An Approach to the Early Phoenician Colonization Trade (10-8th centuries BC) through the Storage Jars

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[The chronological and typological sequence of Phoenician pottery, particularly that of storage jars, during the early Iron Age (10th-8th centuries BC) remains a complex issue. While recent research has advanced our understanding of Phoenician colonization, heterogeneity in typological frameworks and lack of consensus in the interpretation of radiocarbon dates persist. To address this challenge, this study systematically analyses Phoenician storage jars from various sites across the Mediterranean basin. By reassessing existing typologies and incorporating new data, we aim to establish a more comprehensive and accurate framework for understanding the evolution of Phoenician pottery.

Our research focuses on three key archaeological horizons:

First horizon – 10th-9th Century BC: This early phase is characterized by the importation of Tyrian and Sardinian storage jars in western sites, highlighting the initial reliance on external sources for storage and transport.

Second horizon – 9th-8th Century BC: During this period, Phoenician colonies expanded, and regional pottery traditions emerged, though still influenced by earlier Eastern and Central Mediterranean types.

Third horizon – 8th Century BC: Established Western Phoenician colonies developed new distinct local pottery types, reflecting a self-sufficient pottery and agricultural production.

We can better understand the dynamics of Phoenician trade and settlement growth by examining these containers' morphological features, production techniques, and geographic origins. This research contributes to a more nuanced understanding of Phoenician colonization and its impact on the Mediterranean world.]

Keywords: Storage jars; Phoenician colonization; Iron Age; Mediterranean Sea.

Introduction

In recent decades, archaeological knowledge of Western Phoenician colonies has seen significant progress thanks to new contributions of the scientific community, particularly regarding chronology and its historical implications for the early periods. However, many aspects still require further research to get sounder. One of them is the sequential and chronological nature of Phoenician pottery, largely due to local studies that have generated numerous overlapping co-

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existing typologies for the same period in scientific literature which hinders a global systematic assessment.

The lack of a comprehensive understanding of Phoenician pottery is a significant issue, as it is, in essence, the key marker for defining the chronological horizons that characterize the Iron Age in Phoenicia and the Mediterranean and its structural circumstances. Together with the different interpretations of radiocarbon dates associated with some key deposits, it has significantly hindered the definition of an agreed chronology for early Phoenician colonization and its historical significance.

For instance, the appropriateness of raising to the 9th century BC the absolute chronology of the colonial horizon represented by the oldest remains of Morro de Mezquitilla (Schubart and Maass-Lindemann 2017), Cadiz (Torres Ortiz *et al*. 2014) and Carthage (Rakob 1999; Docter *et al*. 2005 and 2008; Niemeyer *et al*. 2007) contemporary with the Late Geometric I style in the Aegean ceramic sequence, as well as those of the controversial find of c/Méndez-Núñez-Pl. de las Monjas in Huelva (González de Canales Cerisola *et al*. 2004), is still contested based on arguments about contextual guarantees of the dated organic samples and pottery characteristics of the assemblages (Fantalkin *et al*. 2011; Gilboa 2013; Núñez Calvo 2018b).

Nonetheless, with respect to the latter context, the archaeological remains recently excavated in La Rebanadilla (Arancibia Román *et al*. 2011; Sánchez Sánchez-Moreno *et al*. 2011, 2012 and 2020; Marzoli *et al*. 2016) and Utica (López Castro *et al*. 2016; 2020a; 2020b; 2024; Ben Jerbania 2020) have also determined a Phoenician presence in Western and Central Mediterranean which radiometric dates place in the 10th-9th centuries BC, this time with better contextual guarantees and with similar associated pottery assemblages. As the assemblage of c/Méndez Núñez of Huelva, all of these assemblages are associated with Middle Geometric II Greek pottery together with contemporaneous Phoenician types of the Levantine Middle Iron Age.

Regarding the Phoenician pottery, although it has benefited from significant contributions to its sequential study in the West, primarily by J. Ramon Torres (1995, 2006, 2010 and 2017) in Carthage by A. Peserico (2002 and 2007), M. Vegas (1999), and R. F. Docter (1997 and 2007), and thorough all the Mediterranean Sea by F. J. Núñez Calvo (2004, 2008a, 2008b, 2008c, 2010, 2011, 2013, 2014, 2015a, 2015b, 2015c, 2016, 2018a, 2018b, 2020 and 2023), it still remains in a rudimentary state compared to the study of other contemporary material sequences, such as Greek Geometric pottery (Coldstream 2008). This widespread lack of knowledge about the sequential and evolutionary nature of Phoenician pottery on a global scale is due, among other reasons, to the individuality of productions in the different main regions – the Eastern, Central, and Western Mediterranean – as well as the independent non-systematic generation of typologies developed by different researchers who have approached each specific site. For example, the typology generated in the Malaga area by H. Schubart and G. Maass-Lindemann (2017) has been developed based on criteria different from those of the Cadiz area by I. Córdoba Alonso and D. Ruiz Mata (2005), as well as the criteria of J. Ramon Torres (1995 and 2023).

This work aims to provide an approach to the Phoenician pottery sequence of the Iron Age between the 10th and 8th centuries BC, focusing on storage jars available in published literature. It starts from the premise that early Phoenician colonization of the 10th-8th centuries BC developed through three clearly differentiated archaeological horizons defined by their associated material, as well as numerous radiocarbon determinations in sites such as Huelva, Utica, La Rebanadilla, Carthage, Morro de Mezquitilla and Cabezo Pequeño del Estaño, among others (see below). In fact, there are already some proposals for the periodization of different horizons defined by horizons of

pottery in Phoenician colonization, such as that of J. Ramon Torres (2010). To the original horizons M1 – with main representatives being Cadiz, Castillo de Doña Blanca and Morro de Mezquitilla, to which we could add the foundation of Carthage and Sulcis in the central Mediterranean – and M2 – with the main representative being Chorreras and other contemporary levels – we add here the earlier period represented by the Huelva assemblages of c/Méndez Núñez and c/Concepción, La Rebanadilla, and Utica (tabs. 1 and 2).

Tab. 1. Western Mediterranean main assemblages and horizons

<table>
<tr><th>Horizons</th><th colspan="2">Huelva</th><th colspan="2">Gaditan area</th><th>Malaga area</th><th>Lixus</th></tr>
<tr><td rowspan="2">First horizon</td><td rowspan="2">C/Méndez Núñez</td><td rowspan="3">C/Concepción</td><td colspan="2"></td><td rowspan="2">Rebanadilla IV</td><td rowspan="3"></td></tr>
<tr><td rowspan="2">TC - Phase IB</td><td></td></tr>
<tr><td rowspan="2">Second Horizon</td><td rowspan="3"></td><td rowspan="2">C/CdC C/Ancha CDB</td><td>MM B1a</td></tr>
<tr><td></td><td>TC - Phase II</td><td>MM B1b1</td></tr>
<tr><td>Third horizon</td><td></td><td></td><td></td><td>MM B1b2 Montilla Chorreras</td><td>Lixus assemblages</td></tr>
</table>

*TC: Teatro Cómico; CdC: Cánovas del Castillo; CDB: Castillo de Doña Blanca; MM: Morro de Mezquitilla

Tab. 2. Central Mediterranean main assemblages and horizons

<table>
<tr><th>Horizons</th><th colspan="2">Utica and Carthage</th><th>Sant'Antioco</th><th>Mozia</th></tr>
<tr><td>First horizon</td><td colspan="2">Utica – pit 20017</td><td></td><td rowspan="3"></td></tr>
<tr><td rowspan="2">Second Horizon</td><td>DM – phase I</td><td rowspan="2">Bir Massouda – pit 4 Rue Ibn Chabâat assemblages</td><td rowspan="2">Cronicario assemblages and tophet sanctuary</td></tr>
<tr><td>DM – phase II</td></tr>
<tr><td>Third horizon</td><td>DM – phase III</td><td></td><td></td><td>Phase IVA</td></tr>
</table>

*DM: Decumanus Maximus

There are many proposals and studies already presented on pottery and storage jars from these horizons (Bikai 1978 and 1987; Sagona 1982; Bartoloni 1988; Ramon Torres 1995, 2006, and 2023; Vegas 1999; Peserico 2002; Docter 2007; Núñez Calvo 2018), but there are also aspects which remain inconsistent that, in case of being reassessed, could contribute to a better understanding of the evolutionary process and the periodization of the Phoenician colonization. This work aims to provide a deeper analysis of the formal and decorative characteristics of the Phoenician storage jars assemblage from the 10th to 8th centuries BC, identifying previously unexplored lines of evolution and sources of inspiration for most of the identified types, and thus attempting to complement the analysis previously made by other researchers. With a more comprehensive and consistent global analysis of the available archaeological material, the aim is to

establish a new, robust typological framework that will serve as a tool for future research on early Phoenician colonization.

The analysis of the storage jars assemblage presented here is divided into three main sections based on the material horizon (tabs. 1 and 2).

The first horizon is represented by the Huelva assemblages of c/Méndez Núñez and c/Concepción, whose pieces have been extensively discussed and associated with radiometric dates dating back to the 10th-9th centuries BC (González de Canales Cerisola *et al*. 2004, 2006a, 2006b, 2008a, 2008b, 2009 and 2017; Gilboa 2013; García Fernández *et al*. 2016; Núñez Calvo 2018; González de Canales Cerisola and Llompart Gómez 2020), as well as those of Utica and La Rebanadilla (Sánchez Sánchez-Moreno *et al*. 2012 and 2020; López Castro *et al*. 2016, 2020a, 2020b and 2024). This first horizon, mainly contemporary with the Levantine Iron Age IIA, is characterized by the absence of Western productions and the exclusive presence of Levantine and Central Mediterranean imports, as well as the presence of Greek containers of the Middle Geometric II and Sub-Protogeometric styles.

A second horizon would be represented by the earliest documented archaeological deposits in Carthage and the Cronicario of Sant'Antioco (Vegas 1999; Niemeyer *et al*. 2007; Docter *et al*. 2008; Guirguis and Unali 2016; Pompianu and Unali 2016; Flügel *et al*. 2020; Maraoui Telmini *et al*. 2020; Guirguis 2022) in the Central Mediterranean, as well as the foundations of Cadiz (Córdoba Alonso and Ruiz Mata 2005; Ruiz Mata *et al*. 2014 and 2020; Torres Ortiz *et al*. 2014 and 2020), Castillo de Doña Blanca (Ruiz Mata and Pérez Pérez 1995 and 2020) and Morro de Mezquitilla (Schubart and Maass-Lindemann 2017) in the Iberian Peninsula. The radiocarbon dates associated with this horizon – especially in Carthage and Morro de Mezquitilla – reflect a chronology placed in the late 9th century and the early 8th century BC.

Finally, a last horizon representative of the 8th century BC – M2 of J. Ramon Torres (2010) – would be represented by the foundation of new colonial enclaves such as Lixus in Northwestern Africa, and Montilla, Cerro del Villar, Chorreras and Cabezo Pequeño del Estaño in the Iberian Peninsula. The chronology of this new horizon dated in the 8th century BC is essentially based on the dates from Cabezo Pequeño del Estaño (Jover Maestre *et al*. 2016: tab. 1; Prados Martínez *et al*. 2020: 99-100).

There are several reasons for focusing a ceramic study on storage jars, as presented here. Among the different formal groups of Western Phoenician pottery, there are many that do not allow for a transversal sequential reading, given that the same standardized patterns continue – carinated bowls, spherical-cap bowls, pouring vessels, lamps, etc. –. However, there are others that are especially useful as fossil guides, allowing for the definition of different sequenced cultural phases during the first chronological periods of Phoenician colonization in the Mediterranean, especially the plates (Núñez Calvo 2018a), ring-necked jugs (Núñez Calvo 2008b and Gil Orduña 2023), and storage jars (Ramon Torres 2023). The latter, in addition to chronological implications, provides complementary data regarding the interaction of different commercial spheres with their respective radiating geographic centres – Eastern, Central, and Western Mediterranean productions –. That is, in addition to contributing to the purely typological study of this type of vessel dedicated to the storage and transport of trade goods, an in-depth analysis of the storage jars assemblage on a global scale will also allow for a clearer identification of interactions between the different commercial spheres that structured Mediterranean trade during the Early Phoenician colonization.

In order to facilitate its reading and comparison, we have remade the original illustrations of the material (figs. 1-25) in a new refreshed universally standardized way.

Analysis

1. *First horizon*

As main characteristics, this first colonial horizon represented by the assemblages recovered in c/Méndez Núñez and c/Concepción, in Huelva, La Rebanadilla and Utica, reflects a majority presence of storage jars from the Central Mediterranean and the Levantine Phoenicia, with few examples of possible Western productions. A problem with this colonial horizon is the main published assemblage from c/Méndez Núñez-pl. de las Monjas. It lacks certain contextual guarantees, in contrast to the assemblages of Utica and La Rebanadilla. The latter, though prolific, still awaits final publication.

1.1. *Levantine Phoenician storage jars*

In the assemblage of c/Méndez Núñez (González de Canales Cerisola *et al*. 2004: 67-73), the Phoenician storage jars represent the predominant group among the storage vessels, unlike in La Rebanadilla.[2] Although the usual fragmented state in which they are found makes it difficult to perform a typological reading, in the assemblage of c/Méndez Núñez there are some fragments of different anatomical parts of the storage jars, in addition to the rims – shoulders, handles and bases –, which can be illustrative.

1.1.1. *Shoulders, handles and bases*

In most cases where the height of the shoulder is preserved, there is a carination separating it from the body, as is usually found in Levantine storage jars (González de Canales Cerisola *et al*. 2004: pls. 14.22-24 and 39 and 35.4) – see an additional example in well 20017 of Utica (López Castro 2020b: 59 and fig. 6.7). As F. J. Núñez Calvo points out (2018b: 210), some fragments of carinated shoulders in Huelva (González de Canales Cerisola *et al*. 2004: pl. 13.22-24, 26-27, 35 and 37-39) have a projection of the lower wall that suggests a maximum diameter located at the waist of the vessel, to which are added some wide bottoms (*ibid*.: pl. 14.14-20) usually associated with vessels of a pyriform profile frequent in Phoenician Iron Age IIA[3] – strata X-VI of Tyre and period II of al-Bass –, which replaced in Tyre the old fashioned containers of triangular profile. These new piriform containers correspond with the group catalogued as TJ-1 by G. Lehmann *et al*. (2022: fig. 3), especially present around the Jezreel valley in the Levantine hinterland – Tell Abu

2. In the provisional publications, the presence of a large quantity of large autochthonous vessels for storage of the Final Bronze Age – which were also used as cremation urns in some tombs of the near cemetery of Cortijo de San Isidro – has been noted, and Tyrian storage jars of type SJ9 of P. M. Bikai and, even more, Sardinian storage jars of the Sant' Imbenia type, as well as some *pithoi* decorated with bands of paint on some occasions – also in one of the burials of the cemetery – (Sánchez Sánchez-Moreno *et al*. 2011: 194-196; 2012: 71-72 and fig. 7.1-4; 2020).

3. There is also a fragment of an ovoid body with bichrome decoration (González de Canales Cerisola *et al*. 2004: pl. 13.36) that could correspond to type 11 of storage jars from Tyre (Bikai 1978: 45, tab. 10A), differentiated from type 12 by the presence of painted decoration on the body and on the rim, although it is not certain – F. J. Núñez Calvo (2018b: 111) considers it more likely to be another type of vessel, such as a krater or a jug, although the frequent appearance of decorated Phoenician storage jars in the Levant during the Iron Age should be taken into account (Bikai 1978: pl. 34.10; Gal and Alexandre 2000: fig. 3.74.21; Mazar and Paniz-Cohn 2020: phot. 28.6).

Hawam, Horvat Rosh Zayit, Tel Shiqmona, Yoqne'am, Megiddo, and Beth-Shean –, as well as in Tel Sera' in southern Levant, during the Levantine Iron Age IIA period.

On the other hand, as F. J. Núñez Calvo (2018b) also pointed out, the handles generally of circular section in Huelva (González de Canales Cerisola *et al*. 2004: pl. 14.22-28 and 35-38) succeeded in the Levant the angular ones in the Iron Age I. They were present since then on both old fashioned triangular and new pyriform bodies, so that, unlike the carinated shoulders of piriform bodies, they do not allow a precise chronological definition. The scenario is similar in c/Concepción (Ramon Torres 2017: 34).

Several fragments from the bases are also presented. Four bulbous bases are similar to Tyrian type 20 (González de Canales Cerisola *et al*. 2004: pl. 14.10-13) which practically disappear from stratum VIII onwards in the metropolis, in the middle of the Iron Age IIA (Bikai 1978). So, it seems that it fits with old fashioned Tyrian triangular shapes, though, as F. J. Núñez Calvo points out (2018b: 111), they continued to occur occasionally on pyriform shapes from strata X-2 and IX of Tyre (Bikai 1978: pls. 21.12 and 13, and 26.18) and stratum II of Horvat Rosh Zayit (Gal and Alexandre 2000: figs. 3.91.3, 92.4 and 95.18). They could even belong to another type of vessel, such as jugs or *pithoi* (Núñez Calvo 2018: 111), although this does not seem likely given the scarcity of these kinds of containers in Huelva, excepting two wide rims which could in fact correspond with *pithoi* (González de Canales Cerisola *et al*. 2004: pl. 9.29 and 30). Other seven rounded bottoms (*ibid*.: pl. 14.14-20) with a small bulbous nipple in the core would correspond to wide containers with a pyriform profile, possibly Central Mediterranean storage jars. Finally, a flat handmade base (González de Canales y Cerisola *et al*. 2004: pl. 14.21) could correspond to a special type of Central Mediterranean storage jar which has also been recognized in Carthage (Docter 1997: 19-21).

1.1.2. *Tyrian SJ9 rim variants*

It is the rims, however, that allow for the definition of a relatively solid typology given the general absence of complete vessels.

In c/Méndez Núñez and c/Concepción, the most important group of storage jar rims recognized corresponds to the Tyrian type SJ9 (González de Canales Cerisola *et al*. 2004: pl. 13.12-35 and 2017: pl. 14.2-5 and 7-8), also present in well 20017 of Utica with at least one example (López Castro *et al*. 2020b: fig. 6.5), as well as in sondages I and II (Ben Jerbania 2020: figs. 6.9 and 11.7), and La Rebanadilla (Sánchez Sánchez-Moreno *et al*. 2012 and 2020). SJ9 is also the most frequent type in Tyre during strata XIII-IV – Iron Age IIA –, where its presence begins to decrease in stratum V and, even more so, in III – Iron Age IIB – (Bikai 1978: 45-46, tab. 10A). It is a straight vertical rim 2 or 3 cm high and 1 cm thick, sometimes slightly curved outwards or inwards, very heterogeneous in its contour and with many variants, among which can be counted the types SJ-11, 12 and 13 of Sarepta (Khalifeh 1988: 147), as well as the types JR8 and JR9 of Tel Dor (Gilboa *et al*. 2018: pl. 20.xiv). It can also appear in other Phoenician sites on the Levantine coast, such as Tel Shiqmona – phase 12, Iron Age IIA – (Shalvi and Gilboa 2023: fig. 11.9), or in Horvat Rosh Zayit as type SJII (Gal and Alexandre 2000: 48-50).

In Phoenicia, these jars are derived from the traditional elongated rim of Levantine Bronze Age storage containers, especially frequent in stratum XIV of Tyre as type SJ12 (Bikai 1978: pl. 39.6-7 and 11-12) – comparable to types SJ-6, 7 and 8 of Sarepta (Anderson 1988: 192-194) – as well as in phases 12-11 of area G of Tel Dor – type JR21 – (Gilboa *et al*. 2018: pl. 17.iv). These ancient containers, however, did not cease to be somewhat common in later levels of Levantine

Phoenicia, as can be observed in the assemblage recovered from the fort of Horvat Rosh Zayit (Gal and Alexandre 2000: 50), where they are presented as type SJIII and constitute the predominant form.

