

Vivre, produire et échanger : reflets méditerranéens

Mélanges offerts à Bernard Liou

Textes rassemblés par Lucien Rivet et Martine Sciallano



Centre Camille Jullian

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Sommaire

<i>Préface (Lucien RIVET et Martine SCIALLANO)</i>	9	Robert ÉTIENNE	Prosopographie monumentale, prosopographie amphorique. Le cas des Ocratii	119
Patrice POMEY		Élisabeth DENIAUX	Recherches sur le transport maritime dans la Méditerranée orientale : les affaires de Patiscus (51-43 av. J.-C.)	121
Remarque sur la faiblesse des quilles des navires antiques à retour de galbord	11	Dominique PIERI	Marchands orientaux dans l'économie occidentale de l'Antiquité tardive	123
Sabrina MARLIER		Enrique GOZALBES CRAVIOTO	Notas sobre las relaciones hispano-tingitanas en la antigüedad clásica	133
La question de la survivance des bateaux cousus de l'Adriatique	21	Claude DOMERGUE, Christian RICO	À propos de deux lingots de cuivre antiques trouvés en mer sur la côte languedocienne	141
Jean-Marie GASSEND		Henri AMOURIC, Éric DULIÈRE, Florence RICHEZ, Lucy VALLAURI	En rade de Villefranche	153
Navires de Saint-Gervais, des Laurons, de Cavalières, etc.	33	José Maria BLÁZQUEZ	El comercio hispano con el norte de África y el Oriente desde el comienzo de la Antigüedad hasta el siglo VIII	159
Claude SANTAMARIA		Moisés DÍAZ GARCÍA, Pedro OTIÑA HERMOSO	El comercio de la Tarragona antigua : importaciones cerámicas entre el siglo III a.C. y la dinastía julio-claudia	171
Épave Chrétienne "E" à Agay, commune de Saint-Raphaël (Var).	35	Michel BONIFAY, Claudio CAPELLI, Luc LONG	Recherches sur l'origine des cargaisons africaines de quelques épaves du littoral français	195
Michel L'HOURL, Elisabeth VEYRAT		Frédéric MARTY	Aperçu sur les céramiques à pâte claire du golfe de Fos	201
Au carrefour des influences maritimes de l'Europe moderne : les épaves de la Natière	43	Armand DESBAT	Quelques témoins de l'importation de sigillée orientale A à Lyon	221
Max GUÉROUT		Thierry MARTIN	Le rayonnement aquitain des présigillées augustéennes du bassin de l'Aude	223
L'épave du Patriote à Alexandrie (Égypte)	51			
Éric RIETH				
À propos d'un bateau-citerne du delta du fleuve Godavari (Andhra Pradesh, Inde) dessiné par F. E. Pâris (1806-1893). Note d'architecture navale comparée	67			
Philippe RIGAUD				
L'inventaire de la galéasse de Philippe de Comynes (Marseille 1491)	71			
François SALVIAT				
Les ports de l'Atlantide dans le <i>Critias</i> de Platon	79			
Francisca PALLARÉS				
I porti antichi della Liguria di Ponente : l'esempio di Albenga	85			
Claude VELLA				
Évolution paléogéographique du littoral de Fos et du delta du Rhône : implications archéologiques	103			
Christian GIROUSSENS				
À propos des étangs de Fos et d'Istres : deux entrepôts à sel à Port-de-Bouc au XVI ^e siècle	115			

Philippe BET, Anne DELOR Les premiers ateliers céramiques de type méditerranéen en Auvergne, l'exemple des officines de sigillée	235	Cèsar CARRERAS MONFORT, Piero BERNI MILLET Microspatial relationships in the Laetanian wine trade : shipwrecks, amphora stamps and workshops	359
Kristell CHUNIAUD Le groupe des ateliers de potiers de Ligonnes à Lezoux (Puy-de-Dôme), un champ d'étude pour les questions relatives à l'organisation de la production céramique en Gaule romaine	243	Rosario GARCÍA GIMÉNEZ, Michal OREN PASCAL, Darío BERNAL CASASOLA Las ánforas como indicadores del comercio entre el sur de <i>Hispania y Iudaea</i>	371
Lucien RIVET Céramiques communes engobées et imitations de campaniennes et de sigillées italiennes de Fréjus (Var), de la fin du I ^{er} siècle avant notre ère et du I ^{er} siècle de notre ère	249	Pau MARIMON RIBAS La importancia de la <i>Gallia Lugdunensis</i> en la distribución de los productos béticos hacia el norte del Imperio	379
Michel PASQUALINI Le pot de chambre : une forme particulière du vaisselier céramique dans la maison romaine entre les I ^{er} et III ^e siècles de notre ère	267	Daniel ROUQUETTE Une représentation de phare sur une estampille amphorique ou doliaire de Narbonne	389
Miguel BELTRÁN LLORIS Un rasgo de la colonización itálica : la fabricación de morteros en la <i>Hispania</i> tardorrepública (valle del Ebro)	275	Stefania PESAVENTO MATTIOLI Una produzione norditalica di anfore bollate	391
Jean-Christophe TRÉGLIA <i>Flanged bowl</i> Hayes 91 : simple bol décoré, mortier ou râpe ?	287	Iwona MODRZEWSKA-PIANETTI Due anfore bollate del Polesine	395
Yves RIGOIR Petit bestiaire sur DS.P.	291	Eduard GARROTE SAYÓ Les timbres sur amphores à huile de Bétique en Narbonnaise	403
Daniela GANDOLFI Una bottiglia-mercuriale Isings 84 con bollo C. EVHODIA dal Civico Museo Archeologico di Ventimiglia (Liguria, Italia)	295	Carmen ARANEGUI GASCÓ Las ánforas con la marca ΜΑΓΩΝ	409
Guillermo PASCUAL BERLANGA, Albert RIBERA I LACOMBA Las ánforas tripolitanas antiguas en el contexto del Occidente Mediterráneo	303	Juan Aurelio PÉREZ MACÍAS La <i>figlina</i> de Pinguele (Espagne)	417
André TCHERNIA L'arrivée de l'huile de Bétique sur le <i>limes</i> germanique : Wierschowski contre Remesal	319	Adrian ARDET Probabilités de la présence d'amphores de type "Gauloise" 5 en Dacie romaine	423
Michel CHRISTOL Marchands gaulois et grand commerce de l'huile de Bétique dans l'Occident romain ; quelques données provenant des amphores	325	Patricia SIBELLA Promontoire d'Uluburun, Turquie : amphores non identifiées	425
Genaro CHIC GARCIA <i>DEGVSTATIO</i> o <i>RECOGNITIO</i>	335	Ramón JÁRREGA DOMÍNGUEZ Nuevos datos sobre la producción anfórica y el vino de <i>Tarraco</i>	429
Stefanie MARTIN-KILCHER <i>Lucius Uritius Verecundus</i> , négociant à la fin du I ^{er} siècle, et sa marchandise découverte à Mayence	343	Jaap van der WERFF Old and new evidence on the contents of Haltern 70 amphoras	445
Tamás BEZECZKY Brindisian olive oil and wine in Ephesos	355	Montserrat COMAS SOLA, Jordi JUAN TRESSERAS La production du vin dans deux <i>domus</i> de la ville romaine de Baetulo. Analyses archéobotaniques et de résidus organiques	451
		Marinella PASQUINUCCI, Simonetta MENCHELLI Anfore picene e paesaggio agrario : alcune considerazioni a proposito dell'ager Firmanus	457

