

Before the Dressel 20: pottery workshops and olive oil amphorae of the Guadalquivir valley between the Late Republic and Augustan-Tiberian times

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Abstract: The Baetican Dressel 20 is probably the most widely diffused amphora of the Roman period, found in large quantities throughout all the Roman and nearby territories. It is the most powerful evidence of the importance of the olive oil trade for Roman society and of olive oil's extraordinary production in the Baetican countryside. This wide diffusion of the amphora and, in some ways, its ubiquity at many archaeological sites, have hindered the study of the early stages of Baetican olive oil production and diffusion. The protagonists were not these spherical containers, commonly stamped up until the late 3rd c. CE, but previous models that evolved rapidly after their origins in Late Republican times. In this paper, we aim to analyze not only the formal characteristics and evolution of these peculiar and still unstandardized containers, but also other aspects linked to their production, as well as the scope of their diffusion.

Keywords: Baetican olive oil, regional economic interaction, Roman amphorae, kiln sites, Late Republican and Early Imperial economy

One of the lesser-known phases in the long story of Baetican olive oil exports in Roman times is that of its initial moments and especially the relatively short process, occurring within just a century from mid-1st BCE to mid-1st c. CE, through which this product became a commodity exported in massive quantities to the central European and Mediterranean markets. This was a moment of enormous importance in the entrance of the provinces (especially the western ones) into the commercial panorama of the Empire and is of significance in understanding the economic articulation of its *pars Occidentalis*.¹

The newly created *Hispania Ulterior Baetica* (ca. 27 BCE) was one of the provinces that played a leading role in this “new imperial economic order,”² particularly the territories around the course of the *flumen Baetis* (the present-day Guadalquivir) and its tributary the *Singilis* (the present-day Genil) (Fig. 1). It is no coincidence that the newly created *conventus iuridici* of *Hispalis/Seville*, *Corduba/Córdoba*, and *Astigi/Écija* grew up around these important waterways.³

¹ Chic García 1983.

² Chic García 1997.

³ Dopico Caínzos 1986.

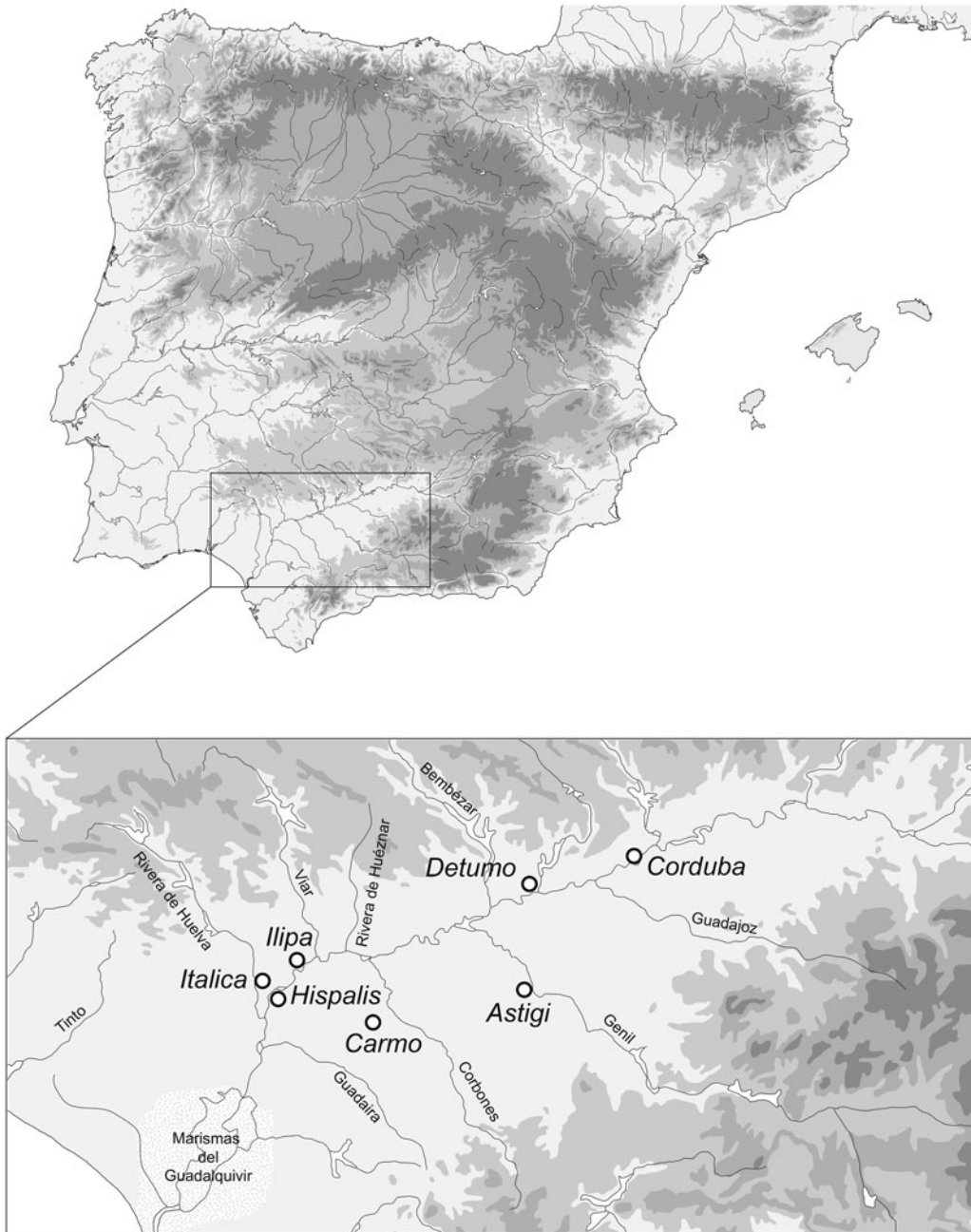


Fig. 1. Map of the Iberian Peninsula, and detail of the Guadalquivir valley and its main urban centres in the 1st c. BCE. (© García Vargas et al. 2019, fig. 1.)

The agricultural development of this region in the early Imperial period was focused on the olive tree.⁴ Based on a long agricultural tradition going back to pre-Roman times,⁵ and

⁴ García Vargas forthcoming.

⁵ Carretero Poblete 2007; with regard to amphorae, among others: García Fernández et al. 2016.

profiting from the fertility of the sedimentary soils and a complex system of fluvial-terrestrial communications, the system was later improved by the Roman administration under Augustus, who afforded a special role to navigable rivers.⁶ The facilities created to provide fast and cheap transport, as well as the availability of clay and water, had a major influence on the rapid increase of oil production and related industries once a significant and continuous demand had developed. The production of ceramic containers was one of the most important accompanying developments. The Roman administration found a particularly suitable opportunity to fulfil its internal needs through the large quantities of oil (required for a wide range of uses) produced in a region where both oil production and a ceramic industry had already existed in pre-Roman times.

The earliest production of olive oil containers in southern Spain and the major question about their workshops: new data from the Guadalquivir valley

From the middle third of the 1st c. BCE onwards, an important shift in local amphora production is documented in the Guadalquivir valley, reflected in the formation of new types that clearly broke with pre-Roman tradition and now followed mainly Italian patterns. This was accompanied by a notable increase in the scale of production.⁷

Some scholars have recently highlighted the importance of regional amphora manufacture from at least the 5th c. BCE: a repertoire of shapes undergoing a progressive homogenization around the type known as Pellicer D has been recognized.⁸ These containers derived ultimately from Phoenician prototypes. They were also still influenced by the contemporary Punic range of amphorae,⁹ alongside which they are documented in places of consumption in the environs of the Straits of Gibraltar.

From the late 2nd or – more likely – from the early moments of the 1st c. BCE, the Pellicer D and some other amphorae of the Phoenician and Punic tradition coexisted with the first imitations of the contemporary Italic amphora repertoire,¹⁰ mainly the Dressel 1. The imitation of non-Punic amphora forms is attested in the territory that became *Hispania Ulterior Baetica* at least from the 6th–5th c. BCE, but only in the Bay of Cadiz.¹¹ In the Guadalquivir valley, a region connected with the coast but with a different economic dynamic, the first imitations of non-Semitic types took place after the Roman conquest (as reflected by the above-mentioned Dressel 1). This is a similar process to that seen in other Spanish regions, mainly the northeastern coastal area of *Hispania Citerior*, where the establishment of an intensive agricultural system employing Roman methods was started at the very end of the 2nd c. BCE.¹²

⁶ Abad Casal 1975; Sáez Fernández 1987; Chic García 1990.

⁷ Almeida 2008; García Vargas et al. 2011; García Vargas, González Cesteros et al. 2019.

⁸ Niveau de Villedary and Mariñas 2002; Ferrer Albelda and García Fernández 2008; García Fernández and Ferrer Albelda 2011; García Vargas et al. 2011; García Fernández et al. 2016; García Fernández and Sáez Romero 2021.

⁹ For the Punic amphora types produced in southern Spain, see: Sáez Romero 2008.

¹⁰ For instance, some forms of the T.7.4 group; García Vargas et al. 2011, 198–200.

¹¹ Ramón et al. 2007; Sáez Romero et al. 2023

¹² González Cesteros et al. 2023.

Pellicer D amphorae produced along the Guadalquivir during the 2nd and early 1st c. BCE were largely, though not exclusively, used for olive oil.¹³ But it is with the emergence of a new “family” of containers from the second quarter of the 1st c. BCE, the so-called Ovoid types,¹⁴ that the first amphorae clearly conceived as containers for olive oil can be documented. This new group of regional amphorae took as their models examples from abroad, mainly south Italian amphorae. They cannot be considered mere imitations, but were rather an autonomous production, based on an interpretation of already well-known Mediterranean forms. Together with the Ovoid amphorae produced in the Bay of Cadiz,¹⁵ the Guadalquivir Ovoid amphorae can be considered the first Roman morphological repertoire of the province of *Hispania Ulterior/Baetica*. Further, some of the most widely diffused Ovoid types can be regarded as the starting point for the most important olive oil amphora of the Imperial period: the Dressel 20, developed in the late Tiberian period.¹⁶

The oil amphorae of the Guadalquivir prior to the Dressel 20

As already mentioned, during the last decade, some scholars, including the present authors, have tried to shed light on the still obscure production centers of the first Roman provincial amphorae in southern Spain, characterized as the Dressel 1 and the Pellicer D by fabrics similar to the later sandy detrital fabrics of the Imperial-era Dressel 20 and Haltern 70.¹⁷ Although this work has been generally well received, some points remain controversial. An important question, mainly concerning the forerunners of the Imperial-era Dressel 20, is how independent they were as types and, thus, if they deserve different denominations.

The identification and formal definition of some Ovoid types (Ovoid 1 to 3 and 8 to 10) seem readily understood. The label “Guadalquivir Ovoid amphorae” is generally accepted,¹⁸ especially for those examples that are better known to the scholarly community, and particularly those that achieved a larger geographical distribution (Ovoid 1 = Lomba do Canho 67, and Ovoid 5). Unfortunately, this has not proved to be the case for the Ovoid 4 and even less so for those forms closely related to olive oil transport: Ovoid 6, Ovoid 7 (Oberaden 83), and Haltern 71. This last type is considered by some scholars to be an initial phase of the Dressel 20 and has been named Dressel 19 or Dressel 20A, effectively linking it more closely to the Dressel 20, so it might just as well be considered “early” Dressel 20.

Some authors have argued for the use of simpler labelling, desirous of amalgamating as much as possible containers with much the same shape (Dressel 20A). In this, they seem to argue for the development of what Paul Reynolds called “lineal typologies.”¹⁹ This is a

¹³ García Fernández et al. 2016.

¹⁴ Almeida 2008.

¹⁵ García Vargas and Sáez Romero 2019.

¹⁶ Berni Millet 2008; García Vargas et al. 2011; García Vargas, González Cesteros et al. 2019; Berni Millet and García Vargas 2016.

¹⁷ This is an aspect that still needs further analysis, specifically concerning the productions of the workshops near the main ancient Turdetanian settlements (see the section about the workshops in this article, and García Vargas, González Cesteros et al. 2019, 95–99).

