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ABSTRACT

The subject addressed in this paper is closely linked to a research the author conducted as a PhD student at the University of Coimbra, Faculty of Letters, Department of Archaeology. The study was financed both by the FCT, the national funding agency that supports science, technology and innovation, under the responsibility of the Ministry for Education and Science, and through an individual scholarship granted by the European Union. The compiled documentation related to the research on the *Meio Aquático* (Water World) encompasses several fields of study: Topography and Geomorphology, Literature and History, and last but not least, Archaeology. In the field of Archaeology, the study enunciates all leads that help to trace the environment of Muslim maritime activities and boats, in particular of the Arabic *qarib*, the contact vehicle at several stages of cultural and technological development. The inspiration for this work came, without any doubt, from the pioneering work of Portuguese maritime research, which is the reason why it is a profound obligation to remember the great Doutora Maria Luísa Pinheiro Blot to whom these pages are humbly dedicated.

KEYWORDS

Gharb al-Andalus, aquatic archaeology

NAVAL MUSLIM ANALYSIS OF GHARB AL-ANDALUS

ASPECTS OF THE GHARB AND ITS MARITIME VOCATION

This study defines its specificities within the chronological order of the Muslim occupation of the Iberian Peninsula, and particularly with regard to the development of the southern region of Portugal, situated between the lower Tagus basin (Lisbon) and the Algarve. The analysis of the relationship between its inhabitants and the sea is focused on a period that precedes the Age of Discovery, which, from the end of the 15th century onwards, sees the Christian reign of Portugal engaged in a global venture of intensive maritime exploration, i.e. engaged outside the Mediterranean basin and the classical circuits that had their exclusive attention until then. During the Islamic period (8th–13th centuries) the vitality of the port cities and the development of nautical activities, including naval construction in shipyards, are mentioned by Arab authors such as Al-Razi, Al-Bakri, Ibne Mozaine and al-Idrisi. Various descriptions made by Arab historians and geographers express a common vision of these territories, considered to be a prolongation of the eastern Arab world, reachable through the North of Africa and most likely via navigation along the coast. Al-Razi proposes an important division of Andalusia into Ax-Xarqi and al-Gharb or, in other words, into eastern and western Andalusia. Al-Gharb corresponds to current southern Portugal.

Although the Arabic literary sources and the corpus of the Medieval Arabian geography constitute the primary sources for information on the use of the coast and shipping lanes during the Arab dominion of southern Portugal, the main maritime cities have revealed large quantities of imported ceramics dating from the Islamic period. The ancient geomorphology of the Portuguese coast benefits from a strategic location between the Mediterranean world and the Atlantic. Inserted into the geographical space of the Atlantic, the Portuguese coast still preserves many Mediterranean characteristics. Up to the 15th and 16th centuries AD, the design of the west coast of the Iberian Peninsula would have been more irregular than the current one, more indented, and there would have been more bays and river mouth. Blot (1998, 1999, 2004) summarizes the evolutionary process of the Portuguese coast in three aspects: the gradual connection between ancient islands and the continent, forming peninsulas; the closing of ancient coastal embayments and the formation of coastal lagoons, and the siltation of estuaries and subsequent inland adhesion of former coastal areas. Siltation is a gradual process that, over centuries, has been increasing in most Portuguese waterways and estuaries, decreasing their navigability.

Historical cartography is commonly used to study the geomorphologic changes of the Portuguese coast. However, the results should be interpreted with caution. These kinds of documents 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 an embayment. Cartography analysis is also affected by chronological contradictions and mistakes resulting from the fact that some maps are copies of previous works. The complexity of the Atlantic environment makes it particularly difficult to recognize ancient port facilities and requires reflection on the concept of harbour space. Thus, it is necessary to identify the relationship between harbour typology – recognized since Antiquity – and eventual corresponding archaeological vestiges. In fact, these vestiges are not always materialized in specific harbour equipment. Early mariners certainly understood the necessity of waiting for high tide before entering estuaries. These mooring places, naturally sheltered by high cliffs, are still today deep and secure mooring sites while boats are waiting to enter an estuary (Blot 2010, 84). Besides nautical artefacts such as lead coated anchors, evidence from Portuguese waters includes products that were imported and exported by Muslims and which were also found in archaeological excavations on the shore and on land. Some of the cities where this is the case are Lisbon on the Tagus river, Alcácer do Sal on the Sado river, Silves on the Arade river, Tavira on the Ria Formosa and Mértola, on the river Guadiana. They provide important information regarding the capacity of overseas transport, and regarding social, economic, and cultural factors related to marine activity. The evidences of Muslim maritime activities are used to compensate the lack of archaeological findings and the impossibility of comparison with current ethnographic evidences that might express a continuity of ancient practices and use of the same sites. In the post-Lusitanian period, the ports, as areas of trade and cultural exchanges, would be the privileged sites for contact with naval technology information, opening the way for its emergence and diffusion in shipyards, mooring places or arsenals. With regard to medieval Islamic times, and especially when it comes to traces of maritime activity, we must distance ourselves from outdated readings that see naval archaeology as a limited source of knowledge when it is deprived of its object of study: the ship (Barata 1996, 15).

