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## **Shipwrecks with Baetican cargo in the Western Mediterranean, First to Third Centuries AD: maritime trade and cargo composition**

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### **Abstract**

This paper examines the shipwrecks with Baetican cargo in the Western Mediterranean between the beginning of the 1<sup>st</sup> century AD and the end of the 3<sup>rd</sup> century AD. It focuses mainly on cargo composed of amphorae-borne products and metal ingots, and the type of trade that wrecks with such cargo could represent. By looking at these wrecks as a coherent set and analysing the different cargoes, this paper outlines the mechanisms of trade of Baetican cargo and its underlining patterns. The end goal is to better understand the export economy of Roman Baetica in the first three centuries AD.

### **Key words**

*Maritime Archaeology, Shipwrecks, Baetica, Cargo, Roman Trade*

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### **Introduction**

This paper is part of a wider study that examined the shipwrecks with Baetican (referring to Baetica, a Roman province in southern Spain that roughly corresponds to modern day Andalucía) cargo in the western Mediterranean between the 1<sup>st</sup> and the 3<sup>rd</sup> centuries AD as part of a master's thesis conducted

at the University of Cadiz in 2019. Despite some limitations due to the nature of the materials that survive underwater, wrecks have the potential to outline the mechanisms through which products were transported, the ways in which they were loaded on a vessel, and how these products were combined in a hull. Ever since the publication of Parker's catalogue of wrecks which coherently listed 1,259 underwater sites, along with their location, their date, and the material recorded in each of them (Parker, 1992), wrecks have been fundamental in the study of the ancient economy.

Although extensive publications of shipwrecks with Baetican cargo are available, these wrecks have mostly been considered individually or, when considered together, scholars concentrated on specific locations, specific products, or produced a simple list of parts of the wrecks. Liou attempted to collect all of these wrecks together in an article published in 2000 (Liou, 2000), but his article tends to list wrecks with Baetican cargo without providing a conclusion or an analysis of the published material, and his focus is not on the organisation of the cargo but rather on the different wrecks and their location. In addition, his time span extends from the Republican period to the 5<sup>th</sup> century AD. Étienne and Mayet made a more complete analysis in their four volumes on Hispanic products (Etienne and Mayet, 2000, 2002, 2004). The authors focus on the different Hispanic products but analysed Baetican shipwrecks together with the ones from Lusitania and Tarraconensis, assessing the different products—oil, fish sauce, and wines—and the variety of producers more than the trade patterns these wrecks represented. Since cargo analysis has the potential of elucidating the different mechanisms of trade, the aim of my thesis was instead to discuss these wrecks together in a holistic comparative framework, undertaking a comprehensive analysis of their components. By considering the different cargo compositions, the locations of the wrecks, and the date and nature of the products transported, the aim of this paper is to attempt to understand the mechanisms of trade for Baetican cargo and their underlying patterns.

### **Baetican products and trade**

We know that Baetican products played a fundamental role in the supply of the empire and especially in supplying Rome and the frontier zones of Germania and Britannia (Dressel, 1878; Carreras and Funari, 2000; Blázquez Martínez and Rodríguez, 2001; Remesal Rodríguez, 2002; Lagóstena Barrios, 2009; Remesal Rodríguez, 2010). Land excavations support this, as material evidence for this trade is visible in the three provinces. Shipwrecks, instead, show us the products that did not reach their destination and are snapshots of the ways in which these products travelled and how they were loaded on a vessel.

Despite this study focusing on a narrow selection of products, we know from Strabo that a much wider array of products was exported from Baetica, called Turdetania as it was the pre-Roman name of the area around the Guadalquivir river.

*There are exported from Turdetania large quantities of grain and wine, and also olive oil, not only in large quantities, but also of best quality. And further, wax, honey, and pitch are exported from there, and large quantities of kermes<sup>1</sup>, and ruddle<sup>2</sup> which is not inferior to the Sinopean earth. And they build their ships there out of native timber; and they have salt quarries in their country, and not a few streams of salt water; and not unimportant, either, is the fish-salting industry that is carried on, not only from this country, but also from the rest of the seaboard outside the Pillars; and the product is not inferior to that of the Pontus. Formerly much cloth came from Turdetania, but now, wool, rather of the raven-black sort... Turdetania also has a great abundance of cattle of all kinds... (Strabo 3, 2, 6, quoted in Jones, H. L., and Sitlington Sterrett, J. R., 1917)*

Strabo's words are fundamental as they underline the limitation of the shipwreck data, which reveal information about a limited range of products and preserve no trace of perishable materials. This study is therefore limited to products that survive underwater, excluding grain, wax, pitch, cloth, and honey, which we know were being transported thanks to Strabo's words; and if available in the archaeological record, such evidence would provide a whole different set of information. Further limitations must also be kept in mind while looking at shipwrecks: most of the wrecks studied have only been partly excavated or published, and some had also been looted. Further, the movement of water displaced many of the amphorae and they are often found distant from their original location, when they are not simply lost, leading to a loss of information.

The variety of products that were being shipped and loaded on vessels departing from Baetica often resulted in very heterogeneous cargoes, which were loaded at only one harbour and must therefore not be thought of as the result of cabotage. The model of direct trade through emporia is the primary mode of trade during the Roman period (Nieto, 1997; Wilson, 2011; Rice, 2016). This model implies a level of planning and organisation, based on the available information about markets. The evidence provided from the Baetican shipwrecks with heterogeneous cargo implies that these ships were loaded in a single harbour, an emporium, where the products were being collected, stored, and loaded together on a vessel, not due to a random exchange and loading.

