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**UNIVERSITY OF SOUTHAMPTON**

FACULTY OF HUMANITIES

Archaeology

# Amphorae from contexts of middle Imperial date found during the excavations of the so-called 'Terme di Elagabalo' in Rome. The implications of their study for our understanding of the economy of the City and of related imported products.

VOLUME 1 of 2

by

**Edoardo Radaelli**

Thesis for the degree of Doctor of Philosophy

July 2016

# ABSTRACT

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| UNIVERSITY OF SOUTHAMPTON |
| ABSTRACT |
| FACULTY OF HUMANITIES |
| Archaeology |
| Doctor of Philosophy |
| AMPHORAE FROM CONTEXTS OF MIDDLE IMPERIAL DATE FROM THE EXCAVATIONS OF THE SO-CALLED 'TERME DI ELAGABALO' IN ROME. THE IMPLICATIONS OF THEIR STUDY FOR OUR UNDERSTANDING OF THE ECONOMY OF THE CITY AND OF RELATED IMPORTED PRODUCTS. |
| By Edoardo Radaelli |


The recent excavations (2007–2013) in the building commonly known as 'Terme di Elagabalo' in Rome have revealed large amounts of totally unpublished pottery that are providing with key, and hitherto unknown, significant information about the Mid-Imperial economy of the City, with particular reference to the commercial activity.

In this research, all fragments of amphorae from that site will be included in a deep analysis of a collection of all sherds of these trade-containers offered in published reports of excavations held elsewhere in the Capital, providing an understanding of imported products (mainly wine, olive oil and fish sauces, but also alum, *defrutum* and dates) that arrived in the *Urbs*. At the same time, data from Ostia will be compared, determining similarities or differences in consuming patterns across these two cities.

The importance of ceramics to comprehend Roman commerce and consumption of products will be also re-emphasized, comparing these data with the current scholarship about trade patterns in the Capital and with also attempts in updating it. Suggestions about how to increase publications about Roman ceramics in Rome will be also offered.

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# DECLARATION OF AUTHORSHIP

I, Edoardo Radaelli

declare that the thesis entitled

**Amphorae from contexts of middle Imperial date found during the excavations of the so-called 'Terme di Elagabalo' in Rome. The implications of their study for our understanding of the economy of the City and of related imported products.**

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- A few amphorae (30 vessels) were published in: Radaelli, E., 2013, Un riempimento fognario di età severiana dalle cosiddette "Terme di Elagabalo" a Roma. In De Sena, E. C. (ed), *The Roman Empire during the Severan dynasty: Case Studies in History, Art, Architecture, Economy and Literature. American Journal of Ancient History, New Series, 6-8 (2007-2009)*: 301-340 (especially 315-318);
- A few themes about products will be published in: Radaelli, E., forthcoming (A), Anfore dai contesti Medio Imperiali delle "Terme di Elagabalo" a Roma e le loro implicazioni nel consumo alimentare di Roma tra l'inizio del II e l'inizio del III secolo d.C. In *Atti del VII Congresso AISU 'Food and the City'*.
- A few reflections about wine will be published in: Radaelli, E., forthcoming (B), The so-called 'crisis of the 2nd century AD'. Reflections from the remains of wine-amphorae discovered in the 'Terme di Elagabalo' (Rome). In *Emergence. Humanities Graduate School Research Journal, VIII: Construction and Decay*.

Signed:

Date:

## Acknowledgements

Many thanks for the preliminary study, the support and help while organising, writing, correcting, and proof-reading this thesis twice must go to: Prof. Simon J. Keay (for having accepted my research and for letting me continue it where all the books I needed were); Emeritus Prof. David P. S. Peacock (RIP); Prof. Clementina Panella (for the chance of studying all these – and other – very interesting finds from the excavations she directs); Prof. Lucia Saguì (for the immediate trust, all the continuous and very precious advices and stratigraphic explanations, and for the help also in revising parts of this thesis); Dr. Giorgio Rizzo; Elena G. Lorenzetti; Dr. Antonio F. Ferrandes; Dr. Giacomo Pardini (for the numismatic information); Giusy Castelli (Room 1SE and Room 3), Viviana Cardarelli (Rooms 7 and 8), Lino Traini (part of Room 2), Elena Arbolino (parts of Rooms 3 and 6), Matteo De Nardis (part of Room 6), Luigi Pagliei (Room 4), Giovanbattista Mannelli (part of Room 6), and Barbara Lepri (for having tolerated my interference into their studies and their theses); Giordano Iacomelli, Francesca Romana Fiano, Simona Bellezza, Giorgio Lusco, Daniela Gasparrini, Diana Greco, Laura Orlandi, Cecilia Gualtieri, Dr. Marta Casalini, Daniele Botticelli (for all our bibliographical and practical exchanges); Elli Karkazi (for having found in Crete a book I needed); Mrs. Valerie Sinden (for kindly having proof-read the first version of this thesis in such a short time last year); Mr. Roger Lister (for having proof-read this whole second version of it despite the lack of time due to his job as a Director of Teacher Training); the guys in the CopyNet shop in Rome (for helping and supporting me in printing this whole thesis twice); Doct. Dragana Mladenovič and Prof. Ian Haynes (for having accepted being part of the VIVA commission and for suggesting me how to refine and ameliorate this new version of my thesis).