In Tyre, however, they become much less common after stratum XIV, which is representative of local Iron Age IA. In stratum XIII – Iron Age IB, with the appearance of the bichrome painting style – transitional examples towards type SJ9 are already recognized (Bikai 1978: pls. 37 and 39), although in area G of Tel Dor they can already be recognized in levels of the Iron Age IA – phases 10-8 –, in types SJ4, SJ5, JR1, JR2 and JR3 (Gilboa *et al*. 2018: pl. 20.xii-xv). They are also frequent in Horvat Rosh Zayit as types SJII and SJIII, reflecting a continuity of their production during the Iron Age IIA (Gal and Alexandre 2000: figs. III.74.18, 76.12-13, 77.17, 80.26, 83.17, 92.7). These 'transitional' containers, in fact, are very present in the material assemblage recovered from well 20017 of Utica with at least four rim fragments, although its excavators interpreted them as type SJ9 of Tyre (López Castro *et al*. 2020b: fig. 6.1-4). Given that they measure more than 3 cm in height, however, they should be considered as part of this transitional stage SJ12/9 – see one more fragment from phase 1 of sounding II (Ben Jerbania 2020: fig. 11.7). Two of them, moreover, are covered in red slip (fig. 1). A very interesting aspect of this type of storage jar is that, along with other models, such as some variants of type SJ9 (see below), it could correspond to the original prototype from which some Central Mediterranean storage jars productions would arise (see below).

Examples of the three phases – SJ12, SJ12/9 and SJ9 – are present in the set of storage jars classified as type 9 in c/Méndez Núñez (fig. 1), with some actually corresponding to type 12 of Tyre – SJ7 of Sarepta and SJIII of Horvat Rosh Zayit – (González de Canales Cerisola *et al*. 2004: pl. 13.1-11), others 'transitional' (González de Canales Cerisola *et al*. 2004: pl. 13.14-15, 19 and 35) similar to the indicated specimens of Utica (see above), and others representative of the Tyrian type 9 more properly speaking (González de Canales Cerisola *et al*. 2004: pl. 13.12-13, 16-18 and 20-34).

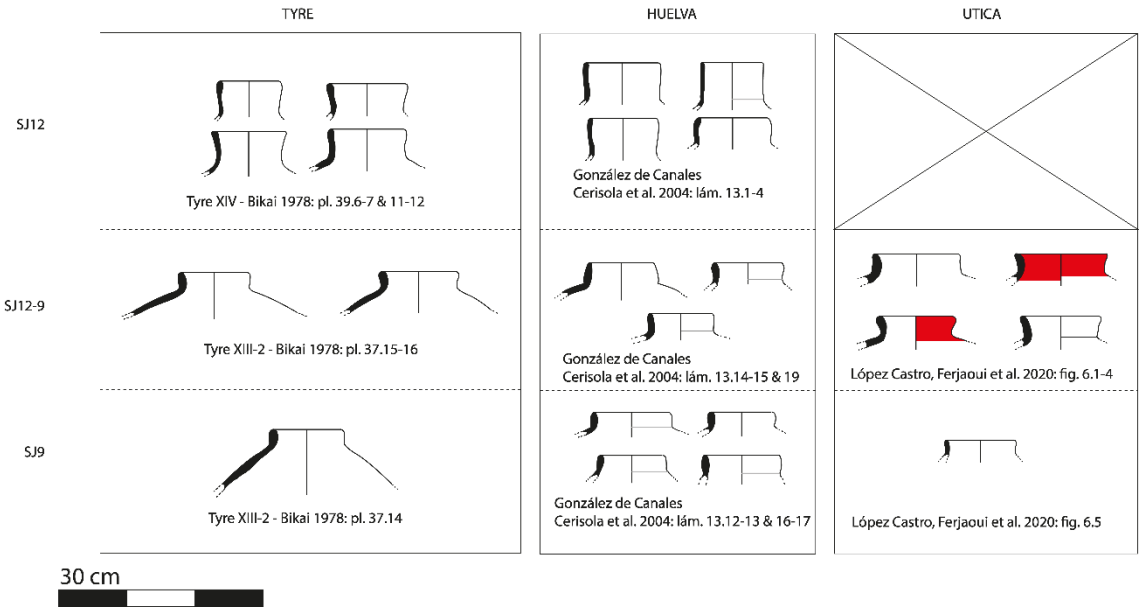

Figure 1. Sequential evolution from type SJ12 to SJ9 in Tyre, Utica and c/Méndez Núñez

Tyrian type SJ9 (fig. 2), however, normally present in vessels with a pyriform profile, is a type of rim that is formally quite heterogeneous and can lead to confusion. Its diverse variants, better recognized in Sarepta or Tel Dor (see above), would serve as prototypes on which later models of Levantine, Central Mediterranean, and Western containers would be developed (see below).

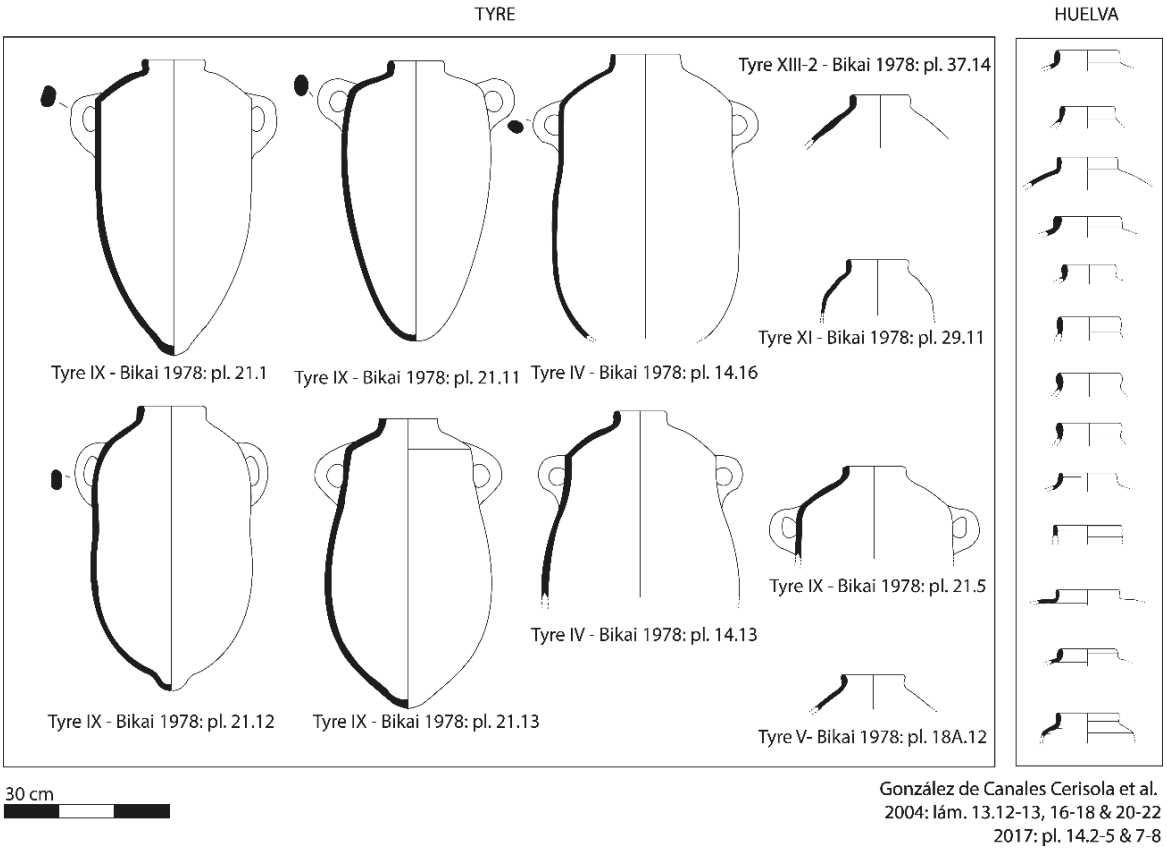

Figure 2. Storage jars type 9 from Tyre XIII-IV and Huelva.

One variant worth noting is represented by at least two examples from c/Méndez Núñez with a thickened exterior section that is either circular or triangular (González de Canales Cerisola *et al*. 2004: pl. 13.25 and 27). This profile (fig. 3), distinct from the other rims with a simpler section, is especially significant as it seems to reflect the Phoenician prototype from which some Central Mediterranean productions – usually known as 'Sardinians', 'Nuragic' or *ZitA* – would emerge, whose earliest examples are notable for having a thickened rim with a circular or triangular section on a more or less elongated neck – type B2 of P. Bartoloni (1988) –, which are also present in c/Méndez Núñez (González de Canales Cerisola *et al*. 2004: pl. 14.1-9).

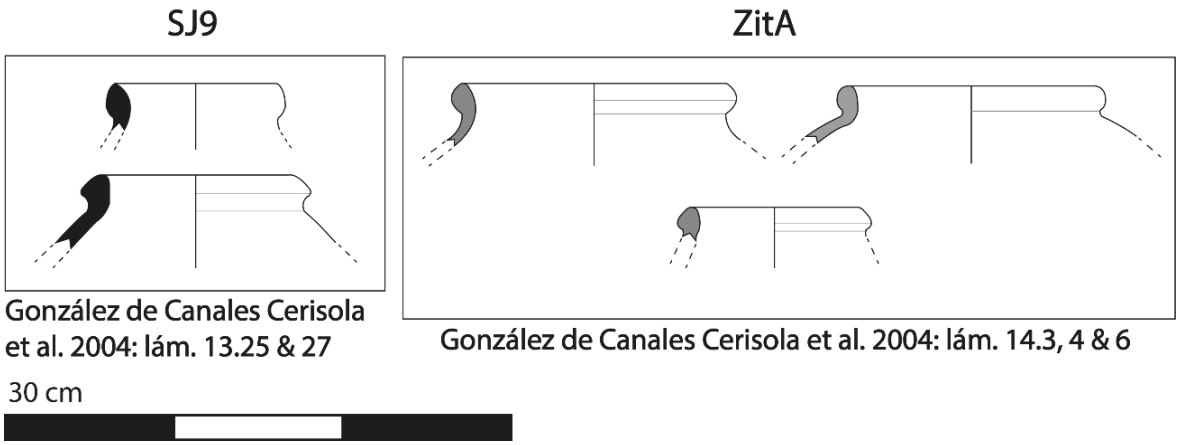

Figure 3. SJ9 Phoenician storage jars with thickened rim and *ZitA* hand-made storage jars from c/Méndez Núñez

In the assemblage of containers from c/Méndez Núñez and c/Concepción, some of the rims classified as type 9 (González de Canales Cerisola *et al*. 2004: pl. 13.23 and 33-34; 2017: pl. 14.5-6) are also noteworthy. Due to the greater thickness at the base of the inner face of the rim, these seem to correspond more closely to the Tyrian type 8 (fig. 4), which is especially present in strata V-IV (Bikai 1978: 46, tabs. 10A and 10B, pls. 14.14 and 18.14) and corresponds to type SJ6 of Tel Dor (Gilboa *et al*. 2018: pl. 20.xiv).

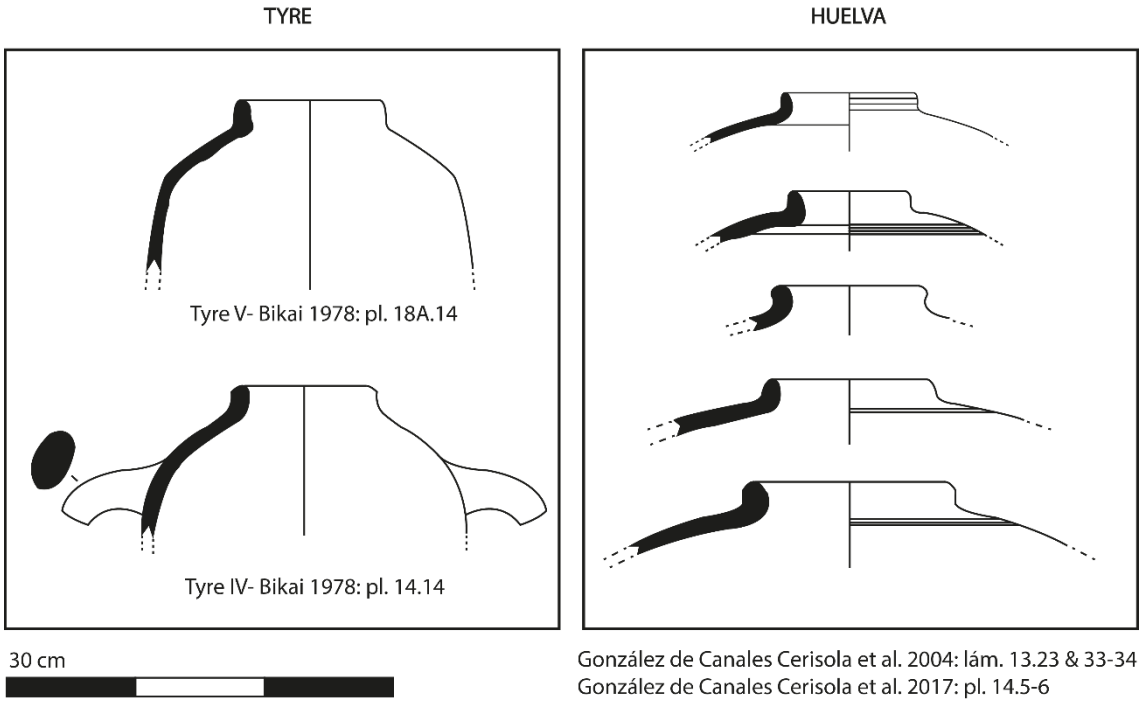

Figure 4. Storage jars SJ8 from Tyre and Huelva

The formal arrangement of the neck in the specimens of Huelva, with an almost horizontally oblique tendency (fig. 4), seems to reflect a precedent for later Western containers of type T-3 and T-10 of J. Ramon Torres (1995 and 2023).

In fact, the similarity of other sherds from Huelva, also classified by their excavators as type 9 (González de Canales Cerisola *et al*. 2004: pl. 13.28-30), with the Western type T-10.3.1.1 (fig. 5) of J. Ramon Torres (2006),[4] with a straight outer face slightly inclined outwards and an inner curved face with a pointed lip, is illustrative as it reflects that the original prototype of early Western productions would be in these Levantine variants as far as the morphology of the rim is concerned (fig. 5). In c/Concepción, in fact, at least one rim fragment has been unequivocally identified as belonging to a Western production of type T-10.3.1.1. by J. Ramon Torres (2017; González de Canales Cerisola *et al*. 2017: pl. 14.14).

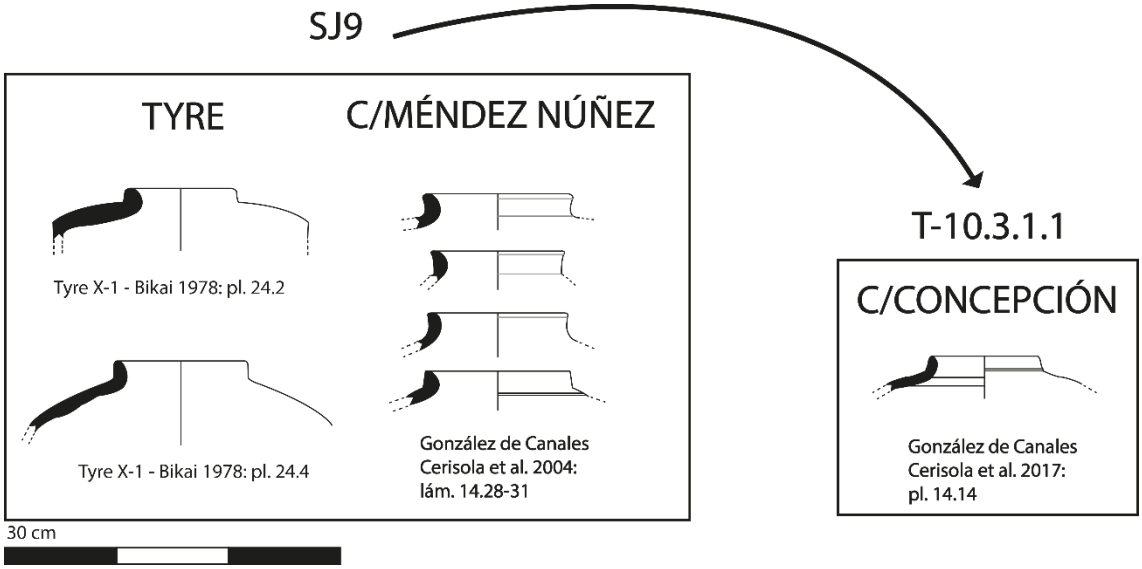

Figure 5: Oriental storage jars' rims preceding the Western group T-10

1.1.3. *Other rim types*

Outside the SJ9 variants, there are other Levantine forms in Western assemblages which are worth mentioning. In c/Concepción, there is at least one fragment of the rim of a Levantine storage jar (González de Canales Cerisola et al. 2017: pl. 14.1) which would correspond to an ancient typology from the Iron Age I on the Carmel coast (fig. 6), as can be seen in the assemblage of phases 12-11 – type JR22 – and 10-8 of area G of Tel Dor – type SJ3 – (Gilboa *et al*. 2018: pls. 17.iv and 20.xi), although with a protuberance on the outer face in the case of Huelva and a smaller size.

4. In Tyre, see other examples already in stratum X-1 (Bikai 1978: pl. 24.2 and 4), as well as the type JR8a of Tel Dor (Gilboa *et al*. 2018: pl. 20.xiv) and in phase 13 of Tel Shiqmona (Shalvi and Gilboa 2023: fig. 8.1-2). See also examples withitn the recently published assemblage of storage jars from Tel Akko H-4 (Brody and Artzy 2023: figs. 6.29.2-26, 6.30.1-10).

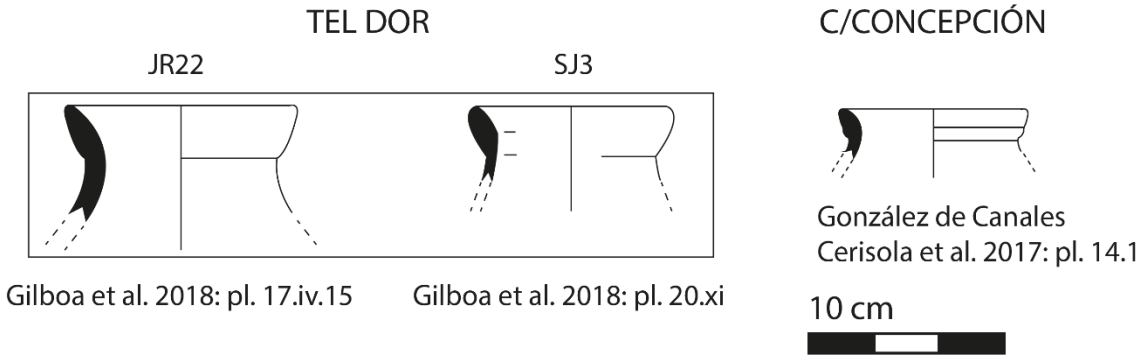

Figure 6: Levantine storage jars' rims from Tel Dor and c/Concepción

In well 20017 of Utica, another exceptional rim is also present, inclined inward with a thickened lip outward, which is not recognized in the typology of P. M. Bikai (López Castro *et al*. 2020b: fig. 6.6), although other quite similar examples have recently been published from levels 13-12 of Tel Shiqmona – Iron Age IIA – (Shalvi and Gilboa 2023: figs. 8.3-8 and 11.10-15). These are shapes classified as TJ-2a by G. Lehmann *et al*. (2022: fig. 4), the first examples of 'sausage-like' storage jars which will become especially characteristic of the Levantine Iron Age IIB period, as in Tel Hazor VI and V (Yadin 1960: pl. 72.8; Ben-Tor *et al*. 1997: fig. 3.46.1).