To counter this idea, at least partially, we examined the studies that have contributed to the overcoming of these limitations, including those that are attributed to the Roman period. From the presently known sources of the Islamic period, works of nautical nature dedicated to history and historiography (Picard 1997), such as collections of naval warfare, ship's logs and detailed descriptions of the coastal dangers, especially stand out. Nevertheless there is a lack of references to trade and exchange, a gap that is bridged by the etymology of the places, whose names testify to their Islamic origin, and by the forerunner of the caravel, later transformed into an institutional ship (Fonseca 2003) for the future conquest of unknown seas. In the specific case of the identification of wrecks or vessels structures, the problem is aggravated by the lack of attention that they have received. An example of this is the work of A.J. Parker (1992) where the focus on medieval shipwrecks is somehow vague and does not highlight any differences

in Arab-Islamic boat structures. This study also presents limitations with regard to geographic space, considering predominantly the *Mare Nostrum* in detriment of the Atlantic. The lack of literary sources and archaeological remains seems to indicate a real decline of Muslim maritime policy. This has contributed to a simplistic view of Islamic and Roman naval history by assuming that their sea exploration was based on unplanned and adventurous navigations, and thus contributing to the theory of an autonomous emergence of the 15th century expansion.

This study covers the ports included in the area between the estuary *olisiponense*, on the banks of the Tagus river, which defined the boundaries of Strabo's Mesopotamia (Geography III, 2, 4), and the Guadiana river, which allowed access to the mines of the interior through the Algarve. The numerous and fascinating testimonies of geographers and other contemporaneous chroniclers of the kingdoms of the Gharb narrate a reality that opposes the one established in the mid-13th century. Some documents, such as Forais II and Charters of the King of Portugal, can be related to a geomorphologic moment of accentuated siltation process, which may be related to the massive deforestation implemented by D. Dinis's agricultural policy. Since the so-called Christian Reconquest, the port entities suffered restrictions of 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 remodelling of coastal boundaries, manifest in the transfer of port competences from the main Islamic centres to the north central coastal cities, but keeping nautical characteristics and types of transport. At a crucial moment of a national identity formation, the establishment of southern ports might have been felt as a menace to the Muslim's determination to control the seas, but it was considered by Christians the only way to conquer the regions that were still perceived as hostile. Arabic language is also present in the harbour space, resulting from the presence of merchants, and the communication and interaction between the previous occupants of the southwestern peninsula and the new conquerors from the territories of the Portuguese dynasties. Muslims master carpenters also admitted Mozarabic craftsmen at their service, thus turning over the secrets of Moorish construction techniques 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 construction. Knowledge of the existence of old vessels, shipyards and arsenals is mainly due to the 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 nautical archaeological remains (also shipwrecks) and graphical representations of boats used in documentary or iconographic sources is, therefore, still an open field for a number of different interpretations, and often a starting point for the identification of a certain type of vessel.

In 1892, H. Lopes de Mendonça, in reference to art documentation, pointed out the overlooking of ancient documentation regarding navigation, especially paintings, sculptures and written sources. However, attention must be drawn to the proper way of how to read and use these documents. An example of this exercise is the ethnographic map of Duarte de Armas. The *115 folio* of his work 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 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 on Portuguese territory, we use the example of the *bacini* from Mallorca and the *ataifores* from Iberia, describing the longitudinal profiles of a similar set of boats, from which most of the information for the reconstruction of the hypothetical *qarib* is obtained. Three plate models – number 292, number 19, from the San Michele degli Scalzi church in Pisa, and a third corresponding to number 59 from San Pietro church in Grado – dating from the last quarter of the 10th century, are to be seen in the Museo Nazionale di San Matteo, Pisa, Italy. The most obvious problems in interpreting the given examples lie in the hollow support of the plates, causing a distorted representation that had to be adapted to the available forms. Numbers 59 and 19 are particularly important for an initial graphic reconstruction. The sum of these ceramic elements, together with other data collected during our study, inevitably raises etymological, structural and logistic questions, especially in the absence of remains (wooden boats), which has a negative impact on the work in progress. From these it is then possible to derive elements of the technique that are not always retainable by naval archaeology because of the fragility of the conditions in which the site is formed. In order to retrace the common merchant vessel called *qarib*, it has to be examined in the context of the extensive territorial margins that were shared by the trafficking peoples of Arabic language.

Should Muslim ships have dominated the Mediterranean – with a sudden peak around the 11th and 13th centuries – it would not be correct to think of all these sailors as being attentive scholars, concerned with an accurate description of the precise points on the nautical charts and the correspondences between the stars. These charts served, in fact, as a reminder of the distances between the various places of orientation in relation to the coastline and entrance points in the ports. Similarly, we do not have details on the type of construction techniques employed; instead, we derive the components from iconography and representations of the time, and by comparing them with subsequent artistic legacies. With regard to the beginning of the Islamic period, the number of ceramic basins found in the Western Mediterranean must be referenced, as well as the contact with the Byzantine world, the most fortunate archaeological findings, and even the lexical continuity in the naming of the caravel

that probably sailed the seas as far as India in 1509, alternating with the lengthy warships.