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<sup>1</sup> A crimson dye-stuff obtained from the dried body of insects.

<sup>2</sup> Used by Strabo to refer to Spanish cinnabar and Sinopean "red earth" as sources of dyes.

## **Wrecks with Baetican cargo**

This study collected data about 91 different wrecks from across the western Mediterranean (Table 1). Some wrecks were better published than others and have allowed for a complete analysis of the cargo, while others, only partly excavated, might have had more cargo than is reported here. The aim has been to collect all this information in one location to view these wrecks as a coherent set, and answer a series of questions:

- What can these wrecks tell us about Baetican maritime trade and its underlying mechanisms?
- Which Baetican products were commonly transported together?
- From which province(s) did products travelling alongside Baetican cargo come from?

### ***Map and location***

Figure 1 shows the location of all of the wrecks considered in this study. We can see where most of the wrecks have sunk, especially near dangerous navigational spots (such as the Balearic islands and the strait of Bonifacio), and perhaps the routes of the vessels. The graph in Figure 2 plots the number of wrecks found in Spain, France, and Italy. This distribution is not representative of the totality of Baetican trade, but is rather an artefact of different environmental contexts that encourage or prohibit documentation, as well as the different levels of research investment of each country.

The map reveals an absence of shipwrecks on the Italian coast near Rome. This could be due to the sandy sea bed, which makes wrecks difficult to locate, or to the high availability of harbours on this coast that would have provided shelter in case of bad weather (Robinson et al. Forthcoming, Schörle, 2011), or to a combination of both factors. There is a high concentration of wrecks on the French coast, probably tied to both a high investment in underwater research and the type of seabed that results in a better visibility of wrecks. No wrecks were recorded on the North African coast because of the lack of systematic research.

### ***Chronology of the wrecks***

Figure 3 plots the probable dates of the wreckage of these 91 Baetican cargo shipwrecks (Figure 3). Following Andrew Wilson's probability per annum approach (Wilson, 2009, 2011), the probability that each wreck sunk in a specific year of its date range was calculated and then plotted in a graph subdivided by half century. The first and last columns contain only the wrecks dated outside the set time span, for example a wreck dated 25 BC – 25 AD do not represent the complete set of wrecks with

Baetican cargo sunk in these two time frames, as many more wrecks with a Republican or late imperial date are available and not classified here.

From Figure 3, we see that 60% of all the wrecks sank in the 1<sup>st</sup> century AD, while there is a decline in the second century. This contrasts with the terrestrial evidence, especially from Monte Testaccio and the area around Rome, where we see a continuation of Baetican imports in amphorae up until the 4<sup>th</sup> century AD. What we can hypothesize is that this decline in the number of shipwrecks could be due to a change in the trade routes, shifting from coastal to high sea, to a better knowledge of the sea conditions and of hazardous locations, to the use of larger ships with better sailing capacities that were less prone to sinking, and to a larger number of harbour structures and lighthouses in the second century AD (Blackman, 2008; Harris *et al.*, 2011; Oleson *et al.*, 2011). Furthermore, as discussed by Robinson, Rice, and Schörle (forthcoming), the investment in new harbour structures and lighthouses that started in the 1<sup>st</sup> century AD provided shelter, visible markers, and safe havens at regular intervals on both the Italian Tyrrhenian coast and the southern French coast (Robinson *et al.*, forthcoming). While the high number of wrecks in the 1<sup>st</sup> century AD could be tied to the change of politics that occurred with Augustus's accession to the throne, the end of piracy, and the opening of the sea that must have incentivized smaller scale traders in investing in sea trade with smaller vessels due to the profit this promised.

### ***Origin of the cargo***

By looking at the origin of the cargo in these Baetican shipwrecks, a series of different combinations are available. Even though Baetican products were at times transported alongside products from other provinces, the majority of the ships (77 out of 91) were carrying exclusively Baetican products (Figure 4). The 14 remaining ships that carried cargoes from mixed provinces do not seem to be part of a pattern, and are single examples of combinations between provinces which seem to represent individual cases.

The 77 wrecks with exclusively Baetican products can be understood as representing the first major journey of these products departing from Baetica. An initial stage of transport would have involved a short journey by river, land, or sea to reach the main emporia in which they were then loaded together on these bigger vessels that then wrecked. While these cargoes were in the initial stage of their transport, the remaining 14 wrecks were carrying mixed cargoes of goods, some of which had been transhipped in another location. These mixed province wrecks should be regarded as the movement of products from emporia, not due to cabotage. Further research could focus on these individual cases and their circumstances.

## ***Products***

The different products transported in the 77 exclusively Baetican shipwrecks show a variation of combinations (Figure 5). What clearly emerges from this graph is that oil is the most common product—transported both on its own and alongside other products—followed by fish sauce and metal. Then a series of combinations of the different products were identified. The cargoes are homogeneous in terms of province but heterogeneous in terms of products and this also illustrates the habit of storing products in a harbour before loading them onto a ship. As mentioned before, even the ship with the most heterogeneous cargo would have been loaded at a single harbour, as having to adjust the balance of the ship every time a new item was loaded was definitely not worth the time, money, and effort.

### **Brief assessment of three case studies: Sud Lavezzi 2, Albufereta, and Bou Ferrer**

Three case studies can be seen as representative of different models of Baetican cargoes. These case studies were chosen because they were well-published, permitting a detailed study of the wrecks and their cargoes.