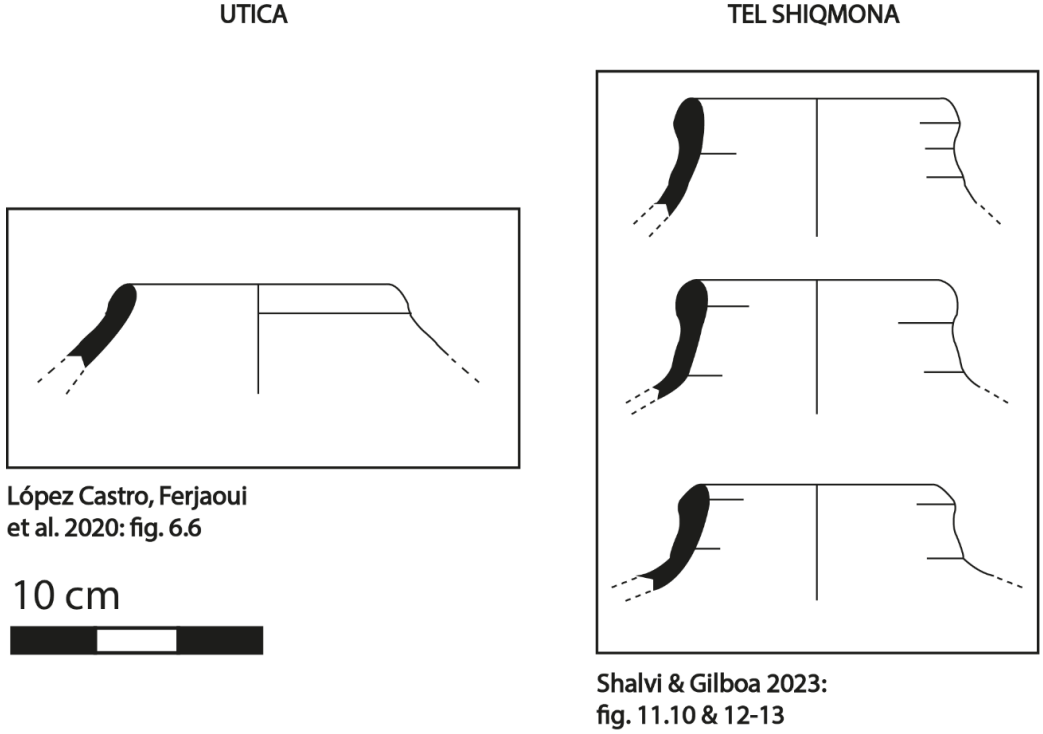

Figure 7: Storage jar from Utica and parallels from Tel Shiqmona

Finally, in c/Méndez Núñez, there are two specimens (fig. 8) recognized as miscellaneous (González de Canales Cerisola *et al*. 2004: pl. 13.37 and 39). Curiously, both cases find a certain formal similarity with type 2 of Tyre (Bikai 1978: pl. 1.14), which, however, is most frequent in stratum I of the metropolis – Levantine Iron Age IIC, 7th century BC –, although it begins to appear timidly in strata III-II – Iron Age IIB, 8th century BC.

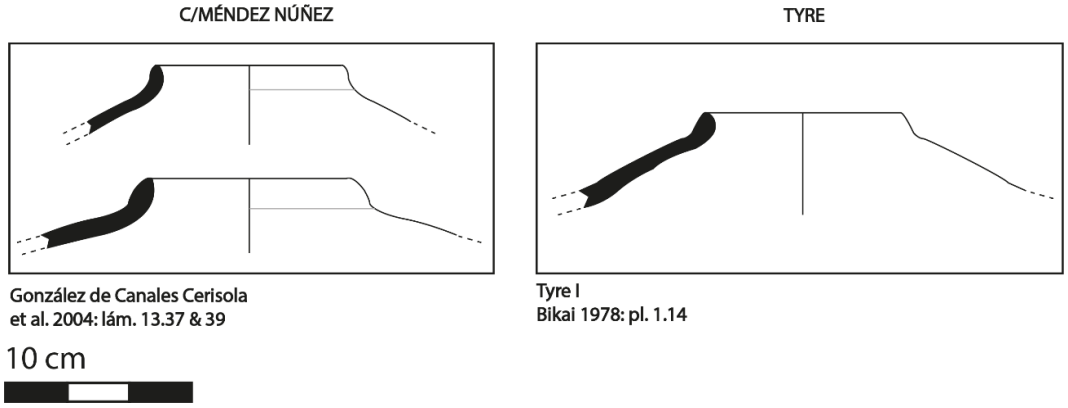

Figure 8: SJ2 storage jars from c/Méndez Núñez and Tyre

The presence of 'late' shapes – along with the fragment of a rim of type T-10.3.1.1 in c/Concepción – is not surprising in the Huelva deposits given their secondary nature and, even more so, in the assemblage of c/Méndez Núñez considering the circumstances of their recovery through unorthodox exhumation methods.

1.1.4. *Overview*

In short, regarding the Levantine storage jars observed in the first colonial horizon reflected in the assemblages of c/Méndez Núñez, c/Concepción, La Rebanadilla, and Utica, most examples seem to indicate a relative chronology situated in the Levantine Iron Age IB and IIA. Some archaic forms, such as the elongated rim type 12 of Tyre, are present, but they may continue to appear profusely even in the Levantine Iron Age IIA, as in Horvat Rosh Zayit. Transitional forms between types 12 and 9 of Tyre, although they begin to appear early in sites like Tel Dor during the Iron Age IA, continue their presence during the Iron Age IB – Tyre XIII – and during the Iron Age IIA – Horvat Rosh Zayit – coexisting with more evolved forms. However, their predominance in the assemblage of well 20017 of Utica with respect to Tyrian type SJ9 is suggestive. If we consider the radiocarbon dates from the Utican well concentrated in the 10th-9th centuries BC (López Castro *et al*. 2016 and 2024), even more so. The apparent predominance of this formal 'transitional' variant in the Central Mediterranean could also explain the predominance of *ZitA* storage jars type B2 in the earliest Phoenician colonial horizons, which possibly derive from this predominant form in well 20017 of Utica (see below).

The exceptional Levantine rim's sherd with a protuberance from c/Concepción, on the other hand, also seems to fit 'ancient' forms, in this case from the Carmel coast with parallels in Iron Age I levels in Tel Dor.

Type SJ9 of Tyre, for its part, constitutes the predominant form in the assemblages of Huelva and La Rebanadilla – but not in well 20017 of Utica, where the transitional type 12/9 is more present –, a form especially representative of Phoenician Iron Age IIA, although it may begin its

presence from stratum XIII of Tyre – Iron Age IB. This heterogeneous type seems to incorporate the formal variants from which later production models would emerge throughout the Mediterranean. Along with the transitional type 12/9 frequent in Utica, the variant of type 9 with a thickened lip outward seems to constitute the prototype from which Central Mediterranean productions would emerge, while flattened variants with a pointed lip and an inner curved face with a more horizontally trending shoulder, arising from type 8 of Tyre, would constitute the prototype from which the first Western productions would emerge, of which an example is presented in c/Concepción.

Finally, exceptional examples stand out, such as the rim from well 20017 of Utica corresponding to a common form on the coast of Mount Carmel – phases 13-12 of Tel Shiqmona – during the Iron Age IIA, as well as two Tyrian specimens of type 2 – frequent late in Tyre – from the material assemblage of c/Méndez Núñez.

1.2. *Central Mediterranean storage jars*

Another major storage jar assemblage appearing ex novo in the first colonial horizon is that of the Central Mediterranean corresponding to types 1 and 2 of R. F. Docter *et al*. (1997: figs. 4 and 6), as well as types B1 and B2 of P. Bartoloni (1988). These containers are made on a wheel and/or by hand, and their production origin is speculated to be on the island of Sardinia due to their special concentration in the settlement of Sant'Imbenia (Rendeli 2020), hence they are also known as Sardinian or Sant'Imbenia-type, in addition to *ZitA* (Oggiano 2000).

In c/Méndez Núñez, up to 9 sherds are recognized (González de Canales Cerisola *et al*. 2004: pl. 14.1-9), with a characteristic thickened circular rim on a generally reduced neck with a concave profile. In c/Concepción, there is also a significant assemblage of up to 10 handmade rims (González de Canales Cerisola *et al*. 2017: pl. 14.9-11).

Unlike in Huelva, a majority presence of this type of storage containers has been indicated in phases IV and III of La Rebanadilla (Sánchez Sánchez-Moreno *et al*. 2020), alluding to the possible profitability of resorting to Sardinian winemaking and pottery centres for the transportation of wine used in the local sanctuary. Several almost complete vessels have been recovered that have an oval widened body with a surface frequently coated in red slip – on at least one occasion, a Phoenician inscription is engraved on the shoulder (Sánchez Sánchez-Moreno *et al*. 2020: fig. 9.1) –. As in Huelva and La Rebanadilla, another important assemblage of Central Mediterranean containers has been recovered in well 20017 of Utica, most often undecorated (López Castro *et al*. 2020b: fig. 10.1-7) or with a red slip (*ibid*.: fig. 10.8-9), and often wheel-made. As in the Iberian sites, most of the specimens would correspond to type B2 of P. Bartoloni (1988), except for one specimen without a differentiated neck (López Castro *et al*. 2020b: fig. 10.6) which correspond to type B1 – the prototype from which the first Carthaginian productions of type T-3.1.1 and T-3.1.2 would seemingly arise (see below). Another assemblage of containers excavated in soundings I and II of Utica stands out with similar characteristics, usually with an elongated neck (Ben Jerbania 2020: figs. 6.10-13 and 14.8) – except in the specimens from phase 1 of sounding II, of type B1 (Ben Jerbania 2020: fig. 11.9-11) – as observed in c/Méndez Núñez and La Rebanadilla.

The predominance of type B2 of P. Bartoloni (1988) is illustrative as it suggests a certain antiquity of this type compared to the variant without a differentiated neck, B1. It is even more illustrative since, apparently, a respective typological origin could be recognized in one case and the other from types 12/9 and 9 of Tyre. Some productions, especially from c/Méndez Núñez

(González de Canales Cerisola *et al*. 2004: pl. 14.1-9) and La Rebanadilla (Sánchez Sánchez-Moreno *et al*. 2020: fig. 9.1) – which can also be covered with a red slip – suggest this (fig. 9). Other productions, on the other hand, as we have seen (fig. 3), would derive directly from a certain variant of type SJ9 of Tyre. In any case, these vessels acquired soon a rolled and thickened rim with a generally circular profile – sometimes triangular – being the majority shape, in fact, in Utica (López Castro *et al*. 2020b: fig. 10.1-9), and reducing the height of the neck until it ends in type B1 of P. Bartoloni (1988) (fig. 10), generating the different later forms recognized in Carthage, Cadiz and other later contexts (see below). This formal evolution did not take a long period of time, since, although type B2 predominates, all variants are already present in the assemblage of well 20017 of Utica, including type B1 specimens.

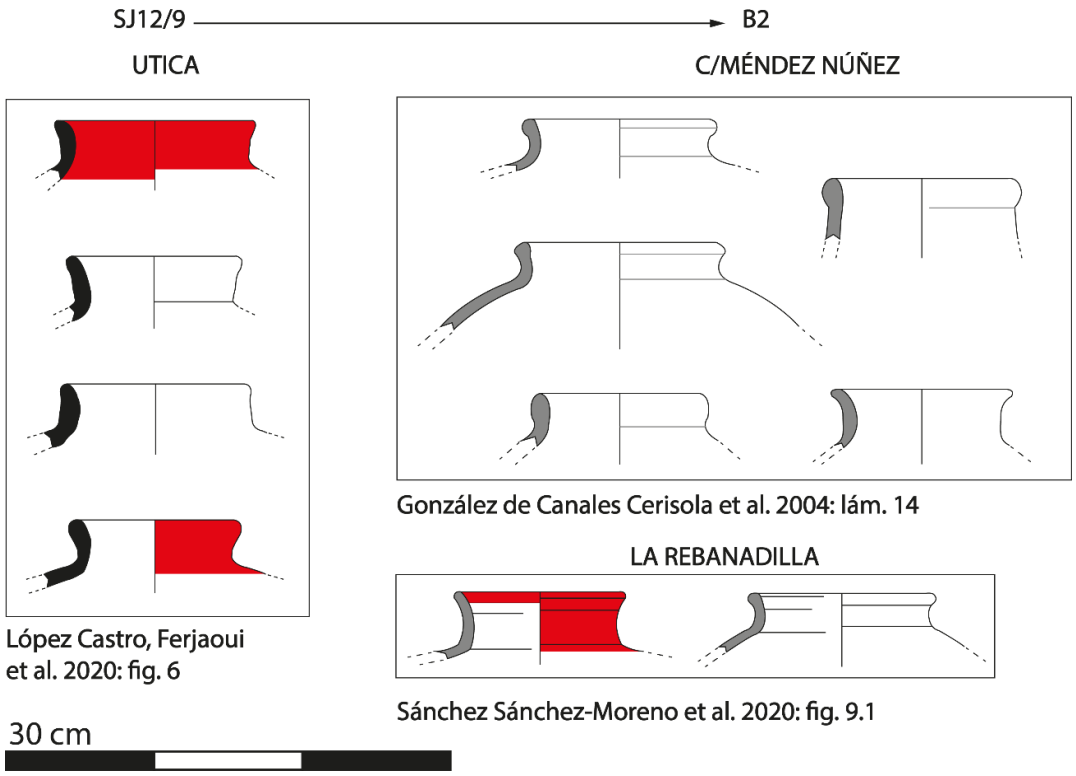

Figure 9: Imitation of Levantine storage jars type 12/9 by Central Mediterranean type B2 examples

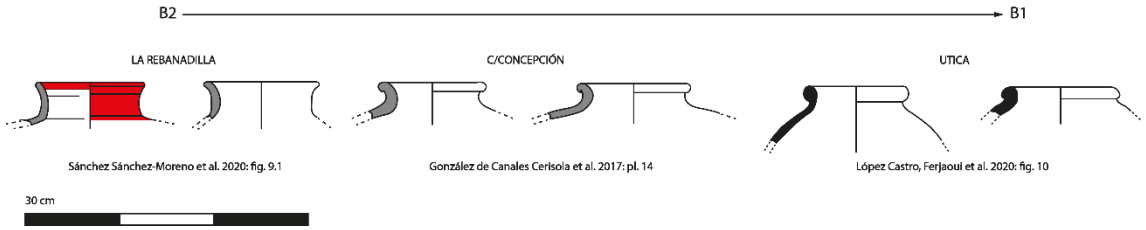

Figure 10: Formal evolution of Central Mediterranean storage jars from B2 ty B1 types of P. Bartoloni

Regarding c/Méndez Núñez, five wheel-made Central Mediterranean type B1 and B2 examples are also presented (González de Canales Cerisola *et al*. 2004: pl. 13.40-44), which were

identified by their excavators as T-3.1.1 and T-3.1.2 Carthaginian productions – typology of J. Ramon Torres (1995 and 2023) – characterized by having an oval vertical rim located directly on the shoulder or a neck of very reduced height. Besides that, there are other two handmade sherd of rims of the same formal type (González de Canales Cerisola *et al*. 2004: pl. 14.4 and 7).

As there is no clear presence of locally produced containers in the earliest documented archaeological levels of Carthage – phase I under the *Decumanos Maximus*, pit 4 of Bir Massouda, Rue Ibn Chabâat and Rue Astarte among others (Vegas 1999, Docter 2007, Docter *et al*. 2008, Flügel *et al*. 2020 and Maroui Telmini *et al*. 2020) – until the phase III of the *Decumanus Maximus* (Docter *et al*. 2007), it seems difficult that the wheel-made and hand-made examples documented in c/Méndez Núñez, which are associated with more ancient pottery types, could have been produced by Carthaginian workshops. It is more likely that they simply were another variant of ancient *ZitA* containers that imitated the most standardised SJ9 Phoenician containers' rim (fig. 11).

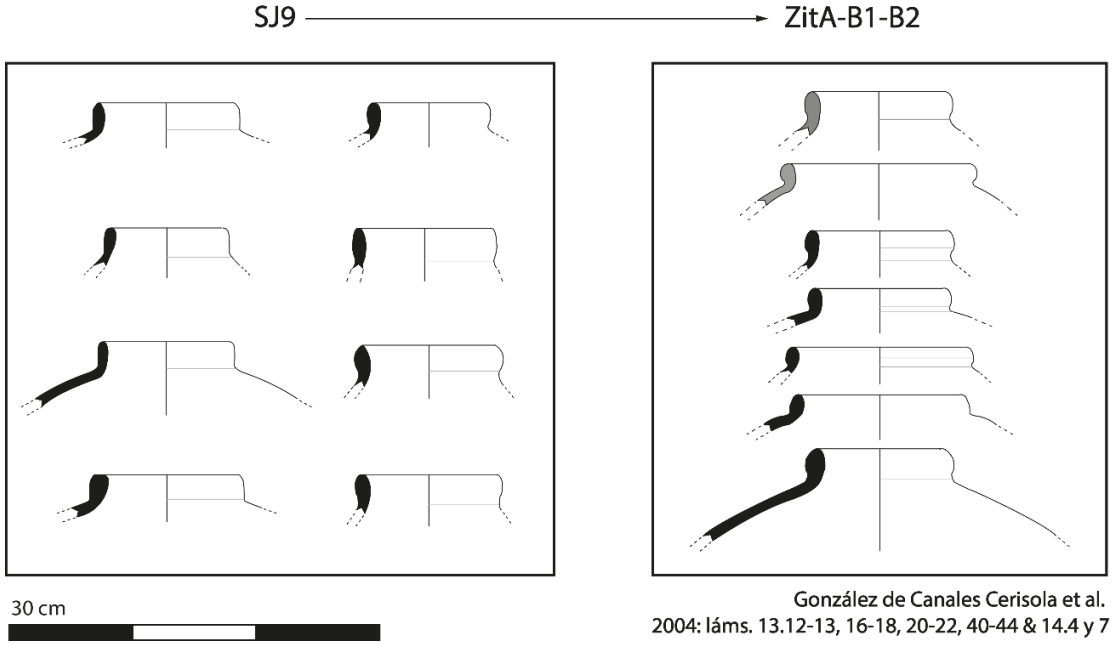

Figure 11: Central Mediterranean storage jars from c/Méndez Núñez derived from Tyrian type SJ9

2. *Second horizon*

This new horizon, marked by the foundation of new colonial settlements in the Gaditan area – *Gadir* and Castillo de doña Blanca –, Malaga coast – Morro de Mezquitilla –, Sardinia – Sulci –, Tunisia – Carthage – and Cyprus – Kition – (Bikai 1987 and 2003), presents a renewed scenario marked by the consolidation of the Phoenician colonial presence in the Mediterranean and the generation of more geographically defined commercial spheres. In addition to the new Western sphere marked by the generalization of new regional containers types, which predominate over other productions – Levantine and Central Mediterranean origins –, in the Central Mediterranean area a closer dependence on – possibly – 'Sardinian' production centres is generated while the first Carthaginian productions T-3 of J. Ramon Torres or *Karthago* A1 of R. F. Docter already appear in small quantities.

