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Ancient Maritime Communities and  
the Relationship between People and  
Environment along the European  
Atlantic Coasts

Sous la direction de / Edited by

Marie-Yvane Daire, Catherine Dupont,  
Anna Baudry, Cyrille Billard, Jean-Marc Large,  
Laurent Lespez, Eric Normand and Chris Scarre

Avec la collaboration de / With the collaboration of

Francis Bertin, Chloé Martin et Kate Sharpe

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# ROMANS AND MUSLIMS IN THE PORTUGUESE ATLANTIC

Alessia AMATO

Fundação para a Ciência e Tecnologia (FCT) scholarship, Universidade de Coimbra/CEAUCP, Centro de Estudos Arqueológicos das Universidades de Coimbra e Porto, Portugal

Sónia BOMBICO

Fundação para a Ciência e Tecnologia scholarship, Universidade de Évora/CIDEHUS, Centro Interdisciplinar de História, Culturas e Sociedades, Portugal

*In memory of Custódio, a brave sailor.*

## INTRODUCTION

Ancient Atlantic navigation has been questioned, for a long time, due to the obvious navigation difficulties on the Atlantic Ocean, but now new material evidence calls that same view into question.

The Portuguese research has too embraced this image of “Finisterre” by the “Ocean sea” and internalised the notion of an ultra-peripheral Lusitania in the context of the Roman Empire. The Islamic period has also been overlooked, mainly for reasons relating to the historical tradition and the Christian Reconquest.

However, there is historical and archaeological evidence of ancient traffic with the Mediterranean Basin, as early as the Bronze Age, which seems to be continuous until the end of the Arab presence in the Iberian Peninsula.

With this paper we aim to present such evidence, following an interpretive line that puts emphasis on the vestiges of exploitation of marine resources, navigation and product use.

## BACKGROUND AND SOURCES

The societies along these western sea lanes and those sailing from elsewhere having chosen these port sites were certainly required to come up with solutions in order to adapt their marine skills to the natural conditions of the local geography and climate circumstances, including prevailing winds. The study of harbours and sea routes along the Atlantic must, thus, consider both topography and ship technology.

Specifically, one must take into account the problems arising from the differences between two nautical universes: the Mediterranean universe and the hard Atlantic universe. With these differences in mind, we turned our attention to the recurring preference for estuaries, marine lagoons, coasts naturally defended by coastal formations or island-barriers and lower courses of rivers for the installation of harbour zones.

In order to characterise the port zones of the Roman and Islamic periods and reconstruct the harbour system, one should consider: geographical and morphological data, archaeological evidences and historical-literary, cartographic and iconographical sources.

*Reassessing the Roman and Muslim maritime activities in the Portuguese Atlantic*

In the last decades, archaeological underwater discoveries

in maritime and fluvial contexts contributed to a better understanding and characterisation of the settlement and sea routes, some of which were referred to by ancient authors in classical (Pomponius Mela, Pliny, Strabo and Avienus) and Arab texts (Al-Razi, Al-Bakri, Ibne Mozaine and Idrisi, for instance).

It is, thus, imperative to reassess the Roman and Muslim maritime activities.

The fact that the major political centres of the Lusitania Province were located inland constitutes an argument on behalf of littoral depreciation. Simultaneously, international bibliography valued the importance of some north-south routes, namely the Gallic isthmus and the Rhone and Rhine routes, on the supply to *Britannia* or *Germania Inferior*, underlining the supposed Hispanic peripheral condition and depreciating the Atlantic route - which despite some sailing difficulties constituted the best choice, considering the distance-cost relationship (Blot 2003; Carreras Monfort 2000; Fabião 2009a, 53) (Figure 1).

The lack of shipwreck records on the Atlantic coast from Cadiz to La Coruna in the work of Parker (Parker 1992) coupled with a somewhat non-contextualised analysis of Avienus' (c. 4th century AD) *Ora Maritima* has contributed to the increase of Roman Atlantic navigation's sceptics. Cadiz, described by Strabo (c. 1st century AD) with enthusiasm, lay in ruins three centuries later, according to Avienus (Mantas 2000).

“It too had been [...] big and opulent in ancient times; it is now poor, small, abandoned - lying in ruins.” (Avienus, 266-283 in Patrocínio 2006).

The combination of these factors has strongly influenced the image one has of the western Iberian Peninsula and, therefore, all undertaken research as well.

However, the presence of numerous shipwrecks along the

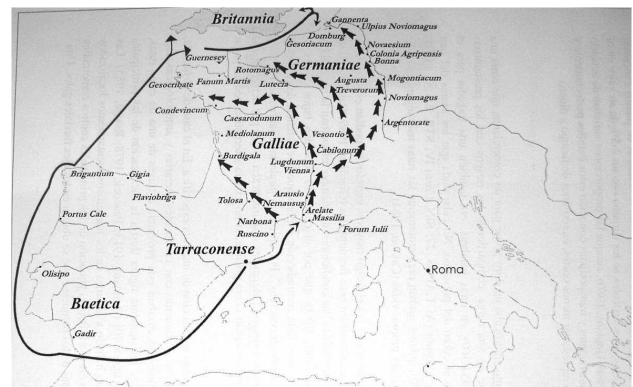


Figure 1. Access routes to Britannia (Carreras Monfort 2000, 2006).

Atlantic coast, the large volume of amphorae recovered and other products demonstrate a constant commercial exchange amongst the diverse Atlantic coastal populations (Carreras Monfort and Morais 2010).

