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Peter Ettl · Ursula Warnke (eds)

HARBOURS AS OBJECTS OF INTERDISCIPLINARY RESEARCH – ARCHAEOLOGY + HISTORY + GEOSCIENCES

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FOREWORD

The Priority Programme 1630 »Harbours from the Roman Period to the Middle Ages« funded by the German Research Foundation (Deutsche Forschungsgemeinschaft) in the years 2011-2018 has made it its priority to unite and connect multidimensional approaches to harbour research within the vast research area of the North Atlantic to the Mediterranean. Modern research of the last three to four decades has particularly shown how the integration of geophysical and geoarchaeological methods has brought new insights into interdisciplinary and interpretational approaches. Thus the logical consequence was to dedicate the first international conference on the framework of the Priority Programme to this approach and its wide discussion. It took place from 30 September to 3 October 2015 with the title »Harbours as objects of interdisciplinary research – Archaeology + History + Geosciences«. About 130 participants from 15 nations with 70 lectures presented their work approaches and results within the five sections of the conference: »Plenum keynote-lectures«, »Geophysics and Field Research: Developing methods«, »Geoarchaeology: Changing Harbour Environments«, »Archaeological Features: Harbour Facilities and Infrastructure«, »Written and Iconographic Sources: Complementing the Material Evidence«. The ceremonial address of the evening was given by Sabine Ladstätter (Vienna) on the harbour of Ephesos. On the last day of the conference the participants visited the Viking Museum Haithabu as well as exhibitions at the Schleswig-Holsteinisches Landesmuseum Schloss Gottorf in Schleswig.

Subsequent to the conference in Kiel, the initiators of the Priority Programme decided on what at first glance appears to be an unusual publication strategy in which the predominantly archaeologically and historically oriented papers are being published in the present volume, whereas some mainly geophysical and geoarchaeological papers will be published in Quaternary International Special Issue »Integrated geophysical and (geo)archaeological explorations in wetlands« (guest editors: Christoph Zielhofer, Wolfgang Rabbel, Stefanie Berg-Hobohm, Tina Wunderlich), thereby reaching different milieus, which are, however, interconnected by their interdisciplinary research on harbours. Consequently, the thematic structure of the present volume will differ from the actual conference and the submitted contributions are arranged regionally as well as topically.

Our thanks go especially to Ilka E. Rau, who was both responsible for organising the conference as well as for the editorial responsibilities of this volume. Moreover, our thanks go to the editorial team of the RGZM in Mainz.

The initiators of the SPP 1630 »Harbours from the Roman Period to the Middle Ages«

Claus von Carnap-Bornheim

Falko Daim

Peter Ettel

Ursula Warnke



NEW APPROACHES TO THE STUDY OF THE HARBOUR OF TARRACO: ARCHAEOLOGICAL AND LITERARY RESEARCH (3RD CENTURY BC - 8TH CENTURY AD)

The present paper falls within the development of two doctoral theses on the harbour of Tarraco¹, based on an analysis of archaeological and literary sources from a broad time period, stretching from the 3rd century BC to the 8th century AD. We aim to present an updated examination of the ancient sources and a study of several recent archaeological discoveries in order to provide new information about the harbour's configuration and its historical evolution as part of the urban, economic and social progress of the city as a whole (fig. 1).

Tarraco was located on the southern slope of a hill and possessed a natural roadstead which provided ships with shelter in bad weather. The position of the harbour was also highly advantageous; it was protected from easterly winds by a promontory, while to the west lay the mouth of the River Tulsis, now known as the Francolí. The river provided a water supply for the city and the vessels, and acted as a nexus between the harbour and the hinterland. Through the pre-coastal mountain range the city was also connected to the Plain of Lleida and the River Ebro, two strategic places for the Romans to consolidate their power and establish commercial networks².

In order to understand the importance of the harbour it is essential to understand the evolution of the city and its status as the capital of the Hispania Citerior province and later Hispania Tarraconensis. Archaeological excavations in the lower part of Tarragona in recent years have provided a considerable amount of new data to add to the scant physical information we had regarding the ancient harbour area³. Due to construction work on the modern harbour in the late 19th century, the entire eastern area adjacent to the sea became a stone quarry and the archaeological remains were completely destroyed in order to build the current harbour⁴. All kinds of archaeological information disappeared, including the remains of the defunct Roman mole that had partially survived until then, which consequently required the use of indirect sources of information to determine what the harbour looked like in Roman times.

Having to rely on indirect information, which we took from literary sources describing the nature of the harbour during the Roman period, inevitably imposes limitations. However, we also received a great deal of information from underwater archaeology⁵, the existence of probable public weighing scales⁶, navigation routes, the position of Tarraco in the Mediterranean hierarchy of Mediterranean harbours and, remarkably, about the western sector of the port suburb⁷. The numerous archaeological excavations carried out in the 1990s uncovered over 20 ha of the ancient harbour quarter, which, in conjunction with the many sources mentioned above, provides clear evidence of the stages and development of this dynamic, interesting area. The literary sources confirm Tarraco's important function in the Mediterranean economy, and also its position for both coastal and open-sea navigation. Furthermore, not far to the north of Tarraco lay important port cities such as Barcino (Barcelona, Catalunya/E) and Emporiae (Empúries, Catalunya/E), and the fluvial harbour of Dertosa (Tortosa, Catalunya/E) near the mouth of the River Hiberus (Ebro), all of them important centres of exchange. Likewise, the proximity of Rome and the possibility of sailing through the Strait of Bonifacio when the weather was favourable made Tarraco and its harbour an important trade settlement.



Fig. 1 Archaeological plan of Tarraco and its location on the Iberian Peninsula. – (Modified from Macias et al. 2007).



Fig. 2 The main trade routes and approximate journey times in days. – (Map P. Terrado Ortuño).

Pliny the Elder, for example, tells us that sailing from Hispania Citerior (which we suppose means Tarraco) to Ostia took only four days⁸. This navigation route provided a fast connection between the west of the empire and the centre⁹. Later authors such as Procopius of Caesarea¹⁰ also tell us about the close relationship between the ports on the west coast of the Italian Peninsula and those on the east coast of Hispania, probably including Tarraco itself (fig. 2)¹¹.