The first wreck is the Sud Lavezzi 2, an early imperial wreck sunk in the Strait of Bonifacio between AD 22 and AD 25 (Liou and Domergue, 1990, p. 94). The cargo was composed of a series of different products all originally from Baetica, including Dressel 20, Haltern 70, Dressel 28, Dressel 8, Dressel 9, Dressel 7-11, and Pompeii VII amphorae carrying oil, wine, and fish sauce, along with copper and lead ingots (Liou and Domergue, 1990). The presence of stamps on the ingots stands out, as they name several individuals who were in charge of the loading of the vessel. Liou and Domergue hypothesised that this was a private shipment made by a group of individuals who consolidated their cargo onto a single vessel. Furthermore, one of the names is also stamped on the lead anchor found in the wreck, suggesting he may have been the owner of the vessel. The same loading pattern has been hypothesized for other wrecks from Baetica: for example, Port-Vendres II, Gandolfo, Cala Rossano (Arata, 1994; Colls *et al.*, 1977; Liou and Rodríguez Almeida, 2000), which all present the merchandize of different individuals. Sharing a vessel between several merchants would have also allowed to split one's cargo between different ships, thus spreading the risk of a cargo sinking and losing all the products at once.

The second wreck is the Albufereta, dated between AD 50 and 70, which sank off the coast of Alicante. This was a smaller vessel loaded with three types of Dressel 20 amphorae and round copper ingots (Izquierdo *et al.*, 2007). This wreck, due to its construction, size, and cargo, is thought to have been en route towards southern France (de Juan Fuertes, 2009), possibly as part of a convoy of small vessels that were travelling together, as hinted at by the nearby discovery of other wrecks with similar cargoes, such as the Portixol, Cap Prim, Ciutadella and Punta Nati wrecks (de Juan Fuertes, 2017).

The last wreck to be considered is the Bou Ferrer, an exceptionally-well preserved wreck dated between AD 50 and 100, which, like the previous wrecks, sank off the coast of Alicante while carrying Dressel 7-11 amphorae and lead ingots (de Juan *et al.*, 2014). However, this wreck was not going toward southern France but rather towards Italy, more specifically towards Rome, as indicated by the imperial stamps on the lead ingots, which indicate that they were owned by the imperial government. In addition, the keelson appears to have been shaped especially to support the lead ingots (de Juan *et al.*, 2014). This suggests a specialised vessel built to carry this type of cargo repeatedly on a particular route.

## **Conclusion**

The data from the shipwrecks show different mechanisms through which cargoes were assembled and products were transported. We see a decline in the number of shipwrecks in the second century AD that is not reflected in terrestrial evidence. This difference could be a result of advanced harbour structures, lighthouses, sturdier vessels or better sailing capacities. Most of our Baetican shipwrecks (77 of the 91 wrecks) carried exclusively Baetican products, and represent the first major journey of these products, which were traveling from Baetica towards a specific destination. The cargoes composed of products of mixed provinces are much less frequent and represent individual cases that were the results of a single systematic loading. Turning to the exclusively Baetican cargo shipwrecks, we have seen that the main product transported on its own was oil, followed by fish sauce. The rest of the vessels carried a variety of products inside the hull. Even heterogeneous cargoes were the result of planned and organised trade, requiring in-depth knowledge of the market; they were not due to casual exchanges. Metal ingots, which have a high weight-to-volume ratio, were placed in the bottom of the hull to reinforce stability. Because of their weight, they needed to be combined with bulkier products such as amphorae, thus making the pair a suitable combination for a cargo. In addition, it would not be surprising if most of these vessels were carrying some perishable material, added as the last layer of their cargo.

The three case studies represent three different cargo compositions: one extremely heterogeneous cargo that seems to have been assembled by several different *mercatores*, a second representing a smaller vessel directed towards the French coast and loaded with oil and copper, and a third representing an imperially-owned cargo destined to Rome.

To conclude, this study highlights trends and peculiarities in the export economy of Roman Baetica over the first three centuries AD. It is clear that the products of the region were highly prized across the Roman West, and that these products moved through a variety of commercial networks that are most evident in heterogeneous cargo organisations. This province-specific investigation is naturally

limited by the available evidence, but certainly highlights the complexity of the early imperial economy.