Marie-Claire AMOURETTI	Gilles SAURON
Découvertes archéologiques récentes sur les moulins et pressoirs romains de Provence	Naissance et mort d'un genre pictural éphémère : la mégalographie
465	511
Denis FONTAINE	Jean-Marie PAILLER
<i>De Frvtyvm</i> (Flash Back)	<i>Sagitta</i> . Les noms de la flèche
471	517
Christian GOUDINEAU	Jacques GASCOU
Les mystères de la lieue gauloise	Les Flaminiques de Livie à Vaison-la-Romaine
473	521
Daniel BRENTCHALOFF	Jean GUYON
Un nouveau milliaire de Tibère sur la <i>uia Aurelia</i>	Jeu de puzzle au Musée Calvet à Avignon : deux pièces antiques à replacer au linteau de l'église Saint-Eutrope d'Orange
479	527
George B. ROGERS	Henri LAVAGNE
La route romaine d'Aix-en-Provence au Rhône Nouvelles hypothèses	Zénobie et Tétricus dans le triomphe d'Aurélien
483	535
Vassiliki GAGGADIS-ROBIN	René GIROUSSENS
Une tête inédite découverte au Castelet-Fontvieille	Un contrat de mariage à Istres au XVI ^e siècle
489	541
Antoine HERMARY	Sabine FAUST
Une tête en ivoire du musée d'Istres	Steindenkmäler aus dem gallo-römischen Tempelbezirk von Tawern
493	545
Martine SCIALLANO	Anne ROTH CONGÈS
Oh ! my god !	Où replacer le soffite à caissons du mausolée de Sestino ?
499	551
Victor LASSALLE	Laurence BRISSAUD, Jean-Luc PRISSET
Une imitation de l'orfèvrerie antique au portail de Saint-Gilles ?	Un édifice funéraire sur le site de Saint-Romain-en-Gal
503	567

Microspatial relationships in the Laietanian wine trade : shipwrecks, amphora stamps and workshops

Cèsar Carreras Monfort
Piero Berni Millet

The publication of volume 5 of *Archaeonautica* by Corsi-Sciallano and Liou (1985) meant a thorough change in the study of Tarraconense amphorae. Their report on Tarraconense shipwrecks not only put together the scattered information from those ships cargoes, but also included a new methodology of how to relate ship cargoes to ports of origin and workshops. One of the key elements used to associate production areas to sea transport, were the amphorae stamps from their ship cargoes.

The authors pointed out the close relationship between amphora marks to a particular workshop or production area. Quoting words of the own authors (1985, p. 159) : «...des estampilles qui figurent sur leurs amphores, procédé aux rapprochements qui s'imposaient et qui nous ont permis d'attribuer telle estampille à tel atelier et de déterminer dans bien des cas avec précision la zone de production des amphores...». Moreover, they realized the complexity of Tarraconense amphorae epigraphy, where the same stamps could be produced in different kilns. This situation normally happens in workshops that were relatively close together. For instance, the stamp AND was manufactured in Can Tintorer and Can Pedrerol, two production centres on the Llobregat riverside. However, sometimes the same stamp was produced far apart such as PTE, which was recovered in either Can Tintorer or Sant Crist (Caldes de Montbui). This phenomena was called homonimia, in other words repetition of the same characters in stamps from diverse workshops (Corsi-Sciallano and Liou 1985, p. 159).

One of their most remarkable contributions was the direct and indirect attribution of stamps to a particular kiln according to associations between stamps. Santamaria (1984) has already attempted to identify origins of amphorae from the Chrétienne H shipwreck following this method. The authors (1985, p. 160-166) extended its application to other Tarraconense shipwrecks, bringing

about a more clear picture of two workshops from the Llobregat riverside, Can Tintorer and Can Pedrerol. Actually, their accurate analysis of amphorae stamps from the Tarraconense shipwrecks shed more light into models of production in those two workshops that perhaps the own survey and excavations of the sites.

The work of Corsi-Sciallano and Liou (1985) fostered the study of Tarraconense amphorae in the own production areas in Catalonia, which Pascual had led until that day. Since then, many important works have been published such as Miró (1988), Pascual (1991) or Revilla (1995) that contain an update about stamps, workshops and amphorae typologies based on new evidences from archaeological excavations and surveys. This documentation provides new ground for the study of relationships between shipwrecks, ports and production centres that it will be covered in this paper.

Production regions : inland and coastal areas

The study of stamps from Tarraconense shipwrecks by Corsi-Sciallano and Liou (1985) made clear that any amphorae workshop such as Can Tintorer or Can Pedrerol should have had a coastal exit for its exports. In the case of Can Tintorer and Can Pedrerol located along the Llobregat river, this exit may have the own river mouth¹ (Izquierdo 1987) or the closest harbour, the city of *Barcino* (Berni and Carreras 2001). It is still difficult to demonstrate that some amphorae and other agricultural products from inland areas were stored in *horrea* of ports such as *Barcino*, since no installation have been unearthed yet. Nevertheless, stamps found in the city (Berni and Carreras 2001) show that they come not only from local centres but also from workshops from the Llobregat riverside and the inland regions of Vallès Occidental.

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¹ Remains of amphorae and other archaeological artifacts were found at Les Sorres on the Llobregat river mouth (Izquierdo, 1987). Amongst the objects, few amphorae stamps from nearby workshops stood out such as A, APO, AT, COM, IV, L, MORCI or STAB.

