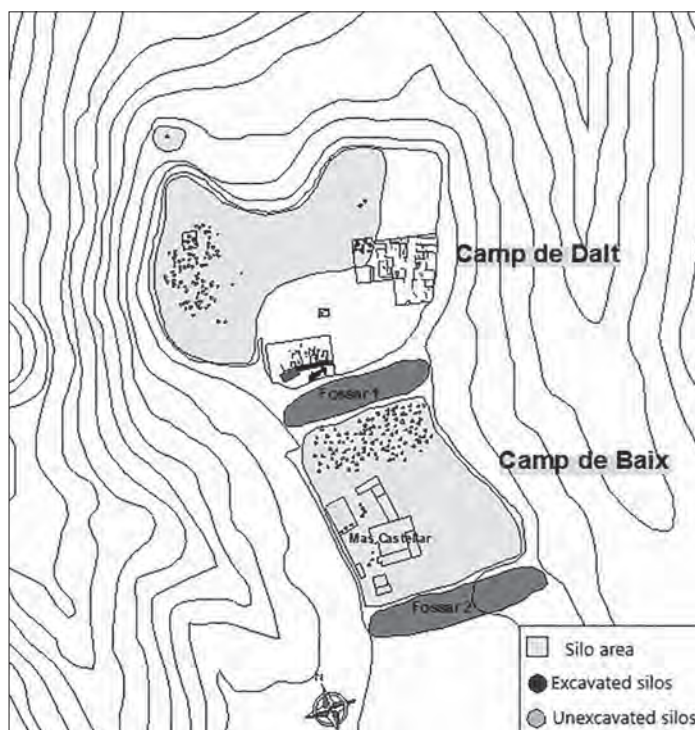


FIG. 2. Plan of the site of Mas Castellar de Pontós (from Pons 2005).

To date most of the archaeological work focused on the upper “Camp de Dalt” sector. Its southwestern area features a fortified village or *oppidum* (425-350 BCE) as well as other defensive features including two ditches and, to the south, a fortified wall.

Traces of an older settlement (450-425 BCE) were identified below the tower of the *oppidum*. These older features in fact were re-used to support the tower. The older settlement features a rectangular building (ES516) comprising three units, notably a central space divided into three enclosures flanked by two rooms to the south and west. Recent excavations in this sector below building ES516 (Zone 33) brought to light three older levels dating to about 525-450 BCE (Phase IIa). These correspond to two successive floors and the fill of a feature, possibly a cistern, sunk into the substrate.¹⁶

Subsequent to the abandonment and dismantlement of the *oppidum*, the occupants moved to the northeastern area of the “Camp de Dalt” where they established a rural settlement (devoid of fortifications) which endured from 300 to 180 BCE.¹⁷

Noteworthy in both “Camp de Dalt” and “Camp de Baix” is the great number of underground silos. These structures extending over a surface of about 2.5 ha saw use between the 7th and the beginning to the 2nd century BCE with a peak in the 4th century.¹⁸ They occupy both the areas devoid of buildings and throughout the *oppidum* (e.g., FS337 and FS434) dug through layers of demolition corresponding to its abandonment.¹⁹ Other structures dated to the 4th century BCE, besides silos, were brought to light in the southeast corner of the “Camp de Baix”.²⁰

Prior to this study, the inscriptions from this site were grouped into Greek, Latin and Iberian (the first the most frequent). A noteworthy Greek example is on an Attic *kylix* of “painted *kalós*” type.²¹ Among the Greek inscriptions are also 23 published examples on amphora seals. They can be subdivided for the most part into Graeco-Italic amphorae (20), one or two on Massaliote amphorae, and one containing a single letter inside a circular cartouche on a Central Mediterranean Punic amphora. The corpus of Latin inscriptions includes a seal and 3 graffiti on Graeco-Italic amphorae.²² Twenty-one of the inscriptions in Iberian script

16 Asensio *et al.* 2017, pp. 124-126.

17 Pons *et al.* 2010, pp. 110-117.

18 Bouso *et al.* 2002.

19 Pons *et al.* 2016, pp. 33-34.

20 Pons *et al.* 2016, p. 19.

21 De Hoz 2014, p. 137.

22 García Sánchez 1998; 2002.

are published (20 on pottery and one on lead). Those inscribed on pottery can be broken down into Attic, specifically *skyphoi* (13), Campanian A ware (2), and ostraca on plain Iberian ware (1), on Iberian low-fired ware (3) and on a Graeco-Italic amphora (1).²³ Silo (SJ434), apart from yielding the Punic fragment presented in this article, yielded four other inscribed Attic *skyphoi* sherds.

This last Punic inscription consisting of two letters on a stamp seal of an amphora originating in the Central Mediterranean area thus updates the corpus of inscriptions of Mas Castellar. The artefact came to light in the fill of a silo in front of House 4 of the fortified settlement during the excavation campaigns of 2002 and 2003.

2.2. Silo 434, Zone 30

The silo yielding the stamp is located in Zone 30 to the south of “Camp de Dalt” where the fortified village was raised in the second half of the 5th century BCE. Several houses were attached to the fortified wall in a first phase between the 450-400 BCE (Period IIIa, phase 3D). The defensive system including the wall and the tower was dismantled in about 400 BCE leading to a modification of the houses obliging them to raise new back walls to replace the original wall (Period IIB, phase 3C, 400-375 BCE). The settlement was finally abandoned in about 350 BCE²⁴ (Fig. 3).

Silo SJ434 containing the Punic inscription is located in front of House 4 (Fig. 4). The excavation of this rectangular north-south oriented structure (9 x 5.50 m; 44 m²) yielded no northern wall. It appears that this space was open and served for collective use during the second phase of occupation.²⁵

The silo was then backfilled around 350 BCE during the abandonment of the *oppidum* corresponding to Period IV (375 and 325 BCE).²⁶ The upper section of the silo was disturbed by a later hearth (FR349) that took advantage of a sort of crown of pebbles originally serving to consolidate the mouth of the silo.²⁷

The circular mouth of the silo measures 120 cm in diameter. Its general form is globular (Fig. 5) and estimated to have held a volume of 1.921 litres. The section reveals that it cut through a series of archaeological levels to a depth of between 106 and 120 cm from where it pierced the bedrock (conglomerate). Probably related to the instability of these levels, its uppermost section was reinforced with a mixture of earth and pebbles measuring between 8 and 12 cm.²⁸

The fill of the silo consisted of six layers of debris divided into two main phases. The first, comprising upper units UE30265, 30267 and 30280, is a soft and loose of ash containing abundant burned organic elements (animal bones, seeds, charcoals, slags, potsherds). Unit UE30280, a soft, heterogeneous amalgam of clay, ash and charcoal, 30 and 40 cm thick and sloping to the north, is of interest here as it yielded the amphora fragment with the Punic stamp. As noted, this phase of the fill contained the greatest number of pottery, notably 648 sherds (corresponding to 42 individuals), including the stamped Punic amphora and the *skyphoi* bearing graffiti. It likewise contained burned animal bones (380), iron slag (42), several bronze objects (a pair of tweezers and several fibulae fragments), a discoidal object of lead and building materials. The second main phase comprising layers UE30285, 30289 and 30294 is characterised by clayey-sandy soils containing a few ashes and little organic material. Its base yielded a large slab (56 x 51 cm) that may originally have served as the silo's lid. Otherwise, a total of 460 litres were collected for sampling from the

23 Panosa 2002 and Ferrer *et al.* 2014-2016.

24 Pons 2002; Pons *et al.* 2016, p. 22.

25 Pons *et al.* 2016, p. 29.

26 Pons *et al.* 2016, pp. 20, 22.

27 Pons *et al.* 2016, pp. 22-24.

28 Pons 2005.



FIG. 3. Detail of Zone 30 in the “Camp de Dalt” sector of the site of Mas Castellar de Pontós (from Pons 2005).



FIG. 4. View of Silo SJ434 in Zone 30 of the “Camp de Dalt” sector (from Pons 2005).

first organic phase of the fill. The carpological analyses (D. Canal) identified cereal, legume, fruit and synanthropic plant remains. Other analyses have focused on anthracological and animal remains.²⁹

The analysis of the pottery reveals that the assemblage of Mas Castellar de Pontós falls in line with those of other sites from the same timeframe concerning proportions of imported and local ware. The imports form 25.4% of the total number and 38.8% of the total individuals. Fine ware, in turn, outnumbers (81%) that of amphorae (19%). Most of the imports consist of fine ware from Attica (90%) while most of the amphorae are Punic (49% Central Mediterranean and 26% Punic-Ebusitan) followed by small proportion from *Massalia* (24%) and a negligible number of unknown origin (1%). These percentages are somewhat higher than those of most of the contemporary Iberian sites in the Catalan area.³⁰ Even so, they follow the general trend observed in this sector of the Iberian coastline between 450 and 200 BCE, that is, most of the maritime transport containers are Punic (80%-90%).³¹

Finds of black slip ware (102 fragments equating with 17 individuals) consist for the most part of *skyphoi* (12). Of the lot, one presents a complete profile and three fragments bear Iberian graffiti (MC'03-30280-4, 30280-5, 30265-2 and 30280-7).³² A lesser number from Attic Greece consist of four fragments of red figure ware and one fragment of what is probably a light-coloured vase, specifically the rim of a *kylix* presumably from a western Greek workshop (either *Emporion* or *Massalia*). Imported amphorae into the Iberian sites of the northeast of the Peninsula usually come from Punic workshops in *Massalia* or Ibiza. Examples are a Massaliote amphora (with a pointed base of Bertucchi 3 or 4 type) and two rims typical of Punic-Ebusitan productions (T-8.1.1.1 or A-PE-14 type). Those of Central Mediterranean origin are represented by the most characteristic shape of the period, notably the Ramon T-4.2.1.5 type. These last two are represented by an almost complete vessel missing its upper third (MC'03-30280-24) and several fragments, notably a rim and a stamped handle (MC'03-30280-23),³³ the object of this study.

The pottery assemblage is completed by locally produced Iberian hand-made (24%) and wheel-thrown ware (76%). These consist of *Indiketes* white painted vessels (3%), a single sherd of either an Iberian painted, Iberian low-fired or grey ware from the Catalan coast (10%). Worth highlighting among this last group is an imitation *skyphos* handle bearing an Iberian graffiti. The main group consists of oxidised Iberian ware (45% and 14 individuals, notably 8 *skyphos* imitation rims). It is noteworthy that of all the pottery in the fill of the silo, 21 are *skyphoi* (12 Attic and 9 Iberian broken down into 8 oxidised and 1 of low-fired) rep-

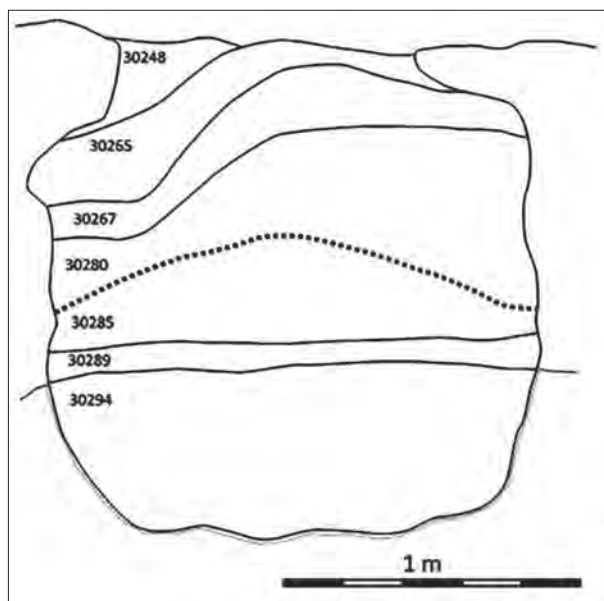


FIG. 5. Drawing of its section (adapted from Pons 2005).