This data allows one to better understand the importance of the Atlantic route (Fabião 2009a, 55).

It is, nonetheless, undeniable that the inclusion of the Lusitania Province and the Iberian Peninsula's northwest in the Roman Empire allowed for the existence of regular long distance contacts with other provinces and especially with the Mediterranean. The spreading out of Rome's power to Great Britain and present day The Netherlands - a process completed in the middle of the 1st century AD - inevitably provided the Roman Empire with a wide Atlantic coastal area.

During the Islamic period, one sees the vitality of the port cities, with the development of nautical activities, including naval construction in shipyards mentioned by Arab authors, such as Al-Razi, Al-Bakri, Ibne Mozaine and Idrisi.

The territory called Al-Andalus includes Southern Spain (Andalusia). Various descriptions made by Arab historians and geographers with a common vision of these territories considered the Iberian Peninsula as a prolongation of the eastern Arab world reachable through North Africa and most likely via navigation along the coast. Al-Razi proposes a significant division of Andalusia into AX-Xarqi and Al-Garbe or, in other words, eastern and western Andalusia. Al-Garbe corresponds to current Southern Portugal (Figure 2). Although the Arabic literary sources and the corpus of the Medieval Arabian geography constitute the primary sources for the study of the use of the coast and shipping lanes during the Arab dominion of Southern Portugal, the

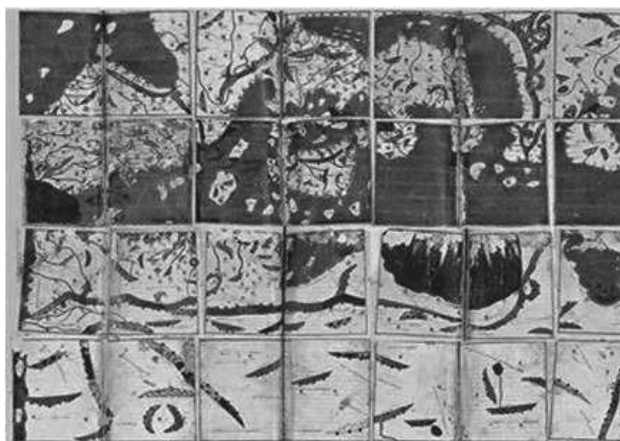


Figure 2. سيردا! نب لالا دبغ نبا دمحم نب دمحم لالا دبغ وبأ (Idrisi) Ceuta, 1099 - Sicilia, 1164. Castello del Monte, Andria, Puglia (2007 foto). Western section of the 70 map board.

main maritime cities have revealed large quantities of imported ceramics dating from the Islamic period.

#### *The ancient geomorphology of the Portuguese coast*

Geographically speaking, the western Iberian Peninsula benefits from a strategic location between the Mediterranean world and the Atlantic one. Inserted in an Atlantic geographical space, the Portuguese coast still preserves many Mediterranean characteristics (Arruda and Vilaça 2006, 31; Ribeiro 1986, 39).

Geomorphologic studies are useful for the creation of hypothesis regarding possible locations of ancient natural ports. But one must also consider the modifications to the seaboard that were responsible for the different interactions between men and environment.

Generally, one could argue that the outline of the coast has been "simplified" in the last 1000 years (Freitas and Andrade 1998). Up to the 15th and 16th centuries AD, the design of the west coast of the Iberian Peninsula would be more irregular than the current one, more indented, and there would be more bays and river mouths (Figure 3).

Maria Luísa Blot (Blot 1998, 148) summarises the Portuguese coast evolution process according to three aspects:

1. Gradual connection between ancient islands and the continent, forming peninsulas (cases of Peniche, Baleal and probably current Tróia peninsula);
2. Closing of ancient coastal embayments and formation of coastal lagoons (cases of Santo André, Melides, Alfeizerão, Ria de Aveiro, Ria de Faro);
3. Siltation of estuaries and subsequent inland context of former coastal areas.

Siltation is a gradual process that has been increasing over the centuries in most Portuguese waterways and estuaries, decreasing their navigability.

The historical cartography is commonly used to study the

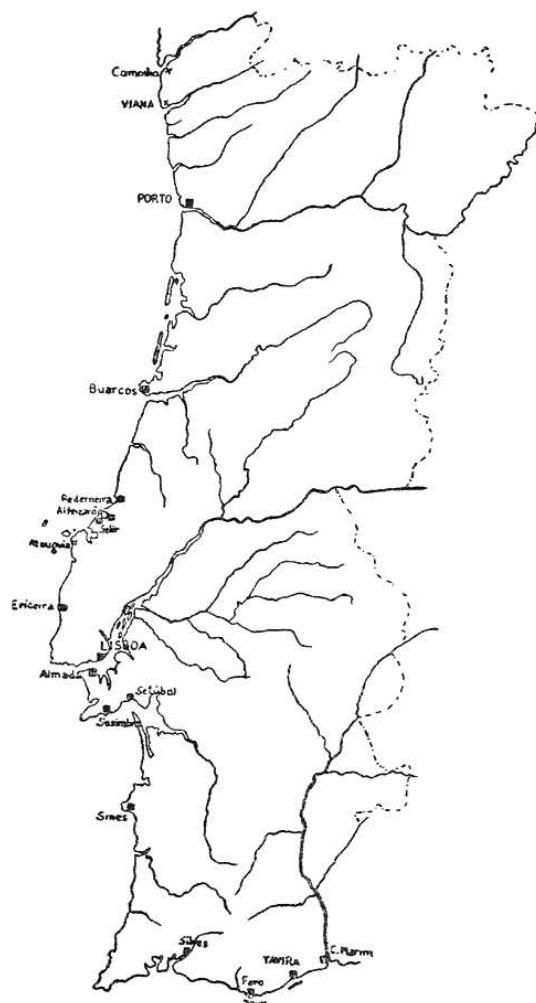


Figure 3. The Portuguese coast in 1383-85, according F. B. Ferreira. (Tracing of Fernandes Martins) Martins 1946, 168.