Likewise, amphora stamps recovered in excavations at *Baetulo* show similar pattern with stamps coming from *villae* located in the coastal strip, and also from inland regions such as Vallès Occidental and Llobregat riverside (Comas 1997). Similar evidences appear in *Iluro*, the third important town in the Laietanian coast, though most are still under study. Without denying a possible direct trade of coastal *villae*² or well comunicated centres on riversides (Nieto and Raurich 1998), it is believed that most Tarraconense amphorae were transported by wagons, pack animals or river boats to the main coastal towns (*Barcino*, *Baetulo* and *Iluro*). They were probably stored there in *horrea* until local or foreign traders bought them and uploaded their ships with them.

This hypothesis would make some sense to the complex composition of Tarraconense shipwrecks, in which mixed cargoes from diverse *villae* appear, but not from far away (see appendix of shipwrecks). The coastal port was the central point for the whole region, and the most suitable place to obtain the wide variety of products from the hinterland. Of course, a commercial ship may have sometimes called to more than one port, or even anchored near a coastal villa in order to upload amphorae.

Unfortunately, inland villae such as Can Feu³ or La Salut (Vallès Occidental) or Can Cabot or Sant Miquel de Martres (Vallès Oriental) did not have other chance but finding a redistribution point such as the coastal ports where contacts with potential customers (*mercatores*, *negotiatores*) was more feasible. Since signing comercial contracts may have lasted some time, meanwhile amphorae should have remained stored somewhere in those coastal ports.

Relationships between coastal ports and inland regions are possible when the production centre of an amphora stamp is identified. Nowadays, the origin is known of only a limited percentage of Tarraconense amphorae stamps, despite the increasing number of kilns unearthed or surveyed (Revilla 1995). There is always the risk that remains of those workshops may have completely disappeared, so analyses of stamps and amphorae fabrics can be an alternative way to disclose stamps origin.

Petrological analyses on Tarraconense amphorae (Williams 1991) show minor variations in fabrics from diverse regions and workshops in the NE Spain, the present Catalonia. The same happens with the physical-chemical analyses, though more samples are required to obtain reliable results. However, the laboratory analyses

should be complemented with the definition of macroscopic groups of fabrics, since there are no economic resources to undertake so many laboratory analyses. That is why regional groups of Tarraconense fabrics have been created based on few samples analysed by thin-sections or X-ray difraction from excavated workshops (Berni, Carreras and Revilla 1998) in order to assign stamps of unknown origin to a particular region. Also, fabric analyses help to sort out problems of *homonimia*, in other words whether a stamp with the same characters was produced in one or more workshops⁴.

At least, in the study of amphora stamps from Barcelona (Berni and Carreras 2001) we were able to identify probable origin of most stamps. Some were likely coming from local kilns, other from the Llobregat riverside workshops and, finally, a few ones perhaps from the Vallès centres. Of course, the study is still at its beginning, but in the long term will allow us to identify most stamps origins, and then, microspatial relationships between coastal and inland regions will become clear⁵.

Furthermore, fabric analyses should have an important field of application in the own study of shipwrecks, due to degree of heterogeneity of Tarraconense cargoes. As can be seen in the appendix of shipwrecks, most stamps from Tarraconense shipwrecks are assigned to particular kilns for associations between stamps or ships. Perhaps, additional information on stamps fabrics from those shipwrecks would illustrate some of problems of stamps identification.

Ports of origin for shipwrecks cargoes

With the documentation available today, the ports of origin of some Tarraconense shipwrecks can be revised again. The more information becomes available, more complex patterns appear to be. Four shipwrecks have been chosen to study their Tarraconense amphorae cargoes in some detail, similar to some degree to the one undertaken by Nieto and Raurich (1998). Two shipwrecks contain Pascual 1 amphorae, Els Ullastres (50 BC - AD 25) and Cap de Volt (10 BC - AD 5) ; and the other two Dressel 2-4, Chrétienne C (AD 15 - AD 20) and Diano Marina (*circa* AD 50).

Els Ullastres (Calella)

This ship provides a quite consistent cargo, whose amphora stamps indicate a variety of origins from Can Feu (Vallès) to Vila Vella (Baix Llobregat)⁶ and probably Montcada (Barcelonès). Besides, other stamp seems to be

2 The villa and workshop of El Moré (Sant Pol de Mar, Maresme) is one probable example of direct exchange of wine amphorae due to its special location near the coastline (Arqueociència 1997).

3 The villa of Can Feu documents a workshop producing amphorae with more than 12 different stamps, some of which were also manufactured in the villa of La Salut only at 4 Km of distance (Carbonell and Folch, 1998).

4 When workshops stay close together, perhaps fabric characterization may not be a method good enough to solve the dilema.

5 Besides, information on stamps should be related to medieval and modern toponimia because this may be the way to recognise properties (*fundi*) where amphorae and/or wine were produced. An attempt to use this kind of information regarding the stamp M.PORCI is included in Olesti and Carreras (forthcoming).

6 New evidences from the workshop of Vila Vella (Sant Boi) came to light in the recent excavations of the site (López Mullor 1998).

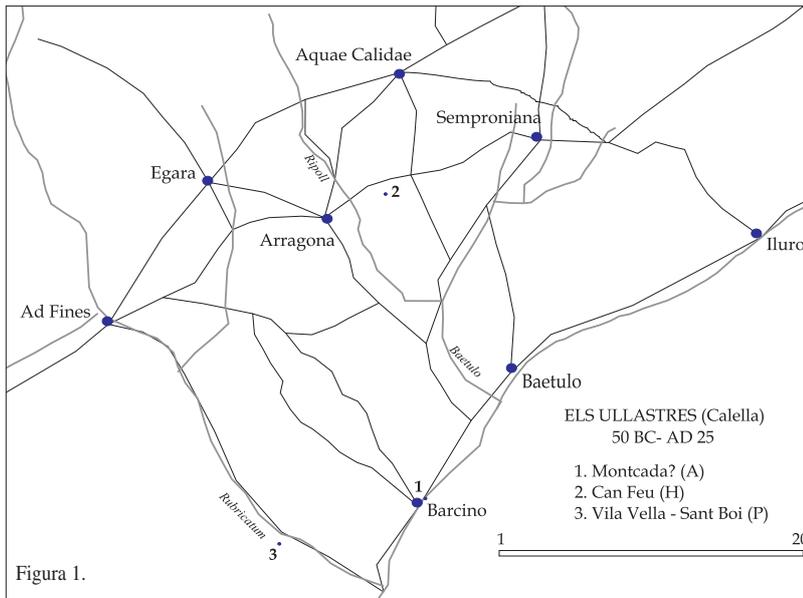


Figura 1.

associated to stamps from Can Tintorer o Vila Vella (Baix Llobregat). If you look at fig. 1, it appears clear the proximity between the different workshops, and the easy access of inland production centres by road or river.

