

THOUGHTS ON LUSITANIA'S ECONOMIC INTERACTION BETWEEN c 50 AND c 550+ a.D.: AN ANALYSIS OF EXPORTABLE GOODS

REFLEXIONES SOBRE LA INTERACCIÓN ECONÓMICA EN LUSITANIA ENTRE c 50 Y c 550+ D.C.: UN ANÁLISIS DE LOS BIENES EXPORTABLES

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Abstract: This paper attempts an analysis of the Lusitanian amphorae trade along the Roman Empire, between the 1st and the 5th c. A.D., with a possible extension into the 6th c. A.D. An overview of the published data is undertaken, taking into account essentially the consumption markets results and mainly their stratigraphic evolution. This flow is observed in comparison to the Historical data on the cereals trade from *Hispania*, trying to distinguish possible coherences and anomalies. At least three clues seem to be correct: the Mediterranean (mainly its western part) as the main market; its consolidation over the Late Empire; and the strong predominance of the salted-fish products, having the Lusitanian wine a residual value.

Keywords: Lusitanian amphorae; diffusion; chronological framework; archaeological data; historical data.

Resumen: Este trabajo intenta un análisis del comercio de ánforas lusitano a lo largo del Imperio Romano, entre el siglo I y el siglo V d.C., con una posible extensión en el siglo VI. Se realiza una visión general de los datos publicados, teniendo en cuenta esencialmente los resultados de los mercados de consumo y sobre todo su evolución estratigráfica. Este flujo se observa en comparación con los datos históricos sobre el comercio de cereales de *Hispania*, tratando de distinguir posibles coherencias y anomalías. Al menos tres pistas parecen ser correctas: el Mediterráneo (sobre todo su parte occidental) como el principal mercado; su consolidación durante el Imperio tardío; y el fuerte predominio de los productos de pescado, teniendo el vino lusitano un valor residual.

Palabras clave: Ánforas lusitanas, difusión; cuadro cronológico; datos arqueológicos; datos históricos.

1. INTRODUCTION

Recently, a number of international publications threw a new light upon something which is still at a truly incipient knowledge stage: the dispersion of Lusitanian amphorae across the Mediterranean area, mainly between the late 2nd and 5th centuries, although its

beginning belongs to the 1st c. A.D. and its end probably to the VI c. A.D.

In the last decade, the works by P. Reynolds (Reynolds 2000, 2010) about Beirut's stratigraphy and *Hispania's* role (especially more focused on *Tarraconensis*) in the Roman Empire's trade had brought to light a Lusitanian food trade, fragile but able to reach the great

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interior sea's far east. It also left two other ideas on the table: that diffusion came into existence during the High Empire, probably in the 1st century AD, stretched itself throughout the 3rd century, but seemed to have its main consolidation during the Late Antiquity, especially by the late 4th and 5th centuries; regarding the contents we would have almost exclusively salted fish.

During the last years, a progressive, though still tenuous, ability of European Archaeology to identify Lusitanian fabrics (whilst frequently with clear inabilities to distinguish between Tagus and Sado and fabrics from Algarve and the western *Baetica*), came to produce a small revolution in the state of the art, allowing to foresee this phenomenon's chronological and geographical structuring, at the consumption markets' level, with an important stratigraphic support. Despite the fact that we may stand before diffusion spots that are very limited by the aforementioned ability to distinguish between manufactures and to publish results, the truth is that these last works seem to show a strengthening in Lusitanian salted fish sales by the end of the 2nd century, according to recent works on Italian contexts from *Ostia* (Panella and Rizzo 2014), as well as by the late 4th century, with a possible primacy in the second quarter of the 5th century and a commercial capacity extension within the Mediterranean sphere until the end of that century or even the following one.

On the other hand, it shows an apparent predisposition towards the Western Italian and Provence markets during the High-Empire (and mainly the late 2nd c.) and an enlargement of this commerce during the Late Antiquity. With regard to Lusitanian wine, this trade was apparently scarce and occurred possibly between the 2nd and the 4th c. A.D. Our on-going study on the quantification of the Lusitanian amphorae from Arles, there is a small amount of Lusitana 3 (3 fragments) and Lusitana 9 (1 fragment) among *c* 150 Lusitanian fragments, clearly dominated by salted-fish amphorae.

This success of Lusitanian salted fish is therefore cumulative, despite having chronological nuances, with its counterparts from *Baetica*, a particularly famous region for the success of its olive oil. This amphoric food trade is therefore a counterpoint to the eminently secondary, if not even sporadic, role of the Hispanic cereal, whose only empirical evidence is textual but focused, such as the late *floruit* of the Lusitanian food trade, on a period between the 4th century and the late 5th or early 6th century.

In this paper we discuss not only the stratigraphic evidence concerning the Lusitanian amphorae spread in Mediterranean (and Atlantic) consumption contexts,

but also the historical evidence for the Hispanic role within the Roman economy, in an effort to compare the chronological coherences and anomalies between the references on the Iberian cereals (taking into account that this merchandise could be an important exportable good) and the contextual record concerning the Lusitanian salted fish – this literary evidence on Hispanic cereals begins however much later than the archaeological evidence related to the Lusitanian amphorae in Mediterranean markets.

2. HISPANIA AS A SUPPLIER

2.1. Historiographical data and the role of cereals

2.1.1. *c* 250-350 a.D.

The second half of the 3rd century presents a sharp decline in the consumption values of African *terra sigillata* in many Mediterranean locations, such as Fentress and Perkins (1987) demonstrated in the cases of *Caesarea*, *Valentia*, Sperlonga, Monreale and the Albegna Valley, to which we added, in one of our previous works (Quaresma 2012: 262-263), within the peninsular framework, Chãos Salgados (*Mirobriga*), *Conimbriga*, Tróia, São Cucufate and Represas. Regarding this issue, the recent work by M. Bonifay and A. Tchernia is also important (Bonifay and Tchernia 2012).

It is possible that this decline (with regard to the values of the African *sigillata* A) has some connection with the so-called "Saint Cyprian's Plague", described by the homonymous bishop who headed Carthage's seat and reports the serious consequences of this disease, in mid-3rd century Africa (Corbier 2008: 398). This plague reached *Syria* in 250/251 A.D. and reached several other regions of the Empire between 250 and 280 A.D. (Blois, Pleket and Rich 2002: xvi). In the 270 A.D.'s decade, the sharp currency depreciations, during the principate of Aurelian (Jones 1974 [1953]: 196), may be a consequence of these circumstances, in which an accelerated inflation of known cereal prices also seems to have occurred, when we compare the known data for 260 A.D., in Egypt (Duncan-Jones 1974: ESAR 2.310-11) with the price set in Diocletian's Edict, in 301 A.D. (Giacchero 1974): the values indicate an evolution from 4.2 *denarii / modius* (260 A.D.) to 100 *denarii / modius kastrensis* (301 A.D.). Nevertheless, in the edict from 301 A.D., the indicated values refer themselves to the military *modium*, whose proportion regarding the Italic *modium* is not certain; it