¹⁸ Almeida 2008; García Vargas 2010; García Vargas et al. 2011; García Vargas, González Cesteros et al. 2019.

¹⁹ Reynolds 2008.

controversial notion, which does not always take account of some of the most important social and economic aspects of amphora production and use. These scholars base their arguments on the difficulties of distinguishing containers by shape at times of transition from one type to another, and especially so if only very fragmentary specimens are available. But we would argue they also seem not to sufficiently allow for the clear differences that do exist in complete or almost complete exemplars. Nor does the methodology deal with variables introduced by, for instance, different places of production, different epigraphic systems, and different distribution markets.

We would argue that it is desirable, especially in times of rapid changes in productive and economic models, to establish a finer matrix of details of shape that makes it possible to separate initial or “experimental” forms from those of later phases, after greater diffusion and increased production have caused longer-lasting forms to become technically standardized.²⁰

We calculate, moreover, that the most significant morphological characteristic of the Dressel 20 – the globular belly – only occurred from the moment when spherical shapes began to be produced. This did not happen until the middle decades of the 1st c. CE.²¹ This important formal feature is derived from the amphora’s function as a vessel for transporting olive oil in massive quantities: it was the outcome of practical experimentation aimed at finding the vessel form with the most effective weight-volume ratio and therefore the fewest breakages during transportation processes. In our opinion, the latter characteristic was an important factor in the extraordinary diffusion of the southern Spanish olive oil containers into the European inland territories along the most important river routes, including being trans-shipped from seagoing merchant ships to river vessels.²² All the previous morphologies, individually discrete, are thus linked in a unique chain of events that culminated rather speedily, albeit with much trial and error, in a “perfected” product: the classic Dressel 20.

Our decision to keep the Ovoid 6, Oberaden 83 (Ovoid 7), and Haltern 71 (Fig. 2) forms separate from the Dressel 20 is also related to the need to create fine-tuned chronologies from diagnostic fragments and complete forms that, certain doubts aside, have a stratigraphical sequence attached to them of value for comparing diachronic or synchronic contexts, and chronologies relevant to places both of production and of consumption.

THE OVOID 6 – This amphora type can be considered the first container of a Roman form produced in *Hispania Ulterior* and clearly linked with olive oil production. It is a type with a marked lack of standardization in shape and volume, especially in its earliest stages. Its range of shapes is evident in the more or less ovoid form of the body, in the necks, and in the profiles of handles and bases (Fig. 3).²³

The Ovoid 6 is in principle an early type, produced in pre-Augustan and very early Augustan times. The ovoid bodies tend to reach their maximum diameter in the upper part of the belly, below which they terminate in truncated cone-shaped bases. The rims,

²⁰ Bernal-Casasola et al. 2023.

²¹ Berni Millet 2008, 59; Berni Millet 2021, 22; Berni Millet and García Vargas 2016.

²² This could also explain why the largest number of Dressel 20 are found at Rome, having reached there via the Tiber.

²³ García Vargas et al. 2011, 230.

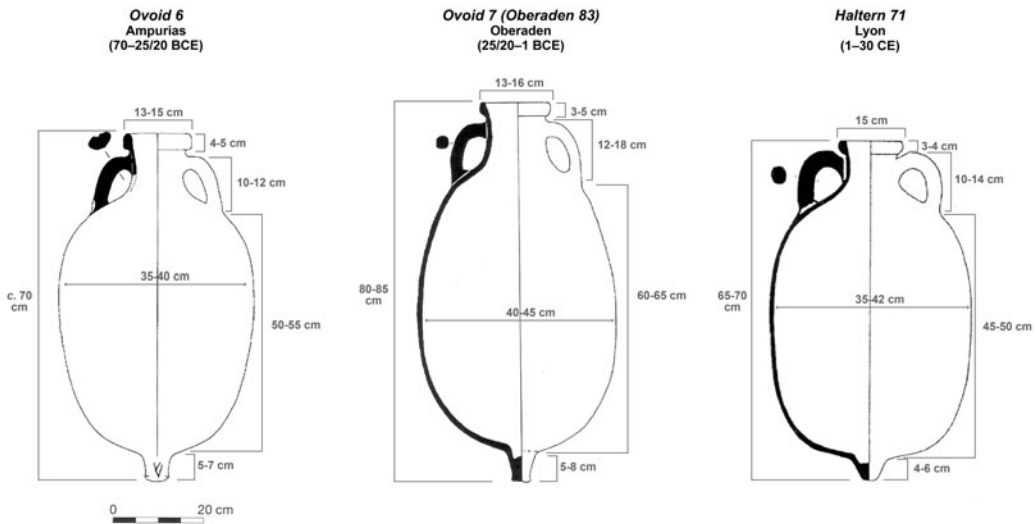


Fig. 2. Morphological and morphometric differences between the Ovoid oil types earlier than the Dressel 10. (© García Vargas et al. 2019, fig. 15.)

however, show a certain homogeneity, with profiles that are usually straight on the inside and rounded or thickened on the outside, with a well-marked edge at the separation point with the neck. The handles are a key element for the identification of this type. In all known specimens, they are oval in section and, most importantly, have a dorsal groove commonly ending in a deep finger-impression at the attachment/insertion point on the shoulder. This characteristic groove on the handle of the Ovoid 6, common to other Ovoid types and to the later Haltern 70, is no longer present in later olive oil amphora forms such as the Oberaden 83 and Haltern 71. This specific feature is proof that these are a different type within the Ovoid amphora group, even if on the same evolutionary line as the Oberaden 83 and Haltern 71.

A complete specimen from Cádiz, produced in the Bay of Cádiz area, has a profile closely linked with the Brindisian olive oil types, especially type III of Apani,²⁴ but has already acquired the dorsal groove in the handles. This specimen, together with the large numbers of other complete or almost complete Ovoid 6 found in different places, demonstrates the close morphological ties between these two products, thus underlining the influence of the Brindisian vessels on the early formation of Roman amphorae in the southern Iberian Peninsula.

Some years ago, one of us proposed the existence of two modules for the Ovoid 6,²⁵ something that undoubtedly would have meant the practice of a more exact standardization of production methods and a higher rate of diffusion abroad. However, the supposedly smaller vessel, represented by just one specimen from *Emporion/Ampurias*, is in fact an Ovoid 4. This situation perfectly illustrates the typological identification problems encountered when dealing with features of shape that are common to different types

²⁴ Fig. 3 bottom right (Plaza de San Antonio). García Vargas et al. 2011, 234.

²⁵ Berni Millet 2008, fig. 28.

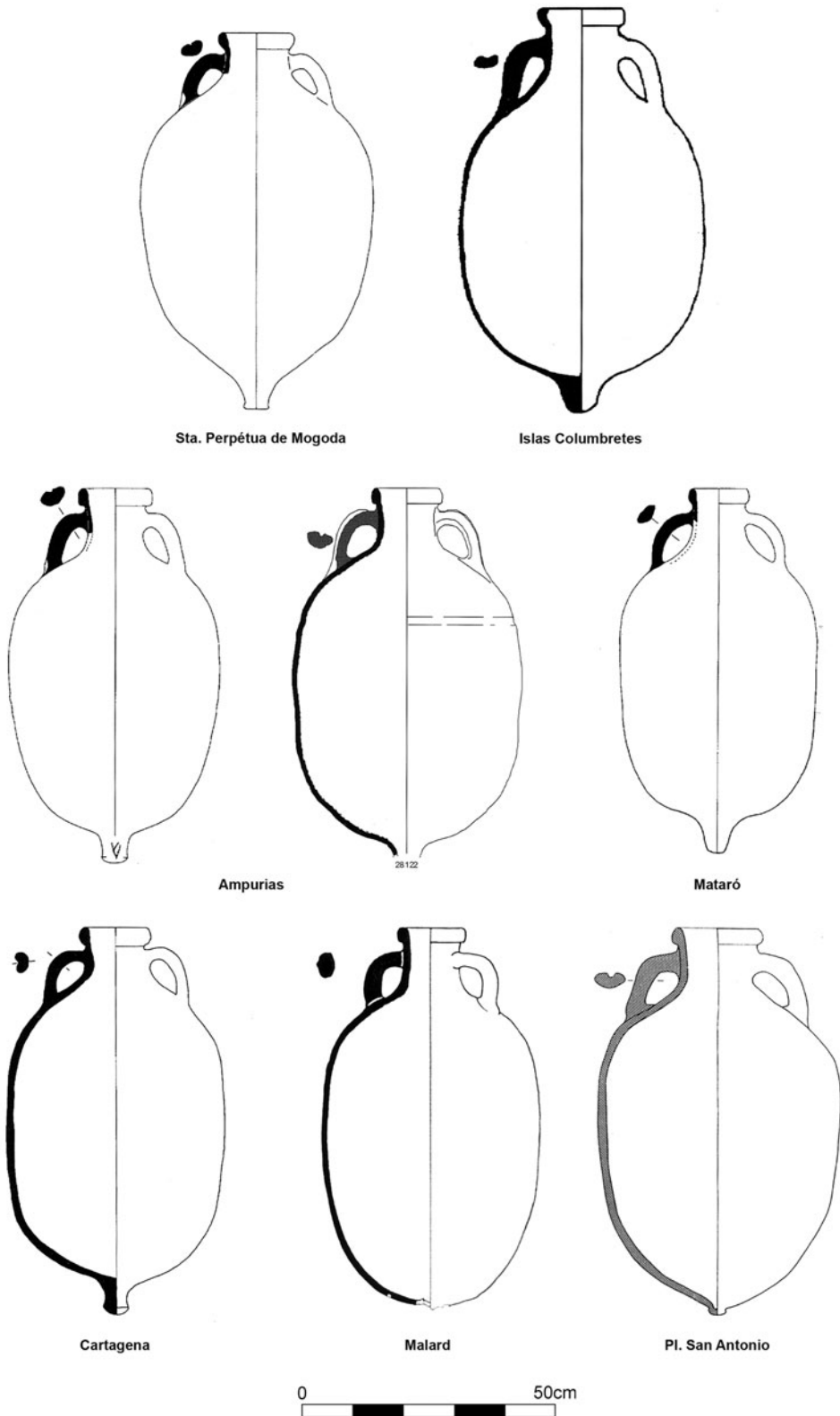


Fig. 3. Ovoid 6, complete amphorae. (© García Vargas et al. 2019, fig. 13.)

within the larger group of the Ovoid amphorae; this occurs mainly among amphorae produced in the Guadalquivir valley, but also with the Ovoid productions of other regions.

THE OBERADEN 83 (OVOID 7) – The initial phase represented by the Ovoid 6 soon gave way to a slightly more standardized type, produced during the last 20 years of the 1st c. BCE and, thus, in the new Augustan province of *Baetica*. This type was singled out by S. Loeschcke in his study of the pottery from the early Augustan military camp of Oberaden²⁶ and was assigned to the Dressel 20, as its type A, by one of the present authors (Fig. 4).²⁷

Close in shape to the Ovoid 6, it presents, in spite of still marked heterogeneity, a series of morphological characteristics that, in our opinion, make it an independent amphora type within the long series of Ovoid amphorae prior to the emergence of the Dressel 20. The main point of differentiation from the Ovoid 6 is the handle section, which has already lost the dorsal groove, as well as the new bases, which are smaller relative to the rest of the amphora and more standardized. A tendency towards a more cylindrical body is noticeable, even if there are still exemplars with quite ovoid and piriform profiles.²⁸

The Oberaden 83 achieved a much broader diffusion than its forerunner the Ovoid 6 and arrived in large numbers into the military markets on the Rhine frontier, where it is the most important amphora type documented in early Augustan layers.²⁹ This increase in production was reflected in greater shape and volumetric standardization, something probably required by the Roman administration in supplying its army.

THE HALTERN 71 – From the early moments of the 1st c. CE onwards, a new amphora type was developed from the Oberaden 83, in a rapid process probably triggered by increased demand related to the supply of state and civil markets. This type was classified as type B by Berni Millet,³⁰ but, once again, it was first classified by S. Loeschcke, in this case among the pottery of the legionary camp of Haltern (occupied from around 9 BCE to 9 CE), which he studied.³¹ Later research carried out by one of us in Haltern and at different military settlements in the Lower Rhine region determined that this form seems to be present only in the latest occupation phase of Haltern.³² On the other hand, the Haltern 71 is the only Baetican olive oil amphora documented in Anreppen,³³ a military camp with a brief occupation dated between 4/5 and 7 CE.