Underwater archaeology has provided a wide range of materials found near the harbour and also along the coast. The discoveries date from a range of periods and vary considerably in nature¹². Finds include amphorae, ceramics, anchors, the remains of shipwrecks and even a complete stone sarcophagus¹³. While some of these materials suggest coastal trade, the origins of others evoke open-sea navigation. A fine example is the arrival of a great number of marble columns from Troy, during the 2nd century AD, destined to adorn the city's most distinguished buildings, such as the forum¹⁴. This is evidence of routes connecting it to the east of the empire and, also, of the harbour's capacity to cope with the unloading of such bulky cargo. We would therefore expect to find docks and moles that enabled these activities to be carried out.

Another good example of Tarraco's trade connections is the recovered ceramics evidence, which covers a wide temporal range. From republican times down to the very last centuries of the late antique period, the city has a considerable number of pottery deposits which clearly bear witness to the continuous economic movement between its harbour and overseas¹⁵.

THE EARLY SETTLEMENT

The origins of the city date back to the Iberian period. In the south of Tarraco, in an area next to the sea, a community was established from the early 5th century BC. To be precise, the earliest archaeological remains found in the harbour zone are from this period. As regards architecture, houses were built near the mouth of the river facing the bay between the 5th and 4th centuries BC¹⁶ and have been interpreted as dwellings related to fishing¹⁷. The existence of this Iberian *oppidum* and buildings on the seashore are good examples of the prospective economic activity linked with the sea. Literary sources also confirm this early settlement¹⁸. The historian Livy relates how the *piscatores Tarraconenses*, who were sailing along the coast, warned Cornelius Scipio about the powerful Carthaginian defences at Carthago Nova (Cartagena, Murcia/E) during the Second Punic War¹⁹. This is proof of the existence of an early settlement before the Roman conquest and economic maritime activity, which would have been developed further once the Romans arrived in the following years and established themselves in Tarraco²⁰.

Indeed, Livy and the Greek historian Polybius both mention the first Roman landing in the city by Gnaeus Scipio. The general arrived at Emporiae in 218 BC and spent the winter with his troops in Tarraco that same year. Hence these Roman troops established themselves in Tarraco, which became the general headquarters and naval base of the Roman army against the Carthaginians. This military base was located in the upper part of the city, on a hill away from the Iberian settlement, and provided the foundations for the subsequent economic development of the city, to which, after the conquest, civilians came, attracted by the possibilities of trade and improvement²¹.

Republican epigraphy provides clear examples to support this soon after the Romans' arrival. Establishing headquarters involved not only the movement of Italian soldiers but also attracted slaves and freedmen. Inscriptions from the 2nd century BC to the 1st century BC supply documentary evidence of *collegia* that look like other associations found in Capua (Campania/I), Minturno (Lazio/I) and Delos (South Aegean/GR). Inscriptions in Tarraco as well as in Carthago Nova and other cities along the Ebro valley show that people arrived from Italy organized in Hispanic associations, chaired by a *magister* and attracted by the supply of

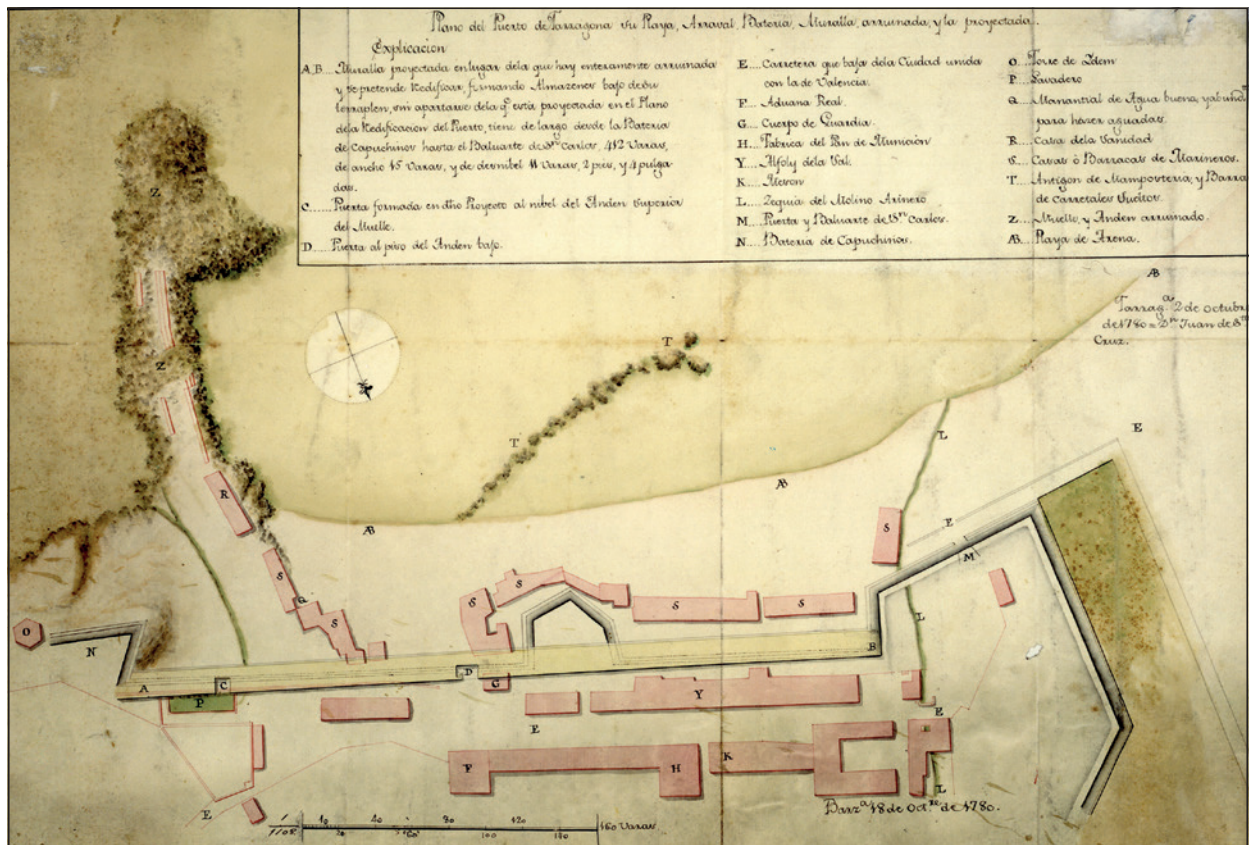


Fig. 3 Map of the harbour of Tarragona in 1780. The abandoned remains of the Roman mole can be seen in the sea. – (Map Juan de la Cruz. Arxiu del Port de Tarragona).