Many thanks for the support and help not always directly linked to this thesis must go to: that woman with enormous courage that is my mother; S. A. (for the spiritual support); Susanne and Caterina Franzi (for remembering me that small steps bring to success); Prof. Silvia Orlandi, Dr. Raffaella Giuliani, Federica Lamonaca, and Ilaria Gabrielli (for our new project together); Dr. Marina Piranomonte (for all the things learned from her during my stage); Dr. Pina Franco (for sharing experiences during my first year in Southampton); Dr. Ambra Naspi and Dr. Alessio Palmisano (for being two of my best friends and always supporting me); Laura P. (for the smiles and all the encountable emotions); GEA S. C. a r. l. and all the people known working with them (for the trust, the help, all advices and especially for the chance of understanding and showing my professional validities); Niccolò Carosi, Marco Della Porta, and Ass. Terre Sommerse (for publishing in 2013 my first novel '*La Parola Amore*' - The Word Love); all my friends not mentioned above (for tolerating my craziness and emotional balances); my gramother (for her everlasting love); my father (for letting me understand how to walk with my own legs); all those who were close to me in every possible way (for having given me their support, help, love, and time).

**GRAZIE – THANK YOU**

# Chapter 1: Introduction

The exceptional and recently unearthed thousands of pottery fragments that had been discovered from 2007 to 2011 during the excavations held in the Eastern sector of the 'Terme di Elagabalo' in Rome are the topic of this study, leading to evaluate, using these tangible objects, commercial activities and ancient people's lives[1]. Even though all the fragments belonging to all ceramic classes (fine wares, coarse wares, lamps) and even other material (such as bones, metals, marble) discovered in all the Middle-Imperial stratigraphic units in the 'Terme di Elagabalo' were analysed[2], the basis for this research will be one specific pottery class: amphorae[3]. These containers are an interesting and valuable source of information about economy, dietary needs, taste, culture, and the purchasing capacity for the consuming people and their evolution over time[4]. These objects' meanings are determined both by their use (society) and their content (product). Meanings of the latter are not necessarily always the same, as multiple ones are possible for products, but they are limited in their range by contextual circumstances (in this case Rome)[5]. The varied level of importance of these products, in fact, is the final result of a complex set of behaviours for those who produced, distributed, purchased, and used pottery, hiding a series of mechanisms about intentions, choices, and conscious selections.

During the analysis of these finds, which also included the study of the available literature about specific topics, two main research questions arose. These research questions had been continuously kept in focus, evaluating literature (Chapter 2) and methodologies (Chapter 3) that could be referred and applied to the specific theme and chosen objects of this investigation (amphorae). Answers to these questions can be seen as attempts in reaching, as close as possible, a probably unreachable truth[6]. Being this problem something which emerges continuously while attempting to reconstruct ancient societies, it cannot be totally eluded. At the same time, this research can also be identified as another significant step in the understanding of Rome and of the Roman society, basing these answers not only on ancient sources, but also on a pragmatic background which is – in this specific research – amphorae.

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[1] This should be the purpose of Archaeology (Olsen 2003: 89–91, 100; Martín Civantos 2006: 12; Sánchez Climent 2013: 32).
[2] With the exception of glass (studied by Barbara Lepri and published in Lepri 2013) and coins (still under study by Dr. Giacomo Pardini).
[3] For a brief literature review about them cf., below, Chapter 2, Section 2.2.
[4] Bruno 2004: 358; Ollà 2008: 283.
[5] For a review of ideas and limits of the so-called 'Contextual Archaeology' cf. Ruiz Rodriguez *et al.* 1988.
[6] Biers 1992: 86.

The first research question considers what kind of amphorae and what kind of contexts come from the so-called 'Terme di Elagabalo' and if they can help in identifying functions of the buildings where they were found (for the description of the complexes cf. below). Even though it may be an elementary question, understanding chronological phases and deposition criteria are both fundamental while considering pottery assemblages so as to understand how they were created. This question also includes problems about primary (in-phase objects) and secondary deposition (residual vessels) in these contexts, discard strategies, circumstances of deposition, and representativeness of waste, because pottery assemblages in Rome usually consist of dumps that had been created sometimes during long periods, sometimes during short periods.

The second research question is related to an understanding of what kind of commerce in Rome can be deduced from the analysis of amphorae considered from the 'Terme di Elagabalo' and how the new data fit on one side among publications of pottery assemblages in Rome (which are unfortunately far from being complete[7]) and on the other side within the published scholarship about trade flows in the Capital of the Empire. The analysis of fragments alone does not produce enough information so as to better understand ancient societies, because they need to be interpreted. A comprehension of what these fragments can suggest in terms of exchanged products and commercial patterns is of prime importance to update the knowledge about the economy of Rome and supply of certain products (wine, olive oil, fish sauces, alum, *defrutum*, and dates) during the Middle Imperial age. At the same time this question includes matters of changes in trade flows and origins of products during the chosen period and the social implications these products may bear.

The following Section will inform about the discovered buildings and periods in the 'Terme di Elagabalo' and the reasons for choosing it as the basis for this research[8].