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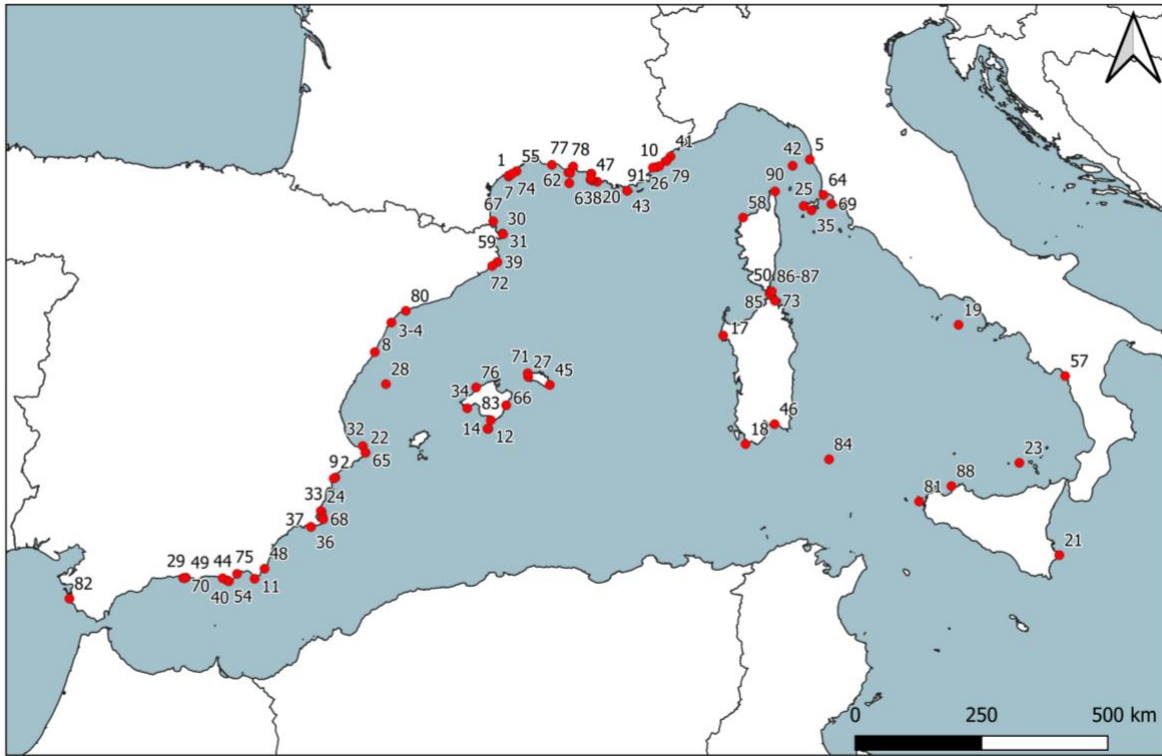


Figure 1: Location of the wrecks listed in Table 1 (author: Stella Rendina).

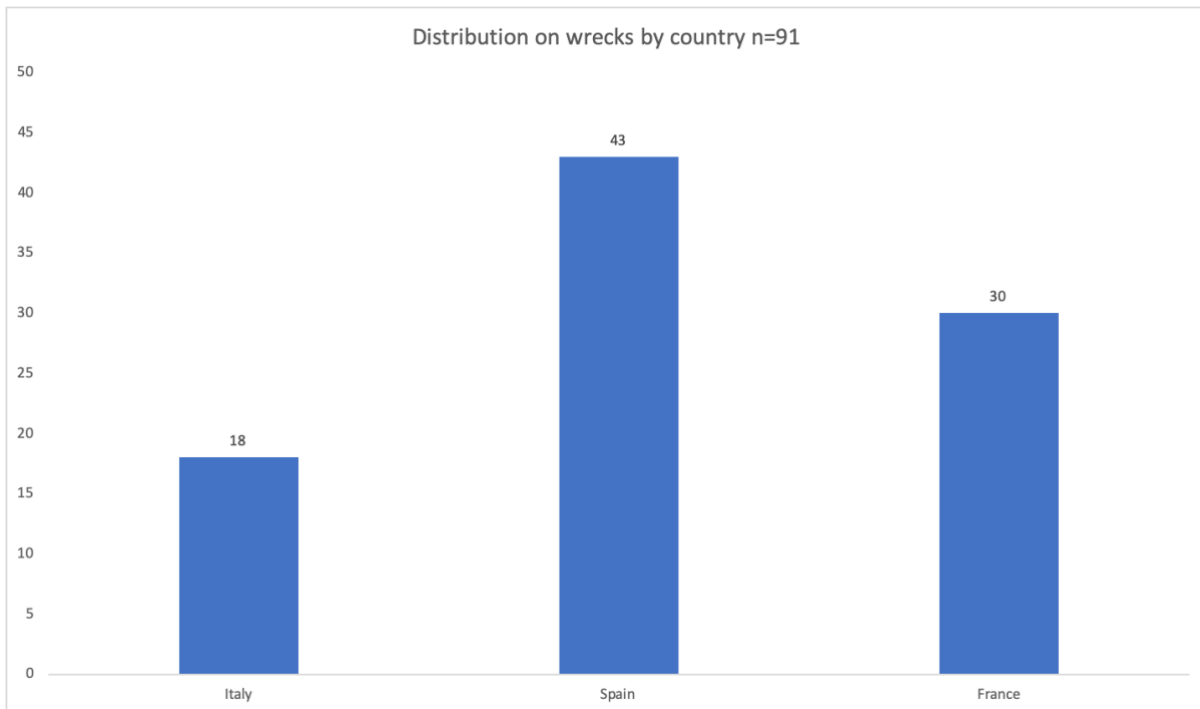


Figure 2: Location of wrecks by country, n=91 (author: Stella Rendina).