trade, plunder and troops²². The military base in Tarraco drew these traders and craftsmen. One example is an inscription of Ephesius, a *magister* with a Greek cognomen who probably undertook a building activity in the city, which highlights the role of this collective in its development as a trade centre²³. All these inscriptions originate from cities with active harbours (such as Carthago Nova and Tarraco) that were also residences of the provincial governor. This made Tarraco an important settlement from the very beginning of the Roman period.

Military epigraphs show the role of the city as a military centre. Inscriptions from the 1st and 2nd centuries AD refer to a *praefectus orae maritimae*, a magistracy carried out by *equites*. Despite the controversy of its origins and function²⁴, the presence of a *praefectus* established on the coast or in a naval district (*ora maritima*) could be related to the surveillance of the coastline and perhaps points to Tarraco being a logistic centre. However, this rank could have honorific features²⁵ and it is therefore difficult to point to any specific function. Nevertheless, the presence of this magistracy is an unequivocal fact that there was a military framework in Tarraco during the conquest and afterwards.

In short, from the Roman victory onwards, the city's strength as the capital and the epigraphy corroborate the movement of soldiers and civilians due to the growth of Tarraco as a noted trade centre.

During the early empire and up to the arrival of Augustus in the city in 26 BC, Tarraco became increasingly important²⁶. The military harbour was progressively transformed into an emporium with commercial actors who lived and worked in the area, a fact that archaeology reveals with commercial items found not only in the city but also in other cities of the empire²⁷. This was also reflected in the urban architecture, both in the upper part of the city and in the harbour. A great deal of construction was probably undertaken in the har-

bour, especially on the mole. However, we do not know when this building work took place due to the lack of physical remains. As mentioned earlier, the information about this Roman mole is based on historiography. Historians such as Hernández Sanahuja and Pons d'Icart recorded the existence of an arched mole built using *opus caementicium* that was destroyed at the end of the 19th century to make way for the modern harbour²⁸. Although the Roman mole was no longer used because the river had silted up and was abandoned at an unknown date, the location is known due to surviving maps. These show the remains of the abandoned mole near the shoreline, and some historians relate how it was difficult for ships to dock because of remaining stone fragments submerged in the water (fig. 3)²⁹.

Although other studies place the mole's construction at the end of the 2nd century BC and the beginning of the 1st century AD³⁰, the approximate presumption that the mole was built at some point during the 1st century AD, either with the arrival of Augustus or sometime afterwards, is made due to the great building programme undertaken in the upper part of the city³¹. However, a remodelling of the harbour by Emperor Antoninus Pius seems to be attested by a number of historians³². A recent study has highlighted this error due to a mistake being made during the transmission of the »Augustan History«, in which a misunderstanding confused the remodelling of the *portus Tarracinensis* with the *portus Tarraconensi*³³.

DEFINING THE ROMAN HARBOUR

In order to determine the type of harbour which existed during this period, we have to refer to literary sources³⁴. The earliest references can be found from Eratosthenes and Artemidorus, both of whom are quoted by Strabo³⁵. Strabo mentions the city of Tarraco as *alimenos*, that is to say harbourless. However, since Strabo never came to Spain, this source cannot be relied on too heavily. Instead, he rather cited other contemporary writers who provided contradictory information. Hence, whereas Eratosthenes said that Tarraco had a *naustathmos* (i. e. a roadstead), Artemidorus reported that the city barely offered protection for temporary anchorage (*ankyrobolion*)³⁶. Meanwhile Polybius defines the city as an *epineion* or naval base, which he mentions in a *scholium* included in the Byzantine encyclopaedia of the *Suda* (10th century)³⁷.

Finally, Livy records how Publius Scipio and his troops arrived in 210 BC and established themselves in the *portus Tarraconis*³⁸. According to Servius's definition, we understand the word *portus* as a place in which vessels are sheltered during the *mare clausum*, unlike *statio*, which would be a temporary anchorage without protection³⁹.

To sum up, the sources provide documentary evidence that a port existed, but it is difficult to determine its true nature due to inconsistencies in the descriptions. We can conclude that the city was chosen for its advantageous geographical attributes and the harbour infrastructures it provided⁴⁰.

A COMMERCIAL SETTLEMENT

After this initial period the harbour expanded with new buildings that enabled it to send and receive goods from all over the empire. Examples of the import-export activity of resources and goods include marble from the imperial quarries that was used to build the provincial complex during Flavian times, wine exported in Dressel 2/4 amphorae and, according to Pliny, the valuable white flax grown in Tarraco⁴¹.

During the early empire *horrea* were built next to the shoreline as a result of this commerce⁴². These *horrea* were located in the western sector of the port suburb and led into a monumental porticus and various roads connecting them directly to the harbour.



Fig. 4 The so-called Lions Fountain located in the western sector of the port suburb. – (Photo Museu Nacional Arqueològic de Tarragona / CODEX – Arqueologia i Patrimoni archive).

In this regard, the epigraphy depicts the arrival of freedmen from Italy interested in doing business and working the land. They were followed by foreign merchantmen from different parts of the empire. A clear example of this dynamism is a *signaculum* or amphora cork found in the wreck of a ship in Dianum (Dènia, Comunitat Valenciana/E) that belonged to Tiberius Claudius Amiantus, a merchant from Tarraco who produced and traded amphorae⁴³.