29 Pons 2005.

30 Pons 2005.

31 Asensio 2011, p. 231.

32 Cfr. Ferrer *et al.* 2014-2016.

33 Pons 2005.

representing 30% of the individuals. Finally, the Iberian oxidised production corresponds to amphorae (43%, 13 individuals) making up 72% of all the amphorae in the silo.³⁴

According to finds in its fill, it is plausible to interpret that its primary function was that of a silo followed by a secondary use as a waste pit. The finds recovered in its different layers, notably the combination of burned animal bones and other remains unaltered by fire, suggest the debris had different origins. The burned finds (bones, potsherds and building elements) presumably were either culinary discards and other materials related to a domestic hearth installed near the pit. Based on the high proportion of ash and slag, the others could be linked to craftwork, possibly metalworking. The finds from the lower units of the fill are very fragmented and show no signs of thermal alteration indicating that the silo may have remained open and was filled progressively in a natural manner. In any case, it definitively served for storage during the last phase of occupation of the sector before being reused for waste at the abandonment of the zone.

3. THE SEAL INSCRIPTION

3.1. *Description of the medium of the seal*

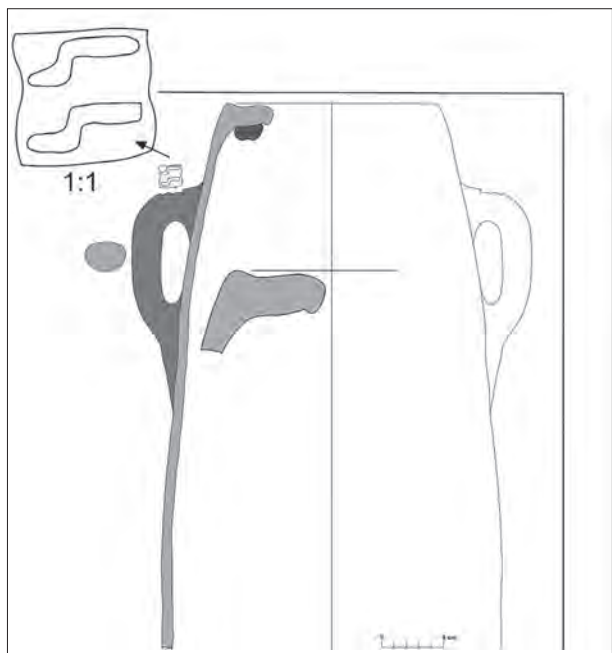


FIG 6. Drawing of the amphora with the stamp seal (with details of the inscription and the rim) discovered at Mas Castellar de Pontós (adapted from Ferrer *et al.* 2014-2016, fig. 16,10).

The vessel bearing the seal is a carinated Punic Central Mediterranean amphora classified by J. Ramon as T-4.2.1.5 (formerly known as the Mañá D type) (FIG. 6).

It is a cylindrical amphora which, like type T-4.2.1.8, features a new particular shape consisting of a flat discoidal rim, no neck and an ogival body ending in a button. Its large handles are arched, semi-circular in profile and oval in section. Its exterior exhibits horizontal ribbons over the central two thirds of its body. Its fabric is characteristic, according to Ramon,³⁵ of amphorae from the Carthaginian-Tunis area. From the chronological standpoint, this narrow rimmed type is characteristic of the period between 375-325 BCE. The type continued to be manufactured (albeit with wider rims) until the first half of the 3rd century BCE.³⁶

The type was produced in Tunisia, probably in the Punic villages in the area of Tunis (such as Cap Bon) and in other areas of North

³⁴ Pons 2005.

³⁵ «En cuanto a la mineralogía, destacan los componentes siguientes: arenilla de cuarzo traslúcido de grano fino a mediano, muy abundante y característico, nódulos de calcita en cantidad y tamaño variable, puntos de cal, de tamaño y cantidad variable, es frecuente que representen ‘erupciones’, núcleos minerales marrón y marrón-rojo y de materia férrica, de tamaño fino a grueso, en cantidad normalmente escasa, nódulos de calcita blanca (trituración artificial) esporádicos, de calibre muy variable (hasta 6-8 mm), elementos malacológicos en cantidad y calibre variable» (Ramon 1995, p. 259).

³⁶ Ramon 1995, p. 189.

Africa. Large numbers were traded along the northwestern Mediterranean coastline. The type forms part of the cargo of the El Sec shipwreck off Majorca, at sites along the coast of Ibiza, and in the Peninsula at Empúries and in the Iberian settlements of Torre dels Encantats and Castell de Vallgorgina. Finds along western Sardinia are also known at Tharros.³⁷ The proportion of imported amphorae at Mas Castellar de Pontós in general, and Punic amphorae in particular, as pointed out by other research, reveals values that are higher than those at other key Iberian sites such as Ullastret. These percentages can be as high as 5.2% for the second half of the 5th century and 13% for the 4th century BCE, and be due either to Punic-Ebusitan or the Central Mediterranean imports representing more than 80% of the total amphora.³⁸ These numbers therefore reveal the significance of the object studied here as it is to date the only find of this type bearing a seal.

The find is made up of 17 fragments (rim, part of the body and one of its handles) basically representing about two thirds of the amphora (inv. no. MC30280-23). Its hard fabric bears a yellowish outer patina and a pinkish interior. Certain of its rim and handle sherds are blackish-brown stemming from slight thermo alteration.

3.2. *The reading of the inscription*

The seal was stamped on the upper exterior of the handle (of oval section) while the clay was still wet, hence before its firing clearly indicating the action was carried out in the potter's workshop. Its position renders it perfectly legible (FIG. 7). As the other handle is missing, it is not possible to know, as in other cases of this type (cfr. *infra*), whether the second handle also bore a seal.

The seal is within a square cartouche (1.7 mm) with one slightly curved edge (FIG. 8). It is deeper (2 mm) nearer the handle's attachment compared to its opposite side (hardly 1 mm) indicating a lack of uniformity of pressure applied to the wet clay. The stroke of each of the letters, slightly in relief, is nonetheless clear.

The two identical signs are identified as Punic, a northwestern Semitic language. Although specialists have considered Phoenician and Punic to be "one and the same", their distinction³⁹ is based on modern linguistic criteria founded on dialectal developments.⁴⁰ The signs are in a Punic script known to Carthage before spreading throughout the western Phoenician lands during the 4th-3rd centuries BCE prior to developing in its own course until the 2nd century BCE.⁴¹

The graphemes, about 2 mm in width, are in relief separated by about 5 mm in the upper and lower area and by 3 mm in the centre. Their shape appears to correspond to two *nuns*. The dimensions of the shortest upper strokes are respectively 5 and 7 mm (a difference probably due, as stated above, to the lack of a uniform pressure when stamping). The horizontal stroke turning to the right measures 5 mm and the lower vertical stroke, longer than the upper, is 10 mm. The beginnings and endings of the strokes are generally rounded.

These characteristics match the forms of *nuns* known for this period.⁴² According to Peckham:

«*Nun* develops, for the most part, as in general Phoenician. By the fourth century the left side of the head has begun to lengthen and/or slant or curve back to the right. In the third century both features develop

37 Ramon 1995, pp. 189, 258, 286.

38 Pons *et al.* 2010, p. 110.

39 J. Prag notes that this distinction is not based on any historical fact: «There is, in fact, very little basis in the ancient terminology for the modern distinction between Phoenicians and Punic, or even between eastern and western Phoenicians» (2014, p. 22).

40 Amadasi – Röllig 1995, pp. 185-192.

41 Amadasi Guzzo 1990, p. 30; Peckham 1968, p. 219.

42 Friedrich – Röllig 1999, pl. IV.



FIG. 7. Vertical view of handle and the inscription (Courtesy of MAC-Girona).

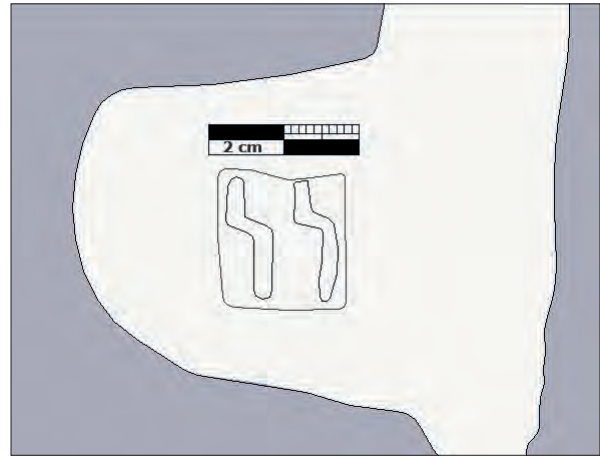


FIG. 8. Drawing of the inscription (author's elaboration).

further, the head either becoming rather fully rounded or as long as the shaft. In the third century again, the shaft shortens and slants farther to the right and may develop a curved foot by the end of the century. In the second century *nun* may be tilted to the left but regularly follows the pattern of development of the third century. In a form influenced by the cursive development of a straight-line *nun*, the upper head line and baseline are drawn in a continuous stroke down to the top of the shaft. This form is found in the latter part of the fourth century and throughout the third century». ⁴³

The graphemes could also be read as two *lameds* in a dextrogyral position. As will be noted below, it is not unusual to find stamps with dextrogyral letters. This can be explained by the carelessness of the craftsmen charged with stamping the seals ⁴⁴ as opposed to the expertise exhibited by stamps on luxury pieces where more attention is given to details.