waterfront geomorphologic changes of the Portuguese coast. However, this should be interpreted with caution. These testimonials often pose problems, such as the inaccuracy of the outlining of the coast, the small scale and the omission or enlargement of certain details, such as embayments. Cartography analysis is also affected by chronological contradictions and mistakes resulting from the fact that some maps are copies of previous works.

In this field, the compilation of Cortesão and Mota (1987) stands out, with particular emphasis on the maps of Pedro Teixeira (*Descripción de España y de las costas y puertos de sus reynos, Atlas de Viena, c. 1634*) and João Teixeira (*Descrição dos Portos Marítimos do Reino de Portugal, c. 1648*), which are quoted by the majority of the authors who study the evolution of the Portuguese coast and its harbour characteristics (Figure 4).

The complexity of the Atlantic environment makes it particularly difficult for one to recognise ancient port facilities and makes one reflect on the concept of harbour space.



**Figure 4.** Pedro Teixeira (1634) *Description de España y de las costas e puertos de sus reynos*, folio 69. *El Atlas del Rey Planeta*, Nerea, 2002.

One must first identify the relationship between harbour typology - recognised since Antiquity - and possible corresponding archaeological vestiges.

In fact, these vestiges are not always materialised in specific harbour equipment. Sometimes, it could be that, as described by Strabo regarding the Tiber River, ships were unloaded through the use of smaller vessels (Blot 2003, 22) (Figure 5).

#### SEAFARING AND HARBOUR ACTIVITIES IN ROMAN AND ISLAMIC TIMES

Early mariners certainly understood the necessity of waiting for high tide before incoming on estuaries. These mooring places, naturally sheltered by high cliffs, are still today's deep and safe mooring sites while waiting to enter an estuary (Blot 2010, 84). Therefore, the amphorae and lead anchor stocks found in rivers and on the coast include not only presumed shipwreck sites but also some important mooring sites. In those places, underwater surveys indicate the diachronic utilisation of such natural marine shelters. Besides nautical artefacts such as lead anchor stocks,



**Figure 5.** Mosaic from the Forum of Corporations at Ancient Ostia, representing direct transshipment of goods from one ship to a *caudicaria*.

evidence from Portuguese waters included containers of imported and exported products, such as amphorae and other pottery vessels, which were also found in archaeological excavations on the seaboard and on land. Those provide important information regarding the capacity of overseas transport and regarding social, economic, and cultural factors relating to marine activity.

#### Roman evidences of maritime activities

Initiated by Augustus, Rome's Atlantic policy seems to have been consolidated in the age of Claudius, with the acknowledgment of the economic potential offered by the Atlantic region (Fabião 2005, 84; Mantas 2002-2003, 459). In fact, between the middle of the 1st century BC and the 1st century AD, the quantity of archaeological evidence indicative of Roman presence in the western Iberian Peninsula grows exponentially, confirming data found in classical literature sources.

Pliny writes "the cities worthy of mention on the coast, beginning from the Tagus, are that of Olisipo, famous for its mares, which conceive from the west wind; Salacia, which is surnamed the Imperial City; Merobriga; and then the Sacred Promontory, with the other known by the name of Cuneus, and the towns of Ossonoba, Balsa, and Myrtili." (Pliny, *Natural History*, 435.21) (Figure 6).

Traditionally, only a small number of cities whose economic functions date back to the pre-Roman period are deemed as true maritime cities. They are: *Olisipo* (Lisbon), *Salacia* (Alcácer do Sal), *Ossonoba* (Faro) and *Balsa* (Luz de Tavira) (Mantas 1990, 160) but also *Scallabis* (Santarém), located in the lower course of the Tagus River. The studies of the last decade lead us to consider the existence of cities with harbour functions north of the Tagus, namely *Aeminium*, *Portus Cale* and even *Bracara Augusta* (located in the lower course of the Cávado River), which functioned as fluvial *terminus*. Moreover, most fluvial courses in the north and centre of the peninsula (Minho, Lima, Cávado, Ave, Douro, Ria de Aveiro, Mondego and the lagoon region of Estremadura) would have known extensive maritime and commercial activity, functioning within harbour complexes (Blot 2003). Coastal islands, such as Pessegueiro and the Berlenga, seem to have played an equally important role, the latter having confirmedly operated as mooring place and scale point for Atlantic navigation. Mar de Ancão (in the estuary of the Sado River) or the "Fundão de Tróia" (situated in front of a fish product factory) are also important



Figure 6. *Tabula Peutingeriana* by Conrad Miller (1887) - Arkeotavira sources.

mooring sites (Figure 7).