## 1.1 The basis for this research

The site was selected because the archaeological investigations lead to the discovery of an extraordinary series of buildings and monuments which follow the entire settlement history of one of the most central sectors of Rome[9]. The interventions on this building are all part of a larger project of archaeological excavations which

[7] Cf., below, Chapter 2, Section 2.3.
[8] Bibliographical research considers only publications by September 2015.
[9] Panella *et al.* 2011b: 243.

considers the whole Palatine's North-Eastern slopes (started in the 1980s which were, for Rome, a very full period of activities for archaeology in general and for urban archaeology[10] in particular). One of the most important archaeological investigations started in this period[11], is the one related to the *Meta Sudans*, directed by Prof. Clementina Panella. It began in 1986 thanks to fundings due to the "Biasini Law" (Special Law of the 23rd March 1981, n. 396) and was partially completed in 2001 bringing to light the Flavian fountain[12] which was demolished in 1936, for the creation of 'Via dell'Impero' by Mussolini[13]. Investigations also allowed the identification and analysis of more ancient obliterated structures, already dated to the age of Nero by Colini[14]. Both excavations and study of finds confirmed those proposed dates, but also raised questions of considerable interest about the Westernmost part of the Colosseum's valley and the topographic reconstruction of the facing area of the Palatine's North-Eastern slopes[15], considering that the latter was never really affected by specific studies or excavations[16].

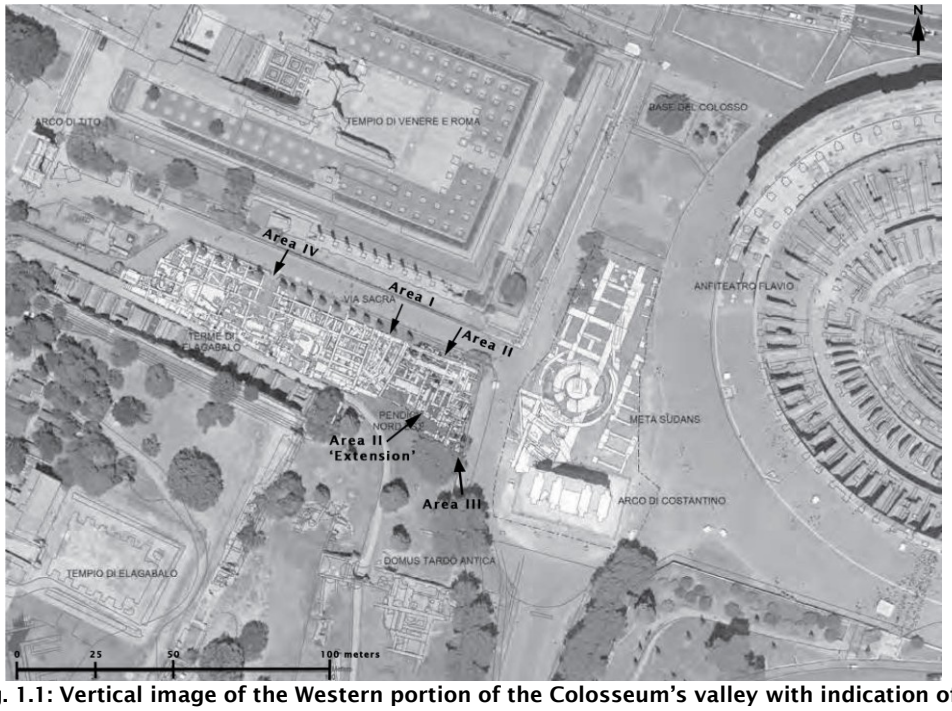


**Fig. 1.1: Vertical image of the Western portion of the Colosseum's valley with indication of excavation areas (after Panella *et al.* 2014: 160, fig. 1, with modifications).**

[10] For the meaning of this word cf., for example, Brogiolo 2000.
[11] Not forgetting the investigations in the Cypta Balbi (extremely important for the post-Antique and Medieval archeology cf., below, Chapter 4, Section 4.1.6) and those at the Palatine's Northern slopes (cf., below, Chapter 4, Section 4.1.2).
[12] Preliminary report: Panella 1989c. Detailed report of remains: Panella 1990. Cf. also, below, Chapter 4, Section 4.1.1 for a brief description of it.
[13] Insolera & Perego 1983: 129; Manacorda & Tamassia 1985: 192–194; Lugli 2000: 11; Nardoni 2005: 132. Cf. also the implications of this project analysed in Russell 2014: 497–501.
[14] Colini 1937.
[15] Radaelli 2013: 302.
[16] Panella 2013b: 9.

During the autumnal excavation campaign 2001, digging activities started in this area in order to find answers to questions raised during previous campaigns. The investigation is still ongoing and it has allowed the identification of a complex stratigraphy, dating from the pre-anthropic age to the present day (considering also the modern city's services[17]). The whole area (fig. 1.1) was at first divided into two sectors (called Area I and Area II) separated by a wall structure with a N-S direction that had existed at least since the age of Sulla and which determined different construction projects[18]. A third sector (called Area III) was added in 2005 on the South-Eastern side of the whole area. The presence of three stone pines (*Pinus pinea L.*), planted during the 1960s, however, did not allow any access to parts of the excavations of considerable size and interest. Investigations in those previously unreachable portions (provisionally named Area II 'Extension': fig. 1.1) started during the autumnal campaign of 2009, after the removal of those pines[19]. In 2007 the whole excavation was, however, already extended with another sector which included the whole complex known as 'Terme di Elagabalo' ('Area IV' of fig. 1.1, and n. 0 of Chapter 4: fig. 4.1).