2.1. *Levantine Phoenician storage jars*

These containers appear in small quantities and not in all Western enclaves. In general, they have typical shapes of strata III-II of Tyre and the Levantine Iron Age IIB, known as 'sausage-like' storage jars with annular vertical rims, although some fragments corresponding to different variants of the more old-fashioned Tyrian type SJ9 are still present. In addition to Tyre – type SJ7 and SJ6 – (Bikai 1978: pl. 94), there are also other stratified Phoenician assemblages such as the recently published level 11 of Tel Shiqmona, where they are known as type TJ2 (Shalvi and Gilboa 2022: fig. 9, and 2023: fig. 17.1-3) and where, in addition, painted storage jars in a bichrome style with an elongated vertical rim are also present (fig. 12) which will continue to appear throughout the Iron Age IIB in Phoenicia as type SJ3 or miscellanea[5] in Tyre III and II (Bikai 1978: pl. 7.1-3).

New Phoenician 'sausage-like' storage jars – Tyrian SJ7 and SJ6 – are elongated containers characterized by bodies with rectilinear or slightly concave walls in the upper part and pointed bottoms, as well as carinated shoulders that can be presented with a rectilinear or arched tendency, either concave or convex. The rims can be vertical and with a rectilinear profile or thickened on the outside normally having a ridge, protuberance or groove (figs. 12 and 13).

One of the Levantine sites where the most quantity of stratified Phoenician storage jars have been excavated is in Tel Hazor – strata VI and V –, related to the Levantine Iron IIB. Here in Tel Hazor, where they have been described as 'sausage-like' storage jars (Ben-Ami *et al*. 2012: figs. 6.19 and 20.1-2, phots. 6.26-28), they begin to appear, however, in strata VIII and VII in limited quantities (Ben-Ami 2012: fig. 3.16.13). So the beginning of their production can be traced back to the late Iron Age IIA. In Sarepta, where they were classified as SJ-17 (Anderson 1988: p. 198, pl. 37.11, 13 and 14), they concentrate in stratum C1 of area II,Y and parallel to strata III-II of Tyre, where the presence of these sausage-like storage jars also increases. However, they also seem to go back in their first examples to stratum IV (Bikai 1978: pls. 3.1-8 and 4.1-6, tabs. 10A and B).

5. See in Peñón de la Reina two examples of similar profile among the wheel-made ceramics, on one occasion with a flared rim and twin handles that could be a krater (Martínez Padilla and Botella López 1980: figs. 219.1 and 220).

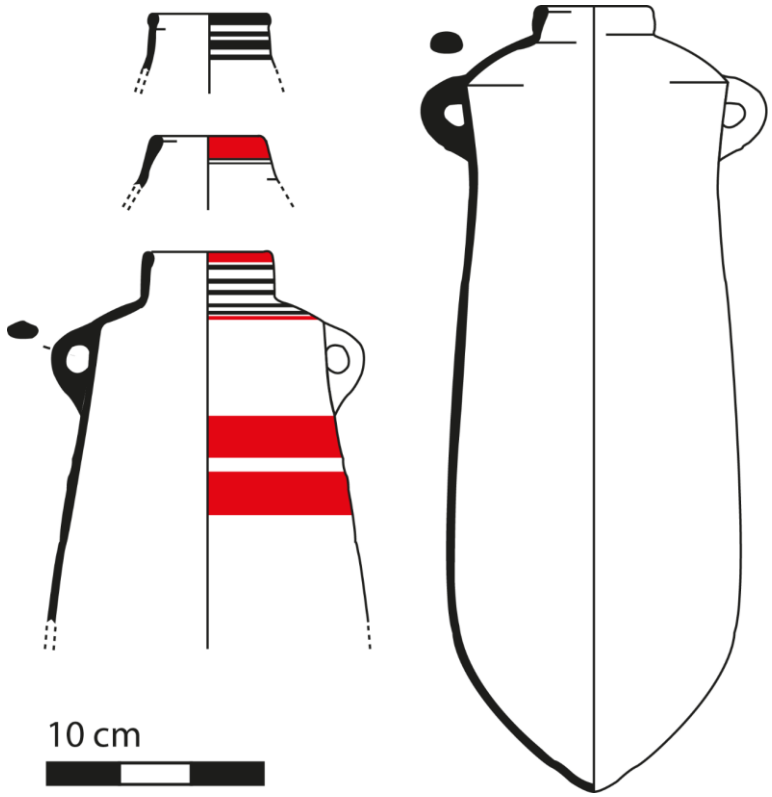

Figure 12: Levantine Phoenician storage jars from the Iron Age IIB. Tel Shiqmona, level 11 (Shalvi and Gilboa 2023: fig. 17)

There are several archaeological assemblages in the Western Mediterranean where these new Levantine storage jars are documented, especially in Cádiz – ancient levels of Teatro Cómico and c/Cánovas del Castillo –, Castillo de Doña Blanca and Morro de Mezquitilla.

In phase IB of Teatro Cómico, a sherd of a curved shoulder was found, possibly corresponding to a Levantine piriform recipient typical of the Iron Age IIA in metropolitan Phoenicia (Torres Ortiz *et al*. 2020: fig. 7). In phase II, the rims of two Tyrian type SJ9 containers are present (fig. 13), one slightly inclined inward and the other vertically shortened (Torres Ortiz *et al*. 2014: fig. 2.g and 2.i), which also reflect a continuity with respect to the previous horizon of Huelva, La Rebanadilla, and Utica.

In c/Cánovas del Castillo, two fragments of a storage jar upper part with a rim, shoulder, and handle (Córdoba Alonso and Ruiz Mata 2005: fig. 13.1 and 13.2), and another rim (*ibid*.: fig. 13.2), correspond to Eastern type 2 of A. G. Sagona (1982: 75-78 and fig. 1.2-5), Tyrian type SJ6 of P. M. Bikai (1978: pl. 4.5) and type TJ2 of Tel Shiqmona (Shalvi and Gilboa 2022 and 2023), as well as the 'sausage-like' storage jars of Tel Hazor VI and V (Ben-Ami *et al*. 2012). The two specimens from c/Cánovas del Castillo show a thickened vertical rim with a groove at the base that separates them from the shoulder.

In the nearby site of Castillo de Doña Blanca, these containers are also present (Ruiz Mata 1986: fig. 4.8 and 9; Ruiz Mata and Pérez Pérez 2020: fig. 7.2.1), and at the same time the presence of some Tyrian SJ9 rims continues, which, however, occur on specimens with pronounced

shoulders typical of 'sausage-like' types, and not on piriform shapes more typical of the previous period (fig. 13) (Ruiz Mata and Pérez Pérez 2020: fig. 7.2.2-4). It's curious that this type of containers has not been recognized in the Levantine Phoenicia, but in other Western site – type AV3 of Morro de Mezquitilla (see below).

In phases B1a and B1b1 of Morro de Mezquitilla, different variants of Levantine storage jars classified as types AV1, AV2, and AV3 are present (Schubart and Maass-Lindemann 2017: taf. 60.20, 23, 29, 35 and 37). In addition to ridged rims corresponding to types SJ6 or SJ7 of Tyre – types AV1 and AV2 (*ibid*.: taf. 60.20 and 29 and 61.76) – there are, at least in the earlier phase B1a, rims corresponding to Tyrian type SJ9 on pronounced shoulders of 'sausage-like' storage jars – type AV3 (*ibid*.: taf. 60.23, 35 and 37) – as occurs in Castillo de Doña Blanca (fig. 13). Lastly, some of the fragments of circular handles and carinated shoulders of the B1b1 phase may belong to any of the three variants of Levantine shapes (*ibid*.: taf. 61.70, 76, 85, 87, 91, 93, 108 and 116).

So, there is a diversity of Levantine storage jars in Cádiz, Castillo de Doña Blanca and Morro de Mezquitilla, including 'sausage-like' containers with old-fashioned vertical thickened rims and new vertical rims with a ridge in the external side which correspond with known Eastern types – SJ6 in Tyre, TJ2 in Tel Shiqmona, SJ17 in Sarepta – (fig. 13), together with some isolated SJ9 rims from Teatro Cómico which could correspond to old-fashioned piriform containers.

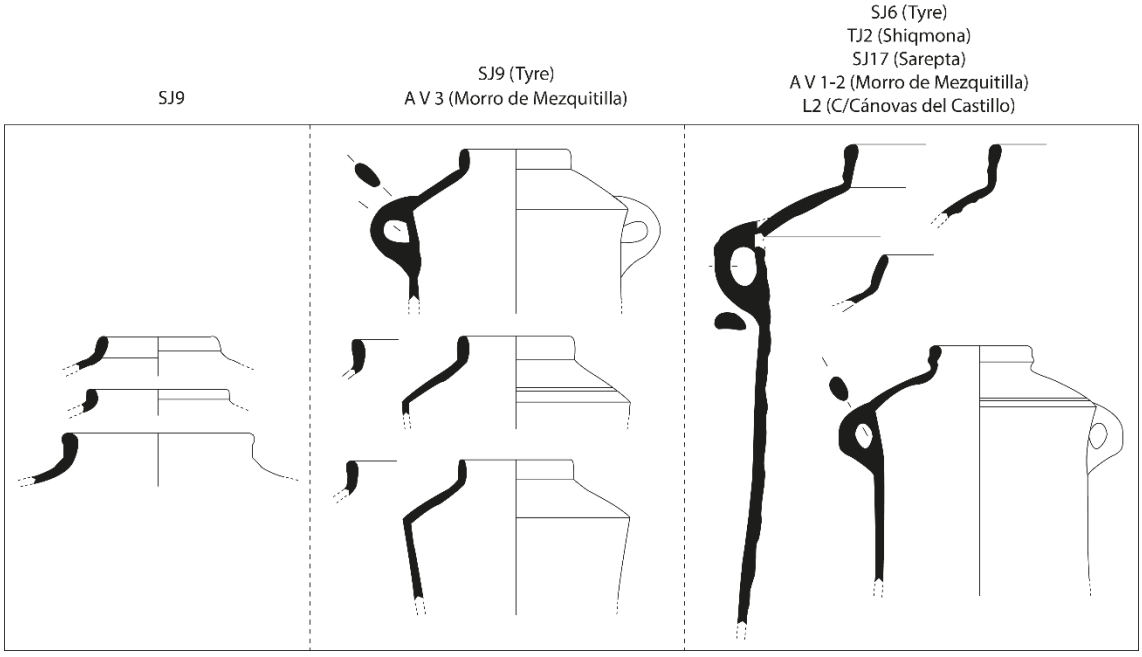

Figure 13: Levantine storage jars in the Western and Central Mediterranean

In the Central Mediterranean, specifically in the oldest archaeological levels of Carthage excavated by the DAI around Rue Ibn Chabâat and by the University of Hamburg under the *Decumanus Maximus*, there are also imported Levantine storage jars of the same typology as those already identified in the West in the typologies of A. Peserico (2002 and 2007) and M. Vegas (1999: abb. 110), but very exceptionally compared to a predominant presence of Central

Mediterranean types and Greek storage containers. In the early phases of occupation of the *Decumanus Maximus*, they are present,[6] although they will become more frequent in later levels of the 8th and 7th centuries BC (Docter 2007: 643-646, abb. 350 and 351). Finally, at least one rim fragment of a Tyrian type SJ9 stands out in the stratum 3172 of section IIF of the Cronicario of Sant'Antioco (fig. 13) (Guirguis 2022: fig. 7.D), along with other Western productions that indicate a chronology situated in this second colonial horizon (see below).

2.2. *Central Mediterranean storage jars*

Central Mediterranean storage jars continue to be especially frequent in both the Central and Western Mediterranean areas, as the dynamic exchanges between both commercial spheres remains. Although local productions are hardly recorded in Carthage compared to a predominance of imported *ZitA* storage jars, in the western sites of Cádiz, Castillo de Doña Blanca and Morro de Mezquitilla some examples are recognized of which a possible Carthaginian production has been suggested, reflecting the first steps of the pottery industry in the Phoenician colony of North Africa.

Central Mediterranean storage jars are frequent in phase IB of the Teatro Cómico, with two recognized wheel-made specimens – 712/2 and 779/1 – and two handmade – 756/1 and 9 – (Torres Ortiz *et al*. 2020, fig. 7) that fit into the types B1 and B2 of P. Bartoloni (1988: 32-33 and fig. 4), as well as in the type *Karthago* A1 of R. F. Docter (2007: 621-623 and abb. 339), and in the types L3a, L3f, and L4 of c/Cánovas del Castillo (see below). One of the handmade sherds is decorated with red slip. Although these kinds of storage vessels are still present in phase II, from which only amorphous sherds and handles with potter's marks are illustrated (Torres Ortiz *et al*. 2014: fig. 2.l-o).

The large quantity of Central Mediterranean jars documented in the pottery assemblage of c/Cánovas del Castillo, almost as numerous as the set of local western productions, allowed for the development of a classification system for the different formal variants grouped under the general type L3 – types L3a to L3f – (Córdoba Alonso and Ruiz Mata 2005: 1297-1300, figs. 13.3-6 and 14) which find parallels in the rest of the assemblages of the second colonial horizon and even the previous one. On many occasions, they are decorated with an external red slip and, sometimes, also internal. Apart from that, the type L4 stand out (*ibid*.: fig. 15.1), characterized by having a thickened circular rim with an external edge and a drooping shoulder with a concave profile, generally made with an orange paste that theoretically reveals an apparently Carthaginian origin and that would correspond to the type *Karthago* A1 of R. F. Docter (1997: 176-177; 2007: 621-623 and abb. 339) or T-3 of J. Ramon Torres (1995: 277-278, fig. 30).

On the other hand, among the storage jars documented in c/Ancha, the presence of eight specimens similar to those of c/Cánovas del Castillo stands out (Ruiz Mata *et al*. 2020: fig. 9A:1-7), to which a typology has been assigned: types L3a – no. 2-5 – and L3b – no. 1 and 6 –, which

6. The only relevant level is the greyish stratum rich in faunal bone remains under the pavement of the oldest house at the SE end of the section – FK 93/183 –, in the east street – Oststraße – (Docter *et al*. 2007: abb. 11), where 12 sherds of storage jars walls of Greek containers appeared in the pavement stratum I-1a2 of house 1 and the subsequent fill II-1a1, in rooms A and B-south. Here, two fragments of Central Mediterranean storage jars together with several Greek, Western, 'local' – one with red slip – and one handmade 'local' sherd are recorded (Docter *et al*. 2005: 562), of which, however, no illustrations are presented. The presence of more Levantine storage jars has been indicated in the context KA93/181 (*ibid*.: 566-567), as well as at least two more in different contexts belonging to phase IIa – cat. 5453 – (Docter *et al*. 2007: 67-83).

may be equivalent to type B2 of P. Bartoloni (1988). Excepting specimen no. 7, without a perceptible neck, which would fit into type B1.

It is worth mentioning the important expansion of pottery material from Castillo de Doña Blanca recently published by D. Ruiz Mata and C. J. Pérez Pérez (2020). Here, forms are recognized to evoke the same ceramic horizon. The storage jars assemblage again provides many Central Mediterranean specimens with little neck development – L3a – (*ibid*.: fig. 7.2.9-11), others with a slightly more developed neck – L3b – (*ibid*.: fig. 7.2.8 and 12), and other intermediate shapes (*ibid*.: fig. 7.2.13 and 14). Fragment no. 14 has a flattened upper surface similar to those indicated in Teatro Cómico (Torres Ortiz *et al*., 2020: fig. 7.712/2) and c/Cánovas del Castillo (Córdoba Alonso and Ruiz Mata 2005: fig. 15.1) as type L4.

Unlike the Gaditan area, in Morro de Mezquitilla these Central Mediterranean containers are less frequent. Known as type AIV (Maass-Lindemann 2017: 292; Schubart and Maass-Lindemann 2017: taf. 58, 59 and 61), they appear in phase B1a with four specimens – 6% of the total set of storage jars – that also fit into types B1 and B2 of P. Bartoloni (1988), as well as types L3e and L3f of Cadiz. In phase B1b1, only one more rim and a shoulder fragment recognized as AIV are present (Schubart and Maass-Lindemann 2017: taf. 58 and 61, no. 81 and 117), although one more rim classified as *varia* (*ibid*.: taf. 61.84) could correspond to the type L3e of Cádiz (Córdoba Alonso and Ruiz Mata 2005: fig. 14.5). According to G. Maass-Lindemann (2017: 292), almost all specimens seem to come from Carthage judging by the orange colour of the paste, except for specimen no. 51, which could be a local imitation (Schubart and Maass-Lindemann 2017: taf. 59.51). This difference in numerical frequency between the sets of the Gaditan area and Morro de Mezquitilla may have to do with the idea pointed out by M. Torres-Ortiz *et al*. (2020) in relation to a greater dependence on wine imports in the Gaditan area and the development of the earliest pottery workshops in the area of Vélez-Málaga, from where the western storage jars documented in the Teatro Cómico seem to come (see below).

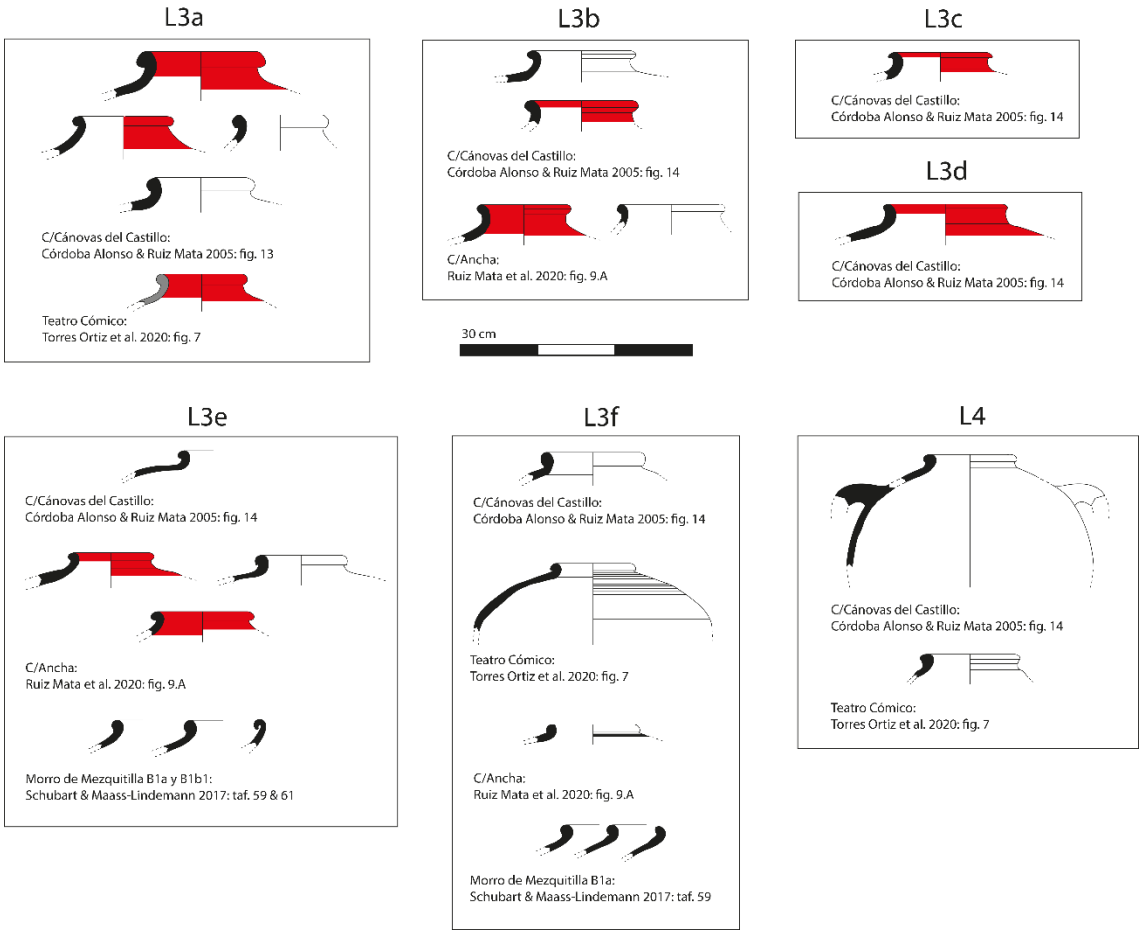

Figure 14: Central Mediterranean storage jars from Cádiz and Morro de Mezquitilla

As expected, these containers are much more prolific in the Central Mediterranean, where the same types documented in the Western Mediterranean are present (fig. 15).