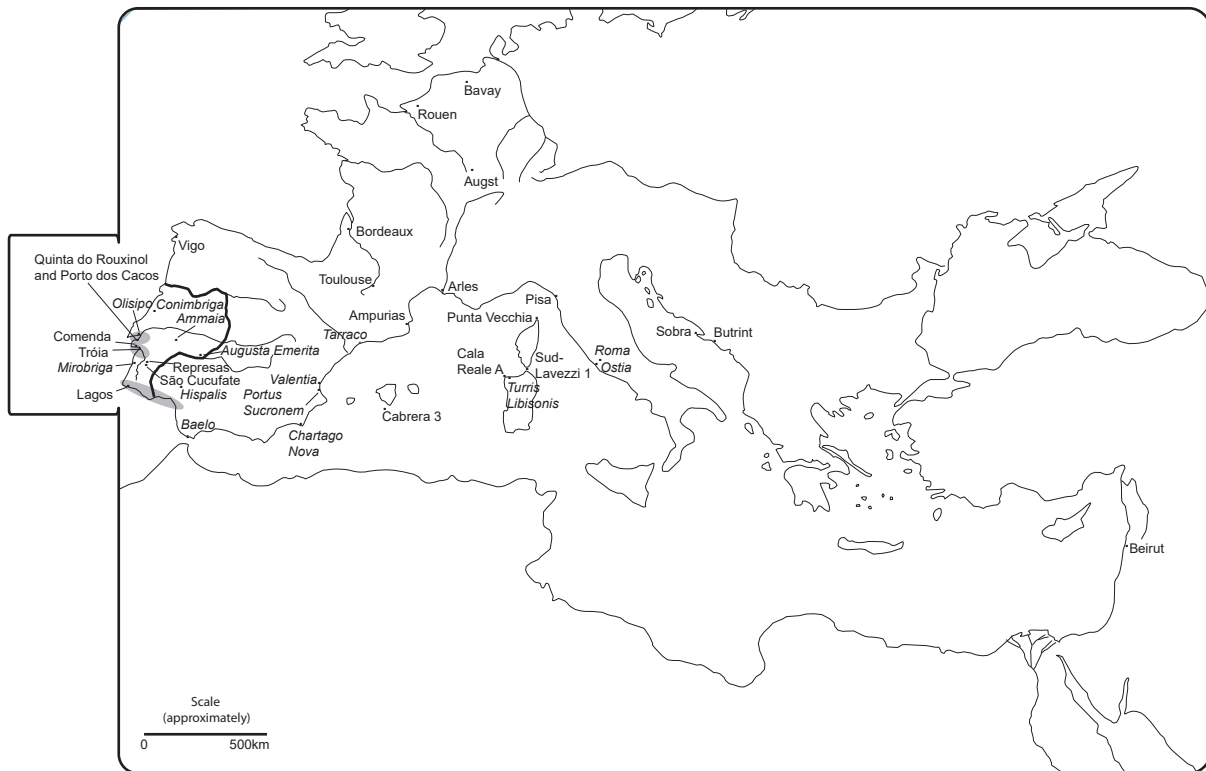


Figure 1. Map of the Mediterranean including the main locations aforementioned in the text. The approximate location of the amphoric production areas analysed in the text is marked in grey. In geographical order, from the North to the South: Lower Tagus, Lower Sado and Algarve/Western *Baetica* (South-Hispanic).

may be 1/1 or 2/1, which would lighten the noticed difference in 50%.

Around 250 A.D., important changes occur in the *Annona*'s organic structure, with the loss of responsibilities of the *Praefectus Annonae*, which were handed onto the *Praefecti Pretorii*, in an effort to improve tax enforcement (García Vargas 1998: 247); this change is coeval with the food trade recovery, both of olive oil and of salted fish, which P. Reynolds (Reynolds 2005: 384-385) fits into a new public-private dynamic, with the resurgence of mixed cargoes in Mediterranean ships.

In the early 4th century, the *navicularii*'s activity becomes *rei publica causa* and is increasingly integrated in the *corpora naviculariorum* legal entity, after 314 A.D., controlled by the *Praefecti Pretorii* or by the *Praefecti Annonae* from *Alexandria* or *Africa* who, in their turn, were submitted to the *Praefecti Pretorii* from the East and *Africa*, respectively (Perea Yébenes 2003: 85).

It is precisely in the late 3rd century that written sources seem to ascribe a new political dimension to *Hispania*'s Atlantic coasts, when Maximian Hercules,

Pars Occidentis's tetrarchic *Caesar*, between 295 and 298 A.D., travelled to *Hispania* and *Africa* fighting the Franks, whose piracy would be connected to usurping moves in *Britannia*. To J. Arce (Arce 2005: 55), the safety of the Atlantic coasts had, by then, become essential and the Lusitanian coast must have played an essential role within this strategy, which may explain the transfer of the political primacy from *Tarraco* to *Augusta Emerita*, the capital of the newly-created *Diocesis Hispaniarum*, which encompassed all of *Hispania* and *Mauritania Tingitana* (Arce 2005: 53). At this same turning point from the 3rd to the 4th century, a *Procurator Provinciae Lusitaniae et Vetoniae*, assisted by a *tabularius*, is appointed, something which V. Mantas believes to be the reflection of the creation of two financial boundaries, based in *Augusta Emerita* and in *Olisipo* (Mantas 1990: 172: *CIL*, II, 178, 1267; *CIL*, VI, 31856: *CIL*, II, 485). In 301 A.D., the abovementioned Diocletian's Edict on Prices, in its 35th chapter, states the freight rate per route, in a long series of set connections, but in which the only referred Atlantic province is Lusitania, for which the planned connection is

the *Oriens-Lusitania* one. Curiously, there is no connection between *Lusitania* and *Baetica*, but the latter has connections to the *Oriens*, *Italia* and *Africa* (Giacchero 1974).

In the second quarter of the 4th century, two articles from the Theodosian Code grant privileges to the Hispanic *navicularii*, in 324 and in 336 A.D., with the first article emanating from Thessalonica, in the Aegean Sea (Perea Yébenes 2003: 88). In 350 A.D., the *Expositio Totius Mundi et Gentium* describes *Hispania* as a supplier of olive oil (*oleum*), salted fish (*liquamen*), garments (*vestem variam*), salted pork meat (*lardum*) and beasts of burden (*iumenta*) for many regions. All these items are common in *Annona militaris* and, in that sense, it is noticeable the absence of any reference to cereals (Woodman 1964; Arce 2011: 290), although it is known that, in 306-312 A.D., at the time of the usurpation of power in Italy by *Maxentius*, Constantine blocks the wheat from *Africa* (308-311 A.D.) and that the solution had been to resort to Hispanic cereal (Arce 2011: 291).

2.1.2. c 350-450/525 a.D.

The late 4th century is particularly rich in references to Hispanic cereal, a region to which the *frumentum* tax is applied (Arce 1993: 396), although its area of origin is never specified, nor is there any mention to *Lusitania*. It seems not to have the Atlantic as a target, considering *Ammianus Marcellinus*' information, in the second half of the 4th century, when he refers that the northern borders were supplied by *Britannia* and by *Aquitania* (Fernández Ochoa, Morillo and Salido Domínguez 2011: 277: *Ammianus Marcellinus*, XVIII, 2, 3; XVII, 8, 1; XIV, 10, 2).