The shape characteristics of the Haltern 71 evolved from the preceding Oberaden 83. It had already assumed some of the features of the early Dressel 20, but it did not achieve the

²⁶ Loeschcke 1942.

²⁷ Berni Millet 1998, 26–28.

²⁸ For the shape characteristics of the Oberaden 83: García Vargas et al. 2011, 237–38; García Vargas, González Cesteros et al. 2019, 88–91.

²⁹ González Cesteros and Tremmel 2011–12; González Cesteros 2014, 368–72; González Cesteros 2018; González Cesteros 2019; González Cesteros and Almeida 2017.

³⁰ Berni Millet 1998, 30.

³¹ Loeschcke 1909.

³² The latest phase of Haltern seems to be linked with most of the construction work documented inside the military camp that has provided the majority of archaeological material. However, within the material from Haltern, some Oberaden 83 also look to have been found. See González Cesteros 2014.

³³ González Cesteros and Tremmel 2015.

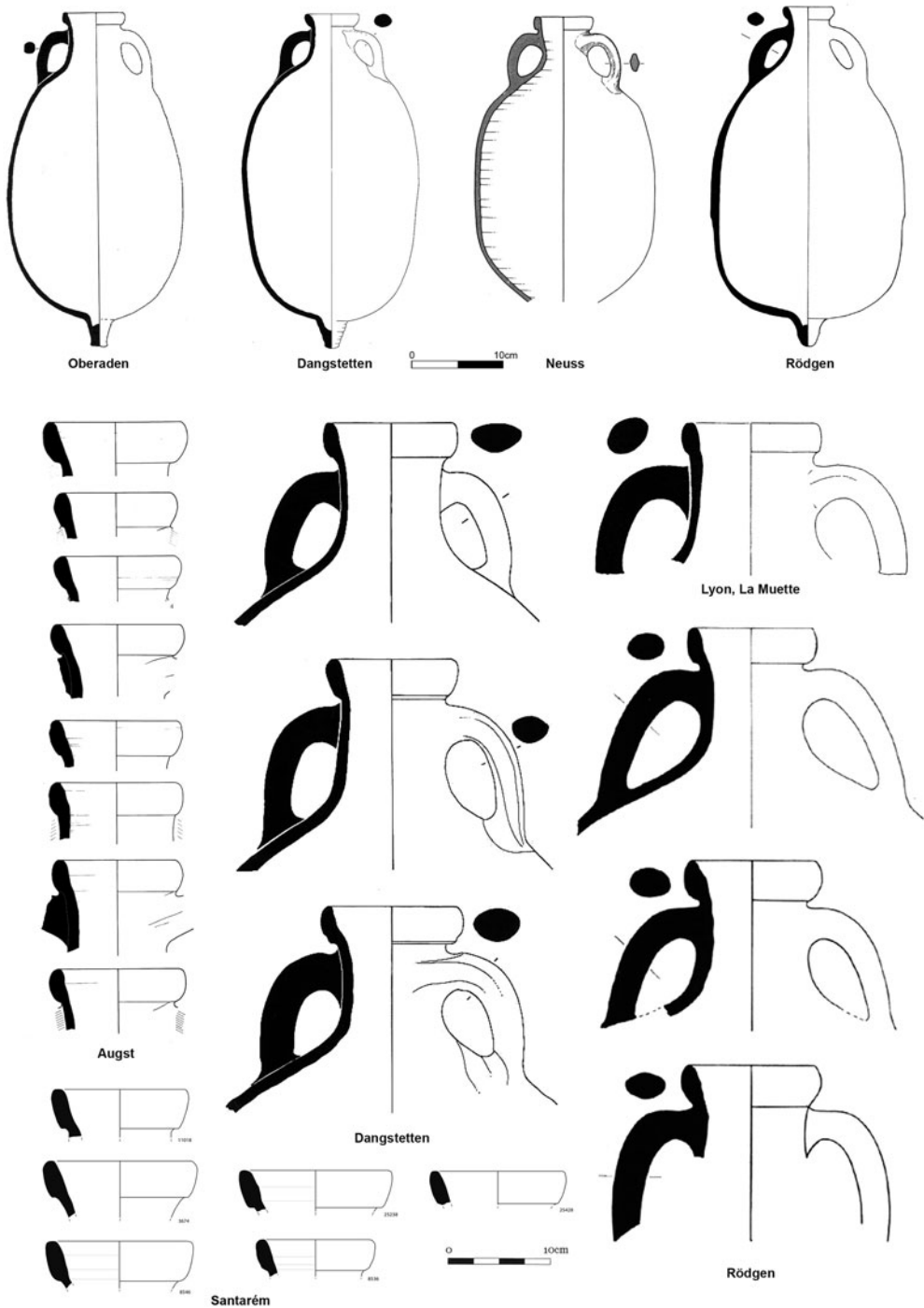


Fig. 4. Ovoid 7/Oberaden 83, complete amphorae and detailed rims and handles. (© García Vargas et al. 2019, fig. 16.)

main physical criterion of the Dressel 20, being still far removed from a semi-spherical shape (Fig. 5). The Haltern 71 can be divided into two different forms, related to two different production periods. The first one, “A,” was produced during the late Augustan

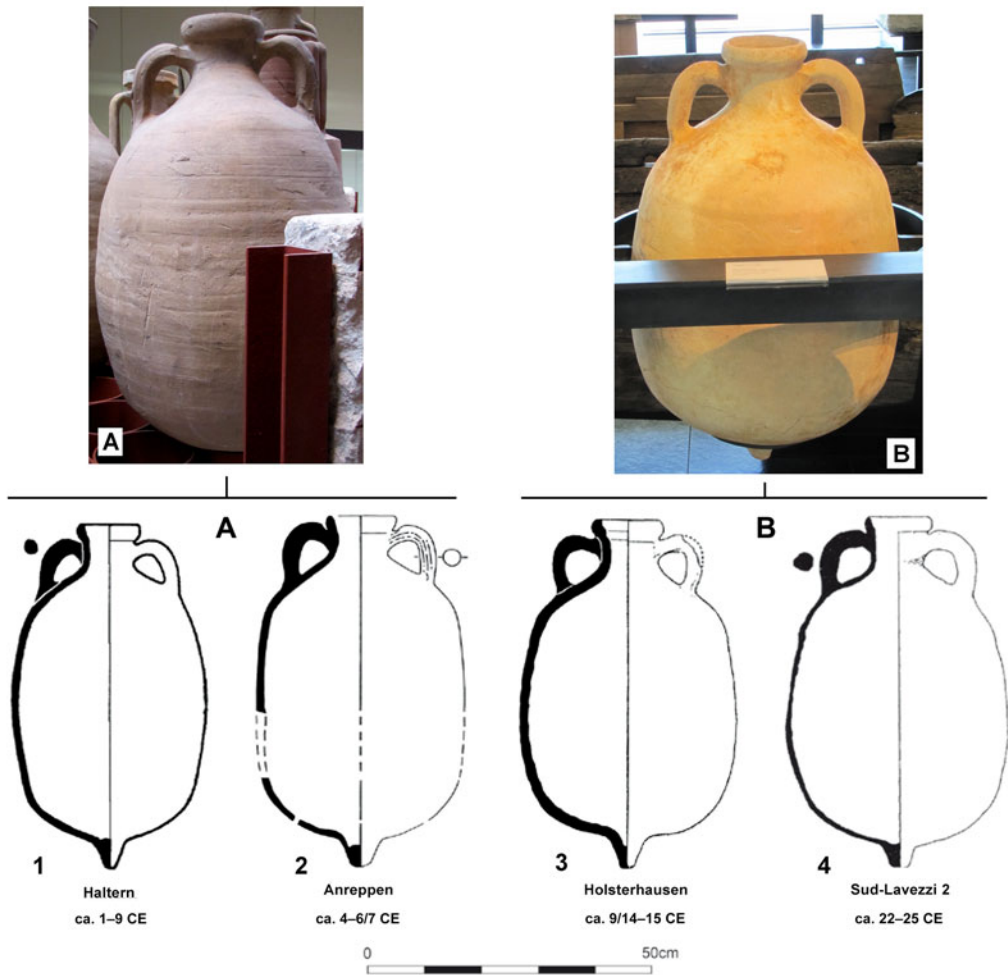


Fig. 5. Haltern 71 with subdivision. (© The authors.)

years: it retained an ovoid body, with round-sectioned handles. Even if these handles tend to be thicker than those of the Oberaden 83, they are still thinner than in the later Haltern 71 version “B” and in the earliest Dressel 20. Normally they form a level plane at the upper junction with the amphora neck. The Haltern 71 “A” has a small rim, normally with an inner step. This version appears at military sites on the Rhine such as Haltern and Anreppen.³⁴ By comparison, the Haltern 71 “B” shares more features with the Dressel 20, including a cylindrical body that tends to the globular, and thicker rims and handles; in the absence of complete pieces, this type can be difficult to distinguish from the earliest Dressel 20.

Concerning the diffusion of the Haltern 71, which is known at present at many military and civilian sites along the northern European frontier and on the main route to the military sites on the Rhine,³⁵ the main difference from its forerunners is the greater number found

³⁴ González Cesteros 2014; González Cesteros and Tremmel 2015.

³⁵ González Cesteros 2014; González Cesteros 2018; González Cesteros and Tremmel 2015; González Cesteros and Almeida 2017.

in the city of Rome (see *infra*). This seems to mark the starting point of a more regular Baetican olive oil supply to the Imperial capital, which is especially noticeable in the case of the “B” variant. This hypothesis is apparently supported by the fact that the Haltern 71 is the first southern Spanish olive oil amphora attested as the main cargo in shipwrecks along the routes to both the Rhône delta and central Italy.³⁶ It also seems to have been imitated on the southern Mediterranean coast of *Citerior Tarraconensis*, specifically in the workshop of Oliva near *Dianium*/Denia, where it goes by the typological name of Oliva 3.³⁷ This case underlines the fact that Baetica, even if it was the most important and biggest producer of olive oil, was not the only Hispanic region producing large quantities of this product. In this sense, the near absence of Haltern 71 in the Lusitanian area, where it is insignificant compared with its forerunners Oberaden 83 and especially Ovoid 6, suggests an increase in local production during the Augustan period. Even if it did not achieve the quantities required for extra-provincial export, the central and southern Lusitanian olive oil production should have been enough to supply most internal demand.³⁸

From the 30s CE, the pottery workshops in the Guadalquivir valley started to produce a highly standardized form of rounded amphora, the Dressel 20 (Fig. 6). This action is closely linked to a new production system and a new organization of olive oil production and exportation in *Baetica*, one based on a massive demand that went beyond the markets under state control in the western territories of the Roman Empire.

The first attempt to create a rounded-belly vessel seems to have started during the late Augustan or early Tiberian principate, but it was not an easy task, and it took more than a decade to finally achieve a truly spherically shaped form. This form can be seen in the amphorae of the Port-Vendres 2 shipwreck dated ca. 41–42 CE, but it is not completely clear if it had been achieved in the amphorae of the Castro Praetorio context, dated some years prior. In Castro Praetorio, H. Dressel described these vessels as “anfore di forma quasi sferoidale.”³⁹ By this wording, he gives the idea that most of the vessels studied by him were not completely globular like the typical Dressel 20 of later times. Some of these “quasi sferoidale” amphorae can now be seen in the exhibition in Trajan’s Market in Rome.

Searching for workshops: the production places of the Ovoid amphorae in the Guadalquivir valley

As mentioned above, over the last decade, great progress has been made in research relating to Ovoid amphorae, especially in establishing their most important typological features and their development/conversion into some of the most widespread Baetican containers of the Principate (Haltern 70, Dressel 20, and Dressel 7–11 in the coastal Baetican

³⁶ They have been found in the Sud-Lavezzi 2 wreck (ca. 22–25 CE), which sank in the Strait of Bonifacio: Liou and Domergue 1990.