The capital status awarded to the city encouraged this demographic movement and urban expansion. The result was the growth not only of business activities but also of leisure, as shown by the construction of the theatre during the early empire⁴⁴.

Tarraco clearly developed its harbour in order to ultimately have all the buildings normally found in an important port: warehouses, administrative centres, customs surveillance, and the like. It also seems that there was a *sacomarium*, that is to say public weighing scales, as attested by a graffito *ante cocturam* on a Dressel 20 amphora⁴⁵. According to a recent study, the scales may be related to the existence of an *aequipondium* weighing 38kg found in the harbour area⁴⁶. The inscription enables us to identify a possible public area set aside for weighing and checking goods arriving by ship, although the lack of information pointing to its exact location in the city makes it difficult to confirm this hypothesis. However, its presence indicates that there was a need to weigh and check goods, which is further evidence of the city's growing economic importance.

The construction of a monumental fountain in the Hellenistic tradition near the shoreline serves as another good example of urban and economic development. This fountain, known as the Lions Fountain because of this animal's protomes, was built in the second half of the 2nd century BC. It was repaired and remodelled a number of times, which is a reflection of the harbour's life and evolution, illustrating times of growth and decline in this area⁴⁷. The proximity of the coast and the fountain's appearance suggest it was directly connected with the harbour's activities. The first construction phase of the fountain shows a rectangular floor with a settling tank and a porticus. During the early empire the portico became a tank enclosed by a masonry wall and three lions head water pumps were added. It was then that this suburban area was urbanized and some work, such as the construction of a semicircular structure to collect excess water, was done on the fountain in order to adapt it to the new times. The third phase, however, shows the urban decline that would set the general tone for the following period, when the fountain was partially in ruins but still in use (fig. 4)⁴⁸.

Fig. 5 Late 3rd-century inhumation burial in a former warehouse. – (Photo CODEX – Arqueologia i Patrimoni archive).



There is a funerary inscription found in an area close to the fountain⁴⁹. Dated to between the 2nd and 3rd century, it describes the location of a *caupona*. This building, the property of M. Iunius Celsus, a freedman and *sexvir* of Tarraco, was located close to a *picaria*⁵⁰. This word comes from *pix*, meaning resin or pitch, a product used, among other things, for caulking⁵¹. Hence the *picaria* could be a pitch workshop which, according to Alföldy, could point to a fountain (*picaria a fonte*) where the *pix* was obtained⁵². A recent hypothesis identifies the fountain next to the *caupona* as the Lions Fountain, because of its importance as a topographical point in the city. Unfortunately, the lack of archaeological remains cannot confirm this⁵³.

A PERIOD OF DECLINE

There were already signs of decline during the late 2nd century. As some scholars have noted from the reduction in munificent activities, it was around this time that the city began to experience definite economic problems⁵⁴. This situation would have been made worse by the accession to power of Septimius Severus, who executed several members of the local elite along with the provincial governor for having sided with his rival, Clodius Albinus. As a result, the city lost many of its key economic players and a new military administration including many members of the Legio VII Gemina was set up to govern the *Tarraconensis*⁵⁵. It was in the 3rd century that this recession really started to become apparent in the urban fabric of the city, especially in the port suburb area, where many buildings and public infrastructures were abandoned and allowed to fall into ruin⁵⁶. The aforementioned Lions Fountain is a clear example of this urban contraction, since its roof collapsed at a certain point between the 3rd and the 4th century, but was never removed or rebuilt. However, as mentioned earlier, archaeological excavations have proved that the fountain, which afterwards became an open-air pond, remained in use throughout the entire late antique period⁵⁷. Another phenomenon documented during the 3rd and 4th centuries is the proliferation of small burial areas scattered throughout the suburb, not only near the early imperial streets but even inside buildings that were no longer in use, such as former warehouses (fig. 5)⁵⁸.

All this occurred at a time when the province was being deeply affected by Diocletian's administrative reforms which led to the loss of almost two-thirds of its former territory and, therefore, its administrative and fiscal control. The city also suffered a Frankish raid that occurred under Gallienus's government (c. 260),



Fig. 6 Private baths of a *domus* in the port suburb. – (Photo MNAT / CODEX – Arqueologia i Patrimoni archive).

an event reported by Aurelius Victor (*Caes.* 33.3), Eutropius (9.8.2), Hieronymus (*Chron.* ad. a. 264) and Orosius (7.41.2). Although it is still difficult to assess the real impact of this episode, it may be linked with certain archaeological evidence found in the harbour area, characterized by stratigraphic levels of ash and building debris along with many pottery and domestic artefacts discovered *in situ*, probably related to the hasty abandonment of some areas due to instability⁵⁹.

Despite this overall picture, significant works were still being carried out, such as the so-called Sant Miquel public *thermae*, built during the first half of the 3rd century following the design of the imperial baths in metropolises such as those of Trajan and Caracalla⁶⁰. The baths were refurbished shortly afterwards, a renovation that has been archaeologically dated to the beginning of the 4th century and confirmed by an inscription dedicated to the *praeses provinciae*⁶¹, who paid for the restoration⁶². However, this seems to be one of the final building efforts made by the imperial elite at Tarraco, and, generally, this was a period of decline for both the city and its territory⁶³.

THE REVITALIZATION IN THE 5TH CENTURY

By the early 5th century this situation had been completely reversed and a new period of revitalization and urban prosperity is attested in the port suburb. As mentioned before, due to the archaeological excavations carried out in the 1990s, a significant urban development was documented in the western sector of the area⁶⁴. New buildings such as warehouses, workshops and conspicuous houses were constructed throughout the suburb where the early imperial edifices stood⁶⁵. We can preliminarily point out that this new urbanization of the suburb largely followed the former urban planning and major road layout. Different areas are distinguished in relation to the coastline, which seems to have expanded southwards by this time. Thus the northern area was mainly residential, with new houses sometimes using previous buildings such as *horrea*. In some cases these residences included private baths, wells and other water supply systems, which probably had some connection with the abandonment of the »Sant Miquel« public *thermae* and the possible disuse of the city's aqueducts⁶⁶. Meanwhile, the southern sector comprised many warehouses and workshops that were built *ex novo* and clearly reflect the economic vitality and resurgence of the port suburb after almost two centuries of urban decline (fig. 6).