Barcino appears to be the midpoint of all centres, as well as the closest coastal port for seaborne commerce. Therefore, it is the most likely place to have stored all amphorae coming from nearby workshops and suitable anchoring location for large ships. Although Les Ullastres does not provide an accurate dating, since the foundation of the Roman town of *Barcino* is dated circa AD 10 (Berni and Carreras 2001), perhaps the shipwreck should be later of date.

The Ullastres cargo resembles the one of Port-Vendres IV (see appendix) in terms of composition, date and origin. Besides, it demonstrates the growing impor-

tance of *Barcino* as a commercial port, which may have been one of the reason of its foundation. Barcelona enjoys one of the best location for a commercial port in the catalan coast, since it is near two of the the main rivers (Llobregat and Besós) that communicate offshore with the inland areas. Moreover, the Montjuïc mountain preserves the harbour from southern winds.

Cap de Volt (Port de la Selva)

The Cap de Volt cargo shows a wider variety of origins than Els Ullastres, despite of some coincidences in stamps and workshops. At least three stamps seem to have been produced in the Montcada kiln (*Barcino*), another one shows a similar fabric (Berni and Carreras 2001), other stamp come from Can Feu (Vallès), other from Can

Reverter (Baix Llobregat), two from *Baetulo* and one from Cal Ros de les Cabres (Masnou). Although the initial impression was that *Barcino* acted again as the exit port for all these amphorae, it seems possible that the ship had a second call at *Baetulo* to complete its cargo (see fig. 2). Following the distinction by Nieto (1988) between ships with first and second cargoes, Cap de Volt should be considered of the second kind.

According to the origin of amphora stamps, the ship may have uploaded Pascual 1 amphorae while it was anchored in different waters, at least near *Barcino* and *Baetulo*. Therefore, Cap de Volt cargo composition should identify a type of wine trade, in which *mercatores* were purchasing the Tarraconense wine while they were on route calling at diverse ports.

Apart from Els Ullastres and Cap de Volt, two other Pascual 1 shipwrecks are included in the appendix. Port-Vendres IV shows a similar behaviour, as it was said, than Els Ullastres, so it may have also come from *Barcino*. However, Cap Béar 3 appear to come from *Baetulo* and *Iluro*, northwards from Besós river.

One may wonder whether Cap Béar 3 reveals an early commercial pattern (50-25 BC), when *Baetulo* and *Iluro* were the outstanding ports in this central coast of Catalonia (Olesti, 1995). As soon as the Baix Llobregat workshops increased their production and *Barcino* was founded, the commercial routes of Laietanian wine skewed a bit southwards. Then, production from inland Laietania could chose between at least three exit ports.

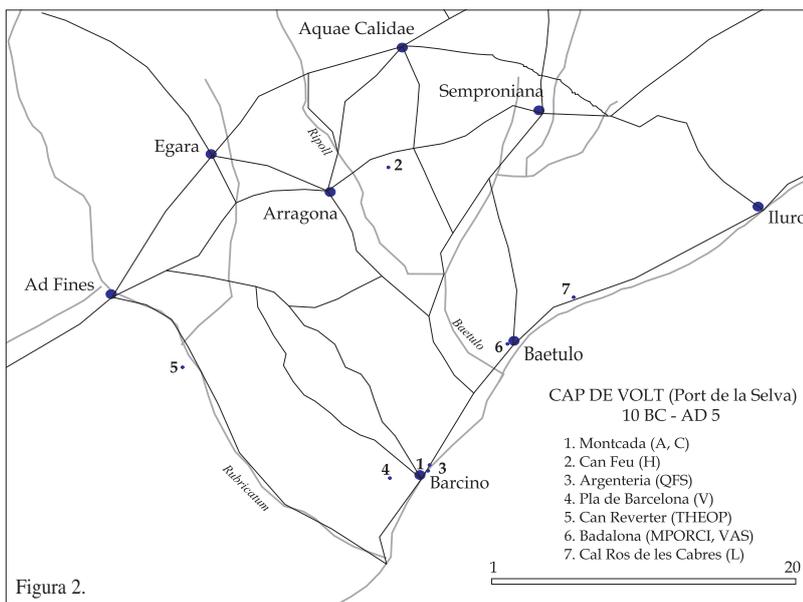


Figura 2.

Chrétienne C (Saint-Raphaël)

This is probably best known shipwreck of Tarraconense amphorae, containing either Pascual 1 and Dressel 2-4. It was dated between AD 15-20, and provides a huge number of stamped vessels (107 stamps) with 76 varieties (Santamaria 1984 ; Corsi-Scilliano 1985, p. 78-94). Due to the wide variety of stamps, there was an accurate report on origin of those marks, mostly coming from the Baix Llobregat workshops of Can Tintorer and Can Pedrerol.

However, new discoveries in the last years have brought about a more complex picture, since some stamps appear to come from other areas such as Vallès Occidental (Can Feu and La Salut), Maresme (El Moré), perhaps Barcino and Baix Llobregat (Vila Vella). Therefore, the initial view that the ship should have uploaded at the Llobregat river mouth, may be questioned. Perhaps, most of the cargo was uploaded there but it may have been second calls (i.e. Maresme, *Barcino*).

An alternative explanation suggests that all those amphorae could have reached a central coastal port such as *Barcino*, where they were embarked at once when the ship moored in its waters. Looking at fig. 3, it seems evident that products from inland region such as Can Feu and Las Salut had the easiest exit to the sea through *Barcino*, whereas Llobregat workshops may have transported their amphorae down the river to either be uploaded at the river mouth or be stored in the nearby harbour of *Barcino*.

There is only one stamp, AC, that does not fit in this scheme since it was produced far away in a coastal workshop in Sant Pol de Mar called El Moré (Arqueociència,

1997). Due to its close location to coastal line, ships could anchor here and complement their cargoes with amphorae from this centre⁷.