The coast of Peniche seems to constitute a particular case. Thanks to the descriptions and cartography, we know that Peniche was an island in ancient times. The geo-strategic and economic importance played by this coastal region within the scope of the Atlantic circulation is suggested by the existence of a large number of leaded Roman anchors, amphorae and other archaeological remains found on the Berlenga island and on the southern coast of Peniche (shipwreck site of Cortiçais) (Figure 8).

The main Roman *viae* seem to appear, on the one hand, from the necessity to link maritime cities, and, on the other hand, from the necessity to establish crossings with the fluvial routes that penetrated the territory (Mantas 2002-2003). This means that roads combined maritime routes and oceanic *termini* with inner *termini* (Blot 2003).

One may argue that the historical and archaeological data collected in the last decades suggests the following scenarios: the existence of a significant activity of marine resources exploitation (mainly fish products) correlated with export and amphorae production activities (Figure 9); an interest for estuaries and the development of Lusitania's maritime cities; proliferation of archaeological records related to transport and circulation of goods by sea along the Atlantic coastline (such as the pattern of distribution of some amphorae and *terra sigillata*); and lastly, the identification of archaeological remains of ancient navigation (lead anchor stocks, shipwrecks and lighthouses) (Figure 10).

These elements suggest an ancient economy based on both agriculture and fishing to which sea trade was added.

The development of salt exploitation, linked to fishing activities, allowed for the production of salted fish, one

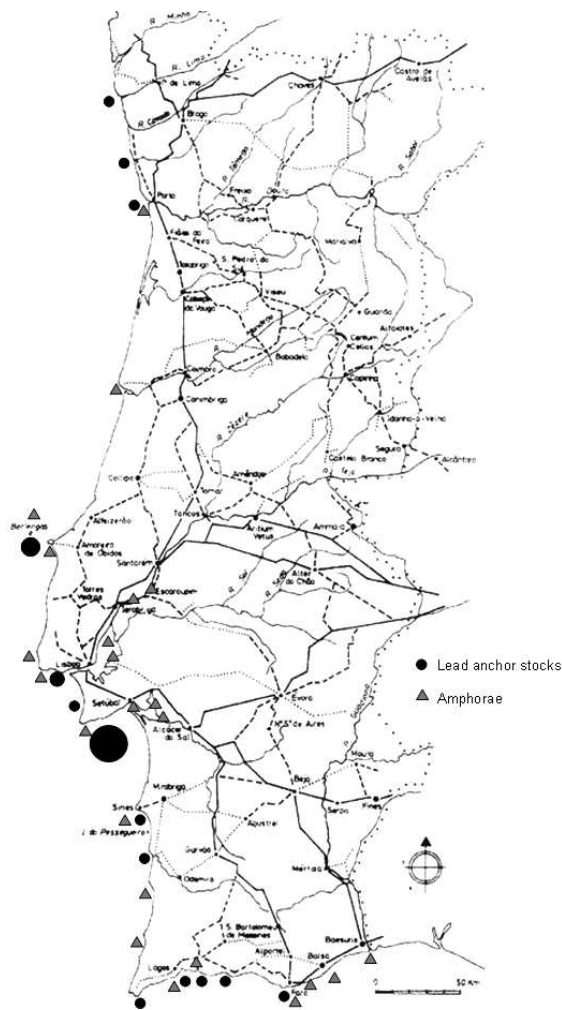


Figure 7. Archaeological underwater evidences. (Background map: Mantas, *Vias Romanas da Lusitana*, 1993.)

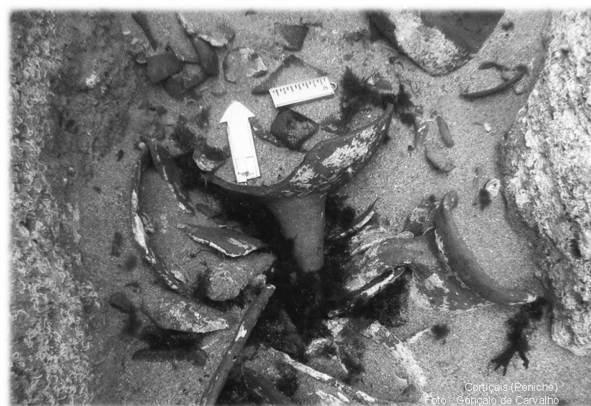
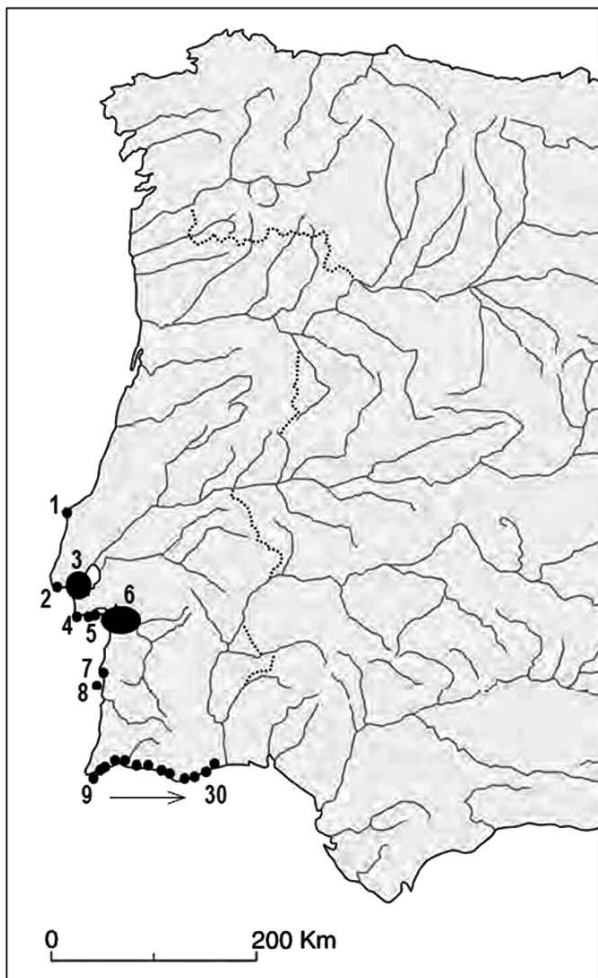