Another reflection of this growth in the port suburb was the so-called Francolí funerary complex located next to the river and thought to be the most extensive open-air necropolis in the western Mediterranean with over 3,000 tombs. This extraordinary site was especially well known after the excavations carried out by Serra i Vilaró in the 1930s, but it was the archaeological interventions conducted in the late 1990s that managed to fully define the funerary complex as a whole⁶⁷. This sector, close to a road leading to the city, was already used as a burial area during the early empire, but it was in the early 5th century that the site underwent a thorough transformation with the construction of two early Christian basilicas and the development of a large necropolis⁶⁸. Current archaeological knowledge of the entire area enables us to explain the funerary complex not only through the importance of the Christian community in Tarraco but also as part of a general growth in this sector.

In this respect pottery remains provide helpful information for determining the position of the harbour within Mediterranean trade. Indeed, recent examination of several pottery contexts has allowed us to define how the port suburb evolved throughout the century. Two of these contexts (T2-22B-C1 and T2-22B-C2) were actually found in the western sector of the port suburb and date from the early 5th century⁶⁹, while the so-called Antic Hospital de Santa Tecla and Vila-Roma contexts were located in the upper part of the city and date from the middle of the 5th century⁷⁰. Particularly noteworthy from these contexts are the substantial

proportions of imports, which clearly increased during the first half of the 5th century. As for their origins, although a significant number of North African products are present in the suburb contexts, they are almost matched in number by eastern products in the upper city contexts⁷¹.

It is therefore clear that the harbour must have been in constant activity, which would reflect both the urban development and the new geopolitical situation of the city. By the early 5th century Tarraco was chosen as the seat for the proclamation of Maximus as emperor, during the usurpation episode led by Constantine III involving the provinces of Britannia, Gallia and Hispania. It was also during this episode when the rebels might have reached an agreement to allow tribes of Alans, Suebi and Vandals to enter the Iberian peninsula, probably in return for military manpower. However, the province of Tarraconensis remained under the usurper's authority without being directly threatened by the presence of the barbarians. Thus, when the legitimate Western Emperor Honorius finally defeated the insurgents in 411, Tarraconensis remained as the only Spanish province under imperial government, with Tarraco as its capital city⁷².

Shortly afterwards, another episode fully defined the renewed geostrategic and political prominence of the city. Due to the correspondence between Consentius and Augustine of Hippo, we know about the arrival of a large army in Tarraco by the late 420s, led by the *comes Hispaniarum*, Asterius. This group of both imperial and *foederati* troops was sent to finally defeat Maximus and re-establish Honorius' authority over all the Spanish provinces, which had been under barbarian rule since 409. As a result, Tarraco became the logistic centre from which the many military campaigns during that century were organized, a function that we can assume gave the city pre-eminence over the Diocesis Hispaniarum and likely contributed to the archaeologically documented urban development⁷³.

THE VERY LATE CENTURIES OF THE LATE ANTIQUE PERIOD

The expansion of the Visigothic kingdom to the Iberian peninsula, and therefore to Tarraco, caused no major changes to the everyday life in the city. In fact, urban development proceeded during the following centuries, as demonstrated by the new constructions, renovations and stratigraphic levels of continued use that have been archaeologically documented in the houses, warehouses and workshops of the port suburb, which remained the economic engine of the entire city⁷⁴.

Interesting data on the harbour's important role in the 7th century is being uncovered by new excavations in the western sector of the port suburb, which are significantly increasing our knowledge about how this area evolved. The archaeological documentation of significant new buildings constructed *ex novo* in this area seems to point to urban development towards the western sector of the quarter. Although these findings are still being studied⁷⁵, the archaeologists suggest that these were multifunctional buildings erected well into the 7th century⁷⁶.

The pottery remains linked with these buildings have been analysed in a recent study and confirm ongoing activities at the harbour throughout the entire 7th century. Not only are new local and regional coarse wares attested, but also a great number of imported ceramics. Of particular note among these imports are the latest African Red Slip ware productions dating from the second half of the century. However, the number of eastern Mediterranean imports is also significant, especially among the coarse wares and lamps, clearly showing the close relations between the Visigothic Tarracona and the eastern regions of the empire⁷⁷.

Although preliminary, these data are certainly suggestive because they enable us to assess and question previous interpretations that characterized the 7th-century city as a secondary settlement within the centralized Visigothic kingdom that was completely abandoned immediately after the Arab and Berber invasion in the year 713. Andalusian sources, such as the chronicle written by Ahmad al-Razi under the caliphate

of Abd-ar-Rahman III (912-961), have supported these explanations because *Tarraquna* is described as a devastated city after the conquest. But it should not be forgotten that the Al-Razi chronicle reflects the political and propagandistic intentions of the Umayyad dynasty, which itself followed a policy of centralization and wanted to demonstrate signs of territorial control. Older texts, such as the *Vita Hludowici*, mention the existence of towns and fortifications on the outskirts of the city and the capture of several prisoners by Frankish troops during the campaign led by King Louis the Pious between 806 and 809⁷⁸.

Certainly current knowledge of the port suburb and the city as a whole during the 7th and 8th centuries does not enable us to determine the precise state of the harbour, but it is difficult to continue to accept this general panorama of ruin and depopulation after 713. Despite the lack of written sources for these centuries, the latest archaeological data prove that commercial activities in the port suburb did not cease, and neither did urban development. Consequently, it remains a challenge to archaeology to define the evolution of the harbour and its suburb from the very late centuries of the late antique period to the Early Middle Ages.