The *Notitia Dignitatum* (XLII, 1, 25: Fernández Ochoa, Morillo and Salido Domínguez 2011: 281), dated back to the late 4th century or early 5th century, but whose information may go back to the Tetrarchic period, places several *limitanei*'s bodies in *Hispania* and for C. Fernández Ochoa, A. Morillo and J. Salido Domínguez, the late 4th century configures a new strategic plan for *Pars Occidentis* and for *Diocesis Hispaniarum*, reflected in information by Claudian according to whom, when Rome was not able to depend upon the African cereal, it resorted to the Hispanic, Gallic and Germanic ones. To the aforementioned authors, this may prefigure a new economic area, within the Prefecture of Gaul, that included *Hispania*, *Gallia*, *Germania* and *Britannia*, which would also explain why the

olive oil supply to Rome ceased being essentially Baetican, to become mainly African. The Baetican production had probably an Atlantic vocation (Bernal Casasola 2000a, 2000b), with *Britannia* as a special target where, indeed, the data from York reflect this situation, with the recrudescence of the Dressel 20 (residual fragments or probably Dressel 23 according to this chronology) at the post-400 A.D. levels, after a sharp decrease at the post-mid-3rd century levels, as it has already been pointed out by Reynolds (Reynolds 2005: 385), an author who, however, presents other data that hint at a certain increase of Baetican olive oil in western Mediterranean locations, such as *Tarraco* and *Barcino*, in *Hispania*; Arles and Narbonne, in *Gallia*; and Rome itself.

In this late 4th century, more precisely between 396 and 398 A.D., during Gildo's revolt, *comes et magister utiusque militiae per Africam*, in *Pars Occidentis*, several African harbors were blocked and again there was the need to resort to *Hispania*, a region which is, however, described as secondary in terms of cereals supply, since, during this revolt, Claudian says that *Lybia* would be "the only hope" and the Theodosian Code itself reveals *Africa* as a key-region for this supply (Arce 2011: 292). Eccentric within this Hispanic panorama is the fact that it is precisely in *Lusitania* that the largest archaeological quantity of late *horrea* is concentrated and that the only Hispanic product mentioned in the Diocletian's Edict on Prices is the wool from *Asturica*, a city from the NW (Arce 2011: 292).

The data from the mid-5th century are scarcest with respect to the establishment of imperial power in *Hispania*, considering the new reorganization that was taking its first steps in the area, with the entrance of Visigoths, Sueves, Alans and Vandals: in 418 A.D. there is a last mention to a *Vicarius Hispaniae*, called *Maurocello* (Díaz 1992-1993: 298-300). The moves of the exogenous peoples, particularly felt in the Atlantic facade and in the Lusitanian area, described by the bishop *Hydaci* from *Aquae Flaviae* between 420 and 468 A.D. (Tranoy 1974), may have played a relevant role in the end of several urban settlements, such as *Mirobriga* or *Ammaia*; of several salted fish production centers, such as Ilha do Pessegueiro or Tróia; of amphorae production centers such as Quinta do Rouxinol in the Tagus Valley; or of *villae* such as Represas or São Cucufate (Quaresma 2012, 2013; Silva and Soares 1993; Lopes 1994; Alarcão, Etienne and Mayet 1990; Etienne, Markaroun and Mayet 1990).

Hispania's role as a cereal supplier seems to have been lost in this early and middle Vandal periods, but to recover itself (maybe only episodically) in the late

Vandal period: in 520 A.D., during the reign of Theodoric over *Hispania*, *Cassiodorus* addresses a letter to *Luiveriot* and *Ampelio*, respectively called *vir spectabilis* and *illustris*, and who were in *Hispania* for the purpose of reorganizing the area, noticing them that the Hispanic cereal assigned to Rome had been diverted to *Africa* (Arce 2011: 292 - *Cassiodoro, Variae*, 5, 35).

2.2. The Mediterranean diffusion of Lusitanian amphorae: a first chronostratigraphic draft (see figs. 2-4)

2.2.1. c 50/70-150 a.D.

The available information on this period indicates a fragility of the Lusitanian salted-fish trade, despite some lines of low degree stability.

The port dumping sector of Arles-Rhône 3, a fluvial filling in face of the town of *Arelate*, formed between 55/65 A.D. (after a shipwreck with an exclusive cargo of stones) and 140 A.D., contains c 4000 amphorae whose assemblage comprises 1,1% of Lusitanian amphorae including Dressel 14, Dr. 14, var. A, Dr. 14 *parva* and Lusitana Antiga (Djaoui and Quaresma 2016: this study is part of our on-going project for the quantification of the full Lusitanian imports in Arles).

The Italian area gives us some contradictory data. In the *Terme del Nuotatore* at *Ostia* the Lusitanian amphorae are absent from the strata before 80 A.D. when they represent 0,16%, a smaller amount if compared to the assemblage from c.120-140/160 A.D., in which they represent 1,67% (Dressel 14, var. B and late Dr. 14: Panella and Rizzo 2014: 81 and 240, tabs. 1 and 35). However, in Rome they seem to be more stable earlier. In fact, the Lusitanian salted-fish is attested since the Neronian strata (although in a scarce amount), being the Flavian period its floruit. The Antonine period represents a strong decline of this trade, which gives a more coherent idea if compared to *Ostia* (Rizzo 2013). The greater antiquity of the imports in Rome is also indicated by the important presence of Hispanic Dr. 14, var. A in the capital (Rizzo 2012: 92, tab 4.2), since this sub-type is absent from the *Terme del Nuotatore* at *Ostia* (Panella and Rizzo 2014). We must stress however that Dr. 14, var. A is also important in the aforementioned Arles-Rhône 3.

In the 2nd century, the first Lusitanian specimens appear in the Beirut strata, still in the first half of this century, through the Dressel 14, var. B type, with Tagus/Sado clays, in the BEY 006.11603, 11629, 11593, 1181 and 11192 contexts, while the Dressel 20 has only one

specimen, being however somewhat abundant in *Alexandria* (Reynolds 2000: 1037/1038. See no.s 1-2).

2.2.2. c 190-250 a.D.

In this period the Lusitanian trade reach its highest level of the Early Empire according to the stratigraphies from *Ostia* and Rome. Geographically it reaches the opposite shores of the eastern Mediterranean Sea. Nevertheless, some cases must be discussed: for instance, T. Bezezky includes Types Almagro 50 and 51c in its repertoire from Ephesus, but clay descriptions and photos point to a Baetican origin of this amphorae (Bezezky 2013: 179-180).

At late 2nd century or early 3rd century levels from Beirut, the presence of the Tagus/Sado's Dressel 14, var. B remains, but the regional source amplifies itself with the first specimens from South-Hispanic origin or from the Algarve, with fine sandy clay and white mica, from the Almagro 50/Keay 16 type and the first and only potter's mark (M (arrow) A), whose ascription to *Lusitania* is quite fragile. Also South-Hispanic or from the Algarve, but with a coarse, mica-rich clay (P. Reynolds, however, makes a clay analogy between n°6=Reynolds 2000: no.19 and another Keay 78 fragment, which he ascribes to *Baetica*: Reynolds 2000: no.20), is the no. 6 amphora, of the Almagro 51C type (Reynolds 2000: 1038). In this somehow high chronology, it is possible for this fragment to be classified in the Lusitana 3 type, quite probably a wine amphora (Diogo 1987).