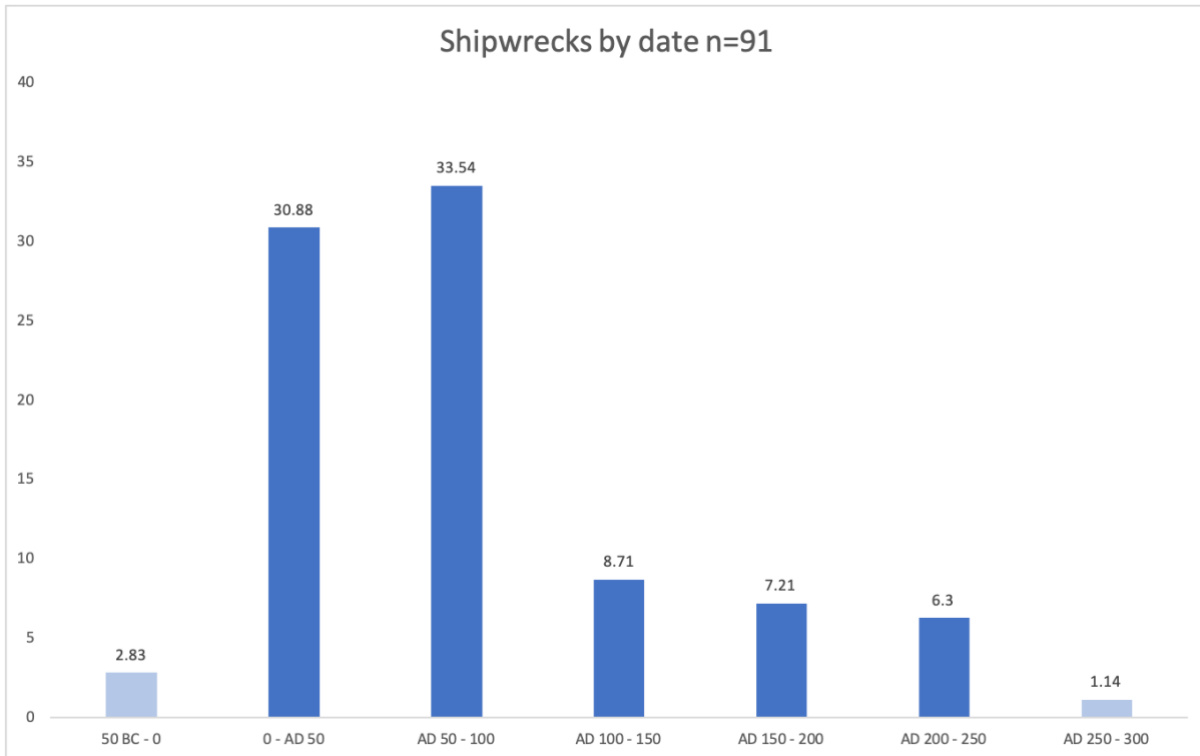


Figure 3: Date of the wrecks, n=91 (author: Stella Rendina).

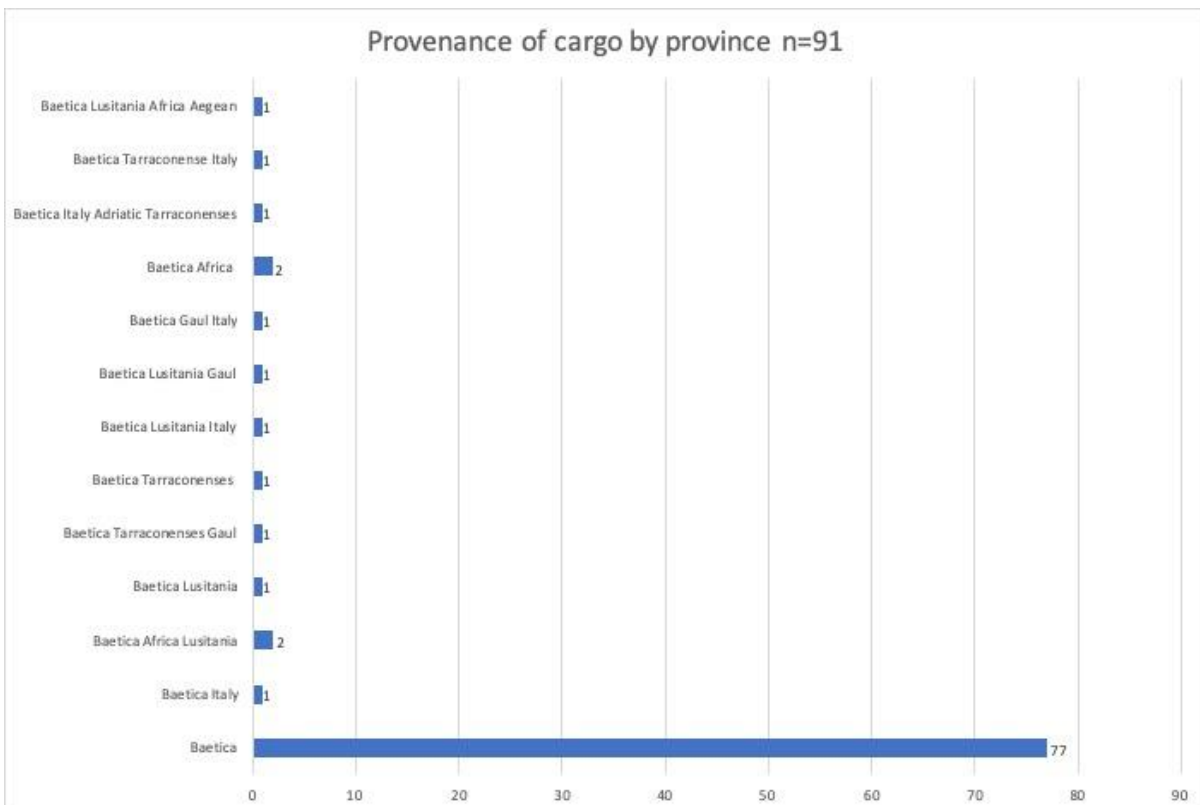


Figure 4: Province from which the cargo originated, n=91 (author: Stella Rendina).