CONCLUSION

It is clear that the significance of Tarraco cannot be dissociated from its harbour, the advantageous geographical attributes of which made it first a military base and then the starting point of the Romanization of the Iberian peninsula. The choice of Tarragona as the main city of the province is understandable due to the presence of a roadstead with good conditions confirmed by the sources⁷⁹. We can consider that the literary sources supply evidence of the existence of a harbour from when the Romans arrive on the Iberian peninsula, and epigraphy shows the early arrival of Italians interested in working in connection with business, trade and military activities. This natural harbour later became a naval base or *epineion*, probably fortified, to which Livy refers with the contemporary definition of *portus*⁸⁰. Obtaining the capital status of Tarraconensis province was the primary engine for urban development during the first centuries of the empire, when the port suburb was urbanized with the establishment of a road system, harbour infrastructures such as *horrea* and administration centres, but also public utilities like, for example, the so-called Lions Fountain⁸¹. As far as the Roman mole is concerned, it is presumed that it was constructed during the building programme carried out during the Augustan period and was perhaps remodelled some time afterwards, although we reject the idea that remodelling took place during the time of Antoninus Pius, something that a number of historians still take into account⁸². During the years that followed, the city grew as an economic and political centre, as shown by the epigraphy and the monumentalization of Tarraco along with the active movement of goods, whose gateway was the harbour.

However, the late 2nd century was already a difficult time for Tarraco and therefore for its harbour as well, since it was socially and economically affected by Septimius Severus's harsh policy on the city and its province⁸³. The Frankish raid occurred under Gallienus's government, attested by many authors and reflected in the archaeological record, and the later administrative reforms carried out by Diocletian did not support a city that was already experiencing political and economic problems. Consequently, during the 3rd and 4th centuries the harbour quarter was characterized by an evident urban decline and a marginal occupation, mainly corresponding to funerary use, as many small burial areas were to be found throughout the suburb⁸⁴. By the early 5th century, the port suburb experienced new urban growth that cannot yet be determined precisely, but which undoubtedly reflects the importance of the city and its harbour after almost two centuries of urban decline. This is demonstrated by the great amount of products that arrived at the harbour during the century and is clearly reflected in the pottery remains⁸⁵. Likewise, the productive building carried out *ex novo* in the territory gained from the sea and the domestic buildings constructed where the former early

imperial suburb used to be, are also definite evidence of such development⁸⁶. Indeed, by this time Tarraco had regained its geostrategic importance due to the historical events that made the city the base for the imperial armies that tried to win back the Spanish provinces during most of the century⁸⁷.

The data about the following centuries are also preliminary, but it is clear that the urban development and economic activities continued uninterruptedly in the area. The archaeological remains corroborate growth of the quarter towards its western sector, where many remarkable new buildings are attested by the 7th century⁸⁸. Moreover, the pottery deposits of this area have also been analysed and prove ongoing activity in the harbour at least during the whole of the 7th century⁸⁹. This is an archaeological fact that is helping to redefine the historical explanations of the city during the 7th and 8th centuries, which, from our point of view, should no longer be described as a secondary settlement within the Visigothic kingdom, nor in terms of ruin and depopulation after the Arab and Berber invasion.

As we have pointed out throughout this brief study, the new archaeological findings and surveys, the critical reviews of the written and historiographic sources, the epigraphical studies of population movements and the topographical study of the harbour suburb are all key aspects of current research. All these features paint a picture of a complex reality that cannot be dealt with in isolation and needs to be developed in a comprehensive manner. With this interdisciplinary approach, we therefore aim to provide a more complete and precise image of the historical evolution of the city of Tarraco and its economic engine: the harbour.

Addendum: The current research has provided new publications. For further and updated information please check Terrado 2016 as well as Remolà/Lasherás in print and Lasherás in print.

Notes

- 1) A. Lasherás: FI-DGR Fellowship (Agència de Gestió d'Ajuts Universitaris i de Recerca, Generalitat de Catalunya). P. Terrado: FPI Fellowship (Ministerio de Economía y Competitividad, Gobierno de España). This article forms part of the project HAR-2012-37405-C04-01 (MINECO). We would like to express our gratitude to the Professors Diana Gorostidi (URV-ICAC) and Josep Anton Remolà (MNAT-URV-ICAC) for their valuable comments and suggestions and also for their comprehension and kindness, and Professor Joaquín Ruiz de Arbulo (URV-ICAC) for his perseverance and support.
- 2) Abelló/Massó 1995, 17 ff.
- 3) The geophysical and topographical surveys carried out at the end of 2015 in the lower part of the city by the team from the »Roman Mediterranean Ports (RoMP) – Portus Limen« project (University of Southampton) are a key element for understanding the Roman harbour. Preliminary results presented at a workshop at the British School at Rome (28th-29th January 2015) are very encouraging as regards locating the exact site of the *portus*. We expect that the final results will shed light on this important part of the city and complete the history of Tarraco.
- 4) Gisbert 2012.
- 5) Pérez 2007.
- 6) Rodríguez/Ruiz de Arbulo 2016.
- 7) Adserías/Pociña/Remolà 2000. – Ciurana/Macias 2010. – Macias/Remolà 2005; 2010. – Pociña/Remolà 2001. – Remolà/Sánchez 2009.
- 8) Plin. *Nat.* 19.1.
- 9) De Soto/Carreras 2009.
- 10) *Goth.* 6.12.29.
- 11) García 1972, 143.
- 12) Pérez 2007.
- 13) The so-called Sarcophagus of Hippolytus is dated to the 3rd century and originates from a Greek workshop. The unfinished relief showing the myth of Hippolytus and Phaedra is the most important feature, because it reveals the stages involved in sculpting the frieze. For more information see Ventura/Solsona 1949 and Clavería 2001.
- 14) Rodà/Pensabene/Domingo 2012.
- 15) Díaz 2012. – Díaz/Otiña 2002. – Lasherás 2015. – Macias 1999. – Remolà 2000. – Rodríguez/Macias 2016. – Trullén 2010.
- 16) Adserías et al. 1993.
- 17) Bea 2008.
- 18) For the ancient sources relating to the Iberian settlement, see Avien. *Ora mar.* 512-522. – Plb. 3. 76. 3-5. – Liv. 21.60. – Plin. *Nat.* 3.4.21. – Ptol. *Geog.* 2.6.17. – Mela 2.5.90.
- 19) Liv. 26.45.7.
- 20) Andreu/Cabrero/Rodà 2009.
- 21) Haley 1991. – Díaz 2008.
- 22) Díaz 2004, 469. – Beltrán 2004, 167. – Cf. Alföldy 1991, 31; 2004, 7.