At the 200-230 A.D. levels, the Tagus/Sado's amphorae represent 0.92% (6 specimens) and disappear at the 230-250 A.D. levels; on the other hand, the South-Hispanic amphorae (Keay 16) represent 1.22% (8 specimens) in 200-230 A.D., and 0.89% (4 specimens) in 230-250 A.D., remaining at the c.250 A.D. levels with 1.45% (2 specimens) (Reynolds 2010: table 1).

In Rome, the decades of 190-210/230 A.D. are the best period for the Lusitanian amphorae together with the Flavian strata (Rizzo 2013). In *Ostia*, the strengthening observed during 120-140/160 A.D. becomes greater: they represent then 4,79% (Panella and Rizzo 2014: 81 and 240, tabs. 1 and 35).

The contemporary levels from Villa de Portmán, near *Carthago Nova*, in the eastern coast of the Iberian Peninsula and an important area for the trade lines into the Balears Islands, Corsica/Sardinia and Italy, contains 2 individuals of Lusitanian amphorae with the typological shapes which will mark the Late Antique *Lusitania*: 1 Almagro 51c (no. 7) and 1 Almagro 51c or Lusitana 3 (wine

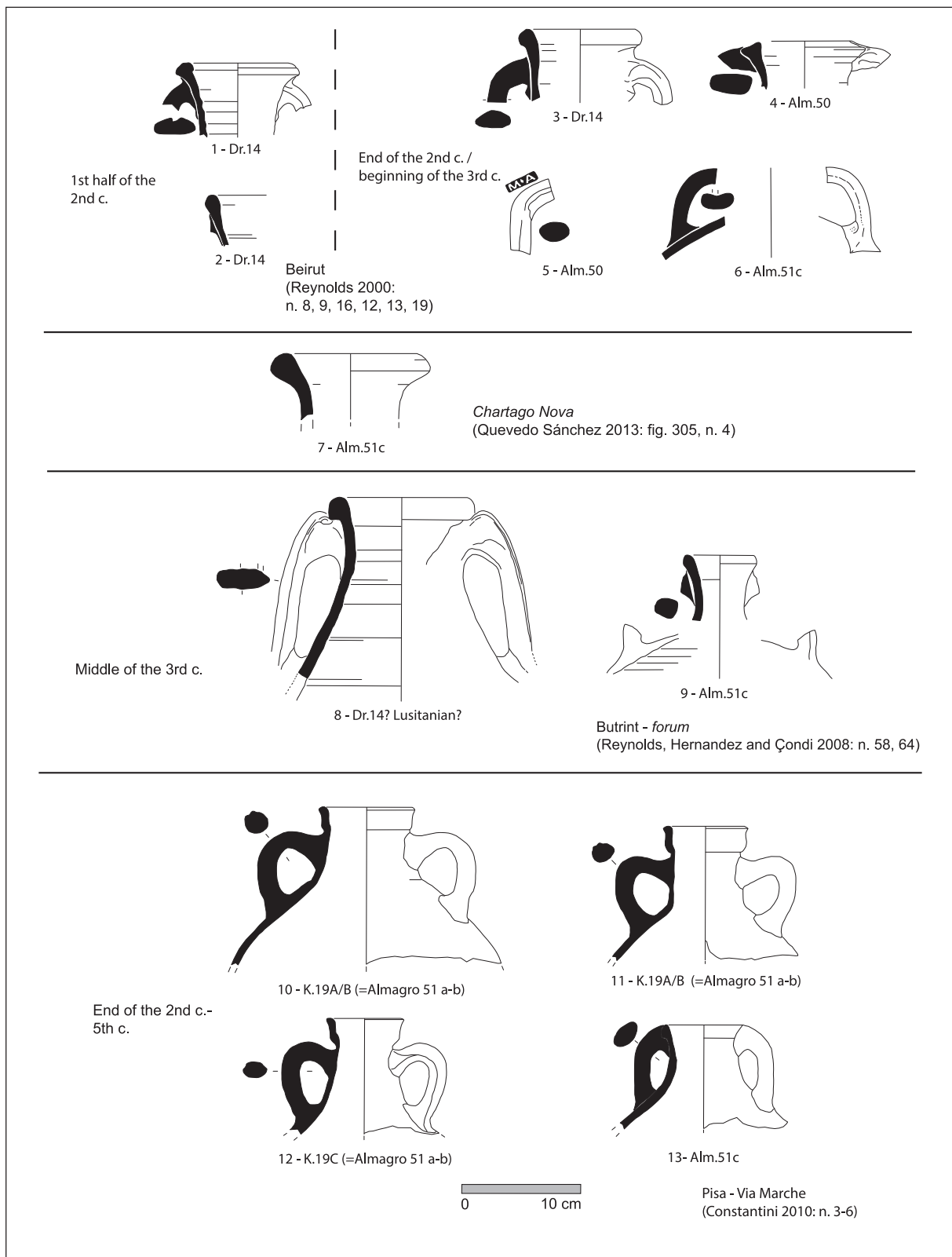


Figure 2. Lusitanian amphorae.