In order to surpass the inherent shortcomings, we have to rely on numerous types of support, contextualized within the medieval period. *Ataifores* and *bacini*, open ceramic forms, miniatures obtained from archives and libraries – with several references to ships bearing only one master, Latin sails and representations of axial rudders.

Another clue can be found when comparing the examples of *graffiti* from the Islamic site of Mértola, Gharb al-Andalus. The housing complex near the banks of the river port, from where the *graffiti* under study comes from, and which chronologically belongs to the 12th century, bears similarities with those of Medina, though it is closely linked to the port context of the site. The *graffiti* was preserved due to the fact that the stone had been laid with the decorated face upside down. In one of the sets, three registers can be noted. Two lines resembling Arabic calligraphy appear at the top, but it is impossible to decode their meaning. A boat appears immediately below these lines, exhibiting a mast fitted with a square sail but collected at the bottom (*graffiti* A). The only part of the vessel that was drawn emerges from the water with a rather elevated stern and the bow; in the stern we can clearly notice two large oars, a rudder to steer the boat that would be driven by nine oars. Other incised lines, imprecise and blurred, certainly from an earlier draft, interfere with the design, making it difficult to read. This hypothetical previous design allows for a glimpse at the bow of another boat. In another part of the same stone, a third boat is noticeable, better designed than the other two (*graffiti* B). It is also a vessel of one mast and square sail collected at the bottom, with a two paddle-wheel.

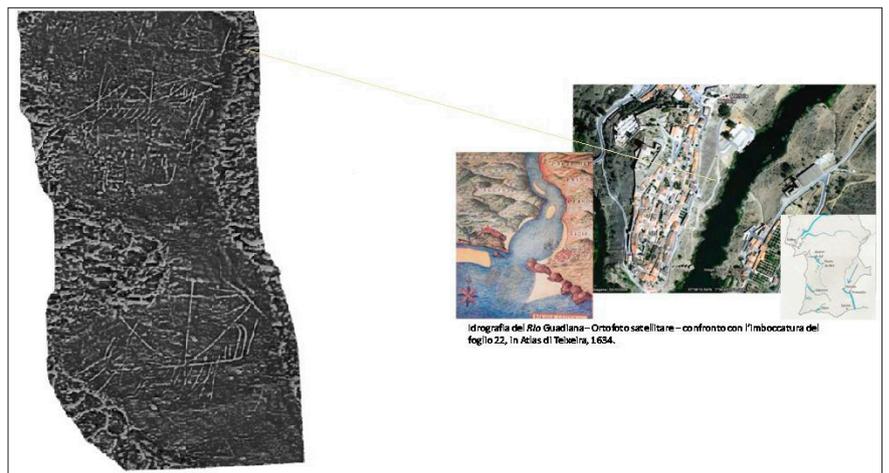


Fig. 1 – Graffiti on stone slab, Mértola “Casa do Arrabalde Ribeirinho”, CAM. (Kind permission Hugo Pires)

This example includes ten paddles and only the emerging part of the hull, with bow and stern curved towards the interior of the vessel, has been drawn. The incisions in graffiti show, moreover, a certain familiarity with the boats and their manoeuvres, revealing knowledge in skilful ship driving, and crews forced into long periods of inactivity. The graphical depiction thus shows its “sailor” origins, justifying the *graffiti*’s

greatest asset as a historical document, which is the fact that it reflects the contemporary view of the author and of his own free expression motivated, probably, by a personal drive. The *graffiti* may therefore present an elongated conformation that immediately leads us to interpret it as being a possible representation of the *saetta*, an even finer lined model of the galley. The *saetta* or *sagitta*, a kind of chase/hunting ship, gets its momentum through extremely long oars. It is for this reason capable of achieving high speeds and is suitable for surprise incursions. From this we can conclude that the unifying element of this research lies in the continuous use of the aquatic areas. The urban centres and developed areas of the coast are the essential starting point for an interdisciplinary approach in seaboard analysis, studied from the standpoint of geographical, geomorphological and anthropogenic evolution. The literary and iconographic historical sources reflect technical developments over the centuries, hypothetical signs of interaction with the unexplored material components. The inconsistent boundaries of the Algarvian territory, at the end of the Islamic domination, and the evident linguistic assimilation that occurred in most populated areas, both at the Atlantic and the Mediterranean coasts, was reflected in the use of techniques and designations that were similarly employed in Muslim working places and by the Christian lords of the 13th century. It is from this coexistence that arose the expansionist desire of the 16th century.

With regard to our present knowledge of the Gharb al-Andalus, the archaeological evidence of arsenals and shipyards is clearly insufficient, despite the evident functional importance of these areas, their logistics and etymological continuity. The main limitation of our research is actually the main reason why it is performed: the ephemeral character of wood reduces the still open possibilities of analysis, carried out in the hope of rebuilding the ancient maritime activities and of confirming the narratives of medieval Muslim authors. 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), which means that they also did so throughout the Muslim period.

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