- 23) *CIL* II²/14, 1200 = *CIL* I³ 3452 = *CIL* II 4309 = *RIT* 5: [---] *I(ibertus) Ephes[ius ---] / [---]S mag[istri]---*. For other inscriptions relating to freedmen and *magistri* in *Hispania* and specifically in *Tarraco*, see Díaz 2004. On the relationship of *Tarraco* and *Carthago Nova* and parallels in Italy and Greece, see Díaz 2004. – Beltrán 2004. – Alföldy 1991; 2004. – Abascal 2002.
- 24) Barbieri 1988a; 1988b. – Ruiz de Arbulo 2011. – Cf. Reddé 1986. – Starr 1943.
- 25) Le Roux 1982.
- 26) On the importance of Augustus in *Hispania* and the Empire, see the latest compilation in López 2015.
- 27) Alföldy 2004. – Chic 2009. – Díaz/Otiña 2002.
- 28) Pons d'Icart 1572, chap. 38. – Hernández Sanahuja 1867, 137.
- 29) Hernández Sanahuja 1867, 137.
- 30) Pérez 1991. – Otiña/Ruiz de Arbulo 2000. – Ruiz de Arbulo 2001.
- 31) Terrado 2015, 242.
- 32) Pons Icart 1572, chap. 38. – Hernández Sanahuja 1859, 14.
- 33) Terrado 2015b.
- 34) Ruiz de Arbulo 2001. – Terrado 2015a.
- 35) Strabo 3.4.7.
- 36) «[...] πρώτη Ταρράκων ἐστὶ πόλις, ἀλίμενος μὲν, ἐν κόλπῳ δὲ ἰδρυμένη καὶ κατεσκευασμένη τοῖς ἄλλοις ἰκανῶς. Ἐρατοσθένης δὲ καὶ ναύσταθμον ἔχειν φησὶν αὐτήν, οὐδὲ ἀγκυροβολίους σφόδρα εὐτυχοῦσαν, ὡς ἀντιλέγων εἶρηκεν Ἄρτεμιδωρος.»
- 37) «Πολύβιος: ὅτι οἱ Ῥωμαῖοι τὰς μὲν ναῦς ἐνεώλκησαν, τοὺς δὲ ἐν τῇ Ταρρακῶνι συναθροίσαντες ἐκ δὲ τῶν προγεγονότων ἐλαττωμάτων ἐπίνειον ἐποίησαν, ἐπὶ τῷ προκαθίσαντας ἐπὶ τῆς διαβάσεως διαφυλάξει τοὺς συμμάχους» (Epsilon, 2488).
- 38) «*Ea classis ingens agmine oneriarum procul visa cum magna laetitia civium sociorumque portum Tarraconis ex alto tenuit*» (Liv. 22.22.1-2).
- 39) «*Statio est ubi ad tempus stant naves, portus ubi hiemant*» (Serv. A. 2.23.) Flamerie de Lachapelle 2014.
- 40) Currently research focuses on literary sources, historiography and archaeology as part of the ongoing PhD dissertation «*Portus Tarraconis. El puerto de Tarraco en época tardorrepublicana y altoimperial. Fuentes literarias, historiografía y arqueología*», carried out by P. Terrado (URV) and directed by Professors D. Gorostidi (URV-ICAC) and J. Ruiz de Arbulo (URV-ICAC).
- 41) Pliny, *Nat.* 19.2.
- 42) Díaz/Gimeno/Mesas 2015. – Macias 2011a; 2012, 196. – Salido 2013, 140.
- 43) Gisbert 2009. – Berni/Gorostidi 2013.
- 44) Mar et al. 2012. – Gris/Vivó/Beltrán-Caballero 2015.
- 45) *CIL* II², 14, 2071 = *IRC* V, 138: *Ad sacco(marium) / T(arraconense, -arraconis)*.
- 46) Rodríguez/Ruiz de Arbulo 2016.
- 47) Remolà/Pociña 2011.
- 48) Remolà/Pociña 2011, 188f.
- 49) *CIL* II²/14, 1255 = *RIT* 420 = *AE* 1938, 18 (*Tarraco*) s. II-III dC: *M(arco) Iunio / Celso VI/virali ho/noribus / functo et co/poni de picaria / a fonte hic in cupa re/quiessit*.
- 50) Gorostidi/López 2012.
- 51) OLD s.v. *picaria* p. 1377 and *pix* p. 1384.
- 52) Alföldy 1975, no. 420.
- 53) Ciurana 2011, 340.
- 54) Alföldy 1991; 2013. – Macias 2013. – Cf. Witschel 2009.
- 55) Alföldy 1991, 39. – Pérez 2012, 33-36; 2013a, 84-87.
- 56) Adserias/Pociña/Remolà 2000, 140f. – Macias/Remolà 2005, 176; 2010, 135f. – Remolà/Sánchez 2009, 603f.
- 57) Remolà/Pociña 2011, 188f.
- 58) Adserias/Pociña/Remolà 2000, 141. – Macias/Remolà 2005, 180. – Remolà/Sánchez 2009, 603f.
- 59) Adserias/Pociña/Remolà 2000, 141. – Macias/Remolà 2005, 177; 2010, 135. – Remolà/Sánchez 2009, 605.
- 60) Díaz/Macias 2004, 201f.
- 61) *CIL* II²/14, 1004 = *CIL* II, 4112 = *RIT* 155: *M(arco) Aur(elio) Vicentio v(iro) p(erfectissimo) p(raesidi) / [p(rovinciae) H(ispaniae)] / Tarraconensis (...) ius-/tissimo restitutori / thermarum Montanarum / Mes[s]ius Marianus / cur(ator) r(ei) p(ublicae) Tarraconensis*.
- 62) Macias 2004, 205f.
- 63) It is not the main aim of this paper to discuss the evolution of *Tarraco's* territory, but it should be noted that after the 3rd century there is no evidence of further local production of *amphorae* and hardly any documentation of pottery workshops (Lasheras 2015, 130. – Roig 2012, 207f.). Likewise, the number of rural *villae* also decreases during the 3rd and 4th centuries (López/Prevosti/Fiz 2011, 395f.). Although this is probably a problem concerning the nature of the archaeological data and the stratigraphic record, this lack of ceramic workshops and rural settlements certainly raises important questions about the state of the territory and its capacity to produce surplus goods.
- 64) Currently, research focuses on this area as part of the ongoing PhD dissertation «*El suburbi portuari de Tarraco a l'Antiguitat tardana (segles III-VIII dC)*», carried out by A. Lasheras (ICAC) and directed by Professors J. A. Remolà (MNAT-URV-ICAC) and J. Ruiz de Arbulo (URV-ICAC).
- 65) Adserias/Pociña/Remolà 2000, 141f. – Macias/Remolà 2005, 182f. – Pociña/Remolà 2001, 92f. – Remolà/Sánchez 2009, 605f.
- 66) Macias 2004, 207f.
- 67) López 2006.
- 68) López 2006, 292f. 296f.
- 69) Lasheras 2015.
- 70) Macias 1999, 182f. 196f. – Remolà 2000, 35f. 46f.
- 71) Lasheras 2015. – Macias 1999, 185. 198. – Remolà 2000, 37ff. 48ff.
- 72) Arce 2005, 56f. – Collins 2004, 11f. – Pérez 2012, 114f. – Pérez 2013a, 90f.
- 73) Pérez 2012, 191f. – Pérez 2013a, 92f. – Remolà/Pérez 2013, 166f.