Most amphorae shipwrecks dating from the same period as Chrétienne H such as Planier 1, Est Perduto, Dramont B and Sud-Lavezzi (see *appendix*), appear to come from the area of Baix Llobregat and *Barcino*. There is a production boost in this southern and central part of Laietania compared to what was happening in early times when *Baetulo* and *Iluro* were the most thriving wine exporting areas. The only exception is Perduto 1 shipwreck containing amphorae produced in the coastal kiln of El Roser (Calella), probably uploaded in the same place.

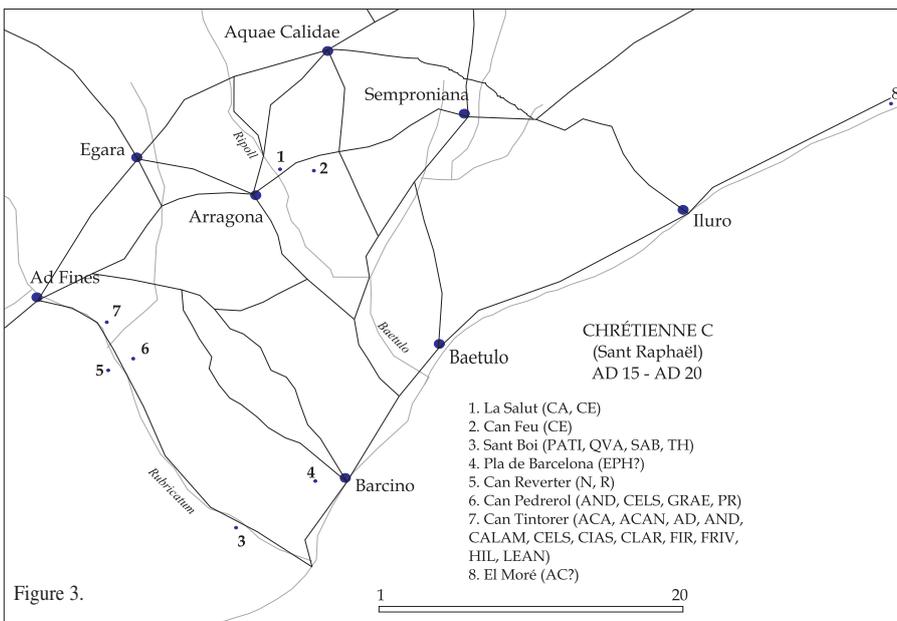
Diano Marina

The shipwreck of Diano Marina illustrates the final period of Tarraconense amphorae exports. Most known stamps from its cargo belong to workshop from the area of Vallès Oriental (ancient Lauro) near Caldes de Montbui and also, there is one stamp from the coastal centre of El Roser. The easiest exit for all the products from the Lauro region was the port of *Iluro*, and therefore one the probable calls of this ship as well as the own *villae* of El Roser.

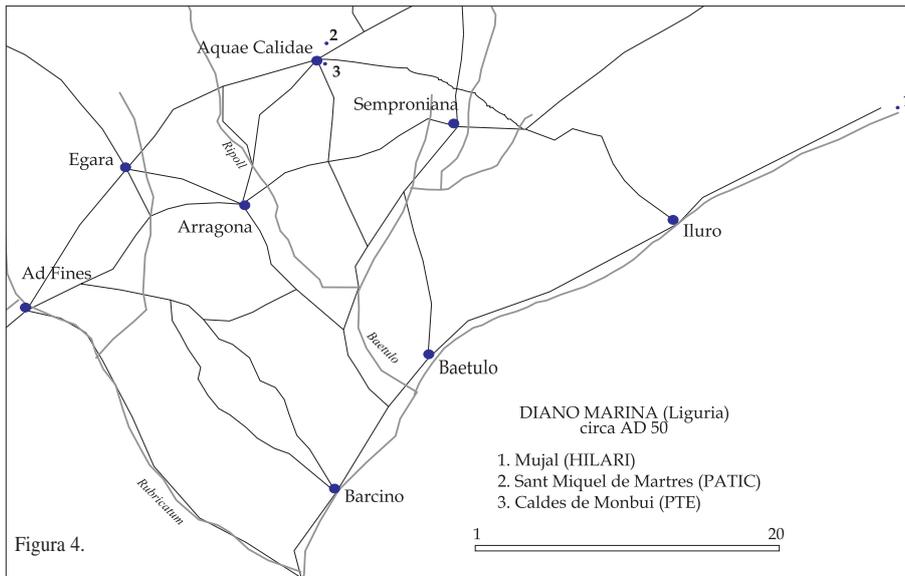
Nevertheless, there are a series of stamps found at Les Sorres mooring (Baix Llobregat) such as A and APO, and other, BAR, with parallels in Chrétienne H, which support the idea that part of the cargo was also from Baix Llobregat workshops. Therefore, the hypothesis of an initial uploading near the Llobregat river mouth can not be disregarded at this stage.

Most amphorae shipwrecks from the same date (AD 40-60) contain amphorae from the Llobregat workshops. This is the case of Cavallo, Petit Congloué, Grand-Rouveau and Fourmigués (see *appendix*), which shows the increasing importance of this wine production region in Laietania.

However, this late period also illustrates a blooming in the wine production of Lauro region, whose amphorae were exported probably through *Iluro*. Apart from Diano Marina shipwreck, the Ile Rousse one transported amphorae from the Lauro region (Can Cabot). They may have also uploaded in the port of *Iluro*.



⁷ The archaeologists of El Moré have identified a probable light-house, which may have attracted commercial vessels in their routes towards southern Gaul or Italy (Arqueociència, 1997, 231-235).



Tarraconense (*Barcino, Baetulo, Iluro...*). It must be borne in mind that those ships were safer completely full than half empty. Therefore, completing the whole ship cargo in only one port, even with ballast, was the most sensible advice (Nieto 1988). The main destinations of those ships were the large ports (Ostia, *Puteoli*) and cities of the Central Mediterranean (Roma, Carthage...) or military ports of southern Gaul. Gaulish wine production appeared to control step by step the military markets in the *Limes*, casting aside other wines such as Tarraconense.

Typologies of Tarraconense sea-trade

The variety of Tarraconense amphorae found in different shipwrecks also depends on ship size as well as the commercial routes employed. For instance, in the early period (second half first century BC) of Tarraconense exports, represented by the *Laietana 1* and *Pascual 1* amphorae, most commercial ships were of small size such as *Los Ullastres* or *Cap de Volt* (Nieto and Raurich 1998, p. 121-123). Wine amphorae were uploaded in production centres around Maresme, Empordà and Badalona-Barcelona region and transported to Narbona, which was the main port-of-trade for Tarraconense wine. Those ships were probably carrying mainly Gaulish products in the return trip towards *Hispania*, alike the Flavian *Culip IV* shipwreck was interpreted (Nieto *et alii* 1986).