Figure 8. Shipwreck of Cortiçais (Foto by Gonçalo de Carvalho, 2006).

of the most important industries in Roman Lusitania (Edmondson 1987).

The idea of a first organised colonisation of the Atlantic seaboard taking place in the Roman period came originally from the studies of other historical periods. Jaime Cortesão was the first Portuguese author to suggest the existence of an "Atlantic settlement process" in Roman times (Fabião 2009a). Later studies have analysed that topic (Blot 2003;



**Figure 9.** Sites with *cetariae* (vats for salting fish) on the coast of Lusitania. (Fabião 2009b, 565).

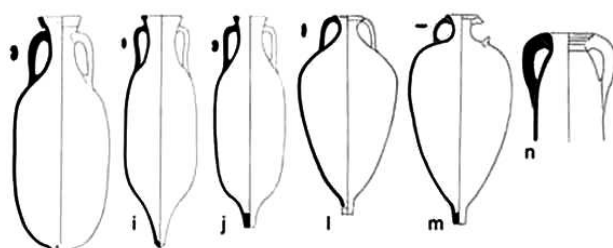


**Figure 10.** Lead anchor stock found in Portuguese waters (Foto by DANS, Divisão de Arqueologia Náutica e Subaquática).

Edmondson 1987; Mantas 1990). It is interesting to note that the cases of the Sado and the Tagus Rivers seem to confirm Jaime Cortesão's concept and, indeed, there are indications of a settlement (or a settlement increase) on the coast in Roman times (Fabião 2009a).

In the Portuguese Nautical and Underwater Archaeological Chart (Nautical and Underwater Archaeology Division), there are currently more than one hundred records (around 121) pertaining to the Roman period, which correspond to approximately two hundred amphorae and one hundred lead anchor stocks (Figure 7 and 11). Four of these contexts are associated with presumed shipwreck sites. The remains of Moção da Póvoa (Vila Franca de Xira)

in the course of the Tagus River; some contemporaneous and associated materials in the Arade River and the site off Tavira that might correspond to the shipwreck of a merchant ship coming from Baetica, datable to the 1st century AD. Even so, the only site that has undergone archaeological surveying is Cortiçais, in Peniche. The excavation campaigns developed between 2004 and 2006 allowed for the identification of fragments of Haltern 70 Baetican amphorae (wine containers) and Italian-type *sigillata* - this findings allowed one to date the shipwreck to the change of the Era, between the last decade of the 1st century BC and the first decade of the 1st century AD. The bibliographic data related with the main amphorae collections coming from underwater contexts are directly linked to the Portuguese inventory records and pinpoint



**Figure 11.** Amphorae found at Cabo Sardão (Alves *et al.*, 2005).

the location of the main areas of findings. The Algarve region stands out with the highest number of records (Cacela, Tavira, Meia-Praia-Lagos and the Arade River); followed by the estuaries of the Sado and the Tagus Rivers; and then by the Peniche area, which includes the Berlenga and Farilhões islands.

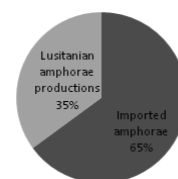
The underwater data allow us to conclude that, in percentage terms, imported amphorae represent a much larger number than the Lusitanian ones (Figure 12).

Chronologically, we can identify two significant moments of import activities. The first one, from the Ibero-Punic period until the middle of the 2nd century AD, attested by the presence of Ibero-Punic, Greco-Italic and Italic wine amphorae Dressel 1 and Dressel 2/4.

Dressel 1 is a constant presence in all discovery contexts of the Portuguese territory, especially in its 1B type.

An import period, then, starts with the first productions from Baetica, with their contents of fish products (Dressel 7/11 and Beltrán I, II and IV), wine (Haltern 70) and olive oil (Dressel 20).

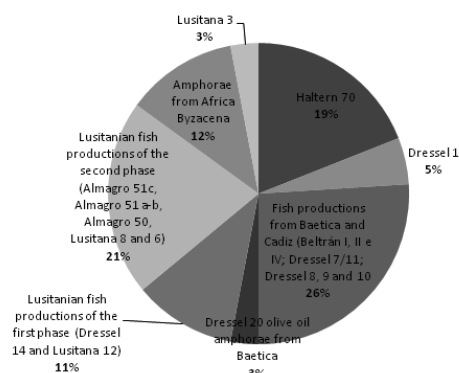
The second significant moment corresponds to the import period of African goods (from the beginning of the 3rd century on), mainly amphorae from Africa Byzacena (Keay III, V, VI and XXV) which are largely present in the Algarve contexts but also in the estuary of the Sado River, off Tróia (Figure 13).