Peckham states the following regarding the *lamed* identified in this period:

«*Lamed*, as generally in Phoenician, develops very slowly in the Punic script. The more formal square foot may be kept until the latest period, but is rare in the second century. Beginning in the latter part of the fourth century a tick develops to the right on the top of the shaft, but its use is not systematic. Beginning in the third century the shaft tends to bend or tilt farther to the left, but rarely lengthens noticeably. As in the Tyrian inscriptions, the dropline may lengthen considerably. Again, in many instances the foot and dropline are drawn in a single curved stroke, as in the cursive script. In this form, which is not found before the last half of the third century, the 'foot' soon slopes down right below horizontal (...) The single-stroke *lamed* appears by the end of the fourth century in the Giron papyrus, probably by the simple omission of the independent curvet-foot; this curved foot with a finely tapering shaft is found, for example, in the fifth century Cyprian tariff (CIS 86B) and the fourth-century Bat Yam jar inscription. In these instances, however, the shaft is drawn from above downward. The emergence of the cursive form which is drawn upward cannot be dated precisely, but the far rightward loop in which it is drawn evidently influenced the stance of the Punic *lamed* in the third century». ⁴⁵

43 Peckham 1968, p. 213.

44 Ramon 1995, p. 245.

45 Peckham 1968, pp. 210-211.

Thus, although the signs are most probably *nuns*, it is not possible to exclude that they could be *lameds* due to the difficulty, as noted, in distinguishing the two letters.⁴⁶ Furthermore, as *lameds* are the longest Punic graphemes, their position and their form are often altered when tracing them in the space available in the cartouche.⁴⁷

When reading the letters of the stamp as *nuns*, the initial *nun* must be interpreted as representing a personal name. Zamora, in his study of a stamp seal bearing a *nun* and an *alif*, pointed out that Punic names with an initial *nun* are neither unusual or numerous and can denote feminine names. In this case he proposes the following options:

«Nombres con un elemento inicial *n'm* [Nota 66: *n'm'l*, *n'mgl'*, *n'mtgl'* o *n'mtp'*] o *nqm* serían quizá los semíticamente más característicos, estando mucho mejor atestados los primeros sobre todo en ámbito púnico».⁴⁸

As there is no explanation, in turn, for the second *nun* as the abbreviation cannot be attributed to a Punic name.⁴⁹

An inscription with two *lameds* can likewise be interpreted as the abbreviation of a personal name. The first of the two *lameds* could also represent the preposition 'from/to' preceding the abbreviation of a name. However, this is unlikely for this case as few Punic names begin with this letter.⁵⁰

In short, it is hazardous, whether viewing the seal as two *nuns* or two *lameds*, to interpret it as the abbreviation of a Punic personal name. Yet before proposing an interpretation of the meaning of the seal from Mas Castellar de Pontós, this study now turns to an itemising the closest parallels.

4. PARALLELS

This section begins with parallels of seals on amphorae stemming from the same production area as that of Mas Castellar de Pontós, that is, from the area to the north of Tunis. Yet it must be noted that most are on handle fragments, which renders it difficult to identify their amphora type⁵¹ which obscures their place and date of production. Furthermore, many of the parallels are from old publications devoid of precise findspot information and no illustrations, other hurdles complicating establishing correlations.

Therefore, in order to attempt to shed light on the systems and meanings of these stamps, this study will not limit itself exclusively to seals known among analogous amphorae bearing the same reading, but to those presumably contemporary to Mas Castellar de Pontós bearing a similar attributes, notably two identical graphemes.

The first group of parallels are on T-4.2.1.5 type amphorae (the same as that of Mas Castellar de Pontós) (TAB. 1) as well and on other contemporary types. The second group concerns seals either identical to that of this study or examples from the same timeframe consisting of two identical letters (TAB. 2).

46 According to Zamora: «[U]na *nun* [n] (el grafema más pequeño), de común apariencia púnica también legible como *lamed* [l]. Esta última posibilidad debe ser considerada ya desde el mero análisis gráfico. Por un lado, grafemas con un mucho más largo trazo inferior que superior –rasgo definitorio de la *nun* canónica, frente al contrario de la *lamed*– son en época púnica empleados con el claro valor de este último grafema (si bien en algunos casos podrían esconderse tras estos hechos cambios fonéticos)» (2010, pp. 338-339).

47 Niveau de Villedary – Zamora 2010, pp. 169-70.

48 Niveau de Villedary – Zamora 2010, pp. 167-168.

49 Benz 1972.

50 Benz 1972; Niveau de Villedary – Zamora 2010, p. 170.

51 Ramon 1995, p. 245.

Amphora	Type	Site	Context	Cartouche	Position	Reading	Date	Bibliography
?	E	Puig de la Nau de Benicarló (Castellón)	storage area	oval/ circular	unspecified	<i>bt</i>	5th-4th	Zamora 2005
	E	Païsses d'Artá (Majorca)	Building 25, UE 49, courtyard zone	circular	at handle height	<i>bt</i> (<i>Bdštrtl</i> / <i>Bdmlqrt</i>)	4th	Ramon – Amadasi 2009
T-8.1.1.1	E “Eivissa” group	Païsses d'Artá (Majorca)	Building 25, UE 34	circular	under handles	<i>alef+š</i> (<i>Arish</i>)	4th	Ramon – Amadasi 2009
Maña C1a, T-7.1.1.2?	CM-TCG	Iberian <i>oppidum</i> de los Nietos (Cartagena)	levels of Phase II	adapted to the figure		a printed rosette associated with two letters <i>šp</i>	1½ 4th (c 400-369)	Belmonte – Filigheddu 2000-2001; Zamora 2005
T-4.2.1.8, Maña D	CM-TCG	Ses Torres (Ibiza)	necropolis	rectangular	top handle	two identical seals: <i>ll</i>	4th	Ramon 1995; Zamora 2005
T-4.2.1.5	CM-TCG	El Sec (Majorca)		rectangular	top handle	illegible	4th	Ramon 1995
T-4.2.1.5	CM-TCG	Bardo Museum		rectangular	upper part both handles	<i>yy</i>		Ramon 1995
T-4.2.1.5	CM-TCG	Mas Castellar (Girona)	Pit	square	top handle	<i>nm/ ll</i>	350 BCE	
T-4.2.1.5	CM	“Los Chinchorros” (Cadiz)	Level II, Pit 5	circular	lower handle	illegible	3rd	Zamora <i>et al.</i> 2020
	CM	Roses (Girona)	Level III church zone	oval	top handle	<i>kk</i>	Late 3rd	Martín <i>et al.</i> 1979; Zamora 2005
T-4.2.1.2	CM-TCG	Roses (Girona)	Level III church zone	circular	top handle	illegible	4th-early 3rd	Martín <i>et al.</i> 1979; Zamora 2005
T-4.2.1.2	CM-TCG	Peyriac de Mer <i>oppidum</i>		square	handle	<i>z</i>		Ramon 1995
undefined	CM	Ullastret		square	handle	<i>‘ayin+nun</i>	4th-3rd	Fuentes 1983; Ramon 1995
T-4.2.1.5 or T-5.2.3.1.	CM	“Los Chinchorros” (Cadiz)	Level II, Pit 5	circular	top handle	<i>ll</i>	3rd	Zamora <i>et al.</i> 2020
T-4.2.1.5 or T-5.2.3.1.	CM	“Los Chinchorros” (Cadiz)	Level 2, Pit 5	circular	top handle	<i>ll</i>	3rd	Zamora <i>et al.</i> 2020
T-5.2.3.1?	CM-TCG	Avda López Pinto (Cadiz)		circular	top handle	<i>hh</i>	Late 3rd	Zamora 2005; Niveau de Villedary – Zamora 2010
T-5.2.3.1, Maña D	CM-TCG	necropolis Ciudad de la Justicia (Cadiz)	pit	circular	lower handle	<i>bet+ alif</i>	Late 3rd	Niveau de Villedary – Zamora 2008
T-5.2.3.1 or T-5.2.3.2	CM-TCG	Ciudad de la Justicia (Cadiz)	well	circular	lower handle	<i>nun+alif</i>	3rd	Niveau de Villedary – Zamora 2010
T-5.2.3.2	CM-TCG	Cuarteles Varela (Cadiz)	well	circular	lower handle	<i>alif + lamed</i>	3rd	Niveau de Villedary – Zamora 2010
T-5.2.3.1/2	CM	Camposoto (San Fernando, Cadiz)	filling	oval	handle	<i>gd</i>	3rd	Zamora 2019
T-5.2.3.2	CM-TCG	Amphitheatre Cartagena		oval	lower handle	<i>‘bn</i> or <i>‘bl</i>	Late 3rd	Ramon 1995; Zamora 2005
Maña D, T-5.2.3.1	CM-TCG	Santuario de la Luz de Verdolay (Murcia)		oval	lower handle	<i>bn</i> + un-recognizable decoration	Late 3rd-early 2nd	Ramon 1995; Zamora 2005
Maña C	CM	Molinete (Cartagena)	debris	circular	neck	Magón/ under inscription crescent with solar disc	Late 3rd	Belmonte – Filigheddu 2000-2001; Zamora 2005
	CM	Villaricos (Almeria)		square	handle	<i>h</i>	3rd-2nd	Zamora 2005

T-5.2.3.1	CM-TCG	C/Serreta Cartagena		square	outer lower handle	š	Early 2nd	Zamora 2005
T-5.2.3.2	TC	<i>Neapolis Emporion</i>		oval	handle	Tanit sign plus <i>alef</i> + <i>gimel</i>	Last 1/3 3rd	Ramon 1995; Sáez – Ferrer 2018
T-5.2.3.1	TC	<i>Neapolis Emporion</i>	UE N-2- 13018 Construction filling	circular	handle	Tanit sign plus two graphemes	Mid 2nd	Ramon 1995; Sáez – Ferrer 2018
T-8.1.3.2	P-E	Na Guardis (Majorca)		rectangular		bird + 2 Neo-Punic text lines <i>ršm</i> , (Arishim)	Mid-2nd	Guerrero – Fuentes 1984; Ramon – Zamora 2018
T-8.1.3.2	P-E	Na Guardis (Majorca)		rectangular		illegible		Fuentes – Guerrero 1987; Ramon – Zamora 2018
Maña E, PE-17, T-8.1.3.2	P-E	Can Fita (Ibiza)	UE 1802 dumping	rectangular	top handle	bird + <i>šbd</i> <i>hšnr</i> / Zamora: <i>š/m</i> <i>l s/w/m</i> [.] <i>‘b d š/m/s/h</i> <i>n/t t/l</i> .	Mid-2nd	González – Fuentes 1990; Zamora 2005; Ramon – Zamora 2018
T-8.1.3.2	P-E	Païsses d’Artà (Ma- jorca)	UE 19, Building 14 (courtyard of a house)	rectangular	top handle	wild boar head + <i>b d</i> <i>š t r</i> [t ...], <i>r/b/d g/b/d/ l</i> [- - ...]	2nd	Ramon – Zamora 2018

Tab. 1. Stamp seals and groupings of the types (by colour) discussed in the text. Abbreviations: CM indicates Central Mediterranean, TCG Tunis-Carthage group, P Punic and E Ebusitan (author’s elaboration).