These early shipwrecks present heterogeneous cargoes that may be due to few calls at different coastal *villae* or ports were limited number of amphorae were uploaded. Ships followed a coastal route towards Narbona, perhaps buying and selling products at every call. Most exports of *Pascual 1* amphorae may have followed this pattern of preferential trade towards Narbonense along coastal routes. It lasted almost 50 years, bringing about a consolidated commercial circuit North-South (Berni 1998, p. 72-74). Besides, this type of sea-trade was based on a decentralized production model.

However, a second type of Tarraconense sea-trade is recorded from Augustus until Flavian period. The new variant is characterized by middle-size ships carrying chiefly *Dressel 2-4*⁸ amphorae from concentrated areas (Barcelonès, Baix Llobregat, Maresme, Vallès Occidental and Vallès Oriental). It seems this middle-size ships required a stable port for anchoring and uploading, so amphorae were probably stored in the main ports of

There were two main routes, one crossing near the Balearic islands through Bonifacio straits towards Rome, and a second one following the Gaulish coast towards Central Italy. Rome was probably the main market for Tarraconense wines in this period, but some of the Tarraconense amphorae arriving at Ostia were redistributed to other destinations (probably to Carthage).

Finally, a third typology of sea-trade can be represented by the cistern-ships that transported most Tarraconense wine in *dolia*, apart from a complement on *Dressel 2-4* amphorae, some of them coming from Tarraconense and others from Campania. Corsi-Sciallano and Liou (1985, p. 169-171) recorded at least a few shipwrecks such as *La Garoupe*, *Ladispoli* or *Grand-Ribaud* (Hesnard, Carre, Rival and Dangréaux 1988) with this kind of cargo. It is believed that wine carried in *dolia* was low quality table-wine, which was later transferred to other containers before it was sold.

Routes of these cistern-ships linked coastal ports of Tarraconense, probably *Barcino*, with the southern coastal ports of Campania (i.e. *Puteoli*). Wine was the main product transported in those ships in both directions.

Final comments

It has been attempted here to follow up an analysis on Tarraconense shipwrecks cargoes according to amphora stamps on the basis of new evidences available. Studies began by Santamaria (1984) and Corsi-Sciallano and Liou (1985), who set up a methodology that stills applies perfectly well. Perhaps, the only addition to their framework is the inclusion of fabric analysis as an alternative way to recognise approximate stamps origin. This technique may also help to avoid confusion in origin between stamps with similar characters produced in more than one centre.

⁸ Both typologies, *Pascual 1* and *Dressel 2-4*, cohabitated during the first quarter of the century, afterwards *Dressel 2-4* became the main Tarraconense export amphorae.



Figure 5 — Tarraconense amphora stamps found in La Chrétienne (1-6); Diano Marina (7-12); Sud-Lavezzi 2 (13-18).

However, as it can be observed in the *appendix*, there are many Tarraconense amphorae stamps whose origin is still unknown. Therefore, many pieces are missing from this complex jigsaw of the Laietanian wine trade. The more information we gather, the better comprehension we will obtain from this undefined mosaic of microspatial relationships. At the present, some logic in Tarraconense shipwrecks appear to emerge linked to the geographical location of workshops and coastal ports. But we are still far from getting a clear picture.

Moreover, the social dimension of the whole Laietanian production remains unsolved. For instance, relationships between vineyards owners, wine producers, amphorae manufacturers, transporters and traders are completely unknown. It is not even known if the same people fulfill some of these functions, or perhaps those roles identify diverse social and professional groups. Tarraconense amphora stamps provide a type of archaeological material with an extraordinary potential for economic and social studies. Following a rigorous methodology as employed by Corsi-Sciallano and Liou (1985), those stamps should shed new light in the future on the Laietanian wine trade.

SHIPWRECKS

This catalog of stamps recovered from shipwrecks with Tarraconense amphorae distinguishes between marks found on Pascual 1 or Dressel 2-4. Due to the problem of *homonimia* in Tarraconense amphorae stamps (Corsi-Sciallano and Liou 1985, p. 159), it was decided at the start to discriminate amphorae typologies in order to avoid confusion regarding possible origins.

Cap Béar 3 Pascual 1	date 50-25 BC BL (Torre Llauder) D LICIN MEVI - found also in Badalona SEMPR	possible origin – Baetulo-Iluro
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Perhaps, this is the earliest shipwreck containing Laietanian amphorae so far documented. Only the production centre is known from one stamp, BL, at the roman vila of Torre Llauder, near the ancient *Iluro* (Mataró). Therefore, the ship probably uploaded the cargo in the coastal towns of *Baetulo* or *Iluro*.

Port Vendres IV Pascual 1	date 50 BC – AD 25 AM - associated to PRI, AN and ANT (from Can Collet and Can Pedrerol) CHR (Can Feu – Sant Quirze del Vallès ; El Moré – Sant Pol de Mar) S - associated to Q, A and TH (from Montcada ? o Vila Vella) TH (Vila Vella, Sant Boi del Llobregat)	possible origin – Barcino
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The ship was uploaded in the Llobregat river mouth or the port of Barcelona, since it contains amphorae from Llobregat workshops (Sant Boi) as well as the kiln of Can Feu, which is located inland in the Vallès Occidental region. There is a doubt whether the homonym stamp CHR was produced in either Can Feu or El Moré, which only can be solved by a petrological or chemical-physical analysis. If the stamp CHR came from El Moré, this mean that the ship would have called near Sant Pol de Mar.

Els Ullastres (Calella Palafrugell) Pascual 1	date 50 BC – AD 25 A (Montcada? <i>Barcino</i> – Berni and Carreras 2001) F - associated to QVA and TH (from Can Tintorer o Vila Vella) H (Can Feu, Sant Quirze del Vallès) P (Vila Vella, Sant Boi del Llobregat) T	possible origin – Barcino
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It seems that the ship was uploaded in the port of Barcelona or nearby, since it contains amphorae from Llobregat workshops (Sant Boi) as well as the kiln of Can Feu, which is located inland in the Vallès Occidental region.