³⁷ Gisbert Santonja 1988; Gisbert Santonja 1999. The presence of a complete amphora belonging to this form among those from Castro Praetorio and now visible in the Mercati Traiani makes us think that it is quite possible that the formal characteristics of the Haltern 71 lasted longer in this region than in the *Baetica*, where they had already evolved into the Dressel 20 by the time the above context is dated. One of us presented this first impression in 2015, during a conference held at the Casa de Velázquez in Madrid: Berni Millet forthcoming.

³⁸ For this topic, see among others: Fabião 1993–94; Peña 2010, 180–84. For some examples of local production in Lusitania: Rodríguez Martín 2012–13; Teichner 2012–13.

³⁹ Dressel 1879, 143.

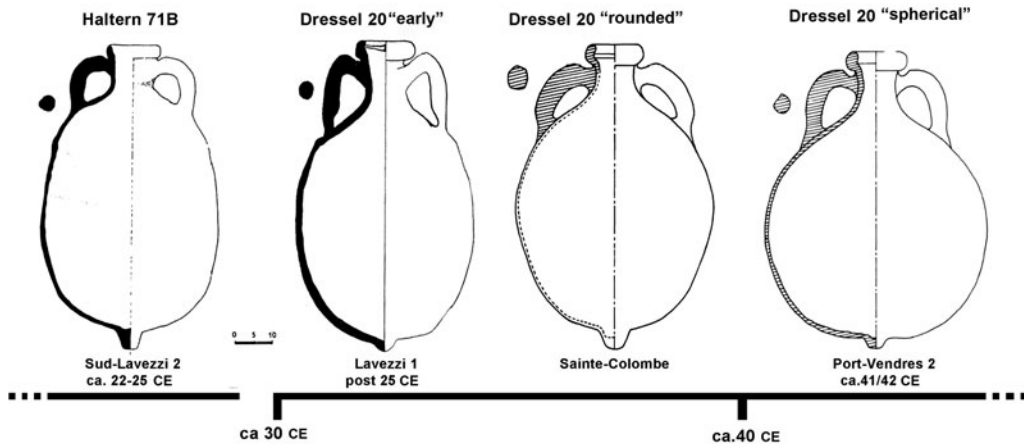


Fig. 6. Evolution proposed from the last stages of Haltern 71 to the earliest Dressel 20. (© The authors.)

territory), as well as in the identification of their consumer markets.⁴⁰ One important gap in scholarship concerning these types, however, involves the workshops where they were produced. In one of our first articles, we drew attention to the lack of evidence on the provenance of their manufacture,⁴¹ while in 2019, we focused on the development of new research that has led to the identification of some production places in both urban areas (peri-urban workshops) and the countryside (Fig. 7).

In the case of the urban settlements, they offer an important illustration of the progressive adoption of Roman production patterns by a pottery industry still not operating on a massive scale and concentrated around the most important settlements of the Turdetanian/pre-Roman period. Sites such as *Ilipa Magna*/Alcalá del Río and especially *Carmona*/Carmona are indicative of these peri-urban workshops, in between the local tradition and the new Roman production.⁴² In Carmona, the production of amphorae of the Ovoid 6 type, with the characteristic local fabric, has been recorded in the suburban context of the present-day Doctor Fleming Street number 25, dating from the second half of the 1st c. BCE,⁴³ although very few examples have yet been found.

In recent years, the countryside too has yielded up fragments of amphorae belonging to the oldest Ovoid series⁴⁴ and pointing to a possible initial production in rural workshops, some of them in the same areas as important early Imperial workshops, such as Huertas del Río or La Catria.⁴⁵ Here, an essential step forward has occurred thanks to surveys carried out by one of the present authors, within the OLEASTRO program, in the fluvial area of the *conventus Corduensis*. Some important new workshops have been detected, including in an Augustan-Tiberian phase, on the banks of the Guadalquivir. These places (Cortijo

⁴⁰ For all these topics, see García Vargas, Almeida et al. 2019.

⁴¹ García Vargas et al. 2011.

⁴² García Vargas, González Cesteros et al. 2019, 95–99.

⁴³ García Vargas 2010; García Vargas, González Cesteros et al. 2019, 96–97.

⁴⁴ Ovoids 1 and 5: see González Tobar and Berni Millet 2018; García Vargas, González Cesteros et al. 2019, 95–99.

⁴⁵ García Vargas, González Cesteros et al. 2019, 98.

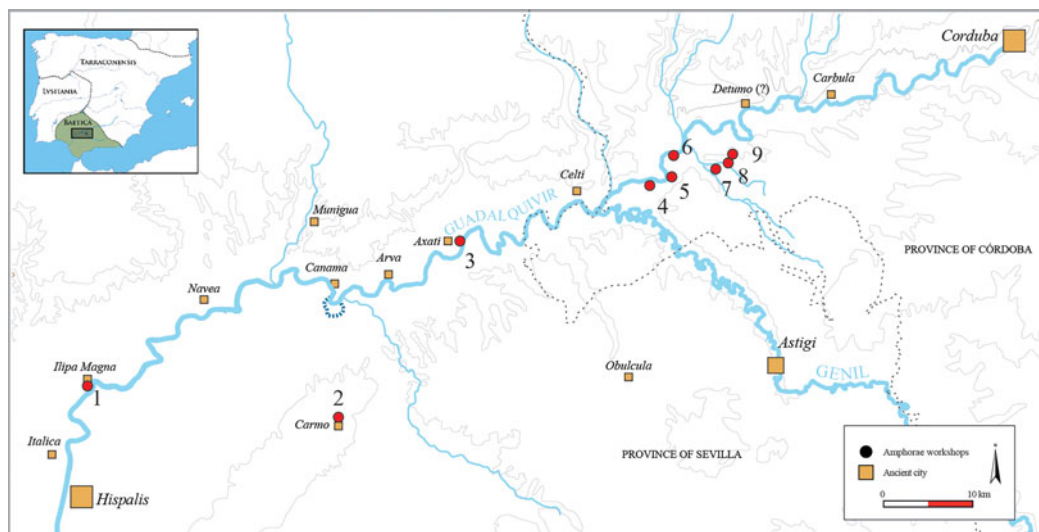


Fig. 7. Map of the Guadalquivir valley with the up-to-date record of places of production located for pre-Dressel 20 olive oil amphorae (1. Mesones Street; 2. Dr. Fleming and C/Montánchez Street; 3. Huertas del Río; 4. Cortijo de Romero; 5. El Mohíno; 6. Cerro de los Pesebres; 7. Los Carneriles 1; 8. Fuente de Los Peces; 9. El Bombo). (© The authors. Map from OLEASTRO program, LabEx Archimède.)

de Romero, Cerro de Los Pesebres, and El Mohíno) would later play an important role in the Julio-Claudian period. The surveys have also highlighted the existence of a group of potteries in the environs of a non-navigable tributary of the Guadalquivir, the Tamujar. In this area, the discovery of the pottery workshop of Fuente de Los Peces and two other potential workshops, El Bombo⁴⁶ and Los Carneriles 1,⁴⁷ stands out for two reasons: first, they are not on the banks of the Guadalquivir but inland and in the countryside, following the stream of the Tamujar; secondly, they cannot be associated with any urban settlement, since not a single city has been recognized in the area surrounding the workshops.

Going deeper into the Oberaden 83–Haltern 71 transition: the evidence from the workshop of Fuente de los Peces

The Fuente de los Peces workshop produced olive oil containers that can be classified within the last two phases of development prior to the emergence of the spherical Dressel 20,⁴⁸ namely the Oberaden 83 and Haltern 71 types. The first study of the products of Fuente de los Peces was based only on rim fragments collected during survey, but it was nevertheless possible to recognize five series of amphorae, designated A to E, that seem to correspond to a chronological development of the vessels (Fig. 8). The first group (A) includes the oldest forms (Oberaden 83), the second (B) was probably a transitional form, while the rest (C to E) had morphological features of the Haltern 71. The importance of this workshop is also linked to the discovery of two stamp series: MR and TAM. To this day, these are the only stamps known for Haltern 71. Recently, it has been suggested that

⁴⁶ González Tobar and Berni Millet 2018.

⁴⁷ González Tobar 2023.

⁴⁸ González Tobar and Mauné 2018.

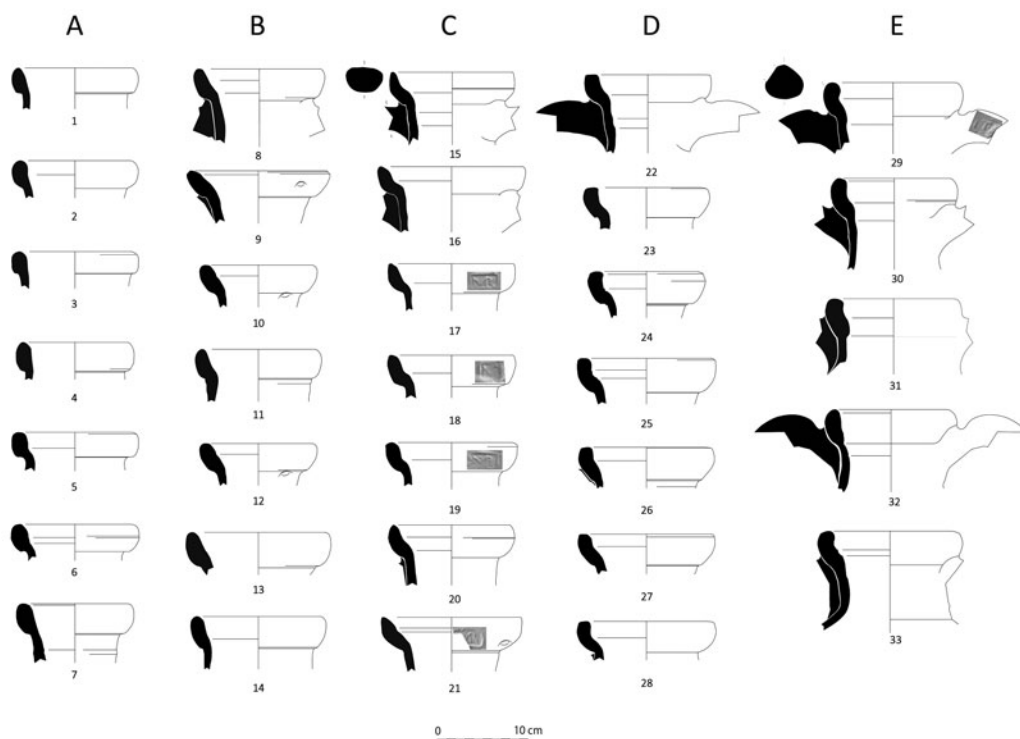


Fig. 8. Oberaden 83 (Group A) and Haltern 71 (B–E) from Los Peces pottery workshop. (© González Tobar and Mauné 2018.)

the presence of multiple variants of stamps is related to multiple production units.⁴⁹ Accepting this hypothesis, the four variants of the MR stamp (Fig. 9) could suggest the presence of more than one contemporary production unit, and thus would illustrate a degree of specialization for this workshop from as early as the end of the 1st c. BCE.

In 2019, an excavation campaign was conducted in the central zone of the workshop.⁵⁰ Four trenches were opened, and waste dumps up to 1.20 m high were identified as belonging to the Augustan period. Stratigraphical analyses allowed the recognition of up to five typological phases. Two other phases, the first and the last, could be deduced from the morphology of the rims. The second phase coincided with group A of the survey, while phases 3 and 4 coincided with group B, phase 5 with group C, and phase 6 with group D. Phase 7, only documented from the survey, corresponds with group E. This last group can be considered the last phase in the production of Haltern 71 (Tiberian or Haltern 71 “B”).

The work developed in Fuente de los Peces has been very important in supplementing and enhancing the research carried out in the early Imperial military camps on the Rhine frontier. Both kinds of sites, production workshops and places of military consumption, can offer a precise chronological seriation, derived from the stratigraphy of wasters at

⁴⁹ Moros 2021.

⁵⁰ Directed by Iván González Tobar and Stéphane Mauné, as part of the OLEASTRO research program and funded by LabEx Archimède (ANR-11-LABX-0032-01) and La Casa de Velázquez of Madrid. Publication in progress.