J. Ramon when referring to Phoenician and Punic amphorae from the Central and Western Mediterranean states that seals on T-4.2.1.5 amphorae were stamped prior to firing and frequently appear on the upper external part of one or both handles. As in the case of Mas Castellar de Pontós, they date to the 4th century BCE. Of four T-4.2.1.5 amphorae identified among the cargo of the El Sec shipwreck discovered in the Bay of Palma (Majorca), one bears an analogous stamp (unfortunately illegible) in a rectangular or square cartouche.⁵²

Another T-4.2.1.5 amphora bearing an illegible stamp in a circular cartouche and dated to the 3rd century BCE comes from level 2 of Pit 5 of the site of ‘Los Chinchorros’ (Cadiz).⁵³

Another similar piece is a fragment with rectangular cartouches on the upper part of each of its handles. Housed in the Bardo Museum of Tunis it bears a *yy* inscription.⁵⁴ It is analogous to that of Mas Castellar de Pontós in that it appears on the same type of amphora (T-4.2.1.5), it is in a rectangular or square cartouche, it is set on the upper part of the handles, and it comprises two identical graphemes.

It is noteworthy that apart from T-4.2.1.5 amphorae, the cargo of the shipwreck of El Sec also included T-2.2.1.2 and T-7.1.2.1 amphorae known to have been produced in Tunisia⁵⁵ but devoid of stamps.⁵⁶

52 Ramon 1995, pp. 61-62, [855].

53 Zamora *et al.* 2020, p. 150, fig. 6.

54 Ramon 1995, pp. 189, 249.

55 Ramon 1995, p. 286.

56 Ramon 1995, pp. 178, 205.

	1. Circular	2. Square	3. Rectangular	4. Rhomboid	5. Trapezoidal	6. Oval
' <i>alif</i>	<i>aa</i> (3) [535,536,537]					<i>aa</i> (2) [538,539]
<i>b</i>	<i>bb</i> [558]	<i>bb</i> (2) [554,555]	<i>bb</i> [556]			<i>bb</i> [557]
<i>g</i>		<i>gg</i> (D)				
<i>d</i>			<i>dd</i> (2) [599,600]			
<i>h</i>		<i>hh</i> [604]	<i>hh</i> [603]			
<i>w</i>	<i>ww</i> [654D]					<i>ww</i> [607]
<i>z</i>						
<i>ḥ</i>	<i>ḥḥ</i> (4) [623,624]				<i>ḥḥ</i> [625]	
ʔ	ʔʔ (6) [639,640,641,642, 246 ² , 360 ²]	ʔʔ [644]				ʔʔ [643]
<i>y</i>		<i>yy</i> [646]	<i>yy</i> [645], Bardo Museum			
<i>k</i>	<i>kk</i> or <i>ww</i> (3) [713D]	<i>kk</i> [608] <i>kk</i> or <i>ww</i> [667]	<i>kk</i>			<i>kk</i> (3) [606,653,655]
<i>l</i>	<i>ll</i> [661 ³]	<i>ll</i> (3) [662,663D,666]	<i>ll</i> (2) [664,665]			
<i>m</i>	<i>mm</i> [668D]					
<i>n</i>		<i>nn</i> or <i>ll</i>				
<i>s</i>		<i>ss</i> [687]				
<i>ʿayin</i>	<i>ʿc</i> [688]					
<i>p</i>		<i>pp</i> (3) [712, 768 ¹]	<i>pp</i>			
<i>ṣ</i>						
<i>q</i>		<i>qq</i> (2) [724,725]	<i>qq</i> (2) [723,726]			
<i>r</i>	<i>rr</i> [734]	<i>rr</i> (3) [735D,736,737]	<i>rr</i>			
<i>š</i>	<i>šš</i> or <i>mm</i> [744D,745D]	<i>šš</i> / <i>šš</i> or <i>mm</i> [746]	<i>šš</i> [669D]			
<i>t</i>		<i>tt</i> [753]	<i>tt</i> (2) [752,754]			

TABLE 2. Inscriptions with two identical letters; the square brackets correspond to their identification of their graphic representation in Ramon 1995, ¹Bondi 2002, ²Sáez – Zamora 2019, ³Zamora *et al.* 2020. D indicates the dextrogyral signs (author's elaboration).

Another amphora roughly contemporary to T-4.2.1.5 is the T-4.2.1.2 produced during the last two thirds of the 4th and perhaps the outset of the 3rd century BCE. The two share cylindrical bodies and a northern Tunisian provenance.⁵⁷ T-4.2.1.2 comes from the Phocaean colonies of *Emphorion* and *Rhode*. The second of the two sites also yielded two stamped examples: one illegible and the other with two identical graphemes (see comments below).⁵⁸ Another site with a stamped T-4.2.1.2 amphora is the *Oppidum* of Peyriac de Mer (France). It consists of a square cartouche on a handle containing the single letter *z*.⁵⁹

Although it is not possible to determine the type of an amphora unearthed at the Iberian *Oppidum* of Ullastret (Alt Empordà), its date (4th-3rd centuries BCE) and location (near Mas Castellar de Pontós) render it relevant. Among the many stamped Punic Central Mediterranean amphorae from this site, this case is significant as it is from the same timeframe as that of Mas Castellar and its stamp is in a square cartouche bearing two letters: an *ʿayin* and a *nun*.⁶⁰

57 Ramon 1995, p. 286.

58 Ramon 1995, p. 249, [763, 655].

59 Ramon 1995, p. 249, [614].

60 Fuentes 1983; Ramon 1995, p. 40.

Noteworthy is also a Punic amphora type (T-5.2.3.1) that is somewhat more recent than that studied in this article. The first point is its ties with T-4.2.1.5 while the second is that it is one of the most common stamped types that saw and extensive commercialisation throughout the western Mediterranean, especially in the Iberian Peninsula. It was presumably also manufactured in the area of Carthage-Tunis. Its dating stretches from the last quarter or quinquennium of the 3rd century to the first quarter or third of the 2nd century BCE meaning it can at times be contemporary to the T-5.2.3.2. Like that of this study, it presents a cylindrical body and stamps also on the upper part of the handles, although at times on their lower part.⁶¹

Even though it is not possible to draw definitive conclusions as to the seals of the T-5.2.3.1 type, it is plausible that they correspond to different groups stemming from specific circumstances. Although there are few, if any, known cases yielding enough data, it is possible to identify at least one group bearing a series of well-defined characteristics, notably inscriptions formed by two letters within circular cartouches at the base of the handle.

The following examples, dating from the end of the 3rd century BCE, are from in and around the city of Cadiz. The first, inscribed with *bet* and *alif*, was unearthed in the Phoenician-Roman cemetery of Ciudad de la Justicia.⁶² Another bearing the letters *nun* and *alif* on an T-5.2.3.1 (or perhaps a T-5.2.3.2) was also found here.⁶³ Yet another parallel is an amphora (potentially a T-5.2.3.1) bearing a circular cartouche seal inscribed with the identical letters (*hh*) from the site of Avenida López Pinto.⁶⁴ A last case is what appears to be an oval stamp on the handle of a T-5.2.3.1 (or 2) type originating in the Central Mediterranean recovered from the fill of a hearth at Camposoto (San Fernando, Cadiz). The inscription in this case, from between 4th-3rd BCE, is a *gimel* plus a *dalet*.⁶⁵

Other compelling finds from Cadiz are two identical clear *lameds* stamped in circular cartouches on two amphorae of either T-5.2.3.1 or T-4.2.1.5 type at the site of San Bartolomé “Los Chinchorros”. The two, recovered in level 2 of Pit 5, date to the 3rd century BCE.⁶⁶

The seals on this type of amphora found in Murcia in southeastern Iberia present more variety. One from the Sanctuary of Luz de Verdolay dated to the late 3rd or early 2nd century BCE bears an ovoidal cartouche inscribed by two letters (*bn*) to each side of an illegible decor.⁶⁷ A second find from Murcia dating to the early 2nd century BCE is from the site of Serreta in Cartagena. It consists of a square cartouche on the outer base of a handle inscribed with a single letter (*š*).⁶⁸ Although hypothetical, it is highly probable that many stamped handle fragments on Punic amphorae produced in the surroundings of Carthage-Tunis are of T-5.2.3.1 type due to their broad distribution throughout the Central and Western Mediterranean. This notion is bolstered by the fact that stamps on other amphora types are not on the handle but on the neck or elsewhere.⁶⁹

Finally, another amphora type worth mention is the T-5.2.3.2 which shares characteristics with the T-5.2.3.1, a cylindrical model manufactured in the area of Carthage-Tunis. Dated to the last third of 3rd century BCE, it is less often stamped.⁷⁰ The excavation of Cuarteles de Varela (Cadiz) yielded one inscribed

61 Ramon 1995, pp. 197-198.

62 Zamora – Niveau de Villedary 2008.

63 Niveau de Villedary – Zamora 2010.

64 Zamora 2005; Niveau de Villedary – Zamora 2010.

65 Zamora 2019, pp. 379-383.

66 Zamora *et al.* 2020, pp. 150, 160, fig. 5.

67 Ramon 1995; Zamora 2005.

68 Zamora 2005.

69 Ramon 1995, p. 197.

70 Ramon 1995, pp. 198-199.

with an *alif* and a *lamed*.⁷¹ Another from the Amphitheatre of Cartagena (Murcia) reveals three letters (*'bn* or *'bl*) in an oval cartouche.⁷²

4.1. *Stamp seals with two lameds*

There is further evidence of seals bearing two *lameds* apart from the examples of “Los Chinchorros” (Cadiz) cited above. A similar inscription from the same timeframe appears on a single T-4.2.1.8 in a rectangular cartouche. As noted, this amphora type can be confused with the T-4.2.1.5 as it is cylindrical and has a similar rim. Its handles, with mid circle profiles and oval sections are large and arched or slightly curved. Like the T-4.2.1.5, the type was produced in Punic centres near Carthage-Tunis and dates, albeit not precisely, to after the 4th century BCE.⁷³

An identical seal is on a T-4.2.1.8 amphora (devoid of its base) found in the cemetery of Ses Torres, a few kilometres from the city of Ibiza. The *ante coctionem* seal bearing the inscription *ll* is on the outside of each of the two handles.⁷⁴ Other stamps bearing *ll* inscriptions in square cartouches on Central Mediterranean amphorae are known in Tunisia and Sicily. Unfortunately, their precise type is unknown.

Parallels from Tunisia include examples from the site of Le Belvédère, one kilometre from the city of Tunis, identified by V. Carton between 1888-1889 as the nucleus of a Punic pottery workshop. The site yielded about 80 stamp seals with at least 67 on fragments of Punic amphorae produced in the area. Among the assemblage are several rectangular stamps inscribed with two *lameds*. Due to similarities with those of Ses Torres (Ibiza) they are dated to the 4th century BCE. Worth highlighting is the square cartouche containing *ll* published by Carton and another square cartouche with only one letter, a dextrogyre *nun*. This production centre is estimated to have operated between the 4th and 2nd centuries BCE.⁷⁵ This case is extremely compelling as the stamp comes from the workshop where it was made suggesting this to be one of the centres producing the stamped amphorae traded throughout the Mediterranean.