**Figure 12.** Graph representing the percentage of Lusitanian amphorae production and imported amphorae.

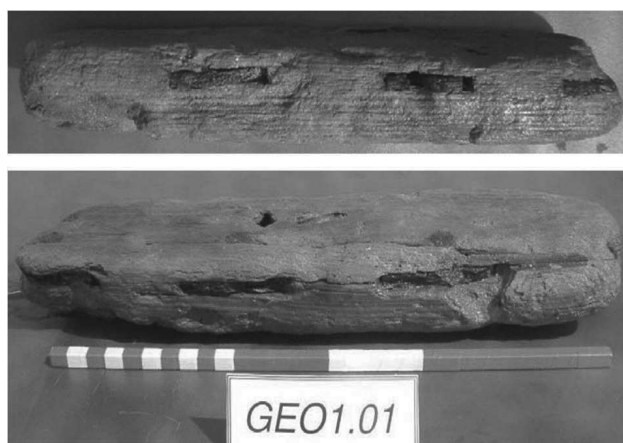


The wooden ship hull remains associated with underwater ceramic materials are less frequent on the Portuguese coast, although they have been recorded on the island of Farilhões (Berlenga), Mouchão da Póvoa (Tagus River)



**Figure 13.** Main amphorae types identified on underwater findings at Portugal.

and in the estuary of the Arade River (Figure 14). Some epigraphic and iconographic information, such as monetary emissions, completes the attempt of reconstruction of ancient naval construction principles (Figure 15). The data recorded on the Portuguese coast seems to



**Figure 14.** Isolated fragment of board identified in Arade River. *Shell first* constructive principle. (Alves 2005, 451).

corroborate the studies that underline the importance of the Atlantic side of the Iberian Peninsula. Among such studies, the following stand out: Carreras Monfort 2000, 2005; Chic García 1995, 2003; Lagóstena Barrios 2001; Naveiro López 1991, 1996; Remesal Rodríguez 1986, 2004, 2008. At the Portuguese research level, the following studies stand out: Fabião 2005, 2009a; Mantas 1990, 1998, 1999, 2002-2003, 2004; Morais 2007.

Archaeological remains show us a continuity of navigation and economic exploitation of the coast that goes beyond the end of the Roman Empire up to the fifth and sixth centuries AD (Fabião 2009a).

#### *Islamic evidences of maritime activities*

The vast testimonies of the Islamic Peninsular maritime world, in the south of Portugal, discloses up from



**Figure 15.** Monetary emission of Ossonoba (Faro). Mantas 2006, 302-303.

the interdisciplinary analysis of its components. These components are used to compensate the lack of archaeological findings and the impossibility of comparison with the current ethnographic evidences, which express the continuity of ancient practices and use of the same sites.

The ports, areas of trade and cultural exchanges, in the post-Lusitanian period, would be the sites in particular to contact with naval technology information, opening the way for its materialization and diffusion in shipyards, mooring places or arsenals.

Regarding medieval Islamic times, especially concerning traces of maritime nature, we must distance ourselves from outdated readings that see the naval archeology as a limited source of knowledge as it is deprived of its object of study: the ship<sup>1</sup> (Barata 1989). To counter this idea, at least partially, we considered the studies that have contributed to the overcoming of these limitations, which were also attributed to the Roman period.

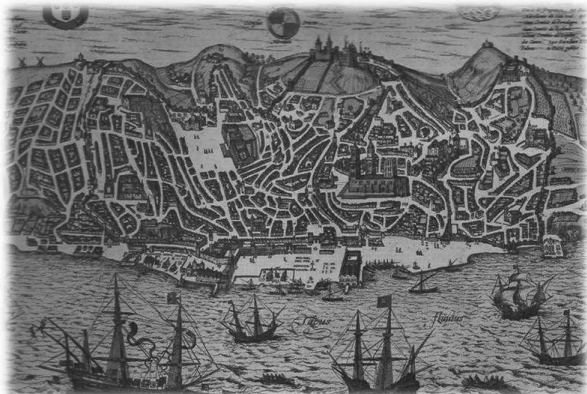
From the present sources of the Islamic period, stand out especially works of nautical nature dedicated to the history and historiography (Picard 1997), such as collections of naval warfare, ship's logs and detailed descriptions of the coastal dangers. Nevertheless there is a lack of references to trade and exchanges, this gap is bridged by the etymology of the places, whose names testify their Islamic origin and are the preamble for the caravel, transformed in to an institutional ship (Fonseca 2003) and to the future conquest of unknown seas.

In the specific case of the identification of wrecks or vessels structures, the problem is compounded by the lack of attention that they have received. An example of this is the work of A. J Parker (1992), the focus on medieval shipwrecks is somehow vague and does not highlight any differences in Arab-Islamic boat structures. This study also presents limitations of the geographic space, considering predominantly the *Mare Nostrum* in detriment of the Atlantic. The lack of literature sources and archeological remains seems indicate a real decline of Muslim maritime policy. This has contributed for a simplistic view of Islamic and Roman naval history, where sea exploration was based on unplanned and adventurous navigations. Assumptions that have contributed to the theory of an autonomous emergent 15 century Expansionism.