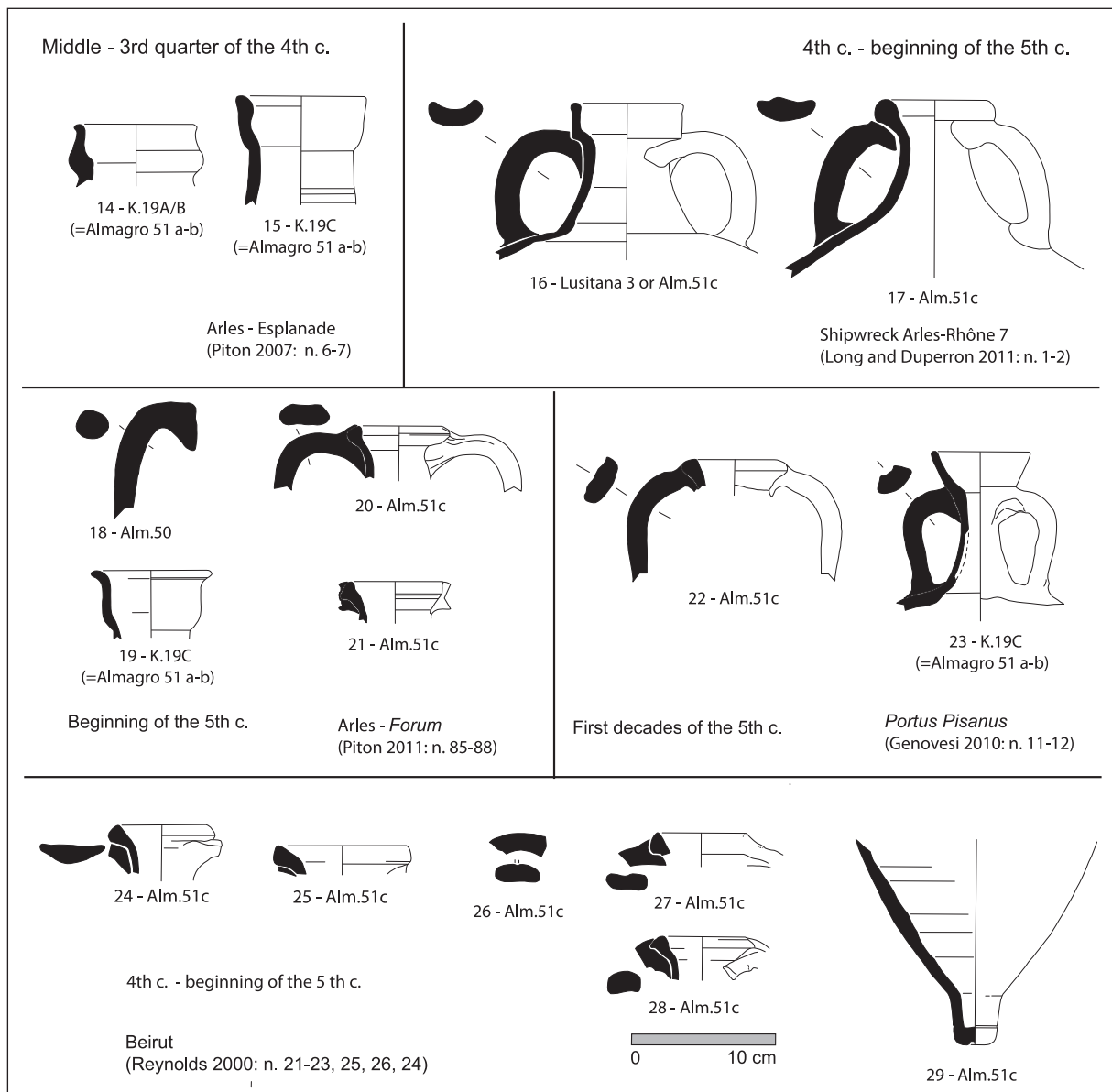


Figure 3. Lusitanian amphorae.

content), in face of 20 Hispanic amphorae and a full assemblage of 46 identifiable amphorae (Quevedo Sánchez 2013: 658-660. I must thank Sónia Bombico and Alejandro Quevedo for the updated data from these contexts).

2.2.3. c 250-350 a.D.

In Butrint, in the South of modern Albania, the mid-3rd century levels (contexts 98 and 26) have only one South-Hispanic neck (0.3%) and 2 Lusitanian individuals

(0.7%), from types Dressel 14(?), large-sized and with a handle that is strangely glued to the lower part of the rim, and Almagro 51C, having a truncated cone-shaped neck and a simple lip, with a rounded-section handle (no.s 8-9) (Reynolds, Hernandez and Çondi 2008: 72-75). Nevertheless, the profile of the Dr. 14 seems quite distant from the Dr. 14's typical profile. Therefore, it is reasonable to wonder if we are dealing with a Lusitanian amphora. It is possible that no. 8's shape corresponds to type Puerto Real 1 or 2 from the Baetican region (García Vargas and Bernal Casasola 2014a, 2014b).

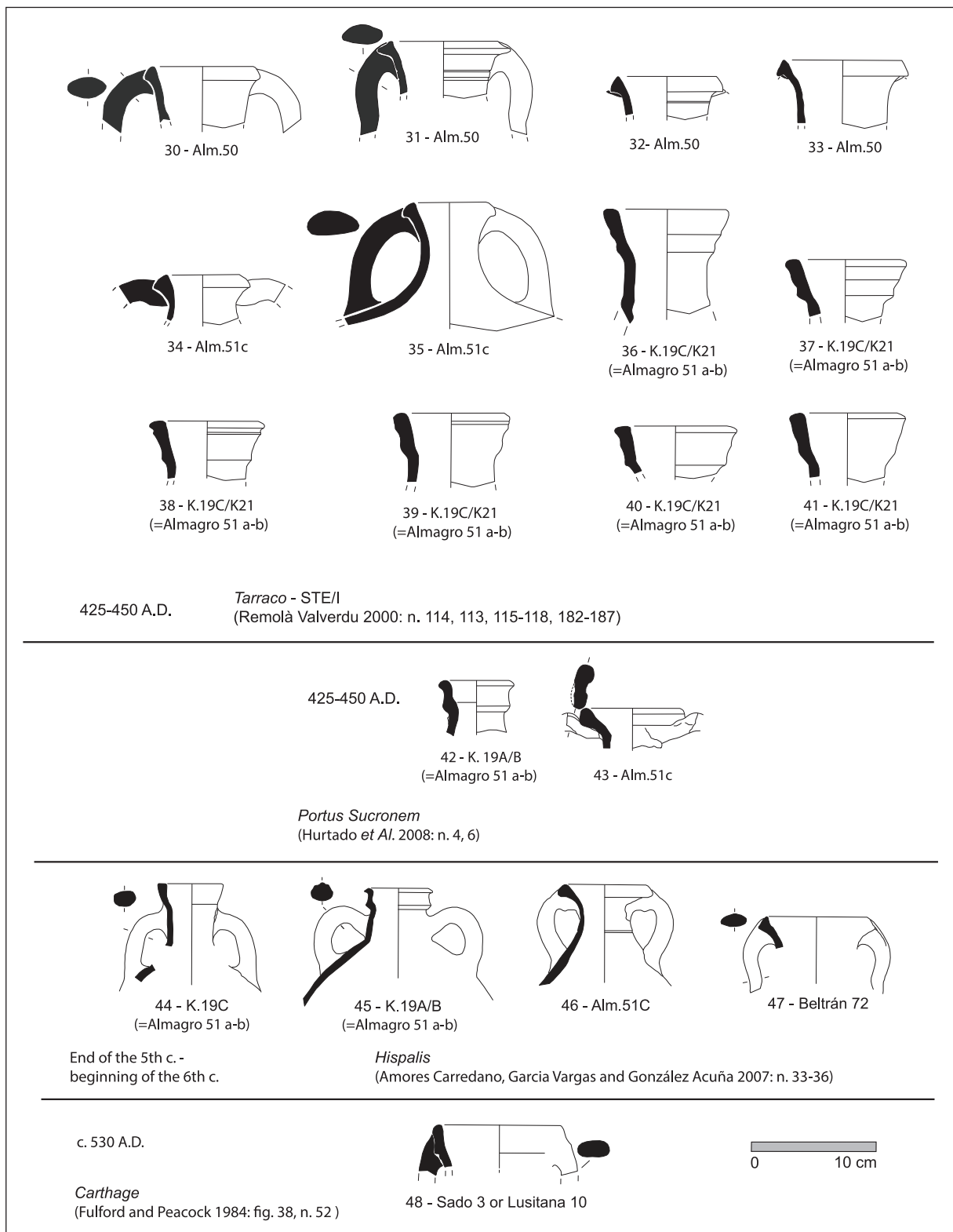


Figure 4. Lusitanian amphorae.