The name 'Terme' (Baths) is partially incorrect: it comes from the discovery at the end of 19th century of a small *balneum* behind the large Western apse (investigated since the 2010 summer campaign, but not relevant to the original structure: cf. below), which led to the interpretation as a thermal system for the whole building[20]. Excavations in this building and in the *balneum* took place from 2007 to 2013. They allowed the identification of an intricate stratigraphy which crosses over all periods and which is very different between the two sides of the building. The type of archaeological deposit, in fact, that is more substantial in the Eastern portion of this building, is caused by the geological morphology of the hill and subsequent human activities. The Palatine's tuff slopes had two directions: from the South to the North and from the East to the West. All buildings which had been erected in this area, had to follow this orographic situation, thus creating their rooms on levels which are increasingly higher towards the West. On this side of the area, the Imperial structures are less preserved and were built one over the other because they were directly constructed in the tuff. At the same time these constructions progressively removed all previous archaeological deposits. On the contrary, towards the East the walls are better

[17] Radaelli 2013: 302.
[18] For these sectors of investigation cf. Panella 2001a; Panella 2008; Ferrandes 2008a; Carbonara 2008; Zeggio 2008; Panella *et al.* 2011a; Panella 2013; Panella *et al.* 2015.
[19] Panella 2013b: 14.
[20] Also the ascription to Emperor Elagabalus (AD 218–222, cf. Hay 1911; Parker 1958: 102–105; Boak & Sinnigen 1965: 345; Rodgers 2006: 75; Sommer 2008) is wrong. For a study of *balnea* in Rome and their functions from data derived by the marmoreal *Forma Urbis* and by Regionary Catalogues cf. Foulché 2011; Foulché 2013.

preserved and differences in height were filled with a significantly dense deposit[21] from which come all the fragments considered for this research.

Before the period chosen for this study, at least six other ones were discovered (Pre-antropic, 9th century BC[22], late Republican[23], Augustan/Tiberian, Claudian, and Neronian ages).

**Fig. 1.2: 'Terme di Elagabalo'. Late Republican (dark grey) and Julio/Claudian complexes (black, sewers are in light grey) overlaid with the vertical picture of all remains (after Saguì & Cante 2015: 38, fig. 2, with modifications).**

Both in the Eastern and Western portions and along the Northern side of the excavations' area (fig. 1.2), some rooms which belonged to a *domus* and this block's street frontage, with *tabernae*, were identified[24]. They are partly a continuation of structures already investigated in the area immediately to the East (so called 'Area I' of the Palatine's N-E slopes excavations). The entire complex, which had many renovations and restorations from the Late Republican to the Claudian ages[25], was affected by the AD 64 fire. Considerable traces of it were found in the Eastern portion of this complex, especially in those sectors that were called 'Rooms 3, 6, 7 and 8'[26] (cf. below fig. 1.5 for these numbers) and it was followed by a complete obliteration and an almost total abandonment[27]. It appears, in fact, that during the Flavian period this

[21] Saguì 2013: 134; Saguì & Cante 2015: 39.
[22] For the Iron-age remains cf. Quondam 2011 and Saguì *et al.* 2015: 224–229. In all the following pages dates will be expressed with BC (Before Christ = before the birth of Jesus Christ) and AD (*Anno Domini* = after the birth of Jesus Christ) convention, although several other alternatives exist: cf. Biers 1992: 15–16.
[23] Cf. Saguì 2009: 238–239 and Saguì 2013: 134–235 for the Pre-anthropic and Late Republican ages.
[24] For the description of remains cf. Saguì & Cante 2015: 39–40.
[25] Saguì 2009: 239–243.
[26] Saguì 2013: 136–137; Gualtieri *et al.* 2013: 21, 43–47; Cardarelli & Castelli 2014.
[27] Saguì 2009: 243–244; Saguì & Cante 2015: 40–41.

area was almost completely empty of buildings and that construction activities in this sector were resumed only during the Hadrianic age[28].