Cap de Volt (Port de la Selva) Pascual 1	date 10 BC – AD 5 A (Montcada ? <i>Barcino</i> – Berni and Carreras 2001) C (Montcada <i>Barcino</i> – Berni and Carreras 2001) D F - associated to QVA and TH (from Can Tintorer o Vila Vella) G	possible origin – Barcino-Baetulo
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H (Can Feu, Sant Quirze del Vallès)
I
IVLI THEOPHIL (Can Reverter, Sant Vicenç dels Horts)
L (Cal Ros de les Cabres ?, Masnou)
MPORCI (Badalona)
QFS (Montcada Barcino – Berni and Carreras 2001)
S - associated to Q, A and TH (from Montcada ? o Vila Vella)
T
V (Pla de Barcelona? – Berni and Carreras 2001)
VAS (Badalona)

It shows a similar pattern to Els Ullastres shipwreck, with stamps produced in different workshops not far away. Again it appears that the ship was uploaded in the port of Barcelona, and a second call at Badalona, since it contains amphorae from Llobregat workshops (Sant Boi, Can Reverter) as well as the kiln of Can Feu, which is located inland in the Vallès Occidental region. There are also productions from the own Barcelona, and the city of Badalona (*Baetulo*) and its neighbourhood.

Planier 1 (Marseille) *date AD 1-15* possible origin – *Llobregat*
 Dressel 2-4
A – found also at Les Sorres (Izquierdo 1987)
M (Can Tintorer - Pascual 1991, n. 132, 85)
MSPVP
P

Notwithstanding the lack of information from the production centres of those stamps, the ship was supposed to be uploaded close to the Llobregat river mouth. At least, a stamp is recorded from Can Tintorer in the upriver, and other example of stamp A was recovered at Les Sorres.

Est Perduto (Bonifacio strait) *date AD 1-50* possible origin – *Llobregat*
 Dressel 2-4
APO – found also at Les Sorres (Izquierdo 1987) ; Chrétienne H and Diano Marina
STAB - found also at Les Sorres (Izquierdo 1987) ; Chrétienne H

Notwithstanding the lack of information from the production centres of those stamps, the ship was supposed to be uploaded close to the Llobregat river mouth.

Dramont B (Saint-Raphaël) *date circa AD 5* possible origin – *Llobregat*
 Dressel 2-4
CIAS (Can Tintorer – Pascual 1991, n. 50, 45)
D
FI

Despite the lack of information from the production centres of those stamps, the ship was supposed to be uploaded close to the Llobregat river mouth. At least, a stamp is recorded from Can Tintorer in the upriver.

Chrétienne H (Saint-Raphaël, Var) *date AD 15-20* possible origin – *Llobregat and Maresme*
 Pascual 1
 Dressel 2-4
ACAS – associated to THA (Can Tintorer)
THA - associated to FIR (Can Tintorer)
A – found also at Les Sorres (Izquierdo 1987)
AC – (El Moré, Sant Pol de Mar – Pascual 1991, n. 4, 21) ; associated to SC + PHIL (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)
ACA (Can Tintorer – Pascual 1991, n. 5, 22)
ACAN (Can Tintorer – Pascual 1991, n. 6, 23)
ACAS - associated to THA (Can Tintorer)
AD
AM – associated to ANT (Can Pedrerol)
AN – perhaps from Can Tintorer (Santamaria 1984, 32)
AND (Can Tintorer and Can Pedrerol – Pascual 1991, n. 18, 29)
APO - found also at Les Sorres (Izquierdo 1987)
BAR – it also appears at the Diano Marina shipwreck
CA (La Salut, Sabadell – Revilla 1995, p. 211)
CALAM (Can Tintorer – Pascual 1991, n. 41, 40)
CAQ (Can Cabot, Santa Eulàlia de Ronçana – Pascual 1991, n. 42, 40)
CE (La Salut, Sabadell and Can Feu – Revilla 1995, p. 211-214)
CELS (Can Tintorer and Can Pedrerol - Pascual 1991, n. 46, 42)
CIAS (Can Tintorer – Pascual 1991, n. 50, 45)
CLAR (Can Tintorer – Pascual 1991, n. 54, 47)
D
EPH (Montcada *Barcino* – Berni and Carreras 2001)
F

FE

FIR (Can Tintorer – Pascual 1991, n. 95, 64)

FRIV (Can Tintorer – Pascual 1991, n. 96, 65)

GEM – associated to CALAM (Can Tintorer)

GRAE (Can Pedrerol – Pascual 1991, n. 100, 68)

HIL – associated to FRIV (Can Tintorer)

IT

IV - found also at Les Sorres (Izquierdo 1987)

LEAN (Can Tintorer – Pascual 1991, n. 121, 79)

N (Can Reverter – Revilla 1995, p. 197)

NLL

OPT – associated to APTI (Vila Vella)

PHIL – associated to AC + SC (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

PR (Can Pedrerol and Can Reverter – Pascual 1991, n. 181, 117 ; Revilla 1995, p. 197)

PYR

QAE – associated to QVA (Vila Vella)

QVA (Vila Vella, Sant Boi – Pascual 1991, n. 197, 126)

R (Can Reverter – Revilla 1995, p. 198)

RVST – it also appears at the Ile Rouse shipwreck

S - associated to Q, A and TH (from Montcada ? o Vila Vella)

SAB (Vila Vella, Sant Boi – Revilla 1995, p. 193)

SANAP

SAT

SC - associated to AC + PHIL (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

STAB – found also at Les Sorres (Izquierdo 1987)

TA –

TH (Vila Vella, Sant Boi – Revilla 1995, p. 193)

TLIC –

VIC – associated to ALBA (Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 160)

The cargo of this shipwreck is rather heterogeneous in terms of origin, point to two different origins. On the one hand, most stamps appear to belong to the Llobregat riverside workshops (Can Tintorer, Can Reverter, Vila Vella and Can Pedrerol), besides other stamps come from *Barcino* (EPH) and the Vallès Occidental region (La Salut and Can Feu). Therefore, most of the amphorae may have been uploaded in either the Llobregat rivre mouth or the port of *Barcino*. On the other hand, there are stamps from the Lauro inland region (CAQ) and the Maresme coastal strip (AC), which suggests that the ship may have called to other ports in the Maresme offshore.