This study covers the ports included in the area between the estuary olisipponense, on the banks of the Tagus river



(Figure 16), which defines the boundaries of Strabo's Mesopotamia (Geography III, 2, 4) and the Guadiana river which allows access to the interior mines through Algarve. The numerous and fascinating testimonies of geographers and contemporary chronicles of the kingdoms of Gharb



**Figure 16.** “Arsenal da Ribeira” Lisbon. 16th century AD, Giorgio Braunii.

narrate a reality that opposes the one established in the mid-13th century. Some documents, such as *Forais* <sup>II</sup> and Charters of the King of Portugal, can be related to a geomorphological moment of accentuated siltation process, which may be related to the massive deforestation implemented by Dom Dinis's agricultural policy. Since, the so-called Christian Reconquest, the port entities suffered restrictions of a political and social nature, with the probable goal of limiting contacts with the North African Islamic coast.

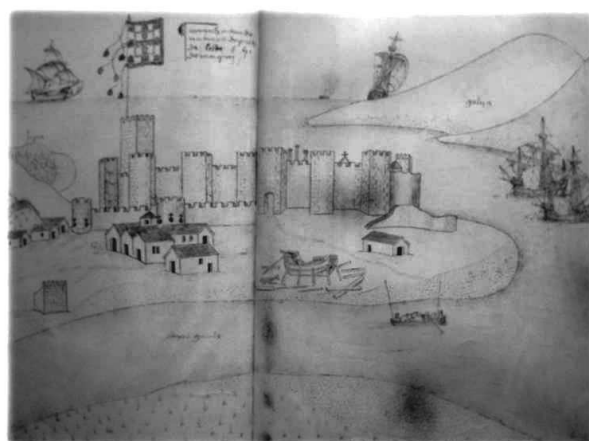
Besides this long-term problem, the administrative priority of the Portuguese Kingdom seems to have been the remodeling of coastal boundaries, manifested with a transfer of port competences from the main Islamic centers to the north-central coastal cities, but keeping nautical characteristics and types of transport. At the moment of a national identity formation, the establishment of southern ports might have been a menace for an Islamic determination to control the seas but it was considered by Christians the only way to conquer hostile regions that still existed.

Arabic language is also present in the harbour space, resulting from the presence of merchants and communication and interaction between the previous occupants of the south western and the new conquerors from the Portuguese dynasties' territories. Muslims master carpenters have also admitted New-Christians as craftsmen at their service, consigning in this way, the secrets of the Moorish construction and contributing to the likely evolution from the qarib to the Caravela.

From documentary data we have also developed an approach to the subject of vessel production. Knowledge of the existence of old vessels, shipyards and arsenals, is mainly due to the number of information obtained from written sources, since we know that the recoveries from underwater archaeology have been limited as a result of the complexity of methodologies and techniques. The parallel between the nautical archaeological remains (shipwrecks) and graphical representations of boats used in the documentary or iconographic sources is, therefore, still an open field for a number of different interpretations, often a starting point for

the identification of a certain type of vessel.

In 1892 H. Lopes de Mendonça pointed out, in reference to the art documentation, the overlooking of ancient documentation regarding navigation, especially paintings, sculptures and written sources. This fact does not invalidate them, but draws attention to the proper way of how to read and use these documents. An example of this exercise is exemplified by the ethnographic map of Duarte de Armas. The 115 folio of his work <sup>III</sup> (Figure 17) clearly restores the physiognomy of a land on the river banks where, despite the geographical proximity to Galicia, one can recognize the same elements that can be found along other medieval coasts, including the Iberian Peninsula. The simplicity of



**Figure 17.** Duarte de Armas, folio 115, Caminha, 16th century AD.

this type of structure can still be seen today in many parts of Mediterranean and Atlantic coasts, pointing to a secular continuity in the naval context.

To overcome the lack of objective evidences in the Portuguese territory, we use the example of Mallorca Bacini describing the longitudinal profiles of a similar set of boats, from which are obtained most of the information for reconstruction of the hypothetical qarib.

Two models, number 292 of the late 11th century - beginning of the 13th century AD, and the number 19, which dates from the last quarter of the tenth century, from the San Michele degli Scalzi church in Pisa, and a third corresponding to the number 59 from San Pietro church in Grado. The latter and the number 19 are particularly important for an initial graphic reconstruction (Figures 18, 19 and 20).

The sum of these ceramic elements with other data collected during our study raises etymological, structural and logistic inevitable questions, more specifically, the absence of remains (wooden boats), which have a negative impact on the work in progress.

We conclude that the unifying element of the research lies on the continuous use of the aquatic areas. The urban centers and developed areas of the coast are the essential starting point for an interdisciplinary approach in the seaboard analysis, studied from the standpoint of geographical, geomorphological and anthropogenic evolution. The literary and iconographic historical sources reflected technical developments over the centuries, hypothetical signs of interaction with the material components unexplored.



**Figure 18.** Bacino number 292 (Museo Nazionale di San Matteo-Pisa). End of the 11th century - early 13th century.



**Figure 20.** Bacino number 59 (Museo Nazionale di San Matteo-Pisa). End of the 11th century - early 13th century AD. According to Berti Graziella.



**Figure 19.** Bacino number 19 (Museo Nazionale di San Matteo-Pisa). Last quarter of the tenth century AD.

The inconsistent boundaries of the Algarve's territory, at the end of the Islamic domination, and the evident linguistic assimilation that occurs in the most populated areas, both in the Atlantic and in the Mediterranean, correspond to the simultaneously use of techniques and places with the Christian lords in the thirteenth century. Is from this coexistence that arises the expansionist desire of the sixteenth century.