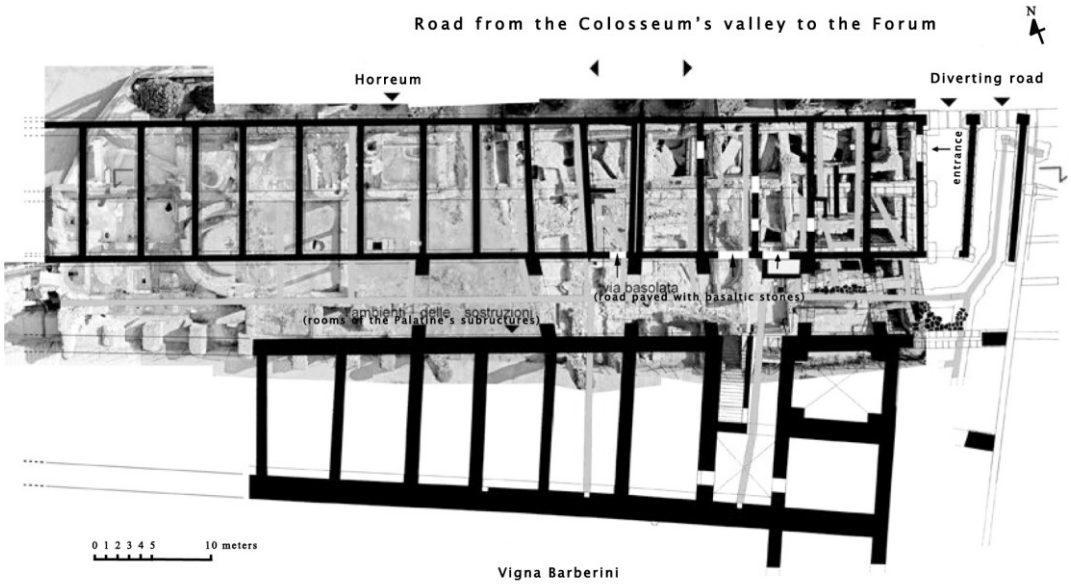


**Fig. 1.3: 'Terme di Elagabalo'. Hadrianic *horreum* (black, sewers are in light grey) overlaid with the vertical picture of all remains (after Saguì & Cante 2015: 42, fig. 11, with modifications).**

During the Hadrianic age, after having created a raising of levels, a large building composed of two main lots was created (fig. 1.3). The complex continues towards the West beyond the excavations' limits imposed by the road called Via di S. Bonaventura. It had at least 16 rectangular rooms elongated in the North-South direction which communicated with each other through one or two passages. The Western lot, with many rooms, is juxtaposed to the Eastern one which has 5 rooms and is on a lower level. All the walls are made of bricks with some *reticulatum* parts. All rooms are joined together by a longitudinal foundation and were paved with *opus spicatum*. It had entrances from the North (the road directed towards the Forum from the Colosseum's valley), the South (another road that bordered its back side), and the East (a small road that joined these other two)[29]. The Palatine's substructures were also rebuilt and, along this inner road, some pillars were realised which linked the complex to the substructures with arches[30]. Interpreted as an *horreum*, especially for its morphology[31], the actual function of all the rooms is not completely clear, lacking information from architectural remains, but it had three latrines (in the second, sixth and tenth rooms counting from East[32]) and it seems probable that one of these rooms

[28] Saguì 2009: 244–245; Saguì 2013: 138.
[29] Saguì & Cante 2015: 41.
[30] Saguì & Cante 2015: 41–44.
[31] Cf. Rickman 1971, the fundamental work about this topic. Cf. also Virlouvet 2011.
[32] Saguì & Cante 2015: 45.

(the second one from East) could have been used as a *popina*[33], presumably for workers of the building or for people passing along the roads[34].

The small amount of finds coming from units dating this period belongs to the first raising of levels to create the building itself, several raising of levels to create various floors (three levels of floors were found, one over the other), and from the restoration activities of the last of these floors[35].

During the Antonine age no radical changes appear to have occurred. This is possibly due to the use of the rooms or, more likely, because Severan activities destroyed all the existing stratification. Only two floor restorations (with an axis dating Antoninus Pius[36]) and natural fillings of two sewers were found for this period, with an extremely low amount of fragments coming from these stratigraphic units[37].