Around 15 shipwrecks with Baetican and/or Lusitanian amphorae are concentrated in a chronology that M. Bonifay and A. Tchernia (Bonifay and Tchernia 2012). Regarding this issue, see also the first critical summary by R. Étienne and F. Mayet: Étienne and Mayet 1993-1994) situate between 250 and 325/350 A.D., with an obvious concentration in the arch that covers the south-eastern peninsular coast (and the Balearic islands), passing through Southeastern Gaul and the Corsica and Sardinia islands, to the northwestern Italy. Only one shipwreck is located to the East of this spot: that is the Sobra's shipwreck, in the Croatian Adriatic coast, with Hispanic Almagro 50, dated back to between 320 and 340 A.D. by the authors. In the set of shipwrecks, besides finding African amphorae in all of them, with a great predominance of olive oil types, Africana IIB-D and Keay 25.1, we notice a great presence of salted-fish Hispanic amphorae, Almagro 50 and 51C, followed, in a smaller quantity, by the olive oil ones, Dressel 23 and 20 and by Beltrán 72 (salted fish), and a scarce presence of Beltrán 68 (Bonifay and Tchernia 2012). In other words, there seems to be a clear commercial strategy relationship between Hispanic salted-fish (Baetican and/or Lusitanian) and African olive oil. The link between the scales of these containers raises very relevant issues to these authors, since the most famous shipwreck, the Cabrera 3, in 257 A.D., has Dressel 20 amphorae in the bottom of the ship, which are covered by the African amphorae, a surprising fact when we would expect the Baetican amphorae to be on top, after a stop-over at the Gaditan area. Cumulatively, the fact that three other shipwrecks are located in the coasts of Sicily and in Southern Sardinia points out that, in this process, there were ships circulating from Cadiz to Tunisia or from Tunisia to Cadiz, before heading for the coasts of Italy or Gaul (Bonifay and Tchernia 2012).

The on-going doctoral research of Sónia Bombico on the Mediterranean shipwrecks with Lusitanian amphorae allowed this researcher to verify one main shipwreck from the western Mediterranean and namely the Corsica/Sardinia region regarding this phase: Punta Vecchia 1, dated to the end of the 3rd c. and the first half of the 4th c., contains 65 recorded amphorae, largely dominated by a Lusitanian origin comprising mainly Almagro 51c, but also scarce Almagro 51a-b (Bombico *et al.* 2014: 362).

Despite the western geography of the shipwrecks, whose spot is also based in a research intensity that has been much bigger within this area, it is again in Beirut that we have a consumption location with available stratigraphy: between 325 and 350 A.D., the Tagus/

Sado's amphorae (especially the Almagro 51C) have 3 individuals (0.89%) and the South-Hispanic ones (Keay 16) have 1 individual (0.29%). Such as in the previous moments of this consumption market, they lie in figures that are lower to 50% of the Baetican containers (Reynolds 2010: 89, table 1).

2.2.4. c 350-450 a.D.

After the second half of the 4th century, although the presence of the Lusitanian trade in the Lebanese coast still remains, the amphorae from *Lusitania* seem to have the modern Provence and western Italy as their privileged market areas.

Once again, the on-going doctoral research of Sónia Bombico allowed her to check 2 other shipwrecks from the second half of the 4th c. or the beginning of the 5th c.: at Sud-Lavezzi 1, among the 450 amphorae, at least 13 are Lusitanian (3 Almagro 51c and 2 Keay 78); at Cala Reale A, among an estimated 2000 amphorae there are several individuals of Sado 3 and Almagro 51a-b, 51c (Bombico *et al.* 2014: 367-368).

The relationship between the Lusitanian and the African trades seems to be well expressed in *Via Marche's* necropolis, in Pisa, in Italy's Tyrrhenian coast, with a broad chronology ranging between the late 2nd century / early 3rd century and the 5th century. Only three origins were identified and, from these, the African is predominant, the Italic scarce, but *Lusitania* places itself in an intermediate position, described as "numerous". The existing clays allow a clear separation between two main families of types/regions: the Keay 19A/B and C (=Almagro 51a-b), whose clay color varies from light beige to orange, with numerous black and white inclusions, not very hard and easily breakable, from the Algarve or the South-Hispanic region; the Almagro 51C, with fragile, orange clay, with many black and grey inclusions, that the author describes as being clearly different from the Keay 19 (=Almagro 51a-b) clay (no.s 10-13) (Constantini 2010: 329-332).

In the third quarter of the 4th century, in Arles, the *Esplanade* Sector has 125 individuals dominated by *Baetica*, followed by Gaul and Italy. In fourth and last place, *Lusitania* has, nevertheless, 7.4% of the Keay 19 (=Almagro 51a-b) (Keay 19A/B and C: no.s 14-15) and one Almagro 51C individual. Nevertheless, according to the author, the clays of these two sets are different, hinting perhaps at a South-Hispanic origin in the first case and a Lusitanian one in the second (Piton 2007: 288).

The shipwreck/port dumping layer Arles-Rhône 7 of a river ship in Arles is probably from the late 4th century / early 5th century, although the authors present a 3rd century chronology, but which is apparently related to a previous layer to that of the shipwreck (Long and Duperon 2011: 40). So, the Arles-Rhône 7 sector has a heterogeneous range of African *terra sigillata* from the 3rd century (Hayes 14, 15 and 6C), from the 3rd and 4th centuries (Hayes 50A and 53A) and a set from the 4th century / early 5th century (Hayes 58, 59A, and 67A and B), besides an African *Atlante* VIIC1c lamp, dated back to the second quarter of the 5th century by M. Bonifay (2004: 366). The amphoric set is dominated by Africa (23 individuals), followed by Gaul (11), the East (9) and Italy (4); *Hispania* provides it with one Baetican Dressel 23 and 5 Almagro 51C (Lusitana 3 in one case?) from *Lusitania* (Long and Duperon 2011: 40, fig. 9), with a rounded rim and a handle of sub-elliptical section with two wide longitudinal grooves (no. 17) or with a vertical rim and a handle with a concave external surface, though drawing a rounded arch, more typical among the Gaulish amphorae (no. 16), that may belong (if we accept its Lusitanian origin) to the wine amphora Lusitana 3 instead (Mayet and Silva 1998: 144 and 203).

Still in Arles, in the forensic contexts of the early 5th century, the 34 amphoric individuals are divided into 17 African ones, 6 Baetican ones and other 6 Oriental ones, an Italic one and 4 Lusitanian ones (9%), with clays whose descriptions inscribe them in the Tagus/Sado area (Piton 2011: 67). The Almagro 51C profile is the one with a thickened rim and a rounded profile handle, to which the Keay 19C (=Almagro 51a-b) and the Almagro 50 (no.s 18-21) are added.

Coeval with this layer is another one from *Portus Pisanus*, where the African origin dominates but *Baetica* is absent. Besides Italic and Oriental amphorae, there are some fragments whose descriptions resemble the South-Hispanic productions or those from the Algarve: no. 23, from type Keay 19C (=Almagro 51a-b), has red clay with many white and black inclusions; no. 22, from type Almagro 51C, with a rounded rim but having a verticalized handle, has brown clay with many white and brown inclusions (Genovesi 2010: 338-339).