Another parallel is from the site of Lilibeo, present-day Marsala, along the western coast of Sicily where excavations in 1965 unearthed a square cartouche on an amphora handle inscribed with two *lameds*.⁷⁶

It is of interest to close this section by citing the seal from the Punic district of Selinunte, also in Sicily, on the handle of a Punic amphora in a square cartouche inscribed with two non-identical letters: a *nun* and a *lamed*.⁷⁷ Noteworthy is the similarity between these two letters that only differ by the length of their upper and lower strokes. Here it is possible to differentiate them as they are side by side.

4.2. *Stamp seals with two identical letters*

It is significant that many inscriptions on seals on Central Mediterranean Punic amphorae, as that studied here, consist of two identical letters. Unfortunately, the precise archaeological context and the type of amphora in most of these cases is doubtful (TAB. 2). Exceptions are the seals on Central Mediterranean amphorae from the excavation of Ciutadella de Roses, which is of special interest here due to their geographical proximity to that of Mas de Castellar de Pontós. Specifically, they come from stratum III in the area of the church.⁷⁸ The first is illegible in a circular cartouche on a T-4.2.1.2, a type contemporary to T-4.2.1.5 (4th

71 Niveau de Villedary – Zamora 2010.

72 Ramon 1995; Zamora 2005.

73 Ramon 1995, p. 190.

74 Ramon 1995, pp. 69, 190, [664, 665].

75 Ramon 1995, p. 114, [661, 662, 663], [680].

76 Ramon 1995, p. 128, [666].

77 Ramon 1995, pp. 129-130, [685].

78 Martín *et al.* 1979, pp. 125-126, 366, 369, fig. 204, 211.

century BCE) produced in Punic centres of North Central Africa and perhaps Western Sicily.⁷⁹ The second is in an ovoid cartouche containing a double *kk*.⁸⁰

The amphora type of the following seals from the western Mediterranean, the south of Iberian Peninsula, the Balearic Islands, Tunisia, Sicily and Sardinia cannot be determined accurately.

The site of Avenida López Pinto (Cadiz), cited above, yielded a seal with a circular stamp with letters *lh* on a fragment of a handle of a Punic amphora from the Central Mediterranean, potentially a T-5.2.3.1 type.⁸¹

The Balearic Isle of Minorca also provides a few examples from two sites. The first, Es Rafal des Frares (es Mercadal), yielded a fragment of a handle of a Central Mediterranean Punic amphora bearing a rectangular stamp containing the letters *tt* at its top.⁸² The second, Sa Torre Vella (Ciutadella), yielded two fragments of Central Mediterranean Punic amphorae with stamps on the upper external part of the handle. One contains the letters *tt* in a square cartouche while the other is inscribed with *qq* in a rectangular cartouche.⁸³

Tunisia is undoubtedly the country yielding the greatest number of stamps seals. This is not surprising as it is one of the main sectors producing these amphorae. Noteworthy are the numerous cases from the workshop of Le Belvédère (Carthage-Tunis) cited above. Ramon, based on sketches, suggests that they definitely correspond to T-5.2.3.1 amphorae and possibly T-7.4.2.1 and/or T-7.4.3.1 types. Moreover, T-4.2.1.8 amphorae bearing the inscription *ll* also suggest them to be associated with this type.

Therefore, although it is not possible to determine their amphora types, the following inscriptions are worth mentioning. Apart from those already cited bearing two *lameds* [661, 662, 633], there are rectangular cartouche stamps inscribed with two *lameds* as well as circular cartouches inscribed with *lh* [623], *tt* [640 a 642], *ss* or *mm* (dextrogyral signs) [744, 745] and *ww* (dextrogyral signs) [654]; an oval cartouche with *tt* [643]; square cartouches with *bb* [555], *bb* or *bd* [554], *gr* or *rr* [590], *rr* [737], *rr* [736], *kk* or *ww* (dextrogyral sign [667]), *ss* or *mm* [746]; and a rectangular cartouche with a *dd* [599, 600].⁸⁴

Other handles of amphorae bearing stamps come from a pottery production area (evidenced by the discovery of pottery kilns) in the southern sector of the Dermech cemetery in the area of Ben Attar (Carthage-Tunis). These stamps on amphorae of undetermined typology consist of circular cartouches inscribed with *lh* [624], *bb* (signs in a peculiar position) [558], *rr* [734], square cartouches containing *pp* [712], *ss* [687], *ss* (dextrogyral signs) [669], *rr* (dextrogyral signs) [735], and a rectangular cartouche inscribed with *tt* [754].⁸⁵

Worth mention among the Punic stamped amphorae from the southern slope of Byrsa (Carthage-Tunis) (published by P. Berger) are circular cartouches inscribed with two *ayin* (‘) [688] and *tt* [639], an oval cartouche with *bb* [557], a square cartouche with *bb* [556], and rectangular cartouches with *hb* [603], *yy* [645] and *qq* [723].⁸⁶

The site of Dermech-Ard el Mourali (Carthage-Tunis) published by P. Gauckler (devoid of contextual details) yielded a Punic amphora handle stamped with a trapezoidal cartouche bearing the inscription *lh*.⁸⁷

79 Ramon 1995, p. 188.

80 Ramon 1995, p. 36, [655]; Zamora 2005, p. 44.

81 Ramon 1995, p. 85.

82 Ramon 1995, p. 58, [752]; Díaz – Fernández Miranda 1977, p. 200, fig. 2, n. 9.

83 Ramon 1995, p. 59, respectively [753] and [726]; for the second stamp seal see Díaz – Fernández Miranda 1977, p. 200, fig. 2, n. 3.

84 Ramon 1995, pp. 114-115.

85 Ramon 1995, pp. 112-113.

86 Ramon 1995, p. 109.

87 Ramon 1995, p. 105, [625].

Also decontextualised are the inscriptions *kk* and *aa* in rectangular cartouches published by M. Icard from the cemetery of Douïmes (Carthage-Tunis).⁸⁸

M. Icard likewise published several handles bearing stamps from the cemetery of Bord Djedid (Carthage-Tunis). Worth highlighting are a rectangular cartouche with a *pp* inscription and a square cartouche with a *gg* (dextrogyral signs).⁸⁹ Another site, “Borde del Mar” (Carthage-Tunis), yielded Punic amphorae handles of which one bears the inscription *hh* in a circular cartouche.⁹⁰

Tomb 6 along the eastern flank of the Odeon (Carthage-Tunis) yielded two handles of unidentified stamped Punic amphorae. Although the publication has no drawings, one is presumably an inscription with a double *r* (*rr*) and the other bears the numeral 20.⁹¹

Other unstratified handles bearing stamp seals on Punic amphorae from Carthage-Tunis appear in old publications. The study by E. Vassel (1919) describes a rectangular cartouche with a double *r* and a circular or oval cartouche with what is either *kk* or *ww*.⁹² Another Punic example from Mactar (Carthage-Tunis), also decontextualised, features a circular cartouche bearing the inscription *kk* or *ww*.⁹³

Three sites in Sicily have yielded stamp seals bearing two identical letters. From Lilibeo, cited above, is a quadrangular stamp with two *lameds* [666]. Another stamp on a handle of an undetermined Punic amphora published by B. Pacem (also with no context) bears a square cartouche with two *yods* [646].⁹⁴ Otherwise, numerous handles of Punic amphorae have been recovered from the Punic quarter in the Acropolis of Selinunte. These include inscriptions in square cartouches: *hh* [604], *tt* [644], *kk* [608], *kk* or *mk* [606]; in circular cartouches: *aa* [536, 537], *kk* or *ww* (dextrogyral signs) [713], *mm* (dextrogyral signs) [668], and in oval cartouches: *ww* [607] *kk* [653], *aa* [538, 539].⁹⁵ The third site yielding stamp seals on handles on undetermined Punic amphorae is Heraclea Minoa, specifically from the excavations between 1955 and 1957. Those with two identical letters are *aa* [535] in a circular cartouche and another that appears to be *pp* [768] in a square cartouche.⁹⁶

Finally, from Sardinia, is a handle of a decontextualised Punic stamped amphora from the excavations of 1984 at the Tophet of Tharros. It bears a square cartouche reading *qq*.⁹⁷ Another seal on a handle fragment in a square cartouche from the open-air working area (Area C) of site of Nora bears two Punic letters interpreted as *pehs* dated between the 4th and 3rd centuries BCE.⁹⁸

Other examples with double letters, notably two *tes* (*tt*), come from the *Impianto Elettrico* excavations in Pompeii on the handle or body of a Tunisian amphora probably of T-5.2.3.1/2 or T-7.2.1.1 [246] type, possibly dating from around the middle of the 2nd century BCE.⁹⁹ The same site presumably yielded a second identical stamp [360] on an undetermined Tunisian amphora. The publication offers no photo or illustration suggesting it to be poorly preserved.¹⁰⁰

88 Ramon 1995, p. 106.

89 Ramon 1995, p. 107.

90 Ramon 1995, p. 112.

91 Ramon 1995, p. 105.

92 Ramon 1995, p. 114.

93 Ramon 1995, p. 119.

94 Ramon 1995, p. 128.

95 Ramon 1995, pp. 129-130.

96 Ramon 1995, p. 130.

97 Ramon 1995, p. 139, [725].

98 Bondi 2002, fig. 1, pl. 1.

99 Sáez – Zamora 2019, pp. 20, 85-86, fig. 1.

100 Sáez – Zamora 2019, p. 86.

5. THE ORIGINAL CONTENTS OF THE AMPHORAE

It is not possible to determine the specific products transported in each particular type of Punic amphora. This is due in part to the lack of *tituli picti* specifying their content and in part to the lack of residue analyses.¹⁰¹

Resin or pitch residues have been interpreted as the remains of wine and/or salted fish or meat. However, as these types of analyses are highly dependent on the state of preservation of the remains,¹⁰² they do not appear to serve as discriminatory elements. Apart from very specific cases, it is not possible to advance any reasonable suggestion as to the product. A plausible hypothesis proposed by Ramon for type T-7.4.3.3 is that it contained salted fish,¹⁰³ a notion supported by the fact that this type of industry is recorded around Cadiz where this type of amphora was manufactured.¹⁰⁴ Another factor brought up by several specialists is that these vessels may have seen re-use and could have served over time to transport a variety of products.

Therefore, pending future residue analyses, it is not possible to identify with certainty the type of product the amphorae transported. Even so, several specialists speculate those produced in the area of Carthage served to commercialise wine.¹⁰⁵

6. INTERPRETATION

As noted in the introduction, seal stamps on unfired storage vessels are usually linked to their manufacture, that is, they stand for the name of the workshop or the potter. Post-firing marks, in turn, relate to content, quantity and consignee.¹⁰⁶ Even so, gaining a better understanding and advancing plausible interpretations of Punic amphorae seals requires contextualising the finds and grouping them according to their attributes.