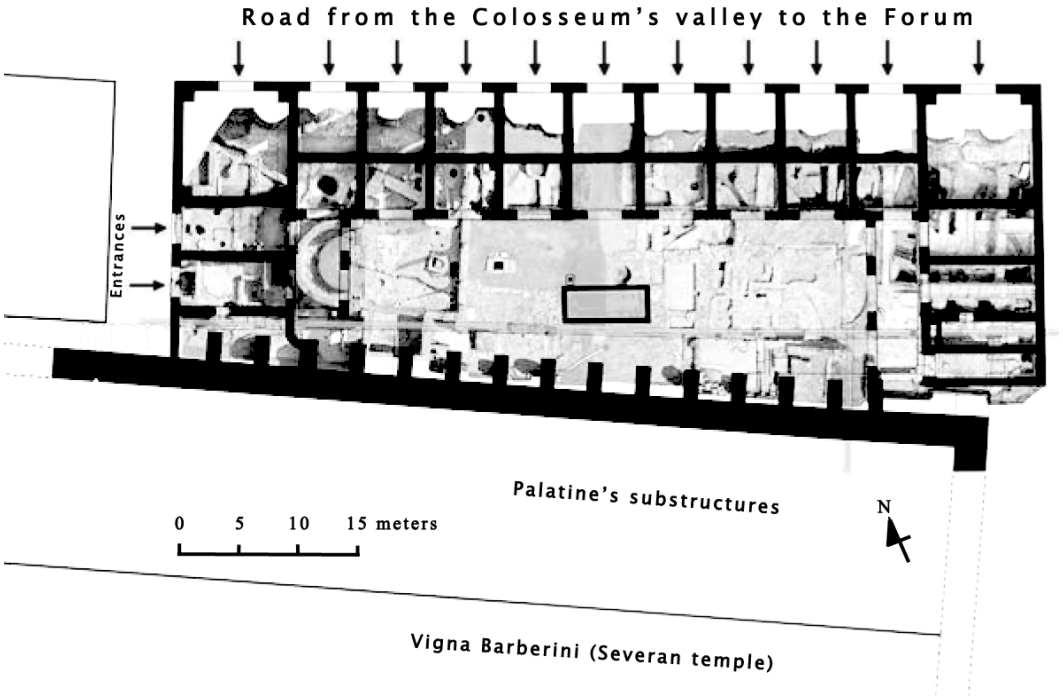


**Fig. 1.4: 'Terme di Elagabalo'. Severan complex (black, sewers are in light grey) overlaid with the vertical picture of all remains (after Saguì & Cante 2015: 47, fig. 24, with modifications).**

During the Severan age the former *horreum* was completely razed to the ground, and with it also part of the Palatine's substructures[38], eliminating much of the previous

[33] Radaelli 2013: 322–323.
[34] Saguì & Cante 2015: 45.
[35] For brief descriptions of phases during this period cf., below, Section 1.3.1.
[36] Personal communication of Prof. Lucia Saguì and Dr. Giacomo Pardini.
[37] For brief descriptions of phases during this period cf., below, Section 1.3.2.
[38] Panella 2013b: 24–25; Saguì & Cante 2015: 47–48.

stratification related to the use of that complex. Levels were artificially raised[39] and above these new levels were based both the building known as the 'Terme di Elagabalo' and new monumental Palatine's substructures to which this complex is physically linked. This new construction (fig. 1.4) consists of a two-storey building[40], with a central courtyard surrounded by and giving access to a series of rooms, and with another eleven rooms whose access was only from the road leading to the Forum from the Colosseum's valley. All these rooms along the Northern front have an increase in levels from the East to the West, following the Palatine's slopes and two of them, on each extremity of the building, are bigger than the others and covered by crossed vaults. These bigger rooms possibly had a different function than the others, although this function is not known, but may be hypothetically ascribed to offices or archives (the smaller rooms may be identified as *tabernae*). The entrance to the entire building was from a small road on the West of the complex which gave access to two rooms and, with three steps, to the central courtyard and to the rooms which faced it that are all on the same level[41]. All the rooms, and possibly even the courtyard which also had a basin in the middle, were paved with a mosaic floor made of basaltic tesseras, but just a few fragments of these floors were found, almost completely removed by subsequent activities[42]. Unfortunately the removal of the Imperial age stratification throughout the entire Western portion of the complex, the loss of almost all floors, and the radical changes which occurred during subsequent periods cannot allow to a precise identification of the function of this complex which remains unclear. Once again its morphology lead to a generic interpretation as another *horreum*.

The very large amount of finds coming from units dated Severan period (all dating the very end of 2nd/first years of 3rd centuries AD) belongs to the raising of levels to create the Severan complex itself after the destruction of the previous one, to another raising of levels to create floors immediately after the construction of this building, and to units related to building activities[43].

After the above mentioned periods, at least four others were discovered: Late Antique, Medieval, Modern, and Contemporary ages.

During the Late Antiquity (4th and 5th centuries AD) this building was completely transformed, possibly even its function changed[44], and it is not always possible to identify the absolute and relative chronology of all units. A new floor was created in the central courtyard with big white marble mosaic tesseras and a wall divided the

[39] Giorgi 2013: 57; Saguì & Cante 2015: 47.
[40] For the reconstruction of the first floor cf. Saguì & Cante 2015: 51 and 48, fig. 26.
[41] Saguì & Cante 2015: 48.
[42] Saguì & Cante 2015: 51.
[43] For brief descriptions of phases during this period cf., below, Section 1.3.3.
[44] For the possible functions of this building cf. Saguì & Cante 2015: 61–63.

courtyard into two parts. On the Eastern part of it, a fountain was created and covered with marble along with a small basin[45]. On the other side of the courtyard, a massive room with an apse was created with a central structure in the shape of a sigma with a central semicircular basin (it possibly was a *stibadium*[46]). All the walls realised during this period are made in *opus vittatum mixtum*[47]. A *balneum*, realised in the Western portion of the building, can possibly be dated during the same period of time[48] (which gave the erroneous name to the entire complex).

During the 6th–7th centuries AD the building was partially abandoned and used as a cemetery. Six tombs were found across different rooms of the Severan complex[49] and can be possibly linked to a new and small building, found in 2013 at the very end of the excavations, which was created in the middle of the courtyard of the Severan complex and identified with a church[50].

Parts of walls belonging to a small group of houses that existed around S. Maria Nova church and dated from the end of 10th century AD were also found within the building[51]. Two wells filled with medieval pottery represent clear traces of the use of this complex during the 9th–12th centuries and refer to that same group of houses[52]. On the contrary, a lime kiln ('calcara') found in Room 16, can be assigned to an immediately previous phase, as ceramics found in the earth that filled it can be referred to the advanced 9th century AD[53]. Many spoliation trenches and tunnels found all over the area and which altered older stratigraphy can be ascribed to the same period, while several others can be dated 19th century[54].