In the contexts of Beirut's late 4th century or early 5th century, P. Reynolds (Reynolds 2000: 1039) ascribes most of the specimens to *Lusitania* although, in 2010 (Reynolds 2010: table 1), he ascribes only 3 specimens to this province (Tagus/Sado), which represent merely 0.76%, with the South-Hispanic/Algarve area being absent. Therefore, it seems that this author revised the

origin of some of the specimens that got into print in 2000 (no.s 24-29. In this paper, P. Reynolds 2000: 1039 ascribes no.s 24-28 to Tagus/Sado and no. 29 to Algarve), which must have been ascribed to *Baetica*, in 2010. We notice, however, an exclusivity of the Almagro 51C, with a rounded, extroverted rim (in the case of no. 28, with an external lip) and a handle of sub-elliptical section. The early 5th century is the final moment of the Lusitanian trade in Beirut, followed by the Baetican one, in the mid-5th century.

The Hispanic Almagro 51C amphorae are quite well represented in *Turris Libisonis* where, in 250-275 A..D., they represent 5.5% having an apogee in the 5th century: 425-450 A..D. (12%), 440-460 A..D. (13%), 460-500 A..D. (9.7%), 460-600 A..D. (7.5%) (Villedieu 1986: 156). This presence in Sardinia reveals a probable shift to Italy of these products, whose geographic origin would be important to determine.

Three contexts from 425-450 A.D. show a trend towards geographic diffusion, which seems to lead the containers, not so much to the Catalan coast but, mainly, to the Mediterranean and, according to the currently available knowledge, with a particular emphasis on the Provence coast.

In *Ampurias* they represent 3.1% (Reynolds 2005: 416), but in *Tarraco*, in the STE/I deposit, the Lusitanian amphorae represent 8.16% to which we must also add 2.04% of Baetico-Lusitanian ones (Remolà Valverdù 2000). This Lusitanian set is dominated by the Keay 19C/21 (=Almagro 51a-b), with very approximate rims to those of the production from the Lagos area, in the Algarve, that C. Fabião, I. Filipe and S. Brazuna (Fabião, Filipe and Brazuna 2010: fig. 1) call Algarve 1 (no.s 36-41), followed by the Almagro 50 and also by the Almagro 51C, of ancient *facies* (no.s 30-35). To this set we may still add the plate with Lusitanian specimens from the Keay 16B-C, 21 and 78 types (this one, most probably, from the Sado area), as well as Baetico-Lusitanian ones from the Almagro 51C and Keay 19C (=Almagro 51a-b) types (Remolà Valverdù 2000: figs. 54, 63-67).

The relative value of Lusitanian amphorae rises even more near Cape Nao and *Valentia*, in *Portus Sucronem*, where they represent 25.8%, being the second most important origin, after the African one with 37.1%, and well ahead of *Baetica*, with 9.6%. The Lusitanian set is dominated by the Almagro 51C (14 individuals: no. 43), together with the Keay 19 (=Almagro 51a-b) (no. 42 is a Keay 19A/B), with 2 individuals. Nevertheless, the resemblance between the extroverted rim of n° 43 from *Portus Sucronem* and the, hypothetically

Lusitanian, early 5th century materials from Beirut (n^os 24-25) is noteworthy.

Arles' theatre excavations have been published by C. Richarté (Richarté 2011) and this sector was quantified in the frame of our on-going project of study of Lusitanian amphorae at this Roman town. Our collaboration with C. Richarté has led to a final quantification of Lusitanian imports, which seem undoubtedly related to the 430-450 and 450 A.D. levels, where they reach a value of c.1% in both periods, a similar percentage if compared to Arles-Rhône 3 sector between 55 and 140 A.D. (see *supra*). In these contexts, Arles shows imports of mainly Lusitanian salted-fish (Almagro 50, 51c and 51a-b), but also a scarce amount of Lusitanian wine (Lusitana 9) (Quaresma forthcoming b). The middle of the 5th c. A.D. represents the end of the Lusitanian imports given that they are absent from the contexts of the end of the 5th c. A.D.

Some 5th c. A.D. fillings from Rome (Bastione Farnesiano of Domus Tiberiana) have a total amount of 802 amphorae (NMI), which includes 23 South-Hispanic amphorae (not specified), alongside with 1 Keay 16, 2 Almagro 51a-b and 1 Almagro 51c from Hispania, whose exact origins should be studied in the future (Ciceroni, Martin and Munz 2004: 141).

2.2.5. c. 450-550+ a.D.

The contexts from the second half of the 5th century at the sector *Magna Mater* in Rome demonstrate how Lusitanian salted-fish is still important in the Italian market: while *Baetica* and its olive oil represents 7,2% with just one type, Dr. 23, *Lusitania* maintains its diversified typology, comprising Almagro 50, Almagro 51a-b and Almagro 51c and it overlaps the Baetican percentage, with 11,6% (Panella *et al.* 2010: 66). This aspect seems to be coherent with the aforementioned Lusitanian dominance among the Hispanic exports in *Portus Sucronem*.

Magna Mater context is coeval with the *vertedero de cenizas* one, in *Hispalis*, where there are Baetican and Lusitanian Keay 19 (=Almagro 51a-b) (Keay 19A/B: no. 45) and Lusitanian Keay 19C (=Almagro 51a-b), Almagro 51C and Sado 3 (?) (no.s 44, 46 and 47) (Amores Carredano, García Vargas and González Acuña 2007: 136).

At the Palatine (Rome) excavations, Almagro 51C from Lusitania is attested by 8 fragments between the end of the 2nd c. and the late 5th/early 6th c. A.D. (Peña 1999: 93. At least no. 56 of this publication does not

seem to be Lusitanian, in face of its profile). Almagro 50 has a typical Lusitanian clay, with a mica-rich fabric. This type occurs in levels dated to a long chronology as well: from the end of the 3rd c. till the 5th c. A.D. (Peña 1999: 95).

In the contexts from c 530 A.D. at Carthage, type Sado 3 or Lusitana 10 is attested by one individual (Fulford and Peacock 1984: fig. 38, no. 52 ; Fabião 2009: 575) (no. 48), to which we may also add the presence of some Lusitanian amphorae (residual?) in *Tarraco*, in the second half of the 6th century (*apud* Fabião 2009: 41).

At Vigna Barberini (Rome), period IV contexts, dated to 540/550-580/590 A.D., have a total amount of 905 amphorae, which include 6 Lusitanian amphorae: 6 Almagro 51C, 1 Almagro 51a-b and 1 Almagro 50 (Rizzo *et al.* 2004: 78). The possible residuality of these contexts doesn't allow any solid conclusion about the historical value of the Lusitanian salted-fish amphorae, taking into account the late chronology of this levels in face of the known Lusitanian production. In this sense, contexts from *Domus Tiberiana* dated to the early 7th c. A.D. include only 1 Almagro 51C, among 38 amphorae (Munz *et al.* 2004: 117).