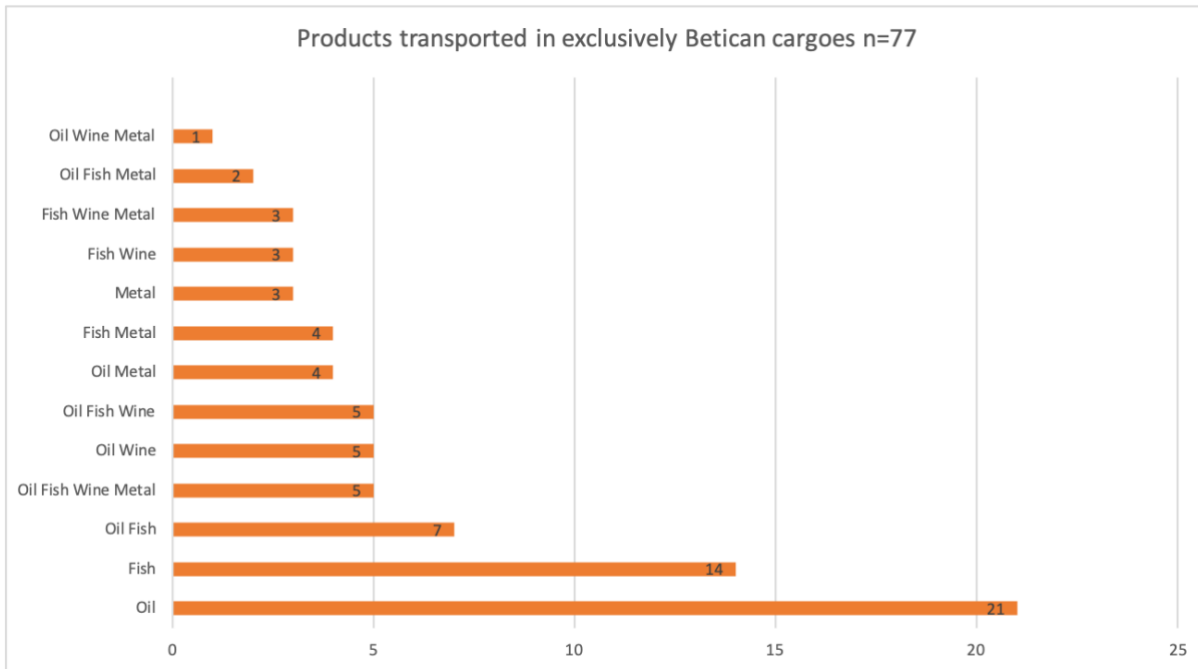


Figure 5: Combination of products transported in exclusively Baetican shipwrecks, n=77 (author: Stella Rendina).

Table 1: Shipwrecks with Baetican cargo found in the Western Mediterranean.

No.	Name	Date	Material	Country	Bibliography
1	Agde E	End 1 <sup>st</sup> century AD – Beginning 2 <sup>nd</sup> century AD	Dressel 20	France	Parker 1992, 12
2	Albufereta	AD 50 – 70	Dressel 20 Haltern 70 Copper ingots	Spain	de Juan Fuertes 2009; Carreras and Martin 2013
3	Ametlla del Mar A	AD 25 – 75	Dressel 12 Dressel 2-4?	Spain	Parker 1992, 36
4	Ametlla del Mar C	1 <sup>st</sup> – 3 <sup>rd</sup> century AD	Dressel 20	Spain	Parker 1992, 38
5	Ardenza	AD 25 – 75	Haltern 70 Beltran IIA Dressel 12 Dressel 7-11	Italy	Parker 1992, 51; Bargagliotti 2000

6	Arles IV	AD 25 – 40	Dressel 20 Dressel 7-11 Dressel 12 Dressel 28 Haltern 70 PE 25 Ceramics Copper ingots	France	Pomey <i>et al.</i> 1992; Carreras and Martin 2013
7	Baie de l'Amitié	AD 50 – 100	98 Lead ingots Dressel 20	France	Parker 1992, 80
8	Benicarlo	AD 50 – 100	1 Dressel 20 2 Dressel 2-4 Haltern 70	Spain	Parker 1992, 99
9	Bou Ferrer	AD 50 – 100	Dressel 7-11 Lead ingots	Spain	De Juan Fuertes 2009
10	Boulouris	Beginning 3 <sup>rd</sup> century AD	Dressel 20	France	Parker 1992, 110
11	Cabo de Gata	AD 70 – 100	Dressel 20	Spain	Liou 2000
12	Cabrera III	AD 257	Dressel 20 Dressel 23C Africana IIB and IIC Almagro 50 Almagro 51C Beltran IIB Beltran 72 Coins	Spain	Parker 1992, 125

13	Cabrera IV	1 <sup>st</sup> century AD	Dressel 7-11 Oberdan 80 Haltern 70 Dressel 2-4 Lead ingots Lead anchors	Spain	Parker 1992, 126
14	Cabrera V	End 1 <sup>st</sup> century AD – beginning 2 <sup>nd</sup> century AD	Dressel 7 Dressel 10 Dressel 12 Dressel 20 Arcaicas Haltern 70 Lead ingots	Spain	Parker 1992, 127 Colom Mendoza 2013
15	Cabrera VI	AD 40 – 70	Dressel 7-11 1 Dressel 8 1 Dressel 9 Copper ingots Tin round ingots	Spain	Colom Mendoza 2013
16	Cabrera VIII	End 1 <sup>st</sup> century BC – beginning 2 <sup>nd</sup> century AD	Haltern 70 Dressel 80 Copper ingots	Spain	Colom Mendoza 2013
17	Cala del Falco 1	AD 200 – 300	Dressel 20	Italy	Parker 1992
18	Cala piombo	c. AD 40	Dressel 20 Dressel 8	Italy	Liou 2000
19	Cala Rossano	AD 30 – 60	Dressel 8 Dressel 9 Dressel 7-11 Tin ingots	Italy	Parker 1992, 153; Beltrame 2002
20	Calanque Devenson 1	1 <sup>st</sup> century AD	Dressel 20	France	Strauss 2013