The last found activities are dated Contemporary age and consist of many restorations of remaining walls and four rectangular sondages dug by Spanish archaeologists[55].

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[45] For them cf. Saguì & Cante 2015: 60–61.
[46] Cf. Caratelli 2013, Giovanetti 2013, and Saguì & Cante 2015: 54–61.
[47] For all the building activities during this period cf. Saguì 2009: 262–268; Saguì 2013: 143–150.
[48] For the description of all remains cf. Saguì 2013: 143–144; Giorgi 2013; Saguì & Cante 2015: 52–54.
[49] Saguì 2009: 269–270; Saguì 2013: 150–151; Saguì *et al.* 2015: 219–220.
[50] For the description of it and about the very interesting fragments reused for creating walls cf. Saguì & Cante 2015: 64–71.
[51] Saguì 2013: 133.
[52] Saguì 2009: 270–272; Saguì 2013: 151; Orlandi & Lepri 2013.
[53] Saguì 2013: 151.
[54] Saguì 2009: 270–272; Saguì 2013: 151.
[55] For the literature review about this site cf., below, Chapter 2, Section 2.1.

## 1.2 Methodology undertaken during the excavations in the 'Terme di Elagabalo'.

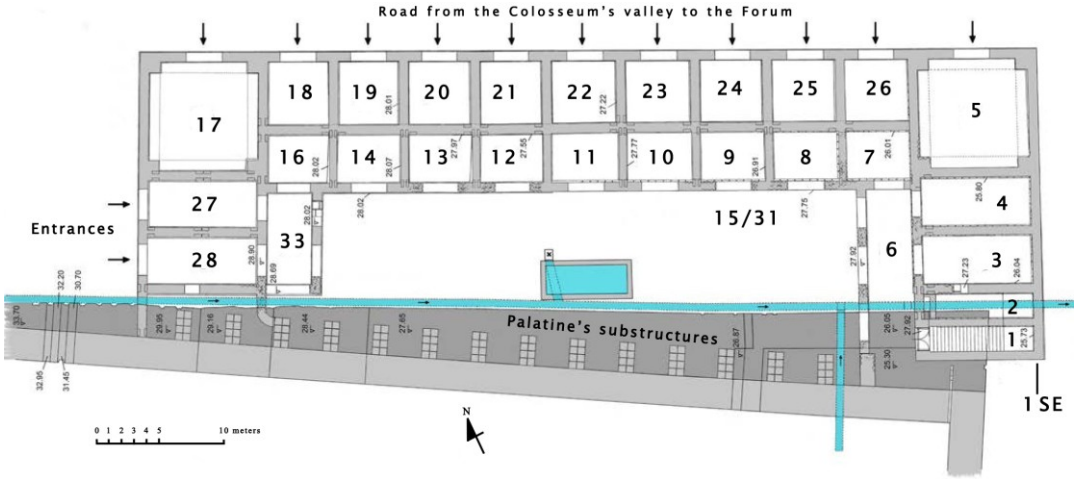


**Fig. 1.5: 'Terme di Elagabalo'. Plan of the Severan complex with the numbers of rooms and arrows indicating all entrances (after Saguì & Cante 2015: 47, fig. 25, with modifications).**

The archaeological investigation started on a ground floor which never was a common ancient one, because during the late 19th century earth was artificially and deliberately removed from the entire complex so as to bring to light all wall remains that were also restored, although not always with philological methods. The existence of these walls led to the sub-division of the digging activities and documentation into rooms[56], which belonged to the Severan complex (fig. 1.5) and which were still visible at the beginning of the stratigraphic excavations, directed and supervised by Prof. Lucia Saguì and by many trained archaeologists, one per each room. While digging, a progressive number was given to all units, using a common list for the whole area with numbers starting with 4 for earth, 7 for walls or preparations of floors or other units which were made of mortar, and with 8 for floors and covering units. All these units were recorded and described in paper sheets ('Schede US' = 'SU files'[57]) and drawn into plans with absolute positioning, identification of altitude above the sea level, and following the same division into rooms. All fragments found during the removal of these stratigraphic units were put in bags or boxes with clear indications of the rooms and units to which they originally belonged. With the time, even more ancient remains than the Severan structure were discovered and they had been as well identified and recorded with the same division into rooms, and drawn in final plans realised at the

[56] This decision was not made because excavating in this way was more comfortable as suggested by Cecamore 1998: 120, but only because that was the only possible solution. However, according to what she stated, wall remains were not removed.
[57] They were codified by the Italian Ministry for the cultural and environmental heritage, the Italian Central Institute for the Cataloguing and Documental activities and by the Soprintendenza Archeologica di Roma. They are published in Parise Badoni & Ruggieri Giove 1984.

end of each campaign. All these structures had been joined together so as to produce plans of complexes (cf., above, figs 1.2, 1.3, 1.4, and fig. 1.5). At the same, as for many urban excavations, decisions for interrupting the digging activities had to be taken. On one side they were related to safety of excavators to not dig too much in depth with the possibility that walls could collapse onto them. On the other side they were taken for offering, in case of future possibilities of opening the area to visitors, better preserved (and understandable) periods. In the Eastern portion of the area these ones mainly consisted of floors or sewers belonging to the Hadrianic and Julio/Claudian complexes, while in the Western portion mainly consisted of Late-Antique ones (with very few exceptions).