These markets may reflect the continuity of part of the Lusitanian production, attested until the first half of the 6th century in Lagos (Ramos, Almeida and Laço 2006: 93) and in Cerro da Vila (Diogo 2001: 110), in Comenda (Trindade and Diogo 1996: 8), possibly in Tróia (Pereira Maia 1973), and in the Tagus Valley, *Olisipo*'s consumption center, (Pimenta and Fabião forthcoming), where Late African and Late Phocaeen *terra sigillata* is attested for this period (see Quaresma 2012: chapter 4). In this region, the amphorae production centre of Quinta do Rouxinol, in face of *Olisipo*, indicates also a possible continuity of its production after c. 425 A.D., taking into account the huge presence of red gloss ceramic, an imitation of the African *terra sigillata*, mainly from type Hayes 61. Nevertheless, we must stress that this centre, as the other ones in the Tagus valley, has not produced Almagro 51a-b, the main type described in the consumption markets (Quaresma forthcoming a).

2.3. The atlantic diffusion of Lusitanian amphorae

The Lusitanian amphorae trade into the Atlantic region is clearly less important all over this long chronology, but it indicates a slight strengthening from the 3rd c. A.D. onwards. It points also for a scarce distribution

in civilian and military areas, between the Northwestern Hispania and the Northern Roman Empire (*Britannia* and *Germania*).

With regard to *Germania*, Lusitanian exports are known at Augst (González Cesteros 2010: 115, note 24 and mainly 114, note 21). This commerce was apparently subsidiary of the Baetican olive oil, which occurs in *Germania* alongside a smaller amount of salted-fish amphorae from the same region.

A similar situation is attested in *Britannia*, where the less represented peninsular amphorae in Britain are wine containers from *Baetica* (Dressel 2-4 and Dressel 28) and salted-fish containers from *Lusitania* (Dressel 14 and Almagro 50) (Carreras Monfort 1998).

The same scarceness occurs in western and northern Gallia, where the single attested amphora is Almagro 50 type: two fragments were detected in contexts dated to 280-320 A.D. and the late 3rd c./second half of the 5th c. A.D., at Bavay and Rouen respectively (Laubenheimer and Marlière 2010: 59).

Without any published total quantifications, the data from Toulouse confirm the importance of Lusitanian imports in South Gaul: in the aforementioned city, *Lusitania*'s amphorae increase their number in the 5th century, amounting to 70 individuals in this phase, whereas for the 4th century only 10 individuals of non-specified Hispanic origin are referenced (Bonifay, Raynaud *et al.* 2007: 152). In this work, F. Thibault presents differences in *facies* between Toulouse and Bordeaux, the latter in an Atlantic location and with scarce Hispanic consumption, while privileging African products; on the other hand, Toulouse presents a scant relationship with Africa and privileged exchanges with *Lusitania*, through the Narbonne harbor, in the Mediterranean coast. At Bordeaux F. Thibault confirms the strengthening of the Lusitanian salted-fish in the 5th century, but the conclusion proposed by the author of an exclusivity of Lusitanian amphorae among the Hispanic exports in the 5th century contexts may not be correct (Thibault 1999: 273, fig. 15). Once again the published drawings indicate some problems in the classification of Lusitanian amphorae: nos. 1 and 2 of fig. 15 (Thibault 1999) cannot be classed as Almagro 51a-b pivots, as they concern most likely Baetican amphorae.

At Vigo, South-Hispanic amphorae (which may include Algarve) are attested in the first half of the 6th century, as well as in the second half of the 6th century and the first half of the 7th century, when 1 individual represents 11,1% of the total amphorae amount (Fernández Fernández 2014: table 51).

These contexts, whose residuality must be considered, rises the same question than the aforementioned contexts from Rome in this very chronology. They also stress the possible importance of Almagro 51a-b type, which was not produced in the Tagus valley, the main production area, alongside Sado. As mentioned above, this type is predominant in the early 6th century contexts of sector Sommer (Lisboa) and points to a possible importance of the Sado valley and the Algarve region, which may be reflected in the stratigraphy of Vigo.

3. CONCLUSIONS

The picture which is merely sketched by this work allows us mainly to conclude that there are unexplored empirical grounds, both in the Mediterranean consumption markets and in the Lusitanian production centres. A clear identification of the containers from the Tagus or Sado area, in view of their counterparts from the Algarve and from Western Baetica is equally vital; the difficulty in separating their manufactures compels us to call them South-Hispanic, as a precaution.

The partial coincidence of the existing data regarding Hispanic cereals export and Lusitanian amphorae hints at an apparent chronological similarity in the apogee of these two segments: the large set of literary references to the Hispanic cereal, although without any geographic precision, defines the late 4th century as a crucial period for *Hispania* in the supply of this food-stuff to Rome. As we pointed out, it is nonetheless interesting that, at the archaeological record level, most of the *horreae* evidences are concentrated, up to now, in *Lusitania* (Arce 2011). This flow was, however, always secondary and, for what it seems, mainly intended to compensate for moments of African cereal crisis.

The data regarding peninsular mining, an activity that was important during the High Empire, also fades out after the 3rd century and focuses, after that date, in Southern *Hispania*, although there is data about the continuity of mining in the NW until the 4th century, in *Trás-os-Montes* and in *Asturias* (Domergue 1990: 215-216), as well as in Southern *Lusitania*, in *Vipasca*, until the early 5th century (Bustamante Álvarez *et al.* 2008), after an apogee during the High Empire until, approximately, the third quarter of the 2nd century. However, this centre's chronology stretches itself, in an apparently uninterrupted way, until the

early 5th century, with the presence of African *terra sigillata* A, from the Hayes 14B and C types, African A/D from the Hayes 31 type (fig. 4, no.s 3-4 from the aforementioned publication) and afterwards, by African *terra sigillata* D, from the Hayes 58B, 61A, 59B types and the A(ii) style.

Whether the cereal flow includes *Lusitania* or not, this province's salted-fish trade intensifies itself at the same time, and although it has an apparent appetite for the area drawn by the arch between Provence and the western Italy, the stratigraphic data of these consumption centers raises a first anomaly, in view of the 15 shipwrecks compiled by A. Parker (1992) and analyzed again by M. Bonifay and A. Tchernia (Bonifay and Tchernia 2012) and S. Bombico *et al.* (Bombico *et al.* 2014), whose cargoes contain African, Baetican and at least in some of them Lusitanian amphorae, too: this set of shipwrecks represents an intense moment focused on a century that runs between c 250 and c 350 A.D., that is, prior to the moment of the Lusitanian products' commercial apogee, in the consumption centers' available stratigraphies. Does this mean that part of that Lusitanian amphorae are not Lusitanian? In this respect it is urgent to fully reclassify these collections. Shipwrecks as Punta Vecchia 1, in the late 3rd c. or the first half of the 4th c. AD indicate that there are already Lusitanian primary cargoes (Bombico *et al.* 2014). This case is quite important for our final consideration.

Another suggestive anomaly that the consumption centers' stratigraphic data points out lies in the continuity of this commerce during the 5th century and the 6th centuries, according to the east peninsular coast contexts (especially from *Portus Sucronem* and *Tarraco*) and to Rome, too.

Since it is exactly at this time that many Lusitanian salted-fish centers and amphorae production centers come to an end, how may we explain the explicit appearance of containers in peninsular and Mediterranean consumption centers, since they are absent from late 5th century contexts in Arles' theatre? The continuity of exports of a reduced but sustainable production or a simple case of residual stratigraphies?

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