In the earliest archaeological levels of Carthage, productions with a thickened rim and arched neck – type B2 of P. Bartoloni and 73 of M. Vegas (1999: abb. 111) – and productions with a thickened rim without a differentiated neck – type *Karthago* A1 of R. F. Docter (2007: abb. 339) and form 74 of M. Vegas (1999: abb. 112) – which will constitute the main model on which the first Carthaginian productions will be built – types T-3.1.1 and T-3.1.2 – have been differentiated. In the stratigraphic sequence under the *Decumanus Maximus*, these forms do not actually clearly appear until phase III, although some circular and oval handles have been pointed out in contexts of phase II that could belong to these new containers (Docter 2007: abb. 339.5301 and 5302). Note that the presence of a Carthaginian rim's sherd has recently been noted – *Karthago* A1, T-3.1.1.2. or L4 – in US 73 from Rue Astarte 2 (Maraoui Telmini *et al*. 2020: fig. 6.Cat.16), which seems to be contemporary to phases I and II of *Decumanus Maximus*.

On the other hand, the storage jars with a curved neck and thickened rim (Docter 2007 635-640, abb. 346-348) – 'Sardinian' or *ZitA* containers – are especially frequent from phase I – cat. 5370-5374, 5379, 5381-5382, 5387-5390, 5392-5394, 5397 and 5401 –.

Among the important pottery assemblage of trench 4 of Bir Massouda, there is also a majority presence of Central Mediterranean containers – in stratum 4460, 69% of the storage jars assemblage compared to 29% of local productions, the latter present in the form of a handle and amorphous sherds – (Docter *et al*. 2008: 328-342 and figs. 3.12 and 14, and 4.6).

Immediately subsequent occupation levels but representative of the same cultural horizon are those of phase II under the *Decumanus Maximus*, in which the area acquires a renewed urban organization with a series of dwellings and buildings in which the sub-phases of reconstruction IIa and IIb are recognized. Of these, although the presence of some vessels of local production is indicated, four examples of *ZitA* containers are illustrated (Niemeyer *et al*. 2007: abb. 346.5372, 5379 and 5381-4382). The few examples published seem to belong to the type B2 of P. Bartoloni (1988), with a prolonged development of the neck except in fragment 5372. Fragment 5372 would fit more into type B1.

Other pottery assemblages have been documented in Rue Ibn Chabâat, Carthage. One of them is context K 91/62 under Rue Ibn Chabâat, known as 'complex 1' (Vegas 1999: 99-102, abb. 5), with up to 33 individualized pieces representing the most archaic cultural phase of Carthage contemporary with phases I and II under the *Decumanus Maximus*. Among the material, a circular rim and a shoulder of a storage jar are presented – local form 74.1, equivalent to *Karthago* A1, T-3, and L4 of c/Cánovas del Castillo – (*ibid*.: abb. 5.28); another with the rim slightly more pointed towards the exterior (*ibid*.: abb. 5.29); another with three grooves on the shoulder and a less pointed termination (*ibid*.: abb. 5.30); and two flared rims of local type 73 – beaded rim, type B2 of P. Bartoloni – (*ibid*.: abb. 5.31 and 32). Another ceramic assemblage of the same chronology comes from *locus* K 90/42 in section 1/1 of sector G on Rue Ibn Chabâat (*ibid*., abb. 4), where two more B2 *ZitA* containers (*ibid*.: abb. 4.16) and B1 (*ibid*.: abb. 4.17) are presented. Another rim's sherd of a B2 *ZitA* container has been documented in US 70 from Rue Astarte 2 (Maraoui Telmini *et al*. 2020: fig. 8.Cat.40), which also seems contemporary in terms of pottery characteristics – a radiocarbon date have been yielded from this context, but too affected by the Hallstatt plateau (*ibid*.: tab. 4).

Finally, in Sant'Antioco, at least one complete specimen from the *Tophet* sanctuary stands out. A calibrated radiocarbon date has been obtained for this specimen, placing it in the first half of the 8th century BC (Guirguis 2022: fig. 15). Morphologically, it corresponds to the rims – perhaps wrongly – identified as T-3.1.1.1 and T-3.1.1.2 by F. González de Canales Cerisola *et al*. (2004) in c/Méndez Núñez, which we identified as directly related to Tyrian type SJ9 regarding its vertical thickened rim (see above).

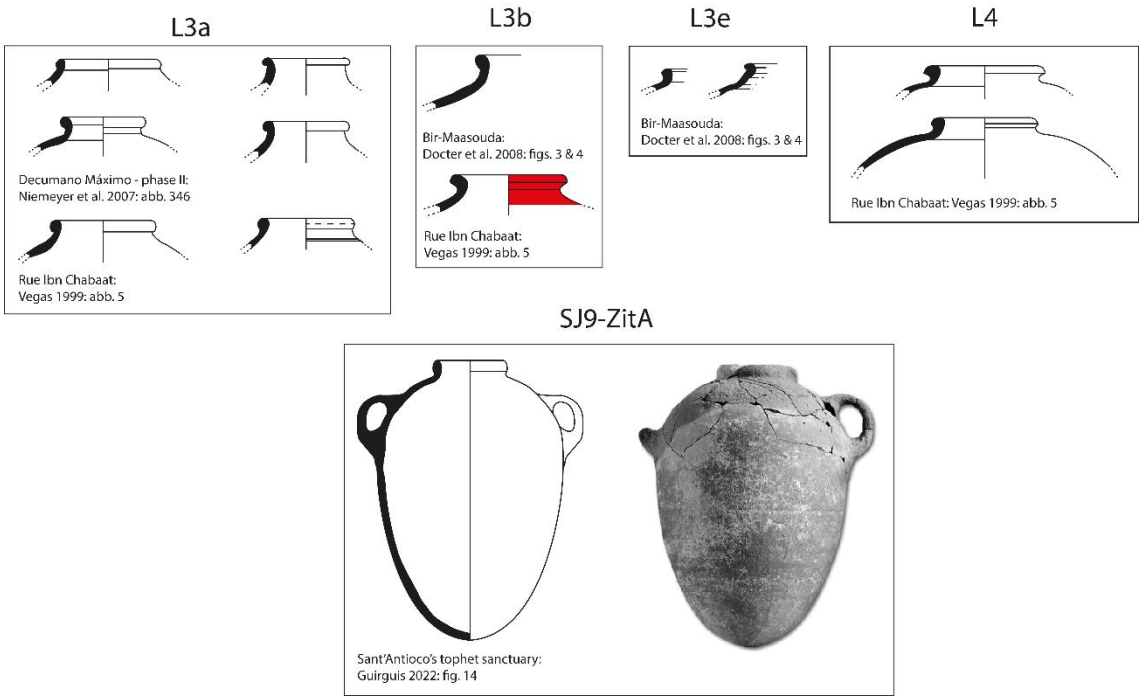

Figure 15: Central Mediterranean storage jars from Carthage and Sant'Antioco. No scale

In short, we observe a greater concentration and continuity of the types and variants of thickened-rim types derived from the ancient Tyrian type SJ9, while, in comparison with the previous horizon and in a significant way, we observe a reduction of specimens with elongated necks of concave profile – Gaditan type L3a – that were frequently observed in La Rebanadilla, the sondage I of Utica and in c/Méndez Núñez, which we consider plausibly derived from the old fashioned Tyrian type 12/9 (see above).

Carthaginian productions registered in Cádiz, Morro de Mezquitilla and several contexts of Carthage are notably significant, although they remain a minority in front of *ZitA* and Levantine containers.

The notable presence of Central Mediterranean storage jars in c/Cánovas del Castillo, c/Ancha and Castillo de Doña Blanca is also very striking – curiously, this is not the case observed in phase II of Teatro Cómico, where there is a very large majority of containers of Western production (see below). Chronologic and/or behavioural differences between all these Gaditan assemblages could explain these variations.

2.3. *Western storage jars*

This second colonial horizon is marked by the generation of a consolidated pottery industry in the Western Phoenician colonies, especially types T-10.3.1.1[7] and T-10.1.1.1[8] of J. Ramon Torres

7. Oval vertical rim, sometimes with a foot ring at the base, on amphorae with a carinated shoulder, narrowed waist, and a tendency towards a cylindrical body.

(1995: 229-230, fig. 195; 2006: fig. 1) – which were attested in c/Concepción (see above) –, and the minor appearance of some specimens of type T-10.1.2.1 (*ibid*.: 230-231, fig. 196) – a variant of T-10.1.1.1 with a greater widening of the lower half of the body, greater narrowing of the upper half of the body and a shorter shoulder[9] – (fig. 16). T-10.3.1.1 was seemingly the first Western form derived from Levantine piriform storage jars – Tyrian SJ9 –, from which the classic 'sack-like' productions would emerge as T-10.1.1.1, and, derived from this, the T-10.1.2.1 – more present in the later M2 horizon of J. Ramon Torres (2010). The problem is that T-10.1.1.1 and T-10.1.2.1 differ only in anatomical measurements that can be easily observed in complete or semi-complete specimens, which is not usually the case. Normally, only fragments of the rim, handles, or body are preserved, which tend to coincide in both types, although external ridges are generally observed at the base of the T-10.1.1.1 rims and a smooth outer surface on the T-10.1.2.1 rims, as well as a greater flattening and internal thickening (Ramon Torres 2023: figs. 195-198).

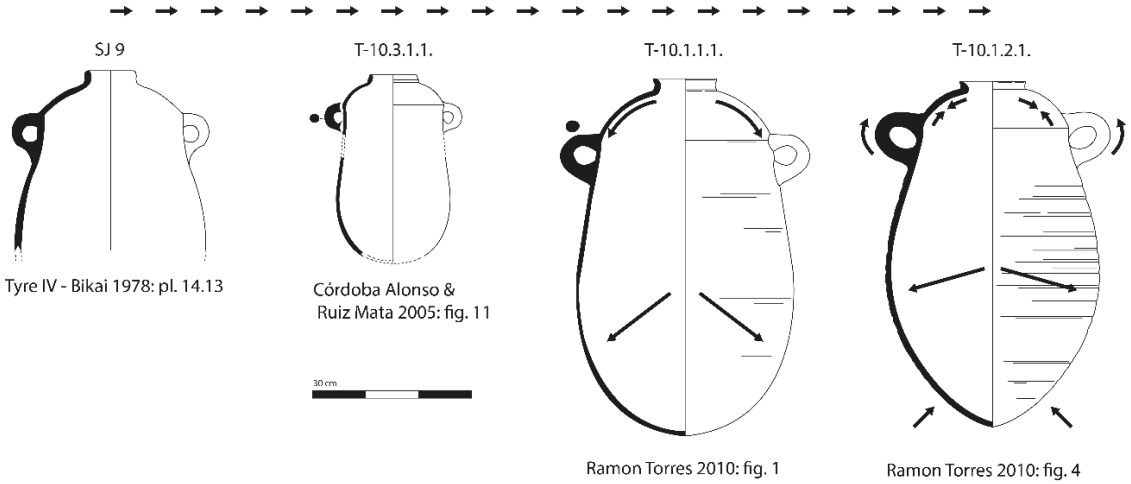

Fig. 16: Western storage jars' sequential evolution

Regarding the Gaditan area, it has been suggested that the first western productions appearing in Teatro Cómico and in the Castillo de Doña Blanca seem to constitute imports from the Málaga area and that, together with Levantine and Central Mediterranean imports, they seem to indicate the absence of wine production in the Bay of Cádiz, as the need to be supplied from the outside (Torres Ortiz *et al*. 2020: 386). This would be suggested by the analysis of the paste carried out on some pieces from phase IB of Teatro Cómico that point to a provenance from the region of Vélez-Málaga and the surroundings of the Morro de Mezquitilla. At least one of the recognized rims in Teatro Cómico – phase IB – (*ibid*.: fig. 7.712/1) has been identified with the type T-10.3.1.1 due to its oval profile. The rest of the fragments are indetermined sherds, circular handles, and carinated shoulders

8. Curved rim with a usual foot ring at the base and pointed lip, with a carinated shoulder on a larger 'sack' body, which reaches maximum diameter in the lower half.

9. The essential difference that J. Ramon Torres (2023: 229) indicates between both types is a relationship between the total height – excluding the rim – and the height of the back or shoulder, equal to or less than 8.8 in type T-10.1.1.1, and equal to or greater than 8.9 in type T-10.1.2.1.

(*ibid*.: fig. 7) that could belong to the same type of vessel or possibly to the type T-10.1.1.1 that already appeared in the following occupation phase.

In phase II, many more examples of type T-10.3.1.1 (Torres Ortiz *et al*. 2014: fig. 2.a-b, f y k) of J. Ramon Torres (2006) appear, which, on the other hand, will be the predominant type in c/Cánovas del Castillo and c/Ancha (Córdoba Alonso and Ruiz Mata 2005: figs. 10-12; Ruiz Mata *et al*. 2014: 103 and fig. 20.9; 2020: fig. 9.B.1-9). There are also other Western containers (Torres Ortiz *et al*. 2014: figs. 2.c-e) that can be classified as type T-10.1.1.1 of J. Ramon Torres (1995: fig. 195) showing a certain heterogeneity, as in c/Ancha (Ruiz Mata *et al*. 2020: fig. 9.B.10-16). There are some specimens, however, that fall outside the more standardized lines, showing a more inclined rim towards the exterior or a much smaller diameter than normal (Torres Ortiz *et al*. 2014: fig. 2.h and 2.j).

In c/Cánovas del Castillo[10] the T-10.3.1.1 predominant containers have been classified as the group LI, inside of which there is also slight variations in the contour of the rim – types LIa to LIh – (Córdoba Alonso and Ruiz Mata 2005: figs. 10 and 12). The different variants are characterized by having a rim with a curved inner face and a pointed lip – LIa –; by a thinned vertical rim – LIb –; by having a curved rim with an external foot ring and a pointed lip – LIc –; by a rim inclined towards the exterior – LId –; by a thickened rim with a rectilinear inner face and a pointed lip – LIe –; by a reduced flared and curved rim – LIf –; by an oval vertical rim – LIg –; and by a rim with a thickened inner base – LIh –. In the assemblage of Castillo de Doña Blanca (Ruiz Mata and Pérez Pérez 2020: fig. 7.2.B), a similar and representative set of containers of the M1 horizon of J. Ramon Torres (2010) is presented. Together with the examples of Teatro Cómico, all of them may be inserted in the typology of c/Cánovas del Castillo (fig. 17).

In conclusion, in the Gaditan area, there is a majority presence of the new type T-10.3.1.1 productions, which nonetheless present different variations in the contour of the rim's profile, as well as a minority presence of T-10.1.1.1/T-10.1.2.1 examples (fig. 17).

10. In c/Cánovas del Castillo, on the other hand, two miscellaneous examples classified as L5 and L6 appear (Córdoba Alonso and Ruiz Mata 2005: fig. 15.2-3). The first case, although its authors relate it to the Carthaginian type 3 B5 of R. F. Docter (1997: 168, cat. no. 268 and 269), seems to constitute a further variant of the type T-10.1.1.1 of J. Ramon Torres and the local type L1a, with the peculiarity of having a marked step on the shoulder and a more vertical projection like the specimens of Teatro Cómico. Type L6 (Córdoba Alonso y Ruiz Mata 2005: fig. 15.3) is a thinned vertical rim moulded on the exterior, with a foot ring at the external base and narrowing towards the beginning of the shoulder. It could be another variant of the general type T-10.3.1.1, although no clear and evident parallels have been found.

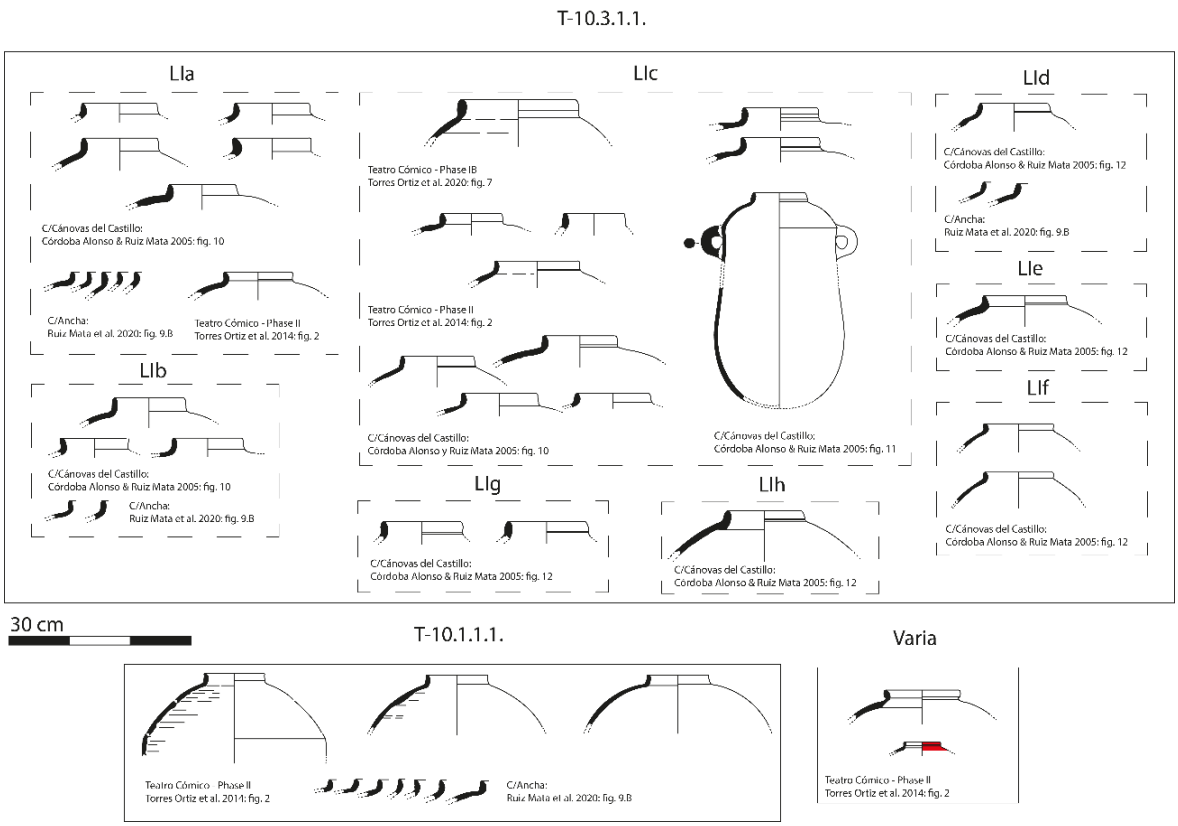

Figure 17: Western storage jars of Cádiz

Outside the Gaditan area, at Morro de Mezquitilla – first levels of occupation: B1a and B1b1 –, the local type AI storage jar (Schubart and Maass-Lindemann 2017: taf. 57 and 59-61) would correspond to the types T-10.3.1.1 and T-10.1.1.1/T-10.1.2.1 of J. Ramon Torres (2023). Although, as G. Maass-Lindemann points out (2017: 288-289), it is important to indicate that the small size of many fragments can lead to some classification mistakes, the great predominance of these Western types is striking, with 71% of the total examples in phase B1a and 68.5% in B1b1.