21	Cap Ognina	AD 215 – 230	Africana I Dressel 20 Almagro 50 Kapitän I and II coins	Italy	Étienne and Mayet 2002
22	Cap prim	1 <sup>st</sup> century AD (?)	Dressel 20 Copper ingots	Spain	De Juan Fuertes 2009
d 23	Capo Graziano C	Beginning 1 <sup>st</sup> century AD	Dressel 20 archaic Dressel 7 Haltren 70	Italy	Parker 1992, 235
24	Castillo	2 <sup>nd</sup> century AD	Beltrán IIB	Spain	Parker 1992, 279
25	Chiessi	AD 60 – 85	Beltran IIA Beltran IIB Haltern 70 Dressel 20 Ingots Terra sigillata	Italy	Parker 1992, 301
26	Chretienne B	AD 50 – 150	Beltrán IIB	France	Parker 1992, 303
27	Ciudadella	1 <sup>st</sup> century AD	Dressel 20	Spain	De Juan Fuertes 2009
28	Columbretes	25 BC – AD 75	Dressel 7-11	Spain	Parker 1992, 332
29	Cueva del Jarro B	End 1 <sup>st</sup> century AD	Dressel 20 Beltran IIB	Spain	Parker 1992 344
30	Culip 4	AD 70 – 80	Dressel 20 Ceramic from La Graufesenque Italian lamps	Spain	Nieto 1986; Parker 1992, 347
31	Culip 7	AD 70 – 80	Haltern 70 Dressel 20 Pascula 1	Spain	Carreras and Martin 2013



32	Denia	AD 150 – 225	Dressel 20	Spain	Parker 1992, 358
33	Dunas del Pinatar	AD 1 – 50	Dressel 20	Spain	Parker 1992, 380
34	El Toro	AD 25 – 40	Dressel 9 Dressel 7 Dressel 10 Dressel 8	Spain	Parker 1992, 1150
35	Elba	AD 25 – 75	Dressel 10 Haltern 70 Dressel 7-11 Pompeii VII	Italy	Carreras and Martin 2013
36	Escombrera 3	Beginning 1 <sup>st</sup> century AD	Haltern 70 Lomba do Canho 67 Pascual 1 Dressel 2-4 Tarraconensis Dressel 2-4 Campania Adriatic Dressel 6	Spain	Alonso and Pinedo 2004
37	Escombrera 4	AD 50 – 100	Haltern 70 Dressel 8 Dressel 9 Dressel 14 Beltran IIB Dressel 20	Spain	Alonso and Pinedo 2004
38	Esteu don Mieu 2	AD 69 – 96	Dressel 20 Beltran IIB (Fragments)	France	Liou 2000
39	Formigues	End 1 <sup>st</sup> century AD	Dressel 7-11	Spain	De Juan Fuertes <i>et al.</i> forthcoming

40	Gandolfo	AD 90 – 110	Dressel 14 Dressel 17 Beltran IIA	Spain	Parker 1992, 435
41	Garoupe C	AD 150 – 200	Dressel 20	France	Tchernia 1969; Parker 1992, 438
42	Gorgona	1 <sup>st</sup> century AD	Dressel 7-11 Beltran IIA	Italy	Parker 1992, 461
43	Grand Ribaud 2	Flavian (AD 69 – 96)	Dressel 20	France	Liou 2000
44	Guardias Viejas	End 1 <sup>st</sup> century AD	Dressel 7-11 Dressel 14 Dressel 20	Spain	Parker 1992, 488
45	Illa de l’Aire	Mid 1 <sup>st</sup> century AD	Dressel 20 Dressel 28 Dressel 7-11 Beltran IIB Haltern 40	Spain	Carreras and Martin 2013
46	Is Mortius	AD 33 – 55	Haltern 70 Dressel 1C Camulodunum 186 Dressel 7-11	Italy	Parker 1992, 602
47	Jarre	AD 10 – 50	Dressel 20	France	Parker 1992, 529
48	Las Negres	C. AD 50	Beltran IIB Dressel 20	Spain	Parker 1992, 731
49	Las Puntas	AD 90 – 140	Dressel 20	Spain	Parker 1992, 972
50	Lavezzi 1	AD 25 – 50	Dressel 28 Dressel 14 Dressel 38 Haltern 70	France	Liou 1990

			Dressel 20 Dressel 2-4 Tarraconensis Copper ingots Lead ingots		
51	Lavezzi 2	Mid 1 <sup>st</sup> century AD	Dressel 7-11 Dressel 20	France	Parker 1992, 585
52	Lavezzi 3	AD 70 – 100	Dressel 14 Dressel 17	France	Parker 1992, 586
53	Los Espins	25 BC – AD 50	Dressel 7-11	Spain	Parker 1992, 390
54	Los Percheles	1 <sup>st</sup> century AD	Dressel 7-11	Spain	Parker 1992, 800
55	Maguelone	1 <sup>st</sup> century BC – AD 96	Copper ingots Lead ingots	France	Rico <i>et al.</i> 2005
56	Maire B	Beginning 2 <sup>nd</sup> century AD	Dressel 20	France	Parker 1992, 632
57	Maratea B	1 <sup>st</sup> century AD – 3 <sup>rd</sup> century AD	Dressel 20	Italy	Parker 1992, 648
58	Oscellucia	AD 20 – 50	Dressel 20 archaic	Italy	Tchernia 1969; Parker 1992, 766
59	Piedra Negra	End 1 <sup>st</sup> century AD – beginning 2 <sup>nd</sup> AD	Dressel 20	Spain	Parker 1992, 814
60	Plainer 2	c. AD 150	Dressel 20 Copper ingots	France	Parker 1992, 825
61	Plainer 4	End 1 <sup>st</sup> century AD	Beltran IIA and B Dressel 20 Copper ingots	France	Carrasco and Melendez 2017
62	Planes d'Arles 4	AD 0 – 50	Dressel 20	France	Liou 2000