An example of this type of characterisation is the well-defined assemblage of Punic-Ebusitan amphorae (type T-8.1.3.2) from about the middle of the 2nd century BCE bearing rectangular cartouche stamps atop their handles. These are Punic inscriptions consisting of two lines referencing names as well as a meaning, difficult to interpret, potentially either part of a name or a technical term or function, perhaps even a date or a toponym. Those bearing animal (bird or wild boar) decors studied by Ramon and Zamora are linked to Oriental-Greek amphorae from Rodes and Cnidos (Aegean Sea) serving to transport wine.¹⁰⁷

Hence classifying the features of stamps into groups based on origin and dating allows speculating on broader questions such as who and where the amphorae were stamped, data needed to advance hypotheses as to their meaning in each specific context.

It should also be borne in mind that *ante-coctionem* marks represent only a part of the possible signs as the vessels, and their lids, could have also been painted or inscribed with graffiti. It is reasonable to infer

101 Zamora – Niveau de Villedary 2008, p. 66.

102 Ramon 1995, pp. 264-265.

103 See Sáez 2014 for an overview of salt-fish processing features and related remains in the western Mediterranean (especially in Cadiz) and see García Vargas – Sáez Romero 2018 specifically for this question in the far western Mediterranean.

104 Ramon 1995, p. 97. Ramon advances a date for the stamp seal: «Por otra parte, un fragmento de borde de un ánfora T-9.1.1.1. ofrece el enorme interés de presentar una estampilla circular con tres atunes, es decir, 1-D3 [829], indicio que junto con las de los hornos de La Torre Alta, viene a demostrar cómo el contenido de estos recipientes era pescado salado» (1995, p. 85).

105 Ramon proposes the following: «La zona de Cartago, al contrario de lo que sucedió en el área del Estrecho de Gibraltar desde finales del siglo VI aC, jamás tuvo una tradición en la industria de salazón de pescado, al menos una tradición reconocida y comentada por las fuentes históricas. Es más fácil admitir que estas ánforas, muy frecuentemente estampilladas y a veces con grafías griegas, buscaran una asimilación a los vinos griegos y especialmente a los rodios como en alguna ocasión ha sido sugerido» (1995, p. 265).

106 Guerrero 1986, p. 175.

107 Ramon – Zamora 2018, p. 213.

that inscriptions on the exterior of an amphora could relate to ownership, manufacturer, origin, destination, date or content.¹⁰⁸ For this last option see the comments above explaining the difficulty in determining the product they transported.

Moreover, Punic amphora stamp research highlights the difficulty of interpreting them due to their brevity of their signs, a notion implying they are abbreviations.¹⁰⁹ It must also be assumed that if these containers were destined to groups that did not speak Punic, thus the marks only needed to be understood by the traders. The inscriptions therefore could have represented a code recognised by the potter and the producer/seller.

As cited above, the traditional interpretation sees these inscriptions as abbreviations of personal names, as indicators of the initials of two parts of a name, or the first and the last letter of a name.¹¹⁰ This appears to be the case of a large number of seals identified as linked to Punic personal names.¹¹¹ Yet their identity remains unclear. They could align with the potter (or the workshop), the producer of the merchandise destined for transport, or the middleman. Ramon, although avoiding being exclusive, tends to see them to the latter.¹¹²

These options are nonetheless not the most plausible for the seal of this study due to the lack of Phoenician personal names corresponding to either two *nuns* or two *lameds*. How can the current seal, which is not an isolated type, therefore be interpreted when it appears that the graphemes are repeated and do not appear to line up with the initials of any known Punic personal name? There is no simple response. As certain specialists note, the abbreviations presumably do not refer to quantities or to any known place name.¹¹³

Table 2 lists a relatively great number of seals comprising two identical letters. Moreover, all of the letters of the Phoenician alphabet are represented except for the *zayin*, *samekh* and *nun* (when not taking into account the letters presented in this article). Furthermore, it is arduous to differentiate between *kk* and *ww*, and *šš* and *mm*. This confusion is perhaps due to the fact that Neo-Punic script changed after the fall of Carthage when the letters become very schematic.¹¹⁴

The double letters appearing in square and rectangular cartouche seals are *bet*, *he*, *yod*, *ka*, *lamed*, *pe*, *qof*, *ra*, *šhin* and *ṭet*. Square cartouches, when considering the current reading, are associated with the *gimel* in a dextrogyral position, as well as the *ṭet*, *sin* and *nun*. It is curious that the *dalet* is exclusive to rectangular cartouches. Thus, certain letters appear only in circular and oval cartouches such as the multiple cases of *alif* and *het*, and *waw* and *ayin*. Moreover, to date, the greatest variety of different double letters are in square cartouches, although, as noted, it is not possible to determine whether all are contemporary.

This particular feature of stamp seals bearing two identical letters has been discussed by several specialists.¹¹⁵ In this sense Bondi, on the presence of double letters, advanced the following hypothesis:

108 Schmitz interprets a *dipinto* inscription on a casque-shaped amphora from Carthage as follows: «It is reasonable to infer that the inscription on the exterior of the amphora might offer an indication of its contents» (2012, p. 58).

109 Zamora 2005.

110 As Harris stated: «The initials of the two members of proper names are frequently used, as *במ* for *בעלמלך*, as also the first and last letters of the name, especially in owners' marks on pottery» (1936, p. 19).

111 Zamora 2005, p. 77; Zamora – Niveau de Villedary 2008, p. 57.

112 Ramon 1995, p. 253.

113 Zamora – Niveau de Villedary 2008, p. 70.

114 Amadasi Guzzo 1990, p. 31.

115 Zamora and Niveau de Villedary, for instance, state the following: «Como en tantas otras estampillas, la secuencia de letras debe corresponder a una abreviatura. Como veremos, al menos en los casos en los que los grafemas no se repiten, tal abreviatura no parece remitir a cantidad o metrología alguna, así como tampoco a ningún referente toponímico o similar. La interpretación más sencilla lleva a pensar en la abreviatura de un nombre personal» (2008, p. 70).

«Un primo problema è costituito dal significato delle due lettere: a meno che non si tratti – ma non sembra probabile – di marchi di fabbrica privi di senso compiuto, l'interpretazione può oscillare tra un'indicazione di misura e una sorta di 'sigla' di riconoscimento del produttore. A favore della prima ipotesi sta la considerazione che spesso i bolli d'anfora punici consistono in una consonante raddoppiata: a Selinunte sono attestati esemplari con duplicazione di *alef*, *he*, probabilmente *waw* e ancora con doppia *ṭet* e con doppia *kaf*. Un bollo con doppia *yod* ricorre inoltre su un'anfora lilibetana. A Cartagine sono attestati bolli in cui la lettera duplicata è rispettivamente *alef*, *bet*, *waw*, *ḥet*, *kaf*, *samek*, *reš*, *šin* e, come si è visto, *pe*. Ciò può suggerire l'ipotesi che il raddoppiamento indichi la duplicazione di un valore, verosimilmente di capacità, espresso dalla consonante semplice. La seconda possibilità, quella di una "sigla" o abbreviazione, ricondurrebbe all'uso proprio del mondo romano, in cui i bolli spesso contengono il nome, non sempre completo, del produttore, seguito da un'indicazione come FEC[IT]. È suggestiva, benché indimostrabile, l'ipotesi che analogamente una delle *pe* del bollo norense possa corrispondere al verbo punico *p'l*, 'fare' preceduto dall'iniziale del nome del produttore; ma bisogna ammettere che la presenza in vari esemplari di coppie di lettere diverse, per le quali un procedimento simile non è ricostruibile, rende piuttosto fragile tale ipotesi».¹¹⁶

Based on the notions above and bearing in mind that it is momentarily not possible to offer any conclusive interpretation, we propose several nonexclusive explanations for these inscriptions, notions that must be tested in future research:

- Inscription reduplication could stem from the letters serving as numerical values serving to indicate quantity as letters of the alphabet are known to have represented numerals.¹¹⁷
- The letters potentially correspond to a sort of Punic trade code referencing geographical areas.
- Reduplication in certain cases could identify a specific product other than that normally used by the container type. This explanation is reasonable when considering that the proportion of amphorae bearing seals is minimal. The seals therefore potentially represent an attempt to convey special and unusual supplemental information as the content is already specified elsewhere on the outside of the vessel or on the lid.

Ruiz Cabrero and Menderos along these lines point out:

«No es de extrañar que un mismo tipo de contenedor industrial sirva para almacenar varios productos. Si atendemos a una posible estrategia comercial, es más rentable el transporte del ánfora si ésta siempre va repleta con algún producto en lugar de vacía. De ahí que la distinción por medio de una marca o grafiti, pueda tener a veces un sentido en relación a la designación del producto que se transporta. (...) Sea como fuere, lo cierto es que las incisiones sobre materiales cerámicos nos delatan sin lugar a dudas la presencia de población fenicia ya que el código utilizado, un grafema o un símbolo, claramente nos indica un lenguaje propio de este mundo ya sea en conexión con un antropónimo (seguramente el nombre del propietario), una dedicatoria religiosa o la designación o medida de un producto».¹¹⁸

Whatever the meaning of the marks, it is clear that they were stamped in the pottery workshop itself connoting that they bear a commercial function. Thus it is necessary to determine if each group of seals designates an operating mechanism, a specific content or geographical area, a quantity, or if they identify an intermediary and/or merchant.

116 Bondi 2002, pp. 91-92.

117 «The letters of the alphabet could also be used as numerals, although the Phoenician inscriptions have a fully-developed numeral system» (Harris 1936, p. 19).

118 Ruiz – Mederos 2002, p. 113.

Furthermore, there is no evidence that these stamps are indicative of a commercial control by an authority or institution.¹¹⁹ However, certain specialists have suggested that city states capable of production and export (e.g., *Massalia*, *Ebusus*, *Gadir* and *Malaka*) could have played significant, albeit not exclusive, roles.¹²⁰ Given the complexity of long-distance trade, it is not viable to envision a mutually exclusive model but one of mixed nature, harmonious and frequently intertwined. Morley explains the model in the following manner:

«Exchange requires agreement between the two parties and thus some basis for agreement, whether in terms of the measurement of the quantitative and qualitative attributes of the objects of exchange or in terms of the establishment and enforcement of the conditions of exchange. Institutions provide such structures; in antiquity this means, above all, the institutions of the state, as the enforcer and creator of laws and the source and guarantor of measures and money. However, the ancient state was never simply the passive facilitator of exchange; it intervened regularly and significantly – mobilising and redistributing resources, encouraging or regulating the activities of traders, above all seeking to protect its own interest and pursue its own goals – in ways that directly affected the structures of ancient trade. Non-state institutions, too, played a part, in the financing and management of overseas expedition, and the nature of the structures developed in antiquity shaped and, arguably, limited the development of systems of distribution».¹²¹

It is thus apparent that the Isle of *Ebusus* (Ibiza) played a decisive role in Punic trade in the Western Mediterranean.¹²² This notion, although speculative, suggests that certain marks serving to identify or differentiate particular products and/or destinations were aimed specifically at Punic intermediaries on this island responsible for their further distribution after their arrival from North Africa.