Inside the AI type there are subtypes which have been differentiated regarding the contour profile of the rim: AI1a, 1b, 1c, 2a, 2b and 3, whose distribution between phases B1a and B1b1 is chronologically significant (figs. 18 and 19). AI1a, AI1b and AI3 rims concentrate their presence in phase B1a. On the other hand, AI2a and AI2b rims are much more frequent in the B1b1 phase (*ibid*.: 288-290).

Within J. Ramon Torres's typology, types AI1a, AI1b, and AI3 would fit mostly into the forms T-10.3.1.1 and, to a lesser extent, into T-10.1.1.1.,[11] while types AI2a and AI2b, into the more flattened form which is more usual in T-10.1.2.1 storage jars, although not exclusively.

11. Most of the specimens of the local types AI 1 and AI 3 correspond in phases B1a and B1b1 to the type T-10.3.1.1 because they have, in most cases, a rim that tends to be vertical or inclined towards the exterior, with only a few corresponding to the type T-10.1.1.1 – only one in phase B1a (*ibid*.: no. 18) and four in B1b1 (*ibid*.: no. 80, 99, 101 and 118).

Another type of more specialized storage vessel at Morro de Mezquitilla is represented by the local type AII,[12] which, in the cases documented in phase B1b1 – a shoulder with a wall starting point and a twin handle, as well as other amorphous decorated sherds (Schubart and Maass-Lindemann 2017: taf. 61) – would correspond to a local production of the Tyrian bichrome decorated type SJ3 (Bikai 1978: pl. 7.3).

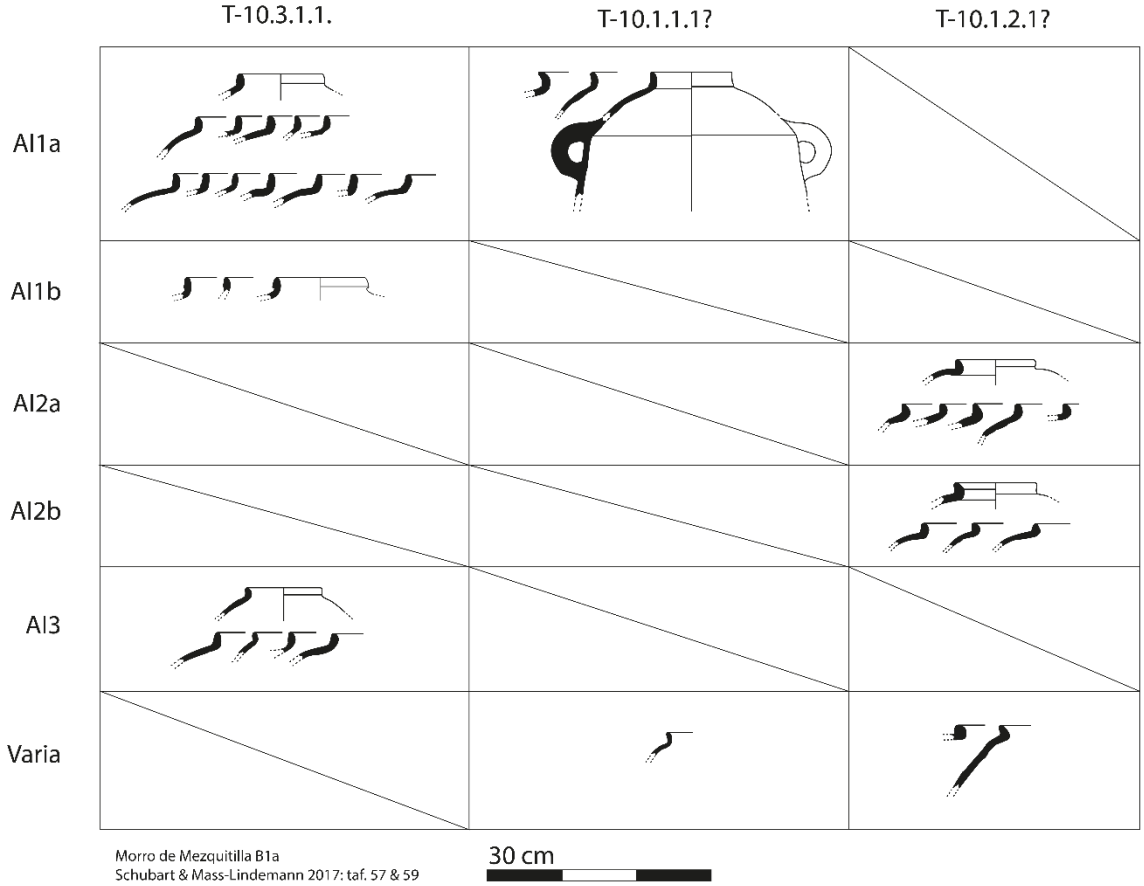

Figure 18: Types of storage jars' rims from Morro de Mezquitilla's phase B1a

12. The type AII (Schubart and Maass-Lindemann 2017: taf. 57 and 61) is a recipient of fine paste that, according to G. Maass-Lindemann (2017), could have been used for more functions than storage and transport. It is usually decorated and is subdivided into two variants: AIIa – monochrome – and AIIb – bichrome. Although, according to G. Maass-Lindemann (2017: 291), there may be several oriental prototypes that served as models, such as the Tyrian type SJ3 of P. M. Bikai (1978: pl. VII.3), the poor development of the fragments prevents it from being recognized with certainty. In any case, the specimens from Morro de Mezquitilla are of local manufacture, except for fragment no. 109 (Schubart and Maass-Lindemann 2017: taf. 61), whose differentiated yellow colour could attribute its origin to Carthage (Maass-Lindemann 2017: 291).

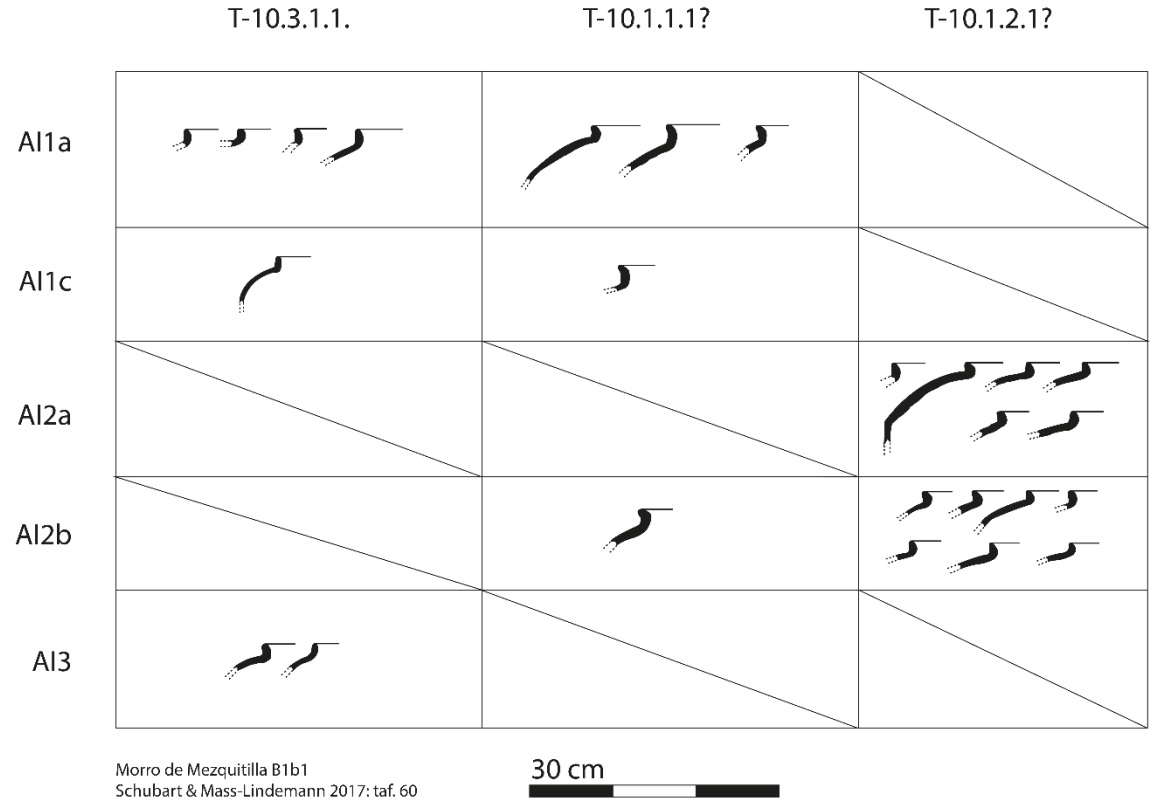

Figure 19: Types of storage jars' rims from Morro de Mezquitilla's phase B1b1

Regarding the Central Mediterranean area,[13] there is limited evidence for Western storage jars – notably T-10.1.1.1 – in the earliest phases of Carthage, with more substantial archaeological examples appearing in later periods (Vegas 1999: abb. 7.18 and 109; Docter 2007: 646-651 and abb. 352-355).

3. *Third horizon*

This new horizon would be equivalent to J. Ramon Torres' M2 (2010: 219-222), who at that time considered the site of Chorreras as the most representative, pending a definitive publication of the material of Morro de Mezquitilla – which in fact would appear in 2017 (Schubart and Maass-Lindemann 2017) – from later phases than B1b1. To this new horizon, which would be dated around the 8th century BC, we can also add the oldest assemblages excavated in Lixus, the foundation of the Phoenician settlements of Montilla and Cerro del Villar, at least part of the

13. Some Western containers are also documented in Sant'Antioco. In the most ancient levels of the sondage IIF, several pottery sherds corresponding to storage jars have appeared: in stratum 3180, the appearance of a shoulder fragment with painted and incised decoration stands out, while in 3209, another shoulder fragment with a ridged neck and a western-type T-10.1.1.1 rim, also decorated with a band of angular geometric motifs at shoulder height, is noteworthy (Guirguis 2022: figs. 8.A and 9.A).

Phoenician pottery assemblage of Cortijo Riquelme and Peñón de la Reina, the amortization material of the Cabezo Pequeño del Estaño fort, phase IVA of Mozia, some recently presented levels of Utica – phase 3 of the sondage 2 – and, at least, phase III under the *Decumanus Maximus* of Carthage.

Regarding the storage jars' repertoire in the Western Mediterranean and the Atlantic Ocean, we observe a consolidation of the Western pottery industry with the T-10.1.1.1 type and, to a lesser extent, T-10.1.2.1, while there is a decrease in the importation of Central and Eastern Mediterranean forms, perhaps related to a higher development of regional wine production and a lesser dependence on foreign sources. In the Central Mediterranean, there continues to be a significant importation of *ZitA* containers in Carthage – as in the recently founded settlement of Mozia in Sicily – while local productions of the T-3.1.1.1 type, which take the Central Mediterranean type B1 as its source, become more frequent. At the same time, in metropolitan Phoenicia, the production of 'sausage-like' storage jars with increasingly shorter vertical rims is predominant, finding some imported examples in Carthage but being almost absent in the Western spheres. To a certain extent, therefore, one can see a more marked regionalization of pottery production and a greater maturity of the autonomous spheres of the Central and Western Mediterranean regions with respect to metropolitan Levantine Phoenicia.

3.1. *Levantine Phoenician storage jars*

In Levantine Phoenicia, the production of 'sausage-like' storage jars, type 2 according to A. G. Sagona (1982), is consolidated with the adoption of new, increasingly flattened rims and a thickened, horizontal, flattened lip[14] (fig. 20). Thus, during the 8th and early 7th centuries BC in Phoenicia, there is a constant evolution of shapes towards more pronounced shoulders, a widening of the lower half of the body, and a narrowing of the waist, as well as increasingly flattened and less vertical rims, while maintaining an external ridge – types TJ5, TJ7, and TJ9 at Tel Shiqmona, present in phases 9-7 (Shalvi and Gilboa 2022) – which would coincide with types SJ5, SJ4, SJ2, and SJ1 of Tyre (Bikai 1978: pl. 94).

14. SJ17 and SJ18 in Sarepta (Anderson 1988: pls. 37.13 and 38.24); SJ5 and SJ4 in Tyre (Bikai 1978: pls. 3.8 and 4.4); TJ4, TJ3 and TJ9 from Tel Shiqmona, already present in levels 10 and 9 alongside a decrease in the TJ2 type (Shalvi and Gilboa 2022: fig. 9).

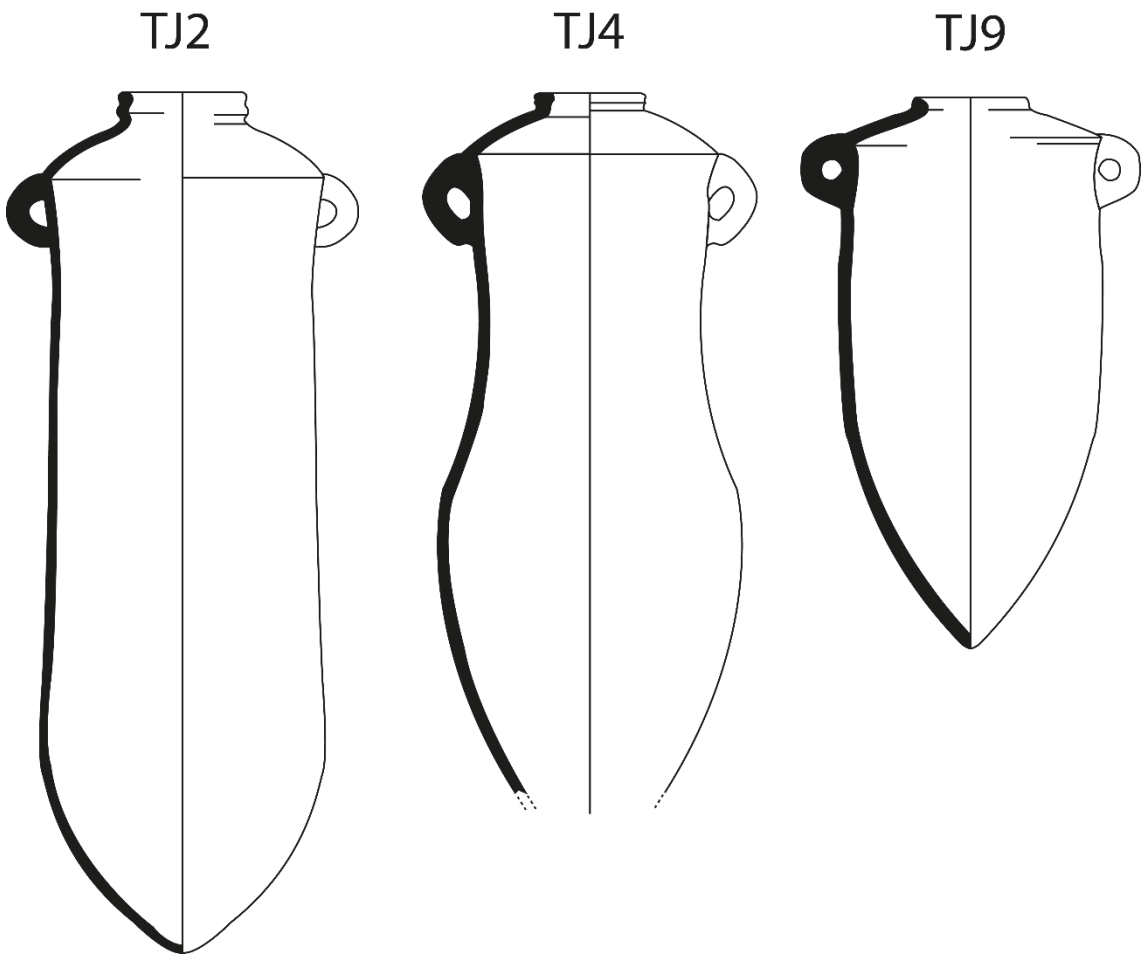

Figure 20: Levantine Phoenician storage jars from Tel Shiqmona's level 10 – Late Iron Age IIB – (Shalvi and Gilboa 2022: fig. 9). No scale

These storage jars are found in very limited quantities in the West. In phase B1b2 of Morro de Mezquitilla, there is an isolated fragment of a possible SJ9 type from Tyre – local type AIII/V – (Schubart and Maass-Lindemann 2017: taf. 105.792) similar to those observed in phases B1a and B1b1 (see above), as well as other rims' fragments that could correspond to the Tyrian SJ2 type, equal to TJ4 from Tel Shiqmona (*ibid*.: taf. 105.790, 791 and 793).

In addition to some sherds found in Sant'Imbenia (Rendeli 2020: fig. 11), on the other hand, in phase III under the *Decumanus Maximus* of Carthage (fig. 21) a larger number of these Levantine containers with rims corresponding to the TJ2 and TJ4 types of Tel Shiqmona are documented (Docter 2007: 644-646, abb. 350.5414, 5416-5418, 5420, 5422 and 5426)[15] along with some

15. Curiously, one of the fragments of a carinated shoulder shows the beginning of an open body, which is more typical of a 'sack' storage jar of Western productions or the old Levantine piriform forms of the Iron Age IIA (Docter 2007: abb. 350.5422).

T-10.1.1.1 Western storage jars (*ibid*.: 646-650, abb. 352.5432-5433 and 353.5437), a sherd of a decorated Corinthian container (*ibid*. 654-655 and abb. 357.5473) and another sherd from an Attic one (*ibid*.: 655-658, abb. 358.5482, 5484 and 5486), which suggests the consolidation of a privileged commercial centre between various commercial spheres.