			Dressel 7, 8, 9, 12 Haltern 70 Dressel 28 Copper ingots		
63	Planes d'Arles 8	30 BC – AD 20	Dressel 9 Dressel 12 Iron ingots	France	Liou 2000
64	Ponte d'Oro	Mid 1 <sup>st</sup> century AD	Dressel 2-4 Haltern 70 Dressel 7-11 Dressel 8 Dressel 20	Italy	Parker 1992, 863
65	Portixol	Imperial	Dressel 20	Spain	De Juan Fuertes 2009
66	Porto Cristo B	1 <sup>st</sup> century AD	Dressel 20 Haltern 70	Spain	Parker 1992, 886
67	Port-Vendres 2	AD 42 – 50	Dressel 20 Haltern 70 Dressel 28 Dressel 7-11 Copper ingots Lead ingots Tin ingots	France	Parker 1992, 875
68	Pudrimel Norte	AD 50 – 150	Beltran IIB	Spain	Parker 1992, 909
69	Punta Ala A	c. AD 250	Dressel 20 Africana 2 B-D Dolia fragments Almagro 51 A-B Almagro 51 c Beltran 72	Italy	Parker 1992, 912

			Dressel 20 Dressel 23 ARS Flat bottomed container Coins		
70	Punta de la Mona	2 <sup>nd</sup> century AD	2 Dressel 20	Spain	Parker 920
71	Punta Nati	Imperial	60 round copper ingots	Spain	De Juan Fuertes 2009
72	Punta prima	End 1 <sup>st</sup> century AD	Dressel 10	Spain	Parker 1992, 956
73	Punta Sardinia A	End 1 <sup>st</sup> century AD – beginning 2 <sup>nd</sup> century AD	Dressel 14 Lusitania Dressel 7 -11 Dressel 20 Dressel 2-4 Italian	Italy	Parker 1992, 959; Bombico 2016
74	Riches Dunes/ Marseillan- Plage E	Mid 1 <sup>st</sup> century AD	lead ingots copper ingots Dressel 20	France	Parker 1992, 667
75	Roquetas del Mar	1 <sup>st</sup> – 2 <sup>nd</sup> century AD	1 Dressel 20 archaic 1 Dressel 8 1 Dressel 1 1 Dressel 14	Spain	Parker 1992, 370
76	Sa Costera	Imperial	Dressel 20 Dressel 12 Africana grande IIB Copper ingots circulars Tin ingots	Spain	Colom Mendoza 2013

77	Saintes-Maries-de-la-Mer 2	AD 1 – 25	Haltern 70 Dressel 2-4 Dressel 20 Dressel 2-4 de Tarraconensis Iron ingots from Galia	France	Liou 2000
78	Saint-Gervais 3	c. AD 150	Dressel 20 Beltran IIB Gauloise 4	France	Parker 1992, 1002
79	Saint-Honorat	AD 50 – 100	Dressel 20	France	Parker 1992, 1003
80	Salou	AD 50 – 200	Dressel 20	Spain	Parker 1992, 1018
81	San Nicola	Beginning 1 <sup>st</sup> century AD	Dressel 20 Dressel 28	Italy	Parker 1992, 1021
82	Sancti Petri	End 1 <sup>st</sup> century AD	Copper and lead ingots	Spain	Parker 1992, 1027
83	Ses Salines/ Santi Jordi	AD 70 – 80	Dressel 20 Dressel 7-11 Beltran IIB Lead ingots	Spain	Parker 1992, 1017; Mendoza 2013
84	Skerki Bank	Mid 1 <sup>st</sup> century AD	Dressel 7-11 Dressel 2-4 Tarraconensis and Italian	Italy	Étienne y Mayet 2002
85	Sud-Lavezzi B (2)	AD 22 – 25	Dressel 28 Dressel 20 Haltern 70 Copper ingots Lead ingots	France	Liou and Domergue 1990; Parker 1992, 1118
86	Sud-Perduto A	25 BC – AD 25	Dressel 12	France	Parker 1992, 1120

87	Sud-Perduto B	AD 1 – 5	Dressel 7, 9, 10, 12 Dressel 20 archaic Lead ingots	France	Parker 1992, 1121
88	Terrasini A	AD 25 – 50	Dressel 8 Dressel 9	Italy	Parker 1992, 1141
89	Tiboulen de Maire 1	AD 130 – 150	Dressel 28 Gauloise 4 Dressel 2-4 Dressel 14 Dressel 20 Dressel 7-11 Beltran IIA and IIB Forlimpopoli Africana	France	Parker 1992, 1148
90	Tour Saint-Marie	AD 30 – 50	Dressel 7-11 Dressel 12 Beltran IIA Haltern 70	France	Tchernia 1969; Parker 1992, 1171
91	Villepey	AD 110 – 160	Dressel 20 Gauloise 4	France	Parker 1992, 1219