Sud-Lavezzi 3 (Bonifacio strait)

Dressel 2-4

date AD 15-25

possible origin – *Llobregat*

A – found also at Les Sorres (Izquierdo 1987)

AD

ALBA (Can Pedrerol – Pascual 1991, n. 10, 24)

ALEX associated to ALBA + VIC (Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 160)

AM associated to ALBA + VIC + ANT (Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 161)

ANDO

ANT associated to ALBA + VIC (Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 161)

ATT associated to ALBA + VIC + ALEX (Can Pedrerol – Corsi-Sciallano, Liou 1985, p. 161)

CELSI (Can Tintorer and Can Pedrerol - Pascual 1991, n. 46, 42)

L - found also at Les Sorres (Izquierdo 1987)

LYA (Montcada Barcino – Berni and Carreras 2001) ; associated to ALBA + VIC

(Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 160)

M (Can Tintorer - Pascual 1991, n. 132, 85)

PHIL – associated to AC + SC (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

POT associated to ALBA + VIC (Can Pedrerol – Corsi-Sciallano and Liou 1985, p. 161)

PR (Can Pedrerol – Pascual 1991, n. 18, 117)

QVAD associated to CELSI (Can Tintorer and Can Pedrerol)

S - associated to Q, A and TH (from Montcada ? o Vila Vella)

SC – associated to AC + PHIL (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

VIC - associated to ALBA (Can Pedrerol – Corsi-Sciallano and Liou, 1985, p. 160)

VT

The cargo of this shipwreck seems to be quite consistent in terms of origin, since most amphora stamps come from workshops in the Llobregat riverside, chiefly Can Pedrerol. Other stamps such LYA (Montcada, *Barcino*) or M (Can Tintorer) were also manufactured nearby. Therefore, it is difficult to assess whether the whole amphorae were produced in the same kiln or diverse workshops in the regions, being the ship uploaded in the river mouth or the port of *Barcino*.

Perduto 1 *date AD 15-25* possible origin – *El Roser, Caella*
 Dressel 2-4 **CISSI** (El Roser- El Mujal – Pascual 1991, n. 52, 46)
HILARI (El Roser- El Mujal – Pascual 1991, n. 106, 71)

The cargo of this shipwreck seems to be quite consistent in terms of origin, since the two stamps recovered come from El Roser workshop on the Maresme coastal strip. This example shows that sometimes the ship cargo only consisted of amphorae from an unique production centre. However, this is the exception to the general rule, which is mixed cargoes.

Cavallo (Bonifacio strait) *date AD 40-60* possible origin – *Llobregat*
 Dressel 2-4 **A** – found also at Les Sorres (Izquierdo 1987)
MALI - it also appears at the Ile Rouse shipwreck
OPTATI – a similar stamp as OPT was probably produced at Can Tintorer (HELE + APTI ; APTI + OPT : Chrétienne H ; Santamaria 1984, p. 35)
PTE (Can Tintorer - Pascual 1991, n. 183, 118)

Despite the scarce information on the production centres of those stamps as happens in Planier 1 shipwreck, the ship was supposed to be uploaded close to the Llobregat river mouth. At least, a stamp is recorded from Can Tintorer in the upriver, and other example of stamp A was recovered at Les Sorres.

Petit Congloué (Bonifacio strait) *date AD 40-60* possible origin – *Llobregat*
 Dressel 2-4 **AMAND** – it also appears at the Ile Rouse shipwreck
GE –
PATERN –
PLO –
SC - associated to AC + PHIL (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

Only SC seems to indicate an origin from a workshop in the Llobregat riverside. Again the ship was supposed to be uploaded close to the Llobregat river mouth.

Ile Rouse (Haute Corse) *date circa AD 50* possible origin – *Maresme*
 Dressel 2-4 **AMAND** – it also appears at the Petit Congloué shipwreck
FEL –
LCP (Can Cabot, Sta. Eulàlia de Ronçana - Pascual 1991 n. 119, 78)
MALI – it also appears at the Cavallo shipwreck
NP – found also in Baetulo and Torre Llauder (Mataró)
RVST – it also appears at the Chrétienne shipwreck

There is only one stamp from the assemblage whose origin is well known, LCP (Can Cabot), from an inland region. The products from this inland region, *Lauro*, were probably shipped from coastal ports such as *Iluro* (Mataró). That is why it does not surprise the fact that another stamp, NP, was recovered in Baetulo and Torre Llauder.

Grand Rouveau (Baie de Bandol, Var) *date circa AD 50* possible origin – *Llobregat*
 Dressel 2-4 **A** – found also at Les Sorres (Izquierdo 1987)
ALB (Can Pedrerol)
ALBA (Can Pedrerol)
AM – associated to PRI, AN and ANT (from Can Collet and Can Pedrerol)
B (Torre Llauder)
BAL
M (Can Tintorer)
OA (Can Tintorer)
QVA (Vila Vella, Sant Boi)
TCL
TRA

The cargo of this shipwreck appear to be quite consistent in terms of origin, since most amphora stamps come from workshops in the Llobregat riverside (Can Pedrerol, Can Tintorer, Vila Vella), with the only exception of the stamp B from Torre Llauder. Perhaps, it is another homonym stamp produced also in the Llobregat valley. Probably, the ship was uploaded in the river mouth or the port of *Barcino*.

Fourmigues (Hyères, Var) *date circa AD 50* possible origin – *Llobregat*
 Dressel 2-4 **CRI** – associated to PH (Can Reverter – Revilla 1995, p. 197)
PH (Can Reverter – Revilla 1995, p. 197)
PHIL – associated to AC + SC (Can Tintorer, Corsi-Sciallano and Liou 1985, p. 161)

The cargo of this shipwreck appear to be quite consistent in terms of origin, since most amphora stamps come from workshops in the Llobregat riverside (Can Reverter and Can Tintorer). Therefore, the ship was uploaded in the river mouth or the port of *Barcino*.

Diano Marina (Imperia, Liguria) Dressel 2-4	date circa AD 50 A – found also at Les Sorres (Izquierdo 1987) APO – found also at Les Sorres (Izquierdo 1987) ASCL BAR – it also appears at the Chrétienne shipwreck CPF EAB HILARI (El Roser- El Mujal – Pascual 1991, n. 106, 71) PATIC (Sant Miquel de Martres – Pascual 1991, n. 169, 110) PTE (Caldes de Montbui) found also in Can Tintorer (Pascual 1991, n. 183, 118) QV RACI RIM ST TYR	possible origin – <i>Llobregat and Maresme</i>
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The cargo of this shipwreck is rather heterogeneous in terms of origin, point to two different origins. On the one hand, some stamps appear to belong to the Llobregat riverside workshops (perhaps A, APO), though the mark PTE with intermediate dots may have been produced in the Lauro region (Caldes de Montbui). On the other hand, there are stamps from the Lauro inland region and the Maresme coastal strip, which suggests that the ship may have called to one port in the Maresme offshore.

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