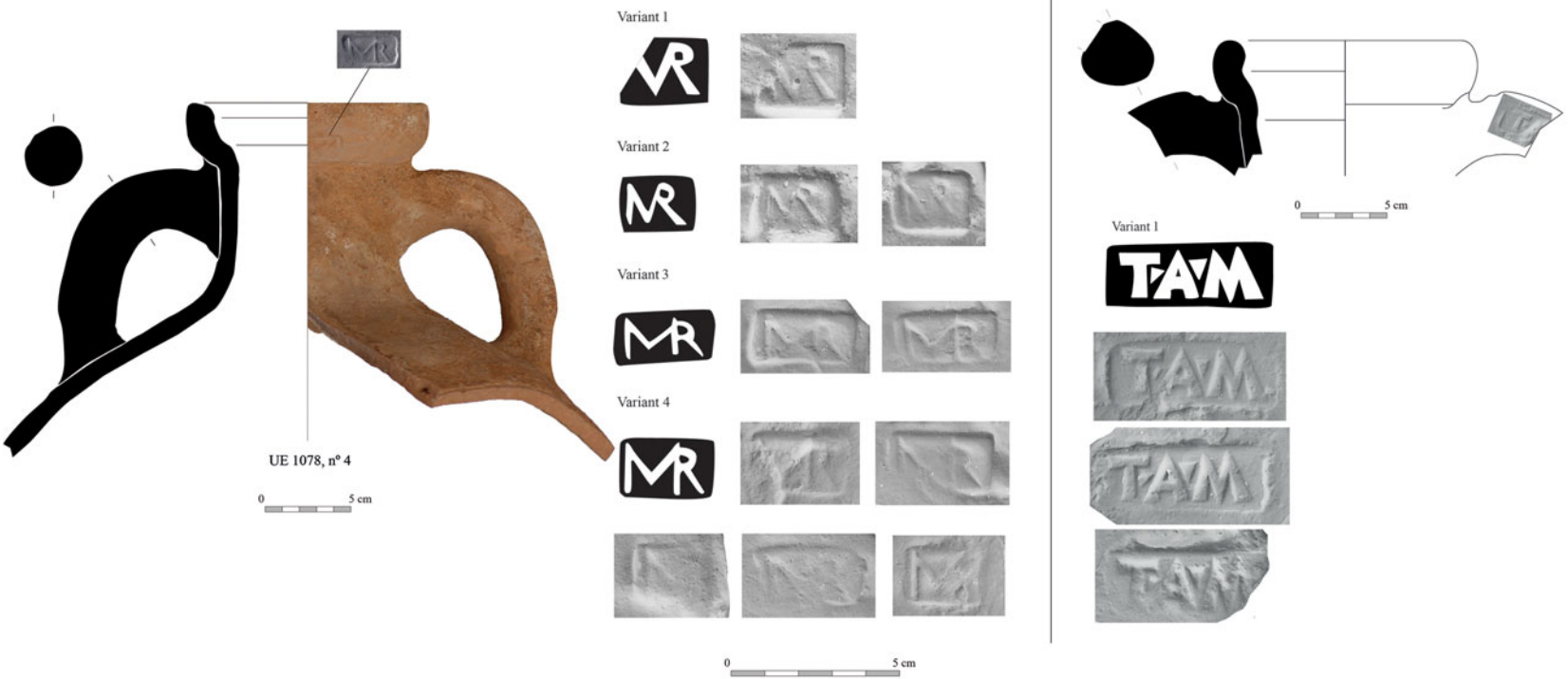


Fig. 9. Amphora stamps from Fuente de Los Peces workshop (Fuente Palmera, Córdoba). (© I. González Tobar.)

the pottery workshops and from short-term use at the military settlements. The recognition of a stamped series in the late Augustan amphorae produced in this workshop, and their recovery in places such as Haltern, Augst, or Ostia,⁵¹ opens up the possibility of a better understanding of the scope of Baetican olive oil production and the economic links that existed in that period. The inland territories of the Guadalquivir valley were already playing an important role in the supply of the biggest state consumer markets on the military frontier and in a lesser way in central Italy, notably in the city of Rome.

Careful analysis of workshops can also provide information about the transition to the classical Dressel 20. Haltern 71 are present in some of the oldest workshops from the Córdoba region producing classical Dressel 20, such as Cortijo de Romero, El Mohíno, and Cerro de Los Pesebres (Fig. 7). We may distinguish them not only by their rims (similar to Haltern 71 specimens) but also by their size. From 30 CE, a general and significant widening of rims and handle thickness can be observed. In this regard, group E from Fuente de Los Peces represents an untidy transition to Dressel 20: it appears to be an adaptation of heavier and more robust models. However, the “new,” completely spherical Dressel 20 was never produced in Fuente los Peces, as the workshop was abandoned right at the moment it emerged.

First epigraphical evidence on oil amphorae from Guadalquivir valley

The stamps of Fuente de los Peces, appearing on olive oil amphorae just before the emergence of the Dressel 20, are exceptional among the Ovoid amphorae from *Ullterior-Baetica*, which are otherwise characterized by an almost complete absence of stamps.⁵² This situation can be connected to the lack of standardization of the Ovoid products. This early epigraphic evidence can thus be seen as belonging to a system of labor organization that clearly differs from that of the Ovoid products' successor, the Dressel 20, an amphora with a rich epigraphic corpus from as early as the Tiberian/Claudian period.⁵³ This hypothesis seems to be supported by the great heterogeneity of forms in the Ovoid types, as evidenced by the large number of types we have proposed,⁵⁴ as well as by the continuous morphological variations within single types.

Be that as it may, recent years have rewarded us with an important series of stamps on handles of early olive oil amphorae of the Guadalquivir valley: the *L·HORATI* series, known from Portugal, southern Spain, the Balearic Islands, Catalonia,⁵⁵ and recently southern Gaul (Fig. 10).⁵⁶ Considering the morphology of the handles on which the stamps were placed, normally without a central depression, and also the broad chronology of the several contexts whence they have been collected and recognized over the last two decades, they are associated with the Ovoid 7/Oberaden 83 type.⁵⁷ However, neither the place of production nor the precise chronology of these marks is known at the present state of

⁵¹ Berni Millet 2008, fig. 29.

⁵² García Vargas, González Cesteros et al. 2019, 93–95.

⁵³ Berni Millet 2008, 82.

⁵⁴ Almeida 2008; García Vargas et al. 2011; García Vargas, González Cesteros et al. 2019.

⁵⁵ Fabião et al. 2016, n° 48; Berni Millet forthcoming.

⁵⁶ González Tobar et al. 2023.

⁵⁷ Fabião et al. forthcoming; González Tobar et al. 2023.

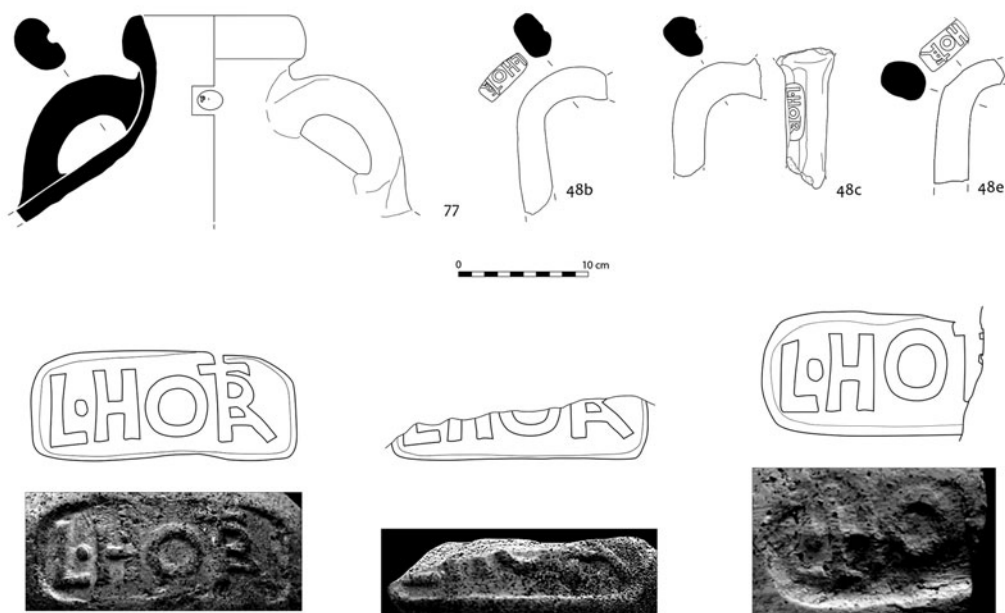


Fig. 10. Difficult-to-read stamp on an Ovoid 6 (amphora neck above) and L-HORATI stamps (handles and photographs). (© García Vargas et al. 2019, fig. 19.)

research, since no known specimen comes from a stratigraphically well-characterized context.

On the other hand, as previously mentioned, the epigraphy of Fuente de los Peces corresponds to the well-known MR (Haltern 71A) and succeeding TAM (Haltern 71B) stamps that appear on rims and handles respectively of series C and on handles alone of series E as defined by González Tobar and Mauné (Fig. 9).

Concerning ink inscriptions, just one *titulus* is known so far. It was found in the military camp of Neuss, in the Lower Rhine (Fig. 11).⁵⁸ The imprecise and confused stratigraphical sequence of Neuss impedes the sure association of this specimen with any particular instance of military occupation there; however, its morphological characteristics, mid-way between the Ovoid 6 and the Oberaden 83, are a good argument to place it in the early stages of the military presence, during the first moments of the Augustan government. The inscription was written with red ink (*rubrum*) on the upper part of the neck. Two of the present authors have proposed a possible reading, but it must be admitted that the partial state of preservation prevents any completely reliable interpretation. Nevertheless, the size of the different recognizable letters and the text's position on the neck clearly differ from the "official" placement found on the Dressel 20 from the late 1st c. CE onwards. Perhaps the labelling system of ink inscriptions was different on Oberaden 83 and had not yet been standardized in this early stage of the military supply system in the Rhine area.

⁵⁸ González Cesteros and Berni Millet 2018, 22–23.



Fig. 11. *Titulus pictus* on Oberaden 83 amphora from Neuss. (© González Cesteros and Berni Millet 2018, fig. 6.1.0.)

Commercial distribution of the Ovoid oil amphorae from *Baetica*

The oil amphorae from *Baetica* that circulated before the highly standardized Dressel 20 had an important distribution in the Iberian Peninsula but also outside its borders. A first appreciation of the find places of forms such as Ovoid 6, Oberaden 83, and Haltern 71 demonstrates their arrival at a large number of sites in the western Mediterranean and central Europe.

Finds in the territory of *Ulterior* are not scarce: we already have a large number of Ovoid 6 from different places in the Guadalquivir valley, but they also turn up in other areas of the province.⁵⁹ Their presence in *Gades/Cádiz*, especially in the harbor area of La Caleta, together with other Ovoid amphorae produced in Cádiz⁶⁰ and the Guadalquivir valley,⁶¹ illustrates the early exportation of Baetican olive oil from this harbor to markets outside *Hispania*.⁶²

One important fact, already noted above, is the close connection that seems to exist between Baetican olive oil and supplies reaching the Late Republican and Early Imperial army operating in the westernmost parts of the Roman Empire. Here, a reliable piece of evidence is the early presence of Ovoid 6 at several Lusitanian sites, ones normally linked with the Roman army's pacification and occupation of territory roughly "Romanized" before the end of the civil wars. However, Lusitania is not the only area with an important military presence where olive oil from southern Spain arrived in the middle decades of the 1st c. BCE. Then, or slightly later, these amphorae, together with other Hispanic products,

⁵⁹ In general, for the diffusion of the Ovoid 6, see García Vargas et al. 2011, 228–35; García Vargas, González Cesteros et al. 2019, 85.

⁶⁰ The production of Ovoid 6 also took place in some workshops of the Bay of Cadiz: García Vargas, González Cesteros et al. 2019, 85.

⁶¹ Sáez Romero et al. 2016.