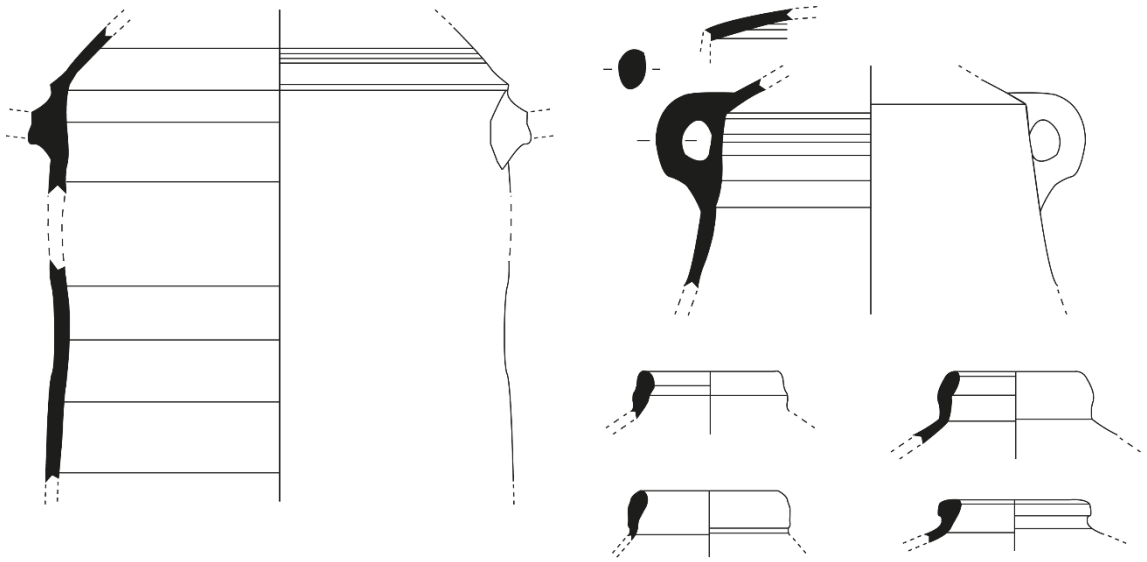

Figure 21: Levantine Phoenician storage jars from the phase III under the *Decumanus Maximus* in Carthage (Niemeyer *et al*. 2007: abb. 350). No scale

3.2. *Central Mediterranean storage jars*

This new horizon is characterized by the continued circulation of Central Mediterranean storage jars of the Sant'Imbenia type, in both its variants with and without a marked neck, while at the same time the production and circulation of Carthaginian shapes of types T-3.1.1, T-3.1.2, T-2.1.1 and T-2.1.2 as defined by J. Ramon Torres (1995 and 2023) develops and becomes more widespread. This panorama is well reflected in the Iron Age levels excavated in the Nuragic settlement of Sant'Imbenia (Rendeli 2020), where, in addition to some Western imports of types T-10.1.1.1 and T-10.1.2.1, all the aforementioned Central Mediterranean types are present (*ibid*.: figs. 10-11). Similarly, this same horizon can be observed in the earliest archaeological levels of Mozia in Sicily – period IVA –, where at least two B1 containers have been found (Nigro 2020: fig. 12.9-10). In phase 3 of the sounding of the *colline* of Utica (Ben-Jerbania 2020: 40, fig. 16), sherds of the Sant'Imbenia B1 (*ibid*.: fig. 15.15) and B2 types (*ibid*.: fig. 15.14) are also present, in addition to a vertical rim with a convex contour on the exterior (*ibid*.: fig. 16.11) with parallels in the early Phoenician productions of the *Portuscuso* type (Bernardini 2000: 37-40; Ramon Torres 2010: 284-285 and pl. 1.1) in Sulci. In phase III under the *Decumanus Maximus* of Carthage, unlike the previous phases I and II, there are numerous examples of local Carthaginian production of the *Karthago* 1 A1 or T-3.1.1.1 type (Docter 2007: 620-623, abb. 339.5300, 5303-5305 and 5307-5308), while at the same time a predominance of *ZitA* containers remains[16] (*ibid*.: 632-640, abb.

16. There is also an extraordinary, flattened bottom (Docter 2007 no. 5365).

346.5363, 5365, 5369, 5374-5376, 5378, 5380, 5385-5386 and 348.5399) that can still be classified within the c/Cánovas del Castillo scheme (fig. 22) and even the presence of two fragments of proto-Etruscan containers[17] which are also inspired in classic ovoid Central Mediterranean shapes (*ibid*., 641-643, abb. 349.5404 and 5408).

In the representative deposits of this new horizon in the Western Mediterranean, a few Central Mediterranean imported containers can be found, as in phase B1b2 of Morro de Mezquitilla – type AIV – (Schubart and Maass-Lindemann 2017: taf. 105) which seem to correspond equally to both formal variants of types B1 or T-3.1.1.1 – no. 789 – and B2 or Sant'Imbenia – no. 788 and 794 –, as well as a possible example in Peñón de la Reina of type B2 (Martínez Padilla and Botella López 1980: fig. 100.3).

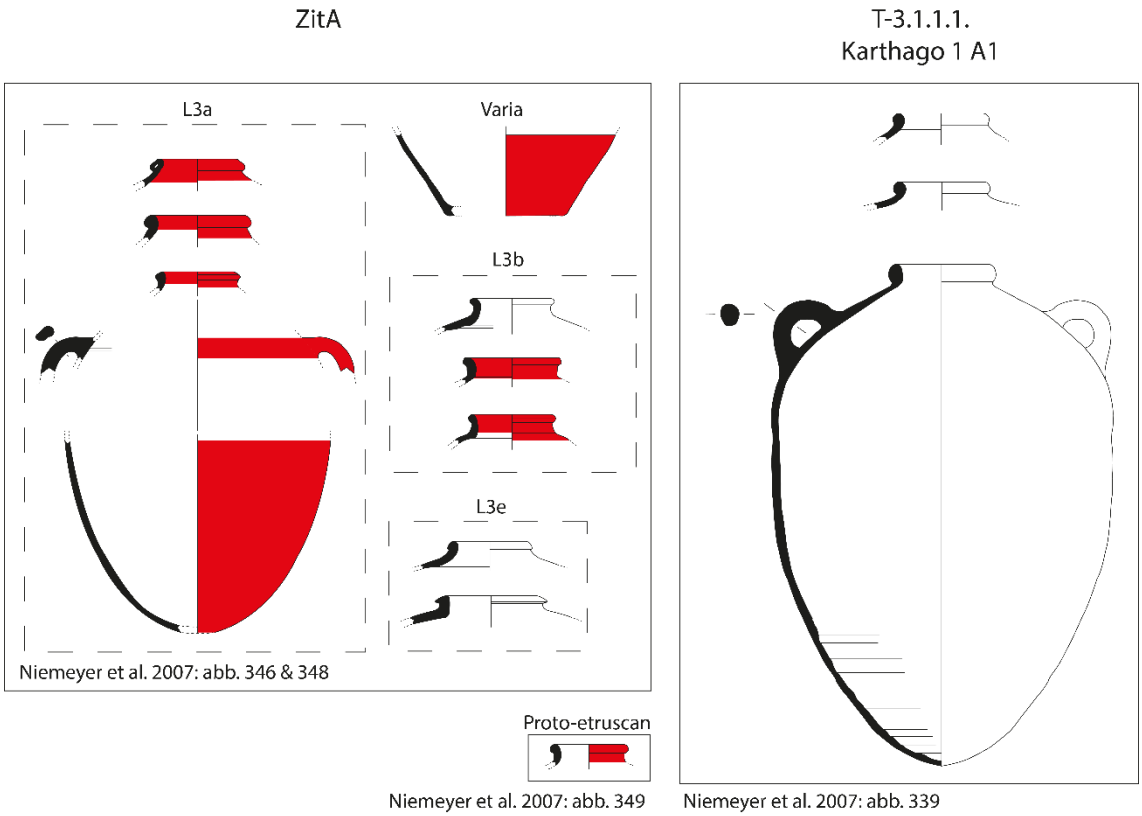

Figure 22: Central Mediterranean and Carthaginian storage jars of the phase III under the *Decumanos Maximus*, in Carthage. No scale

3.3. *Western storage jars*

In this new horizon, likely dated in the 8th century BC, Phoenician settlements in the West multiply with the founding of towns like Lixus, Montilla, Cerro del Villar, Chorreras, Cabezo Pequeño del Estaño, and Fonteta. At the same time, imports increase in autochthonous settlements such as Castillejos de Alcorrín (Marzoli *et al*. 2010), Peñón de la Reina (Martínez Padilla and

17. Proto-Etruscan containers will be more frequent in phase IV – 7th century BC – (*ibid*.: 641-643, abb. 340).

Botella López, 1980) or Cortijo Riquelme (López Castro *et al*. 2017; López Castro *et al*. 2020c), among others. Regarding El Carambolo, although radiocarbon dating suggests a foundation of the sanctuary in the 9th century BC (Fernández Flores and Rodríguez Azogue 2007 and 2010; Fernández Flores *et al*. 2020), the bulk of the pottery material from the levels of use and amortization of the oldest occupation level – V –, although more representative of the 7th century BC with a predominance of type T-10.1.2.1 storage jars, suggests a continuity of use during this 8th-century BC horizon.

The storage jars of this new period in the West are characterized by a eventual disappearance of the early T-10.3.1.1 form and by a new predominance of the T-10.1 group, mostly apparently T-10.1.1.1, although possibly some rims correspond to T-10.1.2.1 which will be more common in later horizons of the 7th century BC (Ramon Torres 2023: 230-231). See in this regard the large set of complete and semi-complete storage jars recovered in San Jaume d'Alcanar (Garcia i Rubert *et al*. 2017: 264-268), as well as the numerous rims recovered in the use and amortization level of El Carambolo V (Fernández Flores *et al*. 2020: figs. 9-13), corresponding for the most part to the final period of its use. Additionally, new twin handles are also generated in addition to those of circular section (fig. 23).

A similar scenario to that of El Carambolo V is observed in the material assemblage from the most archaic levels of the excavations of the 1990s in the Algarrobo and Olivo sectors of Lixus – Larache, Morocco – (Aranegui Gascó 2001; Álvarez García *et al*. 2001: fig. 4). The material from other sondages in the same site includes, however, apparently older vessels comparable to the assemblages of Montilla, Morro de Mezquitilla B1b2, and Chorreras, with a predominance of T-10.1.1.1 shapes (see below). For example, in the excavations of M. Tarradell i Mateu (Belén Deamos *et al*. 2001, figs. 7, 8, 13 and 14), two fragments of possible storage jars show a peculiar pointed vertical rim with a triangular section (*ibid*.: figs. 7.558 and 14.603), in the first case decorated with red bands. The same pattern of shapes, although less numerously, is observed in the oldest levels recovered on the south slope (Habibi *et al*. 2005: fig. 4.1-2 and 6) and in the Southwest area (Vives-Ferrándiz *et al*. 2010: fig. 10.10).

Strictly regarding the third horizon of the 8th century BC, the significant assemblage recovered from the excavations at Montilla, near the mouth of the Guadiaro River (Schubart 1987), stands out. Here, a highly accentuated formal diversity is observed, with numerous variants of the T-10.1.1.1 and T-10.1.2.1 types, as in Lixus. In the same environment of the Strait area, a similar assemblage with an overwhelming predominance of handmade autochthonous containers and some T-10.1.2.1 and T-10.1.1.1 examples occurs in the fortified settlement of Castillejos de Alcorrín (Marzoli *et al*. 2010, figs. 7.10 and 8.1). Further east, at the mouth of the Guadalhorce River, among the few pottery sherds recovered in the oldest strata of sondage 5 of Cerro del Villar, where the foundational levels were reached (Aubet Semmler 1999a and 1999b), two rim sherds of T-10.1.1.1 storage jars were recovered in stratum X (*ibid*.: fig. 50.b and d).

After observing and reassessing the assemblage of storage jars from the surrounding of the Strait of Gibraltar, we have determined the differentiation of at least four types of rims within the T-10 group of J. Ramon Torres (1995 and 2023).

On the one hand, the vertically inclined rims with a smooth face and softened lip – T-10.1.1.1 (A) – are differentiated from the curved rims with a pointed lip and an external edge – T-10.1.1.1 (B) – and from the rims of reduced height – T-10.1.1.1 (C). On the other hand, the group of rims with a thickened internal base and usually rectilinear internal face that could be associated with

type T-10.1.2.1 is differentiated, and finally, some miscellaneous rim forms with a triangular profile documented in the Algarrobo sector of Lixus (fig. 23).

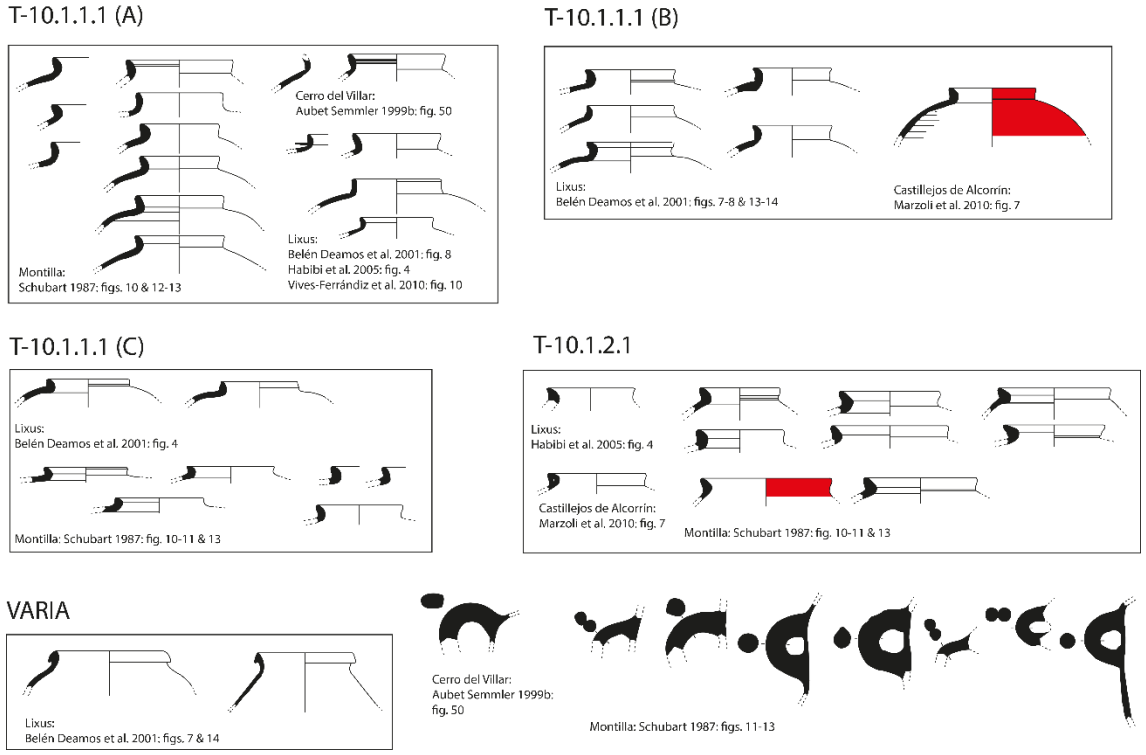

Figure 23: Storage jars from the Strait area. No scale

In the area around the Algarrobo River, the typology of documented storage jars is similar, but with certain differentiating elements in the predominance of rim shapes. In phase B1b2 of Morro de Mezquitilla (Schubart and Maass-Lindemann 2017: taf. 104-105), a significant group of type T-10.1 is present (*ibid*.: taf. 104) as local types AI 1a, 1c, 2a, 2b, and 3, with a significant variety of contours and projections that also fit into the typology defined here for the pieces of the Strait area – types T-10.1.1.1 (A), T-10.1.1.1 (B), T-10.1.1.1 (C), and T-10.1.2.1 –, as well as the appearance of peculiar forms – AII – (see below). On this occasion, however, unlike the Strait area (figs. 23 and 24), there is a majority presence of variants T-10.1.1.1 (B) and T-10.1.1.1 (C) and, curiously, a very testimonial presence of the type T-10.1.1.1 (A). Some examples are also documented, especially the local type AI3, which may still correspond to the type T-3.1.1.1 of J. Ramon Torres (2006), as well as a few with a flattened rim with a thickened base that could correspond to T-10.1.2.1. Finally, there is at least one example of a rim of the local type AII with an elongated vertical rim and thinner walls (fig. 24), with parallels in the necropolis of Trayamar and in Toscanos (Niemeyer and Schubart 1975: taf. 12.547, 12.557 and 16.606; Maass-Lindemann 1982: taf. 3.109-113), which belong to later horizons – M3 and M4 of J. Ramon Torres (2010).

The set of storage jars is similar in Chorreras (fig. 25) (Aubet Semmler 1974: figs. 10, 17 and 19; and 1979, fig. 8; Maass-Lindemann 1983: abb. 2 and 4), with an overwhelming majority of types T-10.1.1.1 (B) and (C) with a continued appearance of T-10.3.1.1 (Aubet Semmler 1974: fig. 10), a minority presence of thickened rims T-10.1.2.1 and the presence of, at least, three fragments

of local type AII (Maass-Lindemann 1983: abb. 2 and 4). Finally, there is at least one fragment of a vertical rim with a flattened thickened lip with a T-profile that has a parallel in Peñón de la Reina (Martínez Padilla and Botella López 1980: figs. 114.1 and 219.1), although in this case without a carinated shoulder, and which could be a local production of the Tyrian SJ3 type (see above).

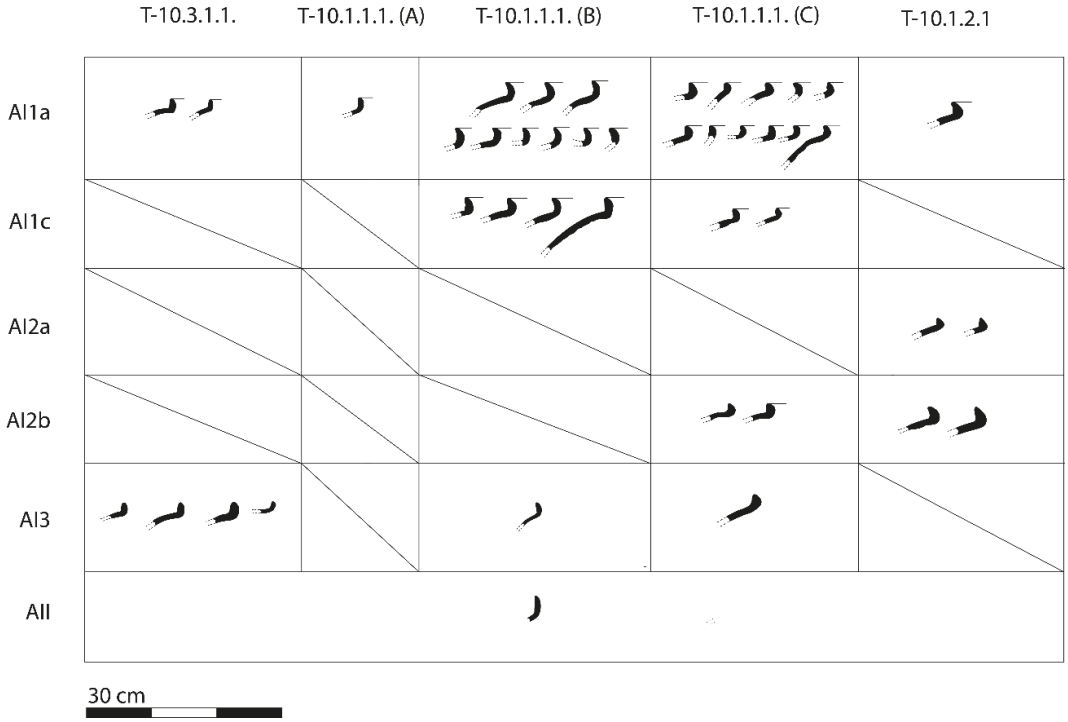

Figure 24: Western storage jars in Morro de Mezquitilla's phase B1b2 (Schubart y Maass-Lindemann 2017: taf. 104)

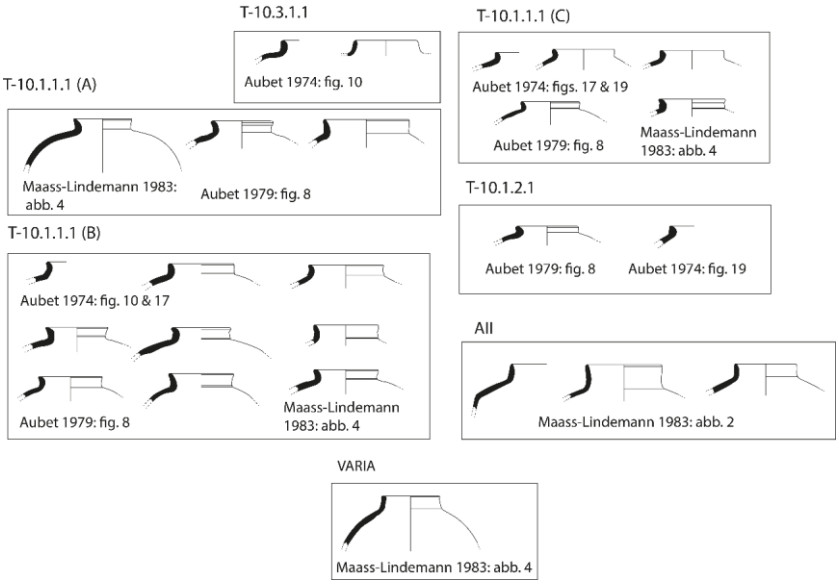

Figure 25: Storage jars from Chorreras

In fact, in the autochthonous settlement of Peñón de la Reina, there is a good quantity of storage jars that follow the same patterns observed in this horizon, with a predominance of the T-10.1.1.1 form and the presence of some T-10.3.1.1 examples (Martínez Padilla and Botella López 1980: figs. 108, 114.5-7, 149, 189.1, and 216.1-2, 3 and 5-6). Another autochthonous site of the southeastern Iberian Peninsula with two recognized T-10.1.1.1 sherds – specifically, of the variant T-10.1.1.1 (C) – in its assemblage is Cortijo Riquelme (López Castro, Martínez-Hahnmüller *et al*. 2020: fig. 6). See also the T-10.1.1.1 (A) example from the amortization level of Cabezo Pequeño del Estaño (García Menárguez and Prados Martínez 2014: fig. 9.3 and García Menárguez *et al*. 2020: fig. 13.CPE15/8005/1), accompanied by numerous fragments of closed ceramic vessels, such as craters with twin handles, very representative of this horizon.