Although highly hypothetical and requiring further research, the two *nuns* of the stamp under study here could potentially relate to the Aramaic word for fish (i.e. *nwn*) when interpreting them to be an abbreviation of *nwn*.¹²³ Consequently, the inscription may have served to denote contents that were not typical of this type of amphora.

7. CONCLUSIONS

The first conclusion that can be gleaned from this study is that the stamping of Punic amphorae produced the Central Mediterranean dates to as early as the outset of the 5th century BCE and increased in the 4th century BCE. This is specifically evident among types T-2.2.1.2, T-4.2.1.2, T-4.2.1.5 and T-4.2.1.8 from the group of “Carthage-Tunis” workshops.¹²⁴ The Mas Castellar de Pontós stamp thus stems from this framework. Moreover, type T-4.2.1.5 amphorae such as that of Mas Castellar de Pontós are stamped with square and/or rectangular cartouches on the apex of the handle. The presence of these amphora types along

119 Zamora – Niveau de Villedary 2008, pp. 76-77.

120 Asensio on this question notes the following: «Esta opción presupone un panorama de comercio marítimo internacional donde el papel de promotor de las ciudades estado con capacidad productora y exportadora (*Massalia*, *Ebusus*, *Gadir/Malaka*) no es exclusivo pero sí determinante, en un marco global de lo que se ha denominado comercio administrado; y no tanto una dinámica en la que prevalecen intereses fundamentalmente privados, a cargo de operaciones mercantiles cuyo objetivo principal sería la obtención de beneficios particulares, fuese cual fuese el origen de los mercaderes implicados, la procedencia de las mercancías transaccionadas, los circuitos utilizados, etc.» (2010, pp. 728-729).

121 Morley 2007, p. 14.

122 Ramon 2014, pp. 114, 118. Asensio in this sense states the following: «En conclusión, apoyamos la idea de que a partir de mediados del siglo V a.C. se fragua una zona de influencia comercial preferente púnicoebusitana que abarcaría las Islas Baleares y buena parte de la fachada mediterránea de la Península Ibérica, englobando también la zona de colonización griega ampurdanesa» (2010, p. 728).

123 Cfr. Hojtijzer and Jongeling: «Subs. fish - this word (*n[wny]*)’ = Plur. emph) prob to be restored in CIS ii 3913 ii 34» (1995, p. 722).

124 Ramon – Amadasi 2009, p. 730.

the northeastern coast of the Iberian Peninsula evidences an extensive trade between the Punic and Iberian worlds. Punic interests in Iberian minerals and perhaps food products, is well known.¹²⁵

Secondly, to correctly interpret the stamping amphorae, one must avoid generalisations. When closely observing the current corpus, various groups can be established according to the criteria of amphora origin, type and characteristics of the cartouche and inscription.

This renders it possible to identify a well-defined type of stamp on T-8.1.3.2 amphorae produced in the mid-2nd century BCE in workshops on the Isle of *Ebusus* (Ibiza). In addition to figurative motifs, these stamps in rectangular cartouches clearly display full-length Punic names and other still undefined information. Furthermore, this stamp type has parallels with other examples in certain areas of the Greek world.¹²⁶

On the other hand, it must also be noted that amphora lids probably were also marked with information such as content, place, recipient, etc. It is thus difficult to maintain the hypothesis that inscriptions consisting of two identical letters correspond exclusively to abbreviations of personal names. Phoenician-Punic personal names following such a pattern are in fact rare, irrespective of whether they comprise, as in the case of this article, two *nuns* or two *lameds*.

Additionally, the percentage of examples with identical double graphemes is rather high. Unfortunately, due to factors related to old excavations (i.e. lack of precise findspot and dating, undetermined handle type, etc.) it is not viable to advance detailed parallels. It is nonetheless possible to narrow their manufacture to the area of Carthage-Tunis.¹²⁷ In this regard, it is plausible to formulate hypotheses that although tentative attempt to shed light on the phenomenon. These include that the abbreviations denote data besides personal names that serve to individualise an individual content or that of a cargo. Other options are that the seals designate products that differs from that commonly linked to the container or quantity, destination or date.

There is currently no evidence supporting these hypotheses as the corpus of stamps is too small which renders it impossible to correlate patterns of the data of inscription type, medium type, origin and destination, and residue analyses.

Thus, this type of research requires expanding the corpus of these inscriptions and potential classes according to production sites, cartouche similarity, inscription repetitions, etc. Although it is currently not possible to draw up definitive conclusions, the ongoing publication of new, well-contextualised finds will lead to a promising future line of research that can shed light on the meaning of the inscriptions and their role in the framework of commercial networks in the Western and Central Mediterranean, as well as the role of writing in trade between the different regions.

There is no doubt that this question forms part of a complex commercial system involving multiple agents encompassing manufacture, packaging, transport and distribution. Its complexity is also evident for other types of inscriptions such those of the El Sec shipwreck¹²⁸ consisting of 24 Greek, 15 Punic and 15 undetermined graffiti interpreted by their author as trademarks. One hypothesis sees this ship as being of Punic origin and marketing Greek products in the Western Mediterranean. The items coming from Greece would thus have first been stamped in Greek before second markings in Punic by the Punic traders charged with their distribution.¹²⁹ Ultimately, the seal presented in this article offers new evidence linked to the intense commercial interchange between North Africa's Punic world and the Iberian Culture along the northeastern coast of the Iberian Peninsula in the 4th century BCE.

125 Ramon 1995, p. 287.

126 Ramon – Zamora 2018, p. 213.

127 Certain authors suggest that this production, which requires further research, concerns the manufacture of specific amphorae and pottery (e.g., T-4.2.1.0 and T-5.2.3.0) around Carthage-Tunis between the 4th and 2nd centuries BCE, Sáez – Zamora 2019, p. 87.

128 De Hoz 1987a.

129 De Hoz 1987b.

REFERENCES

- Amadasi Guzzo 1990 = M.G. Amadasi Guzzo, *Iscrizioni fenicie e puniche in Italia*, Roma 1990.
- Amadasi – Röllig 1995 = M.G. Amadasi Guzzo – W. Röllig, *La Langue*, in V. Krings (ed.), *La civilisation phénicienne et púniques*, Leiden-New York-Köln 1995, pp. 185-192.
- Asensio 2010 = D. Asensio, *Evidencias arqueológicas de la incidencia púnica en el mundo ibérico septentrional (siglos VI-III a. C.): estado de la cuestión y nuevos enfoques*, in «Mainake» XXXII, 2010, pp. 705-734.
- Asensio 2011 = D. Asensio, *La presència de ceràmiques púniques ebusitanes al nord-est peninsular (segles V-III aC): impacte econòmic i social de les relacions comercials entre l'Eivissa púnica i els ibers del Nord*, in B. Costa – J.H. Hernández (edd.), *Yöserim: La producció alfarera fenicio-púnica en Occidente. XXV Jornades de Arqueologia fenicio-púnica* (Eivissa, 2010), Eivissa 2011, pp. 223-254.
- Asensio et al. 2017 = D. Asensio – E. Pons – R. Jornet – J. Morer, *Aportación de la cerámica griega fina y sus contextos cerámicos a la caracterización de la secuencia de asentamientos superpuestos entre el siglo VI y el siglo IV a. C. en el Mas Castellar de Pontós (Alt Empordà, Girona)*, in X. Aquilué – P. Cabrera – M. Orfila (edd.), *Homenaje a Gloria Trias Rubiés. Cerámicas griegas de la Península ibérica: cincuenta años después (1967-2017)*, Barcelona 2017, pp. 124-139.
- Belmonte – Filigheddu 2000-2001 = J.A. Belmonte – P. Filigheddu, *Marcas de alfarero púnicas procedentes de Cartagena y su entorno*, in A. González Blanco – G. Matilla Séiquer – A. Egea Vivancos (edd.), *El mundo púnico: religión, antropología y cultura material*, Murcia 2000-2001 («EsOr», 5-6), pp. 501-507.
- Benz 1972 = F.L. Benz, *Personal names in the Phoenician and Punic inscriptions*, Rome 1972.
- Bondi 2002 = S.F. Bondi, *Un bollo su anfora da Nora*, in M.G. Amadasi Guzzo – M. Liverani – P. Matthiae (edd.), *Da Pyrgi a Mozia. Studi sull'archeologia del Mediterraneo in memoria di Antonia Ciasca. Vicino Oriente*, Roma 2002 («Quaderni di Vicino Oriente », 3/1), pp. 89-92.
- Bouso et al. 2002 = M. Bouso – N. Gago – E. Pons, *Els Camps de sitges de Mas Castellar*, in Pons 2002, pp. 165-215.
- Díaz – Fernández Miranda 1977 = F. Díaz – M. Fernández-Miranda, *Nuevas estampillas e inscripciones púnicas halladas en Menorca*, in «Anuario de Filología» 3, 1977, pp. 195-211.
- Ferrer et al. 2014-2016 = J. Ferrer – D. Asensio – E. Pons, *Novetats epigràfiques ibèriques dels segles V-IV aC del Mas Castellar (Pontós, Alt Empordà)*, in «Cypsela» 20, 2014-2016, pp. 117-139.
- Friedrich – Röllig 1999 = J. Friedrich – W. Röllig, *Phönizisch-punische Grammatik, 3. Auflage, neu bearbeitet von Maria Giulia Amadasi Guzzo, unter Mitarbeit von Werner R. Mayer*, Roma 1999 («Analecta Orientalia», 55).
- Fuentes 1983 = M.J. Fuentes, *Dos inscripciones y dos símbolos fenicios en Ullastret*, in «Aula Orientalis» 1, 1983, pp. 280-283.
- Fuentes – Guerrero 1987 = M.J. Fuentes – V.M. Guerrero, *Corpus d'inscripcions de Na Guardis (Mallorca)*, in V.M. Guerrero (ed.), *La colonia de Sant Jordi (Mallorca). Estudis d'arqueologia i epigrafia*, Palma de Mallorca 1987, pp. 201-251.
- García Sánchez 1998 = M. García Sánchez, *Epigrafia anfòrica de Mas Castellar de Pontós (Segunda parte)*, in «Pyrenae» 29, 1998, pp. 231-236.
- García Sánchez 2002 = M. García Sánchez, *L'epigrafia amfòrica*, in Pons 2002, pp. 565-575.
- García Vargas – Sáez Romero 2018 = E. García Vargas – A.M. Sáez Romero, *Todo el pescado vendido. Una lectura cuantitativa de la producció púnica y romana de ánforas, sal y salazones en la Bahía de Cádiz*, in J. Remesal Rodríguez – V. Revilla Calvo – J.M. Bermúdez Lorenzo (edd.), *Cuantificar las economías antiguas. Problemas y métodos*, Barcelona 2018, pp. 61-213.
- González – Fuentes 1990 = R. González – M.J. Fuentes Estañol, *Nueva inscripción púnica hallada en Ibiza*, in «Studi Epigrafici e Linguistici» 7, 1990, pp. 123-127.
- Guerrero 1986 = V.M. Guerrero Ayuso, *Una aportación al estudio de las ánforas púnicas Maña C*, in «Archaeonautica», 6, 1986, pp. 147-186.
- Guerrero – Fuentes 1984 = V.M. Guerrero – M.J. Fuentes, *Inscripciones de 'Na Guardis' (Mallorca) I*, in «Aula Orientalis» 2, 1984, pp. 85-104.
- Harris 1936 = Z.S. Harris, *A grammar of the Phoenician Language*, New Haven (CT) 1936.
- Hojtjizer – Jongeling 1995 = J. Hojtjizer – K. Jongeling, with appendices by R.C. Steiner, A. Mosak Moshavi and B. Porten, *Dictionary of the North-West Semitic Inscriptions*, Leiden-New York-Köln 1995.