⁶² For an overview on this question see: Bernal-Casasola, Díaz et al. 2022.

were reaching the new Roman colonies in the central Rhône valley,⁶³ following a route that can be traced by the presence of different Ovoid types along the Mediterranean coast of the Iberian Peninsula.⁶⁴

Though Ovoid 6 amphorae have been found in different parts of the western Roman territories, they are always present in low quantities. This situation changes between 20 and 10 BCE, when Baetican oil begins to arrive in massive quantities at its main import markets, especially on the Rhine frontier. The main shape to exemplify these first large-scale exports is not the Ovoid 6, but its immediate successor, the Oberaden 83. Early forms of Oberaden 83 have been found in the military settlement of Neuss, a place with a constant military occupation from 16 BCE to the Flavian period.⁶⁵ In the *Limesforschungen* publications of the 1970s on Neuss, a series of amphorae linked to the transitory forms between Ovoid 6 and Oberaden 83 were identified.⁶⁶ The presence of these forms was confirmed by work that some of the present authors undertook in Neuss.⁶⁷ We were also able to establish a strong early Augustan horizon and a later one, in which typical Oberaden 83 and Haltern 71 forms stand out, demonstrating the fast typological development the Baetican olive oil containers experienced in less than 30–40 years.

Studies in the camps in the Lippe valley, one of the main eastern tributaries of the Rhine in its lower section and an important route into *Germania libera*, have proved of particular importance for understanding Spanish imports during the early years of Roman occupation in the lower Rhine area.⁶⁸ The military camps settled along the Lippe have a particularly precise dating, between 12 BCE, the moment of the beginning of the so-called Drusus campaigns, and 9 CE, when the Roman army was defeated in the battle of the Teutoburg forest. The precise dating of the occupation of places such as Oberaden, Haltern, Anreppen, or Hosterhausen, established through ceramic, numismatic, and dendrochronological evidence, confirms the chronology already established on the basis of the written sources.

The establishment of chronological horizons at the different military camps, especially at Oberaden and Haltern, is essential for marking the clear difference over time not only in the quantities of the different kinds of imports and in the regions that supplied them, but also in the morphological characteristics of the pottery types.⁶⁹ The double legionary camp of Oberaden, situated in the middle of the Lippe valley and occupied during the so-called Drusus campaigns (12 to 7 BCE), has provided a large quantity of archaeological material.⁷⁰ Among the ceramics that we were able to study a decade ago, from excavations in the 1990s and 2000s, we did not find a large number of amphorae, at least not as many

⁶³ We do not have clear evidence of the presence of Ovoid 6 north of Lyon, other than a potential specimen found near Basel: González Cesteros 2019, 322.

⁶⁴ García Vargas et al. 2011; García Vargas, González Cesteros et al. 2019; Mateo Corredor and Molina Vidal 2019; and in southern Gaul: Quillon and Luaces 2019.

⁶⁵ González Cesteros and Berni Millet 2018.

⁶⁶ Two publications in this series are essential for the early Roman pottery of Neuss: Filtzinger 1972 and Vegas 1975.

⁶⁷ González Cesteros and Berni Millet 2018.

⁶⁸ González Cesteros 2014.

⁶⁹ The absence at the present time of shipwrecks with Baetican olive oil amphorae before the late Augustan/early Tiberian period highlights the relevance of the Rhinish military camps for establishing the morphological division of these types.

⁷⁰ For the amphorae, see Loeschcke 1942; González Cesteros and Tremmel 2011–12.

as might be expected for a camp of this size and date. Nevertheless, of those recovered, more than 40% came from the Guadalquivir valley, with Oberaden 83 standing out and only being surpassed by imports of salted fish and fish sauces from *Baetica*, especially from the Bay of Cádiz.⁷¹

In order to better determine the different periods in which Hispanic products arrived (based on the material and the good chronology of the early military camps of the Rhine), the material of Oberaden itself was compared with that of other settlements with similar chronologies. The most important is Rödgen,⁷² which is of the same date, along with Dangstetten in the Upper Rhine,⁷³ which was occupied with certainty from 15 to 9–8 BCE. As shown in Fig. 4, the Oberaden 83 amphorae of these military places display a higher level of standardization than their predecessors, the Ovoid 6, but even so, they still present some variation in form that is particularly evident in the body and rim. However, this lack of precision and uniformity in shape and, probably to a lesser degree in volume, did not hinder the wide dissemination these containers enjoyed during the last years of the 1st c. BCE.

At the turn of the 1st c. CE, a new chronological horizon can be established in the Lippe valley. This horizon is linked to Haltern, a camp with at least two main phases, of which the second is the better studied due to the abrupt abandonment of the settlement caused by the great Roman defeat in 9 CE. At Haltern, a large number of southern Spanish olive oil amphorae have been found, of which the greatest proportion are Haltern 71, even if some might fall within the Oberaden 83 range (and thus actually belong to the first occupation phase there). Haltern has a less precise chronology than another camp on the Lippe, Anreppen. Anreppen is the easternmost of all the Roman military camps in the Lippe, and was occupied for a very short period, between 4/5 and 7 CE, being associated with the advance of the Roman troops commanded by Tiberius. Among the Anreppen material, the large presence of southern Spanish olive oil amphorae is again quite remarkable, accounting for more than one out of every three specimens. The shape of these amphorae is very similar in this case, with no great formal or fabric differences. They can be fully included within the Haltern 71 type A (Fig. 5).

Regarding the quantitative aspect of the amphora imports in the Lippe when compared with other places on the Rhine, some important trends can be discerned. If in the earlier stages the amphorae with fish products from southern Spain achieved higher percentages than the olive oil containers (Oberaden 83), this situation changed during the Haltern horizon, when the percentages and quantities of olive oil from the Guadalquivir (already transported in Haltern 71) topped the amphora imports.⁷⁴ This situation remained constant at least until the 3rd c. CE, but probably endured up to the end of the Roman presence in the Rhineland.⁷⁵

⁷¹ González Cesteros and Tremmel 2011–12; González Cesteros 2014.

⁷² Schönberger and Simon 1976; Ehmig 2007.

⁷³ Ehmig 2010.

⁷⁴ This fact does not mean that olive oil was the commodity imported in the highest quantities by the army, just that it was first among those transported in amphorae. The presence of a large quantity of barrels in different military settlements in central and western Europe until the Flavian period clearly indicates that the importation of wine was at a much greater level than any other food staple in the diet of the Roman soldiers: Marlière 2002. For a visual demonstration of this fact, see Marlière and Torres 2005, fig. 241.

⁷⁵ González Cesteros 2010.

The practical monopoly Baetican oil had on the military supply on the Rhine during the Augustan and Tiberian periods is also evident in the near absence of amphorae containing olive oil from other regions. These other amphorae seem to have arrived mostly, although always in distinctly small quantities, in the initial phase of the occupation of the Rhône and Rhine axis, when some Brindisian and Dressel ante 6B are attested in places such as Lyon, Neuss, Mainz, and Dangstetten.⁷⁶ The presence of products from other olive oil production areas such as North Africa or the Aegean was either insignificant or cannot directly be confirmed for most Augustan military sites, even if African Ovoid amphorae are attested at some settlements in the Rhône area and *Gallia Belgica*,⁷⁷ and some Dressel 24 seem to have arrived at Haltern.⁷⁸

The diffusion of 1st-c. BCE olive oil amphorae from the Guadalquivir valley recalls the argument already made for a military connection with the production and consumption of this oil from early on. It is quite possible that the military supply of the German region was behind the spectacular rise in olive oil production in southern Spain, but even so, it was following a pattern established earlier, when supplying the military contingents operating in Lusitania in the middle decades of the 1st c. BCE. The proximity to military units operating in Lusitania and other areas of the Iberian Peninsula must have been the most important reason for the strong link between Baetican oil and the army, together with the long-standing tradition of olive oil production in the Guadalquivir valley. This connection would continue during the shift of military activity to the northwestern European territories from the Augustan period on, in that case not only due to the geographical proximity, if compared with other main olive oil production regions such as North Africa or parts of the Aegean world, but also because the infrastructure and economic connections between the Roman army and the Baetican suppliers were already in operation.

We can see that the extraordinary privileging of southern Spanish oil was occurring on the German frontier from the last decades of the 1st c. BCE onwards. Without a doubt, the assignment of Baetican olive oil to the military and in lesser quantities to civilian settlements on the frontier was the direct result of action by the state focused on the supply of its troops, buying a huge number of amphorae with such an important commodity as oil.⁷⁹ But what about the other main market that can be linked to the Roman state? What about the early arrival of Baetican olive oil in Rome in this period?

We have briefly mentioned, especially with regard to Ovoid 6, imports of Spanish olive oil in Rome and Ostia. Unfortunately, we must admit that large gaps still exist regarding this geographical area. From our point of view, it is here where the greatest research effort must be made in the coming years to generate secure quantitative and percentage-based data presented in reliable publications with abundant illustrations.

The work of colleagues in Rome, especially G. Rizzo, V. Moreno Megías, and A. Ferrandes,⁸⁰ has attempted to shed some light on this opaque topic. Unfortunately, the lack of drawings and accurate images of those amphorae classified by them as

⁷⁶ González Cesteros 2019.

⁷⁷ González Cesteros 2019.

⁷⁸ H. González Cesteros personal observation.

⁷⁹ For uses other than nutritive: Brun 2011–12.

⁸⁰ Rizzo and Moreno Megías 2019; Ferrandes 2014.

Ovoid 6, Oberaden 83, and Haltern 71, does not help throw any light on the arrival of southern Spanish olive oil at Rome and/or Ostia.⁸¹ The context of La Longarina, already published by A. Hesnard and at the present date undergoing deep revision by a Spanish-Italian team,⁸² supports the theory of the early import of this Spanish commodity, arriving once again together with other Ovoid amphorae from the Iberian Peninsula, in a similar way as witnessed in different places on the Iberian Peninsula and in south and central France.

The presence of forms such as Oberaden 83 and Haltern 71 in La Longarina is mentioned by Rizzo and Moreno Megías⁸³ and clearly to be seen in the pictures published by Hesnard.⁸⁴ However, the real impact, expressed as a degree of increase, and any comparison with other contexts in central Italy are still open questions that, in our opinion, are central to better understanding the clear development of the southern Spanish economy and its role in supporting the economy of the Roman state in the period prior to the data currently offered by the Monte Testaccio.

The Baetican olive oil amphorae in the context of the Late Republican and Early Imperial Mediterranean: some notes with regard to the city of Rome

In the absence of further in-depth analyses such as the one that is currently being prepared about the important deposit of La Longarina, one way in which we can proceed is to examine the presence in Rome of olive oil amphorae from other regions during the same chronological frame. Thus, we can start to form some outlines of the presence of several sources in a market that was constantly growing and evolving during the second part of the 1st c. BCE and first part of the 1st c. CE.

The Guadalquivir and other southern Spanish areas were not the only regions that produced and exported their olive oils during this key period. The first productions of the large family of Ovoid amphorae are linked with olive oil,⁸⁵ and these early productions did not start in the Guadalquivir valley, nor in any other former territory of the *Ulterior/Baetica*, but in three central and eastern Mediterranean areas: the North Peloponnese, probably in various places along the coast of the Gulf of Corinth,⁸⁶ in North Africa around Carthage and Utica,⁸⁷ and in Brindisi.⁸⁸ These three areas were renowned for both the quantity and the quality of the oil they produced, and thus, even if other commodities packed in amphorae were also being delivered to external markets (which was obviously

⁸¹ A good example is the recent paper on the amphorae from the deposit at Trajan's Market (Rome), which does not introduce any major changes into the scenario here described: Rizzo et al. 2022.

⁸² Hesnard 1980; Contino et al. 2019. See also Contino et al. 2022.

⁸³ Rizzo and Moreno Megías 2019.

⁸⁴ Hesnard 1980, figs. 1 and 2.

⁸⁵ García Vargas, Almeida et al. 2019, 404.

⁸⁶ Its production is at present clearly documented in Egion (Filis 2019), where some kiln-sites producing different amphorae of the mid- and late 2nd c. BCE have been found. However, we agree with C. Trainor and other pottery specialists working in Sicyon that most of these vessels (classified by them as Sicyon type A) were produced within the territory of more than one city of the northern Peloponnesian part of the Corinthian Gulf: Trainor et al. 2019, 71–72; see also Trainor 2015; Trainor and Stone 2016; Tzavella et al. 2016, 92.

⁸⁷ Contino and Capelli 2019.