- 74) Díaz/Roig 2016. – Macias/Remolà 2005, 182 f.; 2010, 138. – Pérez 2013c. – Remolà/Sánchez 2009, 606.
- 75) This study is part of the ongoing project »El port de Tarraco a la desembocadura del riu Francolí (segles VII-VIII)«. We thank Dr. M. Díaz (CODEX – ICAC), Dr. J. M. Macias (ICAC) and Dr. J. F. Roig (CODEX – ICAC) for the information provided.
- 76) Díaz/Gimeno 2013. – Díaz/Roig 2016.
- 77) Rodríguez/Macias 2016.
- 78) Gonzalo 2013, 14 f. – Macias 2011b. – Menchon 2011. – Pérez 2012, 411 f.
- 79) Ruiz de Arbulo 2001.
- 80) Terrado 2015.
- 81) Macias/Remolà 2010. – Pociña/Remolà 2001.
- 82) Terrado 2015b.
- 83) Alföldy 1999, 39. – Macias 2013, 127. – Pérez 2012, 33-36; 2013a, 84-87.
- 84) Adserias/Pociña/Remolà 2000, 141. – Macias/Remolà 2005, 177; 2010, 135. – Remolà/Sánchez 2009, 605.
- 85) Lasheras 2015. – Macias 1999. – Remolà 2000.
- 86) Adserias/Pociña/Remolà 2000, 141 f. – Macias/Remolà 2005, 182 f. – Pociña/Remolà 2001, 92 f. – Remolà/Sánchez 2009, 605 f.
- 87) Arce 2005, 56 f. – Pérez 2012, 114 f. 191 f.; 2013a, 92 f. – Remolà/Pérez 2013, 166 f.
- 88) Díaz/Gimeno 2013. – Díaz/Roig 2016.
- 89) Rodríguez/Macias 2016.

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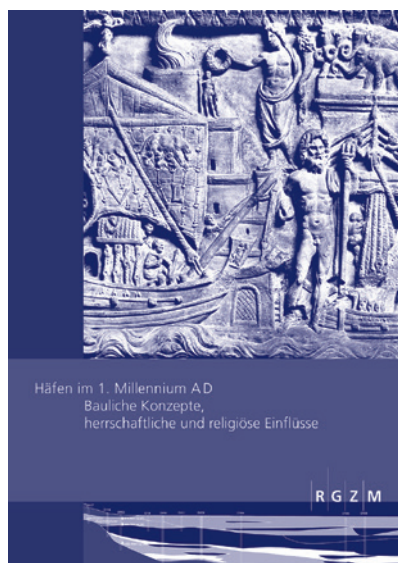
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Summary

The importance of Tarraco, former capital of Hispania Tarraconensis, largely resided in its condition as a port city. This paper gives an account of the progress made in research into this ancient harbour by analysing literary sources and archaeological remains from a broad time period, covering the period from the 3rd century BC to the 8th century AD. The updated examination of the ancient sources and the study of several recent archaeological discoveries allow us to provide new and precise information about the configuration of the harbour and its evolution. We outline the advances in these fields of study in order to understand not only the harbour's appearance, but also the economic, urban and social progress of the city. First, we take into account the boost to the city's economy, bolstered by the arrival of Italian immigrants during the Roman conquest of Hispania and later from other cities, and also the movement of people and the growth of the city as an urban and economic centre. Second, we analyse the urban reality of the port suburb, which clearly reflects the situation of the harbour. After an interval of urban contraction, the 5th century AD sees a new period of urban and economic growth. This development is also attested in the centuries that follow, calling into question previous interpretations that considered the 7th century as a period of decline that culminated in the Arab and Berber invasion in 713.

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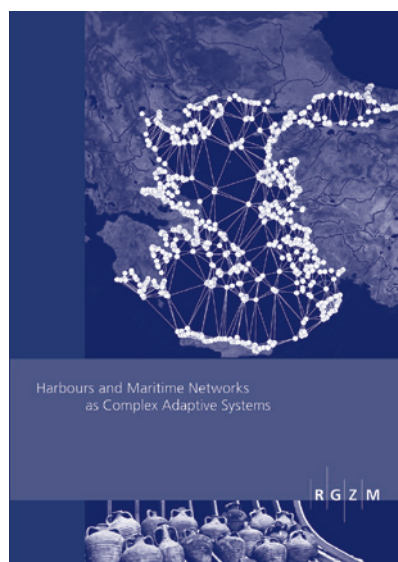
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