- De Hoz 1987a = J. De Hoz, *La epigrafía del Sec y los grafitos mercantiles en occidente*, in A. Arribas – G. Trias – D. Cerda – J. De la Hoz (edd.), *El Barco del Sec (Calvià, Mallorca): estudio de los materiales*, Mallorca 1987, pp. 605-650.
- De Hoz 1987b = J. De Hoz, *Les graffites mercantiles en Occident et l'épave d'El Sec*, in P. Rouillard – M.-C. Villanueva-Puig (edd.), *Grecs et Ibères au IV^e siècle avant Jésus-Christ* («Revue des Études Anciennes», 89/3-4), Bordeaux 1987, pp. 117-130.
- De Hoz 2014 = M.P. De Hoz, *Inscripciones griegas de España y Portugal* (IGEP), Madrid 2014.
- Israel 1995 = F. Israel, *L'onomastique et la prosopographie*, in V. Krings (ed.), *La civilisation phénicienne et puniques*, Leiden-New York-Köln 1995, pp. 215-221.
- Martín *et al.* 1979 = M.A. Martín – F.J. Nieto – J.M. Nolla, *Excavaciones en la ciudadela de Roses (campana 1976 y 1977)*, Girona 1979 («Sèrie Monogràfica», 2).
- Morley 2007 = N. Morley, *Trade in Classical Antiquity*, Cambridge 2007.
- Niveau de Villedary – Zamora 2010 = A.M. Niveau de Villedary y Mariñas – J.Á. Zamora López, *La necrópolis como centro de consumo a propósito de dos nuevos sellos anfóricos con inscripciones púnicas procedentes de Cádiz*, in «Madrider Mitteilungen» 51, 2010, pp. 152-183, pl. 2-3.
- Panosa 2002 = M.I. Panosa, *Epigrafía ibèrica a Mas Castellar de Pontós*, in Pons 2002, pp. 577-574.
- Peckham 1968 = J.B. Peckham, *The Development of the Late Phoenician Scripts*, Cambridge 1968.
- Peckham 2014 = J.B. Peckham, *Phoenicia. Episodes and Anecdotes from the Ancient Mediterranean*, Winona Lake (IN) 2014.
- Pons 2002 = E. Pons (dir.), *Mas Castellar de Pontós (Alt Empordà). Un complex arqueològic d'època ibèrica (Excavacions 1990-1998)*, Girona 2002 («Sèrie Arqueològica», 21).
- Pons 2005 = E. Pons (dir.), *Memòria 2001-2005. Mas Castellar-Pontós (Alt Empordà)*, Servei d'Arqueologia de la Generalitat de Catalunya, Unpublished 2005.
- Pons *et al.* 2010 = E. Pons – D. Asensio – M. Fuertes – M. Bouso, *El yacimiento de Mas Castellar de Pontós (Alt Empordà, Girona): un nucleo indígena en la órbita de la colonia focea d'Emporion*, in H. Tréziny (ed.), *Grecs et Indigènes de la Catalogne à la Mer Noire, Actes des Rencontres du programme européen Ramses (2006-2008)*, Aix-en Provence 2010 («Bibliothèque d'archéologie méditerranéenne et africaine», 3), pp. 105-118.
- Pons *et al.* 2016 = E. Pons – D. Asensio – M. Fuertes, *Casas, sociedad y economía en el oppidum de Mas Castellar de Pontós-Alt Empordà (425350 a.C.). Poblamiento y conflicto en el entorno de la colonia griega de Emporion*, in Cl.-A. Chazelles – M. Schweller (edd.), *Vie quotidienne, tombes et symboles des sociétés protohistoriques de Méditerranée nord-occidentale. Mélanges offerts à Bernard Dedet*, Lattes 2016 («Monographies d'Archéologie Méditerranéenne. Hors Série», 7/1), pp. 17-43.
- Prag 2014 = J.R.W. Prag, *Phoinix and Poenus: Usage in Antiquity*, in J. Crawley Quinn – N.C. Vella (edd.), *The Punic Mediterranean. Identities and Identification from Phoenician Settlement to Roman Rule*, Cambridge 2014, pp. 11-23.
- Ramon 1995 = J. Ramon Torres, *Las ánforas fenicio-púnicas del Mediterráneo Central y Occidental*, Barcelona 1995 («Col·lecció Instrumenta», 2).
- Ramon 2014 = J. Ramon Torres, *Economía y comercio de la Ibiza púnica en la época de las acuñaciones de moneda (siglos IV a.C.-I d.C.)*, in A. Arévalo – D. Bernal – D. Cottica (edd.), *Ebusus y Pompeya, ciudades marítimas. Testimonios monetales de una relación*, Cádiz 2014 («Monografías del Proyecto Pesca y Garum en Pompeya y Herculano», 1), pp. 83-123.
- Ramon – Amadasi 2009 = J. Ramon – M.G. Amadasi, *Dos sellos sobre ánforas púnico-ebusitanas del poblado talayótico de ses Païsses d'Artà (Mallorca)*, in J. Aramburu-Zabala Higuera (ed.), *Ses Païsses (Artà, Mallorca). Excavaciones en el Edificio 25 ("Climent Garau")*. Campañas 2004, 2005, 2006, 2009, pp. 728-736 [<http://www.arqueobalea.es/articulos/Edificio25.pdf>]
- Ramon – Zamora 2018 = J. Ramon Torres – J.Á. Zamora López, *Una nueva estampilla sobre ánfora púnico-ebusitana hallada en ses Païsses d'Artà (Mallorca): Nueva luz sobre una distintiva forma ebusitana de estampillado*, in «Archivo Español de Arqueología» 91, 2018, pp. 205-216 (<https://doi.org/10.3989/aespa.091.018.010>).
- Ruiz – Mederos 2002 = L.A. Ruiz Cabrero – A. Mederos Martin, *Comercio de ánforas, escritura y presencia fenicia en la península ibérica*, in «Studi Epigrafici e Linguistici sul Vicino Oriente Antico» 19, 2002, pp. 89-120.
- Sáez 2014 = A.M. Sáez Romero, *Fish Processing and Salted-Fish Trade in the Punic West: New Archaeological Data and Historical Evolution*, in: E. Botte – V. Leitch (edd.), *Fish & Ships: Production et commerce des salsamenta durant*

- l'Antiquité. Actes de l'atelier doctoral* (Rome, 18-22 juin 2012), Aix-en-Provence 2014 («Bibliothèque d'Archéologie Méditerranéenne et Africaine», 17), pp. 159-174.
- Sáez – Ferrer 2018 = A.M. Sáez Romero – E. Ferrer Albelda, *Dioses de barro. Sellos con simbología religiosa de la producción anfórica de Gadir (siglos IV-II a.C.)*, in A. Navarro Ortega – E. Ferrer Albelda (edd.), *Trabajo sagrado: producción y representación en el Mediterráneo occidental durante el I milenio a. C.*, Sevilla 2018 («SPAL Monografías Arqueología», XXV), pp. 271-307.
- Sáez – Zamora 2019 = A.M. Sáez Romero – J.Á. Zamora López, *Las importaciones anfóricas de tradición púnica procedentes del Mediterráneo Central*, in D. Bernal-Casasola – D. Cottica (edd.), *Scambi e commerci in area vesuviana*, Oxford 2019 («Roman and Late Antique Mediterranean Pottery», 14), pp. 77-95.
- Schmitz 2012 = Ph.C. Schmitz, *The Phoenician Diaspora. Epigraphic and Historical Studies, with an appendix to chapter 5 by Joann Freed*, Winona Lake (IN) 2012.
- Tremoleda – Santos 2013 = J. Tremoleda – M. Santos, *El comercio oriental en época helenística: los sellos anfóricos*, in M.P. De Hoz – G. Mora (edd.), *El Oriente griego en la península Ibérica, epigrafía e historia*, Madrid 2013 («Bibliotheca Archaeologica Hispana», 39), pp. 61-110.
- Zamora 2005 = J.Á. Zamora, *Un bollo púnico da Puig de la Nau de Benicarló (Castellón) e la questione della stampigliatura anfórica nell'occidente mediterraneo*, in «Studi Epigrafici e Linguistici sul Vicino Oriente Antico» 22, 2005, pp. 53-71.
- Zamora 2010 = J.Á. Zamora, *Poenica Hispana I: Documentos epigráficos fenicio-púnicos inéditos, mal conocidos o sujetos a nuevo examen procedentes de la Península Ibérica y su entorno*, in E. Ferrer (ed.), *Los púnicos de Iberia: proyectos, revisiones, síntesis*, Málaga 2010 («Mainake», 32), pp. 335-353.
- Zamora 2019 = J.Á. Zamora, *Poenica Hispana II: Documentos epigráficos fenicio-púnicos inéditos, mal conocidos o sujetos a nuevo examen procedentes de la Península Ibérica y su entorno (nº 2)*, in J. Gil Fuensanta – A. Mederos Martín (edd.), *Orientalística en tiempos difíciles. Actas del VII Congreso Nacional del Centro de Estudios del Próximo Oriente* (Madrid, 12-16 de diciembre 2016), Zaragoza 2019, pp. 377-400.
- Zamora 2022 = J.Á. Zamora, *Epigrafía fenicia en la Península ibérica*, in A.G. Sinner – J. Velaza (edd.), *Lenguas y epigrafías Paleohispánicas*, Barcelona 2022, pp. 71-95.
- Zamora – Niveau de Villedary 2008 = J.Á. Zamora López – A.M. Niveau de Villedary y Mariñas, *Una nueva estampilla epigráfica sobre ánfora púnica hallada en la necrópolis de Cádiz*, in «Habis» 39, 2008, pp. 57-78.
- Zamora et al. 2020 = J.Á. Zamora López – A.M. Sáez Romero – M.L. Lavado Florido, *Estampillas anfóricas y grafitos púnicos recuperados en el solar de "Los Chinchorros" (Calle San Bartolomé, Cádiz)*, in «Revista Atlántica-Mediterránea de Prehistoria y Arqueología Social» 22, 2020, pp. 139-168.