⁸⁸ Among others: Manacorda and Pallecchi 2012; Palazzo 2012; Manacorda 2019.

so for Africa and to a lesser degree for Brindisi), it is logical to think of olive oil as the main export of these territories, at least during the Late Hellenistic and Early Roman periods.⁸⁹ Together with these three areas, a fourth deserves mention: the western part of Anatolia, the territory within the limits of the Roman province of Asia, where the production of olive oil in large quantities and for different purposes is attested throughout antiquity.⁹⁰ During the Roman period, a container derived from the amphorae of Hellenistic Erythrai was produced in different locations.⁹¹

It is no surprise that amphorae connected to olive oil production in these regions arrived at Rome in the last two centuries BCE and the 1st c. CE. We know of different contexts where some of these amphorae have been found. Aegean amphorae transporting olive oil, the North Peloponnesian products of pre-Dressel 25, typical Dressel 25 of the Augustan and Julio-Claudian periods, and later types are present in contexts in Ostia,⁹² as well as in Rome.⁹³ In the case of the Dressel 24, the form is increasingly well documented both in areas of production in western Asia Minor and in places of consumption, notably in Adriatic and Tyrrhenian centers, including the area of Rome,⁹⁴ and in Pompeii.⁹⁵ However, most of the examples that are well documented from Rome and Ostia are later in date and, as far as we know, no early Dressel 24 has been found. Opaït has proposed a link between the Dressel 24 (and thus the Asiatic olive oil) and supply of the Roman army,⁹⁶ as was previously suggested by Karagiourgou for the Late Roman Amphora 2.⁹⁷ We think this is a very good point, and most probably the same was true for the army and the Dressel 24 in the 2nd and 3rd c. CE, and perhaps even earlier too. However, these connections seem to have been with the army on the Lower Danube border and the Black Sea provinces; how it affected the western provinces and Italy is not clear, since Dressel 24 seem to appear only in Haltern, and in Italy no Dressel 24 have been

⁸⁹ We cannot exclude the use of some African Ovoid containers and some African products of the 1st c. CE for the transport of other commodities, as has been suggested by some content analysis done in Pompeii, which nevertheless must always be critically interpreted. For the analysis, see Pecci et al. 2021.

⁹⁰ For the Roman period, see Mitchell 2005 (epigraphical and literary perspective) and Aydınoğlu and Şenol 2010; Diler et al. 2015 (archaeological evidence).

⁹¹ Erythrai: Lawall and Carlson 2005–6; Lungu 2010; Territory of Ephesus and Kuşadası: Meriç 2002, 86; Bezecky 2013, 72–75; González Cesteros and Sauer 2020, 106–8. In Chios, the production of Dressel 24 of the 2nd and 3rd c. CE has been documented by, among others, Opaït and Tsaravapoulos 2011. For Kyme, see Opaït and Tsaravapoulos 2011. The great longevity of Dressel 24, giving rise to LR 2 as early as the 4th c. CE (among others: Pieri 2005, 85; Opaït 2007), indicates their constant demand in external markets, while the ink labels like those found in Monte Testaccio and the Dacian settlement of Romula tell us about their oil content (for Testaccio: Carreras 1999, 98; Remesal and García 2007, Cat. nos. 530, 533, fig. 39; for Romula: Tudor 1968, 396; Popilian 1976, 40, Tab. 23. 76; Opaït and Tsaravapoulos 2011, 303).

⁹² House of the Porch of the early and mid-1st c. BCE (van der Werff 1986); Longarina 1 of the Augustan period (personal observation H. González Cesteros); different contexts in Ostia: Zevi 1966. In the context of Terme dell Nuotatore, they appear but are the later productions of the 2nd and 3rd c. CE: Rizzo 2014, 334.

⁹³ Castro Praetorio (Dressel 1879, 175–80; Berni Millet forthcoming).

⁹⁴ Rizzo 2003; Rizzo 2014; Coletti and Lorenzetti 2010; Carreras 1999.

⁹⁵ Manacorda 1975.

⁹⁶ Opaït 2007.

⁹⁷ Karagiourgou 2001.

documented, or at least published, that are earlier than the finds from Pompeii, where they are certainly present together with other Aegean amphorae of the mid- and late 1st c. CE, mainly those of Cretan origin.

The second area that deserves special attention is North Africa, especially those territories around Carthage in northern Tunisia and the rich Tripolitanian region. The arrival of African imports at Rome has been well known since the work of Zevi and later Panella at Ostia, and also from some Mid- and Late Imperial contexts in Rome.⁹⁸ In recent years, due to the work of Bonifay, the association of all North African types with olive oil has not only been brought into question but completely transformed.⁹⁹ These studies have paid special attention to the African types of the Mid- and Late Roman periods, when they arrived in massive quantities at Rome. However, in this article, we focus on the early types of the Roman formal tradition, especially on the recently labelled “Africaine ancienne” (previously known as “Tripolitana antica”), Dressel 26, and the Tripolitana 1 types, that can be connected with olive oil imports from Africa from the late 2nd c. BCE to the mid-1st CE. In recent years, the work of Contino has brought fresh insights to studies on the presence of African amphorae of this period in Rome.¹⁰⁰ Her success has been followed by other scholars who have also paid attention to the Punic types from Late Republican and Augustan contexts.¹⁰¹ In the reevaluation of the African presence in the depot of La Longarina 1, Contino documented the presence of amphorae from north Tunisia in large numbers, together with a small quantity of amphorae from Tripolitania.¹⁰² In this particular context, where amphorae were selected and used in a riverine area to create drainage and a barrier against flooding, the African amphorae linked with olive oil contents hugely outnumber any other olive oil amphorae.¹⁰³

Another important context for understanding the growth in the arrival of African commodities at Rome in the pre-Flavian period is the Nuovo Mercato Testaccio, again studied by Contino together with other scholars.¹⁰⁴ In this special context, used to store discarded pottery with the aim of reusing it for construction purposes, together with some Tripolitana 1 there are some Dressel 26 to be found. This still-controversial form is dated by Contino to the 1st c. CE. The drawings presented by Contino and Capelli suggest a more important role for the African imports during the Julio-Claudian period than in the Flavian and early Antoninian phases.¹⁰⁵

⁹⁸ Among others: Zevi 1966; Zevi and Tchernia 1969; Carandini and Panella 1973; Carandini and Panella 1977; Panella 1983; Panella 1993.

⁹⁹ For the contents on African amphorae in general, see Bonifay 2007; Bonifay 2016; Bonifay 2021.

¹⁰⁰ Contino and Capelli 2016; Contino and Capelli 2019; Contino et al. 2019.

¹⁰¹ Contino et al. 2017; Ferrandes 2020.

¹⁰² Contino et al. 2019, 241–50.

¹⁰³ Among the vessels of this context stored in Ostia, a total of 30 are olive-oil African amphorae (Contino et al. 2019, table 1), while the number of amphorae related to olive oil from other production areas (Spain, Brindisi, Aegean, north Adriatic) is much lower (personal observation H. González Cesteros, April 2024).

¹⁰⁴ Contino and Capelli 2016.

¹⁰⁵ Contino and Capelli 2016, fig. 2.

In our opinion, the data provided by Contino are of great relevance for understanding the import of oil at Ostia and Rome in this crucial period. If we compare the number of African olive oil amphorae with those from other production areas in the late 1st c. BCE and early 1st c. CE context of La Longarina, or in the earlier phases of Nuovo Mercato Testaccio, it seems that African oil plays a much greater role in the second part of the 1st c. BCE and the first part of the 1st c. CE than oil from other export regions, including *Baetica*. Nonetheless, the data from other contexts in Rome dated to the 1st c. BCE and 1st c. CE, such as the Late Republican levels of the *Horti Lamiani*,¹⁰⁶ the Forum of Caesar,¹⁰⁷ and the Gianicolo,¹⁰⁸ do not include such large numbers/percentages of African olive oil amphorae, even if they are always present. Some scholars have underlined the distinction between the contexts of Ostia and those of Rome, based on a differing distribution between African commodities and Italian and western Anatolian wines.¹⁰⁹ We believe a highly accurate chronological division is required to avoid confusion but will return later to this controversial topic, which still needs much more future research.

A lack of information seems to exist concerning the arrival of Late Republican Brindisian amphorae at Rome. We could find some published exemplars in Ostia and Rome,¹¹⁰ but their number seems very low indeed. However, some scholars are of the opinion that oil from Apulia/Calabria, and thus the Brindisian amphorae, enjoyed a solid presence in Rome¹¹¹ and may even have been responsible for the first layers of discards at Monte Testaccio.¹¹² A similar situation seems to have been the case for other olive oil productions that we find sporadically in Rome, such as Dressel 6B produced in Istria (Croatia), whose main consumption market was the army stationed on the frontiers of Pannonia and Raetia.¹¹³ Production of amphorae used for Istrian olive oil seems to have started in the early Augustan period, but it is during the 1st and beginning of the 2nd c. CE that they reached peak production.¹¹⁴ Despite the early presence of at least one specimen identified in La Longarina 1 as Dressel 6B by Hesnard,¹¹⁵ whose illustration confirms this diagnostic,¹¹⁶ they are almost completely absent in 1st-c. CE Roman contexts, even those with large quantities of Adriatic Dressel 6A, such as Castro Praetorio or the Nuovo

¹⁰⁶ Ferrandes 2014.

¹⁰⁷ Zampini 2010; Bertoldi and Ceci 2013.

¹⁰⁸ Rizzo and Moreno Megías 2019. We decided to exclude Binario Morto because of acute identification problems.

¹⁰⁹ Rizzo et al. 2021, 148.

¹¹⁰ For Ostia: La Longarina 1: Hesnard 1980; House of the Porch: van der Werff 1986. During work on the material from La Longarina, one of us observed more Brindisian amphorae in the big storage area of the Archaeological Park of Ostia. For Rome: Ferrandes 2014, 363; Rizzo and Moreno Megías 2019.

¹¹¹ Manacorda 2019, 38.

¹¹² Aguilera 2002, 208–9.

¹¹³ Among others: Bezeczky 1987; Dobрева 2017.

¹¹⁴ Carre and Pesavento Mattioli 2003, 460; for some early Augustan finds: González Cesteros 2019, 326.

¹¹⁵ Hesnard 1980, 150.

¹¹⁶ Longarina 257. We would like to thank Christina Genovese and Claudia Tempesta of the archaeological park of Ostia for providing one of us with the original pictures of the Longarina 1 material. We do not rule out the presence of some Dressel 6B in the context of Binario Morto in Ostia but do have doubts about it since some of the images published by Rizzo et al. 2021,

Mercato Testaccio.¹¹⁷ Equally, only a couple of stamps are attested in the epigraphy published in *CIL*.¹¹⁸

Lastly, there is an even more significant lack of knowledge about the presence in Roman and Ostian contexts of Ovoid amphorae produced along the Tyrrhenian coast of Italy, above all in Lazio.¹¹⁹ If we scrutinize their formal characteristics and resemblance to other Ovoid amphorae, mainly those produced in North Africa, it is clear that both factors suggest that these central Italian amphorae were olive oil containers. It is to be expected that once scholars working in Rome start to recognize this production, at least some of these amphorae will be identified in Roman and Ostian contexts. Some of the specimens previously classified under other types and/or provenances probably ought to be reconsidered as central Tyrrhenian products.

The arrival of amphorae connected with olive oil production from these various areas should be regarded as a normal fact when dealing with the consumption of the large and multicultural population of Rome in the 1st c. BCE and early 1st c. CE. But the main point here is to quantify the amounts of those products entering the market of the capital of the Empire, and to determine their level: sporadic/almost marginal, medium, or massive. Such distinctions are at present not possible due to the small quantity of well-studied materials that have been published. However, a first approach suggests that African products were the most important before the end of the 1st c. BCE, and that from the late Augustan or early Tiberian period, Baetican containers start to play a much more significant role in the olive oil supply of Rome.

Initial conclusions on a still uncompleted subject

The substantial improvement in our knowledge of southern Spanish Ovoid amphora forms connected with olive oil production is undoubtedly a major boost to a better understanding of the contexts of importation and consumption throughout the whole Roman region (Fig. 12). As is clear from the above, there is still a lot of work to be done, on both the places of production, where much progress has been made in recent years, and the places of consumption, especially in Italy.