Albeit in small quantity, some Western T-10.1.1.1 storage jars have been documented in contemporary archaeological contexts of the Central Mediterranean, such as Sant'Imbenia (Rendeli 2020: fig. 11) and phase III under the *Decumanus Maximus* of Carthage (Docter 2007; abb. 646-650, abb. 352.5432-5433; 353.5437), to which could be added the aforementioned bichrome decorated examples from Sant'Antioco (see above), which allow us to cross-reference the chronology of the same horizon in both geographical areas.

4. *Discussion and conclusions*

The Phoenician storage jars' repertoire of the Iron Age in the Mediterranean Sea between the 10th/9th-8th centuries BC ultimately reinforces the identification of three sequenced colonial horizons in which different spheres of commerce are generated and consolidated, which will ultimately be responsible for restructuring the Mediterranean trade.

A first horizon marked by the material assemblage of c/Méndez Núñez and c/Concepción in Huelva, as well as the earliest occupation of La Rebanadilla at the mouth of the Guadalhorce River and Utica on the North African coast. Although there are some primitive Western productions, the bulk of the ceramic material reflects a greater dependence on the supply of large transport and storage vessels from metropolitan Phoenicia in the Levant and – likely – from the island of Sardinia, whose autochthonous communities might join with force in this commercial dynamic thanks to an important wine production that will continue to develop in the future based on widened containers that seem to take Phoenician storage jars – some variants of the piriform body with thickened rim group – of as a prototype (Bernardini 2020; Botto 2020 and Sánchez Sánchez-Moreno *et al*. 2020). The predominantly piriform shapes suggested by the amorphous sherds and the predominance of Tyrian SJ9 rims reflect a relative chronology contemporary with the Levantine Iron Age IIA, with the presence of some archaizing pieces – Tyrian SJ 12 – documented in older horizons in certain Eastern sites such as Tyre.

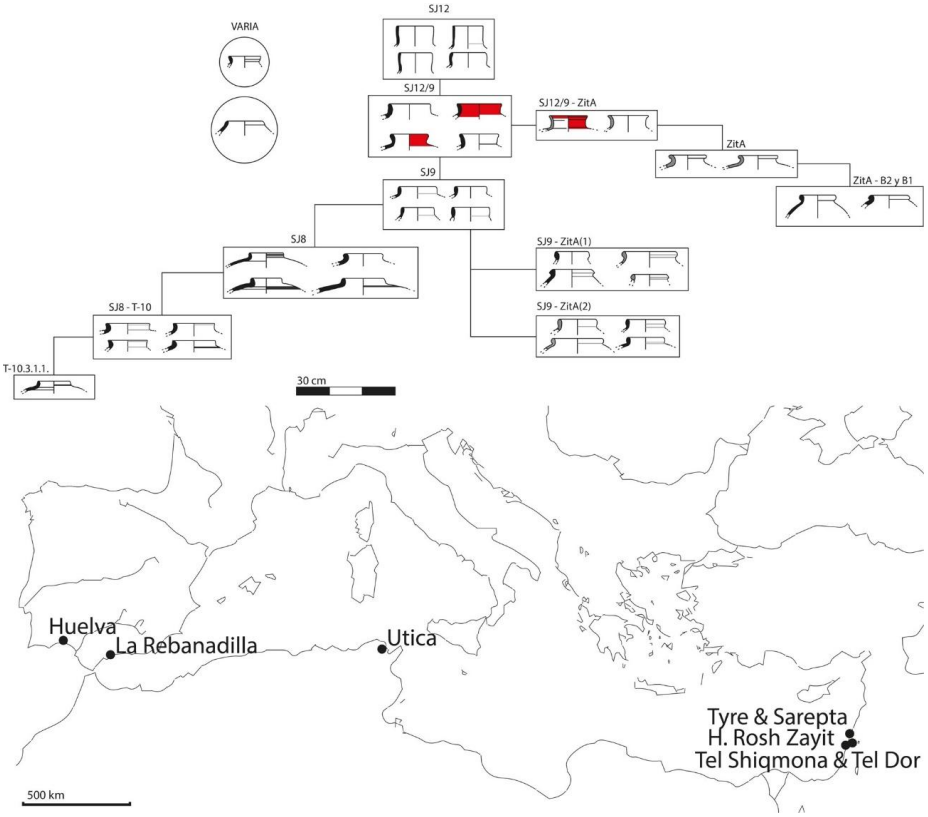

Figure 26: First colonial horizon with Levantine and Central Mediterranean storage jars

Next, it would be worth highlighting the generation of a renewed pottery production industry, at least in the Iberian Peninsula, at the same time as new colonial posts are being founded in the area of Cádiz – Cádiz and Castillo de Doña Blanca –, at the mouth of the Algarrobo River – Morro de Mezquitilla –, on the island of Sardinia – Sulcis – and on the Tunisian coast – Carthage. Although the recovered material in Teatro Cómico points to an apparent centralized production on the Málaga coast, this is a topic that deserves more study with a larger sample. In any case, the earliest Western productions are generated on widened containers with a 'sack' profile, especially in the form of T-10.3.1.1., with the minority appearance of T-10.1.1.1. and T-10.1.2.1. types, which originate from the Phoenician and Levantine piriform shapes of the previous period – Iron Age IIA – with a larger diameter in the lower half of the body, while in metropolitan Phoenicia the new 'sausage-like' containers become predominant, also among the Levantine containers documented in the Western sites of Cádiz and Morro de Mezquitilla. On the other hand, unlike the assemblages from the Iberian Peninsula, there is not a large number of illustrated specimens from the first archaeological levels excavated in Carthage, but the marginal presence of some Western, Eastern, and Greek imports is noted in scientific literature, together with a predominance of *ZitA* storage jars that will constitute the model to be followed by the first local productions which will be more numerous in the future. These *ZitA* storage jars – also very frequent in Cádiz –, unlike the previous horizon, frequently show rims of reduced height possibly inspired by the SJ9 rims of Tyre, and less by the SJ12/9 elongated rims, although they continue to have a great formal variety in their contour – types L3 and L4 of c/Cánovas del Castillo –.

Thus, the main structural break appeared in this new horizon is the generation of a new sphere of independent production and commercialization in the Western Mediterranean that attends to the most immediate regional needs at the expense of the Central Mediterranean and Levantine Phoenician workshops, which, however, does not cease to be present in the Western settlements. Thus, a complex commercial network across the Mediterranean emerges, which acquires a new, more reinforced and consolidated structural dynamic in which there is, at least, a new autonomous regionalized system of production and commercialization that will be, theoretically, centralized in the coast of Malaga – perhaps Morro de Mezquitilla as suggested by M. Torres Ortiz *et al*. (2020)? –.

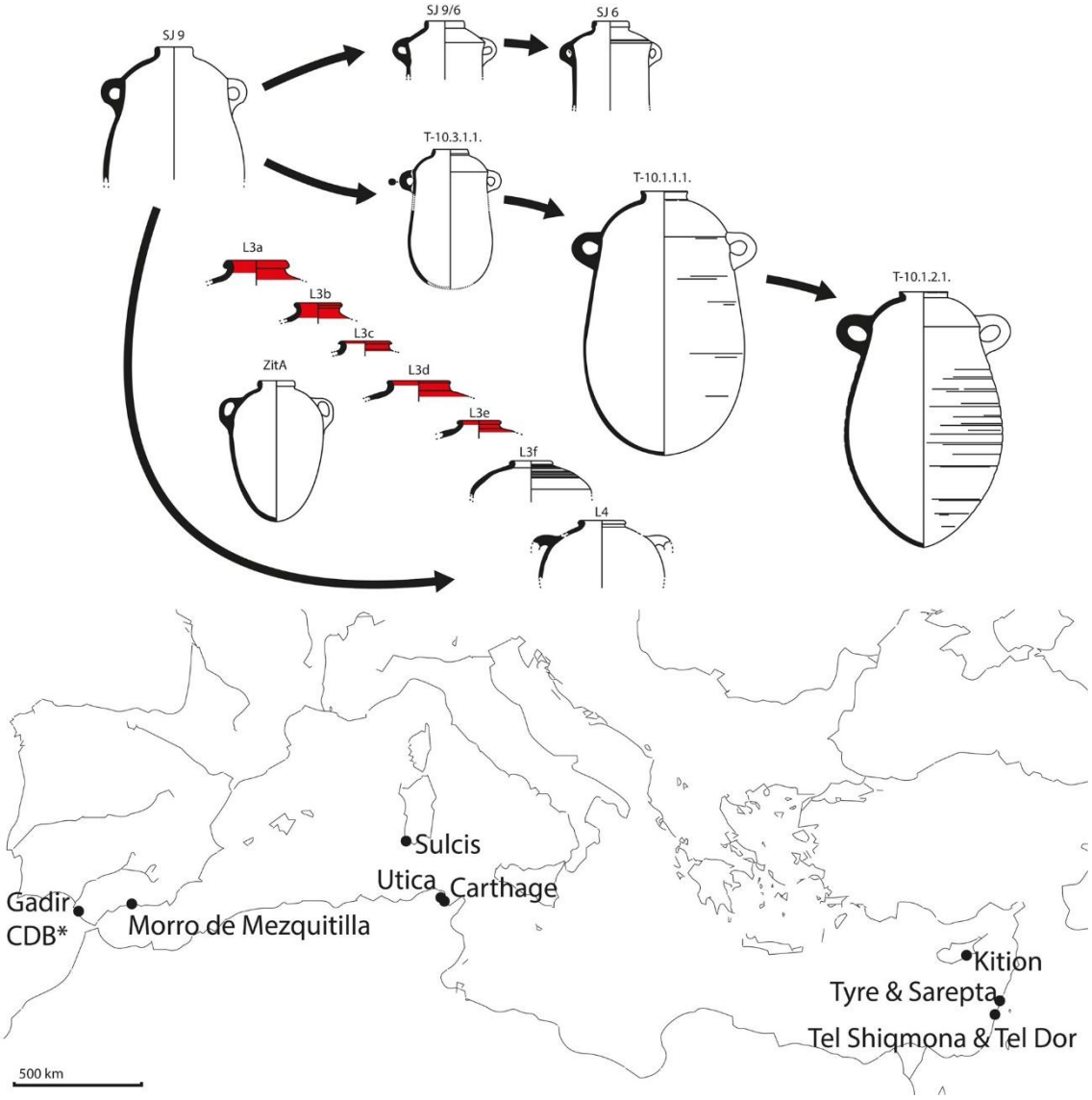

Figure 27: Second Phoenician colonial horizon with Levantine, Central Mediterranean and Western storage jars. CDB*: Castillo de Doña Blanca

Finally, a third horizon would be marked by the expansion and reinforcement of Phoenician colonial presence in the Central Mediterranean, where the settlement of Mozia is occupied, and in the Strait of Gibraltar area, where the foundation of numerous new settlements is documented – Lixus, Montilla, Cerro del Villar, Chorreras and Cabezo Pequeño del Estaño –. Although in Levantine Phoenicia the production of classic 'sausage-like' storage jars of the Levantine Iron Age IIB continues, now with a greater frequency of flatter vertical rims, these productions appear much less frequently in the colonial sites of Western and Central Mediterranean. In these last two areas, regional and local pottery traditions seem to be reinforced, extended, and consolidated. In the Carthaginian area, there continues to be a predominant frequency of *ZitA* containers likely produced in Sardinia, which at least in this commercial sphere continue to have a primary importance in terms of wine transport, as is also observed in the Sardinian settlement of Sant'Imbenia. However, it is at this time that an autonomous pottery industry seems to be generated more clearly in the Carthaginian environment with the appearance of the local types T-3 and T-2 that take as a model the traditional Sardinian type B1 of P. Bartoloni.

In the Western Mediterranean, on the other hand, a significant autonomous and independent pottery production is generated, with a predominance of local types over some limited imports from the Central Mediterranean and metropolitan Phoenicia. In addition to the previously developed T-10.1.1.1 and T-10.3.1.1[18] forms that appeared in the Bay of Cádiz and in Morro de Mezquitilla, a new scenario of greater formal diversity follows, in which numerous variants of the type T-10.1.1.1 (A), (B) and (C) and type T-10.1.2.1 predominate, as well as the appearance of extraordinary forms such as the type AII of the Vélez-Málaga and Algarrobo area, with thinner walls, usually painted, and apparently different functionality, similar to the Tyrian type SJ3 and metropolitan Phoenicia. The assemblages from Lixus, Montilla, Morro de Mezquitilla – phase B1b2 –, Chorreras, and Cabezo Pequeño del Estaño especially demonstrate this, as well as the assemblages documented in autochthonous settlements such as Peñón de la Reina, Cortijo Riquelme and Castillejos de Alcorrín. All of this reflects a new scenario in which the production of goods and transport containers has become an almost exclusive domain in this region by new autonomous production centers due to the geographical distance from the rest of the Phoenician enclaves, the development of local workshops and the practical regional needs.

Though the main formal types of storage jars are thus defined and clarified throughout the sequence of early colonization phases during the 10th-8th centuries BC, it would be convenient however to have a large database of neutron activation analyses that would allow for a clear distinction between production centres in some uncertain cases, such as the theoretically noted Carthaginian origin of certain Central Mediterranean containers in Huelva, Cádiz and Morro de Mezquitilla, or the production of the Western containers of the second horizon in the area of Vélez-Málaga.

18. Regarding the later presence of these ancient types in contexts of the 7th century BC – conventional chronology – and their production in the coastal area of the Axarquia, there is an interesting container used as a burial urn with a drilled shoulder in tomb 9 of the Phoenician cemetery of Ayamonte (Huelva, Spain) (Marzoli 2019: figs. 179.a, 180.a, and 181.a; Pernicka and Schifer 2019). There is a radiocarbon date from one of the bones exhumed in that tomb – UGAMS-17378: 2510±30 BP – but its calibration is significantly affected by the Hallstatt plateau – from the late 8th century to the mid-6th century BC (Heußner 2019).

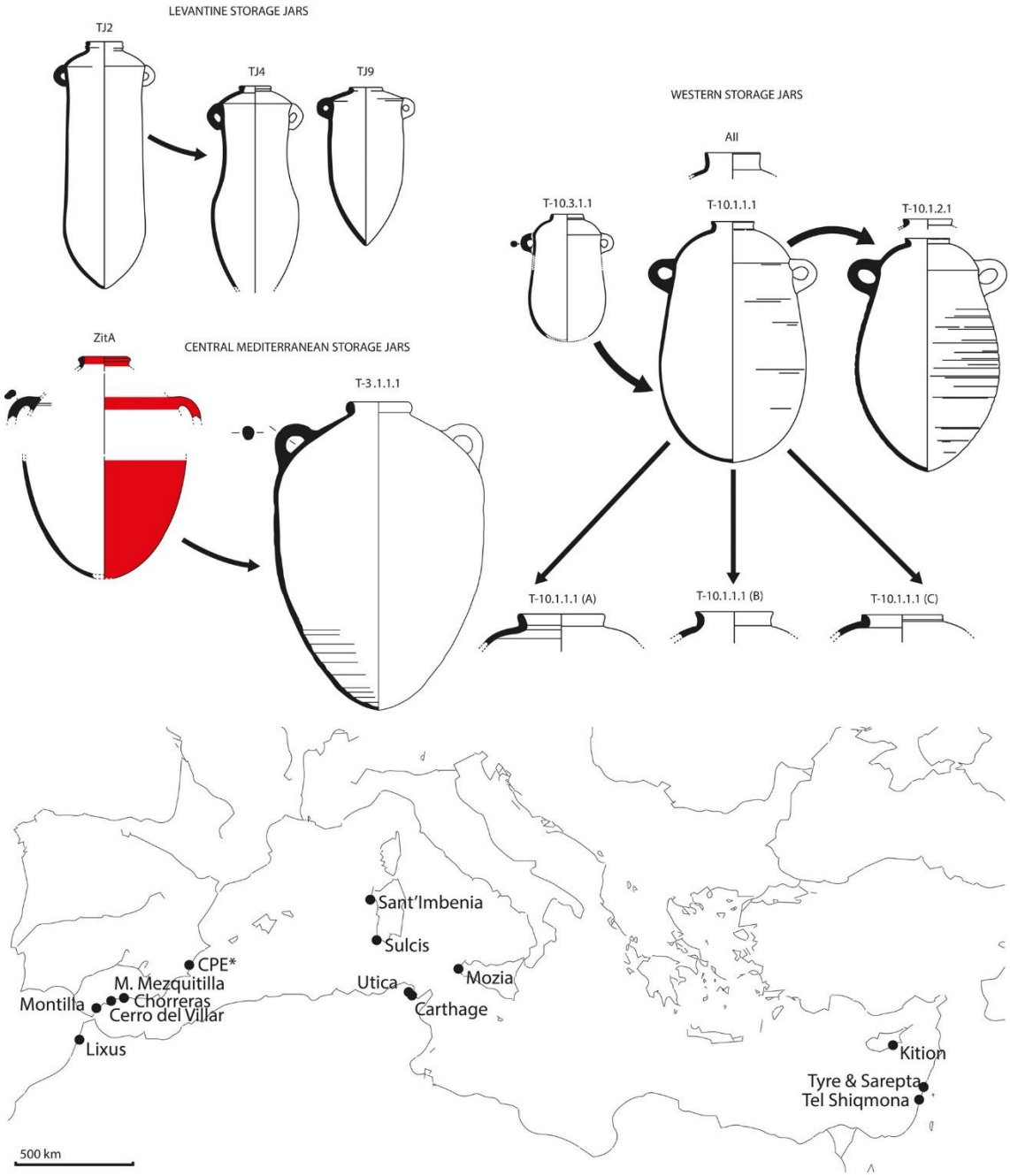

Figure 28: Third colonial horizon, with Levantine Central Mediterranean and Western productions. CPE*: Cabezo Pequeño del Estaño

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