In the present knowledge of Garb al-Andalus the archaeological evidence of arsenals and shipyards is insufficient, despite the clear functional importance of these areas and their logistics and etymological continuity. The main limitation of our research is actually the main reason why it is performed: the ephemeral character of the wood and the hypothetical possibility of analysis, still keeping the hope of rebuilding the ancient maritime activities, confirming the writings reported by medieval Muslim authors.

## CONCLUSIONS

We may conclude that we have the same port zones dominated by the same maritime cities over more than two millennia. In some cases those maritime activities lasted until the seventeenth and eighteenth centuries AD, with fluvial transportation only coming to an end in the nineteenth century AD with the construction of the railway networks, which replaced the ancient water routes (Blot 2003, 2010).

One may conclude that the Portuguese ancient maritime installations are made up by a set of harbours integrated in the same navigable geographical reality, such as an estuary for instance, called "harbour complexes" (Blot 1998, 154; 2003; Mantas 2000).

The long-distance seaborne traffic and commerce received an undeniable stimulus during the Roman presence; however, such evidence continued to exist throughout the next centuries going beyond the end of the Roman Empire and lasting throughout the Arab period. No doubt the "littoralisation" of the settlement was a gradual process, which allowed the development of the Portuguese Atlantic façade, which greatly contributed to the Portuguese Maritime Expansion of fifteenth and sixteenth centuries AD. In the words of Professor Vasco Gil Mantas "Most cities that performed important sea port functions during the Roman dominion continued to perform such functions until today." (Mantas 2002-2003, 466).

More than the marine coast, estuaries feature protected interfaces between land and sea that have been attracting attention these last years. Palaeoshapes and estuarine areas are the ones presenting us with the greatest nautical archaeological potential.

Without material evidence of harbour activities, such as structures, archaeologists working in cities along riversides, or other kinds of waterfronts, expect to find evidence of ancient wooden structures much more often than stone ones.

Harbour functions played an important role in the development of urban centres. That is why archaeological

remains of port facilities, shipyards and industrial sites are often registered in the underground of major maritime Portuguese cities.

Thus, the future trend is the increase of knowledge driven by the development of building monitoring missions on the waterfront and its expansion to the North, especially with the growing studies in historical Atlantic routes.

The number of cases registered in the Portuguese underwater archaeology inventory led us to study the particular case of the Portuguese littoral as a new territory to be explored.

#### NOTES

I - “The marine archaeologist is always in a state of considerable inferiority to their colleagues in other branches of archeology, as it lacks the very purpose of their studies: the ship”) Barata 1989, vol. 1, 15.

II - Royal Charters.

III - Duarte de Armas, 16th century AD, *Livro das Fortalezas*, 1990, folio 115.

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## ROMANS AND MUSLIMS IN THE PORTUGUESE ATLANTIC

Alessia AMATO, Sónia BOMBICO

**KEY-WORDS:**

*Romans; Muslims; maritime activities; seafaring; harbour complexes; underwater archaeology; Atlantic Ocean; geomorphology.*

**ABSTRACT:**

*The Atlantic coasts of the South of Portugal, conveniently located near the area where the Mediterranean and the Atlantic World meet, were continuously visited and populated by peoples of the Mediterranean – societies of maritime vocation such as the Romans and the Muslims who transformed the Atlantic maritime space.*

*The expansion of the main Portuguese maritime cities took place side by side with the development of harbour activities, whose consolidation dates to the Roman period. In addition, evidence throughout the Islamic era confirms both the proliferation of maritime commerce and the preference for estuaries for the installation of harbour structures. Today's Portuguese maritime landscape is, thus, shaped by harbour complexes made up by a set of harbours all integrated in the same geographical context.*

*The study of ancient maritime installations must also take into account the economic meshing of territories. Underwater archaeology and its relationship with archaeological evidences on land, such as imported ceramic materials for instance, have provided our study with natural connecting links where ancient harbour activities existed.*

## ROMAINS ET MUSULMANS DANS LA ZONE ATLANTIQUE DU PORTUGAL

Alessia AMATO, Sónia BOMBICO

**MOTS-CLÉS :**

*Romains ; Musulmans ; activités maritimes ; navigation maritime ; complexes portuaires ; archéologie sous-marine ; Océan Atlantique ; géomorphologie.*

**RÉSUMÉ :**

*Les côtes atlantiques du sud du Portugal, commodément situées près de l'endroit où se rencontrent la Méditerranée et le monde atlantique, ont été fréquentées et habitées de façon continue par des peuples de la Méditerranée – des sociétés à la vocation maritime telles que les Romains et les Musulmans qui ont transformé l'espace maritime atlantique.*

*L'expansion de la plupart des principales villes maritimes portugaises s'est déroulée en même temps que le développement des activités dont la consolidation remonte à la période romaine. De plus, tout au long de l'époque musulmane, les données confirment à la fois la prolifération du commerce maritime et le choix des estuaires pour l'installation des structures portuaires. L'actuel paysage maritime portugais est donc formé de complexes portuaires composés par un ensemble de ports, tous intégrés dans le même contexte géographique.*

*L'étude des anciennes installations maritimes doit aussi prendre en compte l'articulation économique des territoires. L'archéologie sous-marine et sa relation avec des vestiges archéologiques sur terre, comme des objets céramiques d'importation, par exemple, ont fourni à notre étude des liens naturels avec les sites où existaient les activités portuaires anciennes.*