In the second half of the 1st c. CE, Baetican oil achieved a near monopoly in the official markets of the Empire, linked to the emergence of the spherical Dressel 20. This success made this commodity one of the main products visible across most of the western Mediterranean regions, a situation that seems to have continued until the mid- to late 3rd c. CE.

Excavations and studies developed over the last two decades have completely changed the vision we had at the beginning of this century about the olive oil diffusion from *Baetica*,

fig. 5 (based on Razza and Surace 2016), are incorrectly classified, including the supposed Dressel 6B (a Dressel 6A) and the Tripolitana 1 (a Haltern 71).

¹¹⁷ D'Alessandro 2013, 353.

¹¹⁸ *CIL* XV 3477, 3528.

¹¹⁹ A workshop has been documented in La Grotta: Attema et al. 2007/8. However, up to now, the largest group of these amphorae was found in Toulouse: Benquet and Capelli 2019. For a first typological division and for the petrographical analysis for this interesting production, see Benquet and Capelli 2019.

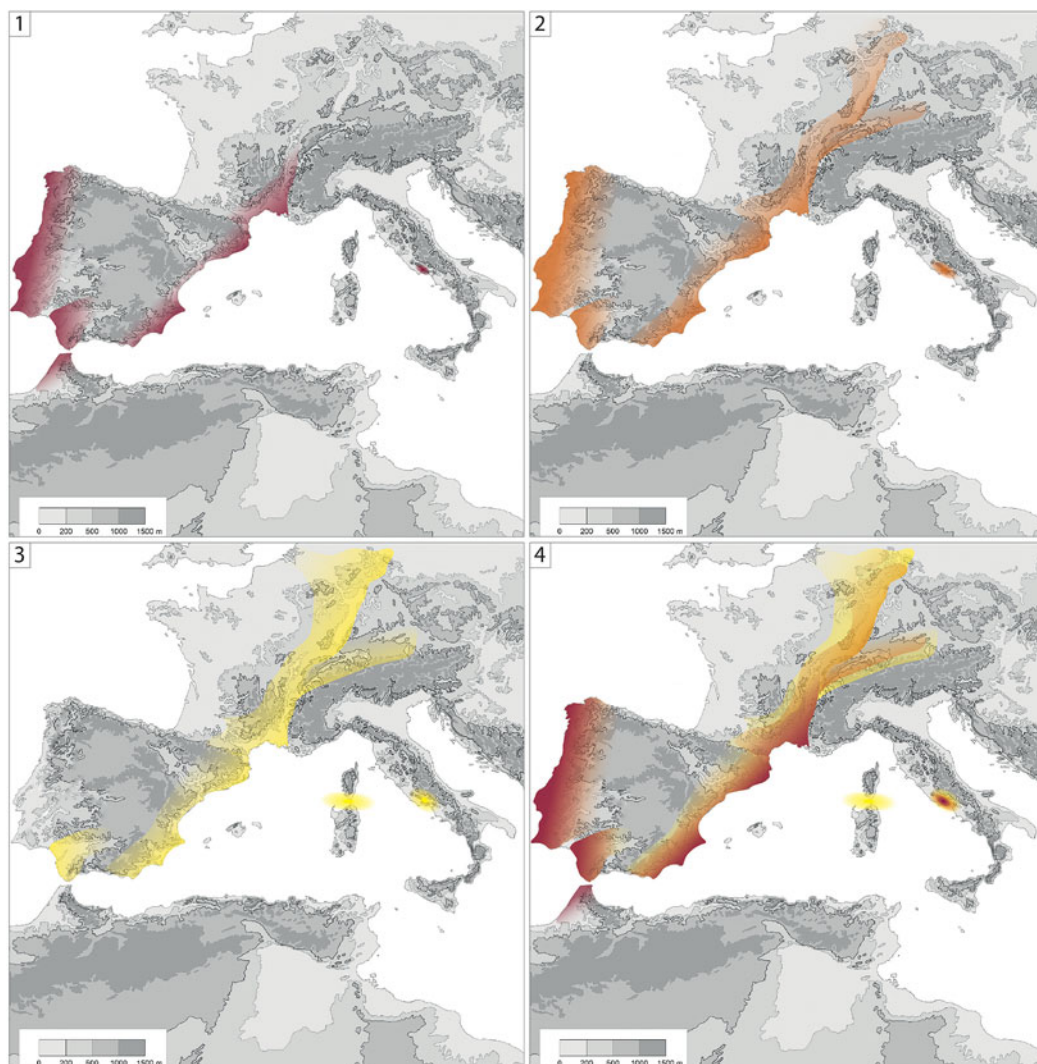


Fig. 12. Main diffusion areas of the pre-Dressel 20 olive oil amphorae produced in southern Spain: 1) Ovoid 6; 2) Ovoid 7/Oberaden 83; 3) Haltern 71; 4) Combined map of the three. (© The authors.)

which was still based almost exclusively on the data provided by stamps from the northern borders of the Empire and information supplied by the difficult-to-understand Monte Testaccio excavations. Little attention was paid to a general understanding of the earliest development stages of this phenomenon and little had been done to elucidate its evolution. Works such as those by Martin-Kilcher in August¹²⁰ were of great relevance for offering a better understanding of the earlier phases of this process in the central European area, but unfortunately focused on just a single site. Nothing was forthcoming in the way of a global vision that could link places of production with the different regions of consumption, above all the military markets in western Europe and the city of Rome. In this contribution, we have tried to present a trustworthy overview focused on the century that

¹²⁰ Martin-Kilcher 1987.

encompassed the first productions of Ovoid 6, namely the time from the second quarter of the 1st c. BCE down to the earliest production of Dressel 20 in the late Tiberian period. We are well aware that although the work of many different scholars has brought to light much new data relevant to correcting our understanding of essential matters such as the diffusion of the earliest olive oil amphorae from *Baetica* or the workshops where these amphorae were produced, our knowledge is still limited. Even if a marked advance has been made with new studies or reevaluations of places of consumption in the Rhine area,¹²¹ there is still a lot of work to be done, mainly concerning the central Tyrrhenian region.

For the city of Rome, the current data seem to suggest limited imports of Baetican olive oil before the mid-1st c. CE. Though the arrival of large quantities of Oberaden 83 and Haltern 71 at the military stations in the Rhine clearly suggest a particular link between the supply of the army and the southern Spanish olive oil producers in the last decades of the 1st c. BCE, this already seems to be dropping away during the second and third quarters of the century with the supply of Ovoid 6 to the military units operating in the west and north of the Iberian Peninsula.

These two impressions still need more data to be safely confirmed, but the same story can be clearly suggested from work done in Rome regarding Baetican and other olive oil imports, especially those coming from Africa. As we have seen, the earliest olive oil amphorae from *Ulterior/Baetica* had already arrived in Rome by the mid- to late 1st c. BCE, as had many other containers packed with commodities from around the whole Mediterranean. But, to us, the important question is, when did they start to arrive in massive quantities? When did Spanish olive oil become the most important commodity packed in amphorae that arrived at Rome? In order to answer these questions, we need more data from Augustan-to-Claudian contexts in Rome,¹²² but also more efforts to try to understand the following difficult questions: What amphora types comprise the early layers of Monte Testaccio? Did this huge ceramic dump start with Brindisian vessels, as has been suggested, with Baetican, or even with African olive oil amphorae?

The information currently available seems to suggest that southern Spanish olive oil amphorae arrived at Rome early (Ovoid 6, Oberaden 83, and Haltern 71) but were subordinate to other oils from other sources, probably to those coming from Africa. This is the picture obtained from some early contexts, especially La Longarina in Ostia, even if the nature of the worked context as a “*vide sanitaire*” must be taken into account given that its function implies that the vessels found there were selected, regarding their forms, for the particular purpose of creating an isolation level against floods. Some scholars have suggested that Baetican oil, being an *annona* commodity, was sent directly to Rome and so was not consumed in large quantities in Ostia.¹²³ We admit that this is a possibility that must not be discounted, but we are not convinced that the argument could be applied to the Late Republican and early Augustan period, a time when not that many southern Spanish olive

¹²¹ Ehmig 2003; Ehmig 2007; Ehmig 2010; González Cesteros and Tremmel 2011–12; González Cesteros and Tremmel 2015; González Cesteros 2014; González Cesteros 2018; González Cesteros and Almeida 2017; González Cesteros and Berni Millet 2018.

¹²² The recently published material from the excavation of 1983 in Alife, near the city walls, dated mainly to the Tiberian and Claudian periods, does not register any Baetican olive oil amphorae, even if other amphorae from the coastal area and inland of *Baetica* have been documented. See Di Mauro 2022.

¹²³ Rizzo et al. 2021, 152.

oil amphorae have been attested in Rome. Equally, from the late Augustan period to the mid-2nd c. CE, the presence of Dressel 20 in Ostia increases considerably, if we accept the published illustrations and the opinions of other scholars.¹²⁴

In our opinion, it is from the second part of the 1st c. CE, or slightly earlier as some shipwrecks may suggest, that the Spanish Dressel 20 started to be associated with the state supply of the city of Rome, enjoying a privileged position when compared with other areas. If this hypothesis is right, then the important question is why Rome was not supplied with Baetican olive oil at the same time as the northern military markets were.

We are not in a position to answer this important question properly, but some historical factors can be suggested. The first and most obvious reason is that the main stimulus for the boom of southern Spanish olive oil was the close connection it had with the Roman army. This special link is visible in the earlier phases of production – when supply was directed towards Lusitania – but it continued in the western provinces until the late 3rd or probably in fact the 4th c. CE. Producers in the Guadalquivir and other southern Spanish areas were able to continually expand their production from the mid-1st c. BCE to keep up with an increasing demand created by the establishment of large stable military bases in the western provinces. This scenario explains the accelerated development in the forms and regularization of olive oil containers, with phases lasting no longer than 20–30 years. This concentration on the military left little opportunity for producers to explore other markets, including that of Rome, which seems not yet to have been completely controlled by the state administration. Tiberius or probably Claudius instituted state involvement in the olive oil supply, as the construction of the massive harbor of Portus probably indicates, and around this time, the Baetican olive oil producers must have enlarged their estates and increased their olive oil production to such a degree that they were able to supply Rome in an almost monopolistic way. We think it is no coincidence that, from this period on, in the Guadalquivir valley we see the establishment of large workshops for Dressel 20 production, the regularity of the stamp habit, and the complete shape and volumetric standardization of the vessels.

The second historical factor that we can suggest played a role in the absence of large-scale imports of Ovoid 6 and mainly Oberaden 83 and Haltern 71 amphorae at Rome has to do with the existing close commercial links Rome had with other olive oil producing regions, especially North Africa. The military requirements of Rome after the Punic Wars would have promoted such ties. This has recently been suggested as one of the main explanations behind the arrival of “Africaines anciennes” amphorae at some places in Republican Spain.¹²⁵ Connections would have been closer still with the city of Rome itself, and they might also have been linked to the famed grain imports from Africa and Sicily. The data from La Longarina and other contexts in Rome seem to underline the continuing vitality of the African imports in the Augustan period, even if the new, Caesarean colony of Carthage was free from tax payments to Rome. The data from the Nuovo Mercato Testaccio¹²⁶ seem to illustrate a change from African suppliers to Hispanic ones: the

¹²⁴ Rizzo et al. 2021, fig. 3; Rizzo 2014; Panella 1983; in general, for the comparisons of Dressel 20 and African amphorae from the mid-1st c. CE in Rome and Ostia, see Franco 2012.

¹²⁵ Pascual Berlanga 2021.

¹²⁶ Contino and Capelli 2016, fig. 2.

dramatic increase in Hispanic containers at the expense of African ones, occurring from the early Julio-Claudian period, continued up till the Flavians.

In this study, we have seen how much reliable information, from both a quantitative and a qualitative perspective, is available to us now compared to two decades ago. This is due to the work at places of both production and consumption, but also to the benefits of adopting a new global perspective of the kind employed in this article. We are of the opinion that this combination of specific and overarching perspectives is the way forward for a better understanding of complex economic and social questions, here focused on the development of the massive production and trade of southern Spanish olive oil, one of the most striking economic achievements of the Roman period.

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