However, as the amount of finds discovered during the excavations in the 'Terme di Elagabalo' would be overwhelming for anyone (for all periods more than hundreds of thousands fragments were found), this study is focussed on the peculiar set of time for this building: the Mid-Imperial age. This period is that part of Roman history which includes the whole 2nd and the beginning of the 3rd centuries AD, before the so called 'Soldatenkaiser' or 'Military Anarchy' period (from AD 235)[58]. As three main periods were identified analysing finds discovered in the 'Terme di Elagabalo', this long period of investigation will be divided into the same three periods. At the same time a first one will be added (the Trajanic age which was not discovered in the 'Terme di Elagabalo') meant to be a starting point for the whole chosen set of time, only as a matter of better understanding the whole period of time considered for this investigation, and because it seems a real turning point for the whole subsequent period[59]. These periods, although named after the Emperors (as typical of Italian archaeology), should not be meant to be closely tied to them, but are imposed on one side to standardise nomenclatures of periods coming from all considered sites and excavations, on the other side because in the 'Terme di Elagabalo' two periods cannot be better defined in their chronology[60]:

1) The Trajanic age (AD 98-117[61] which can also be named as early 2nd century AD);

2) The Hadrianic age (AD 117-138[62] which can also be named as second to third decades of the 2nd century AD);

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[58] For this latter period cf., for example, Parker 1958: 141-220; Boak & Sinnigen 1965: 403-421; Johne *et al.* 2008. For a review of the 3rd century AD 'crisis' related to the 'military anarchy' period cf., for example, Carrié 1999 and Lo Cascio 2008b.

[59] Cf., below, Appendix 4, Section 4.3: 437 about Trajanic interventions to ameliorate commerce.

[60] Cf., below, Section 1.3.4.

[61] Cf., for example, Boak & Sinnigen 1965: 324-329; Foster 1974: 308-373; Bennet 1997; Goodman 1997: 67-69; Rodgers 2006: 70.

[62] Cf., for example, Boak & Sinnigen 1965: 329-332; Foster 1974: 377-440; Taliaferro Boatwright 1987; Birley 1997; Goodman 1997: 69-71; Fraser 2006; Rodgers 2006: 69.

3) the whole Antonine age (AD 138–193[63] which can also be named as mid/late 2nd century AD).

4) The Severan age (AD 193–211 which can also be named as very late 2nd/early 3rd centuries AD).

## 1.3 Contexts in 'Terme di Elagabalo'

Across this building, amphorae that will be analysed[64] come only from the Severan age rooms numbered 1 to 10, 1SE and 15B/31 (fig. 1.6), where deposits of Middle Imperial date were found[65]. The following Sections will inform about the phases discovered belonging to the Mid-Imperial age[66].

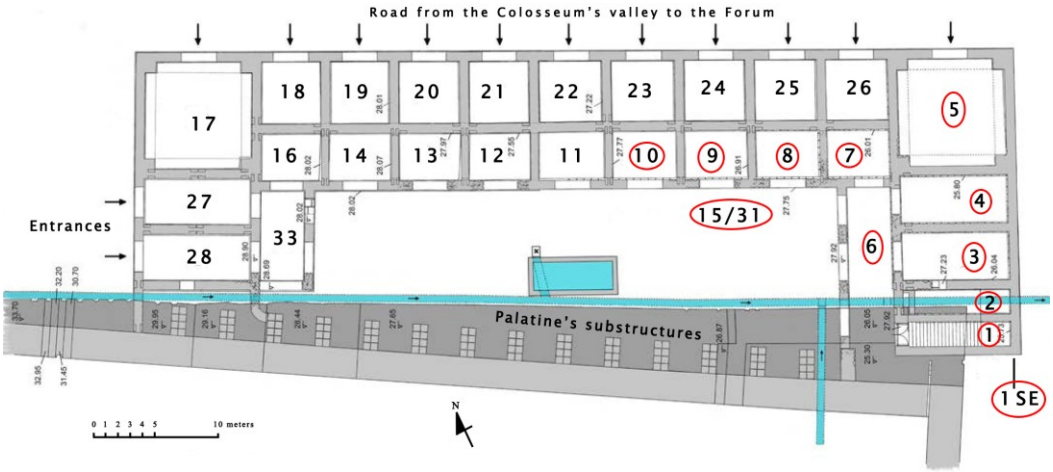


**Fig. 1.6: 'Terme di Elagabalo'. Plan of the Severan complex with the numbers of rooms, red circles indicating the rooms which resulted in Mid Imperial deposits, and arrows indicating all entrances (after Saguì & Cante 2015: 47, fig. 25, with modifications).**

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[63] The Antonine Emperors had been rather different from Hadrian. Antoninus Pius (cf., for example, Parker 1958: 3–13; Boak & Sinnigen 1965: 332–333; Lacour-Gayet 1968; Foster 1974: 441–471; Goodman 1997: 71–72; Galimberti 2007: 38–43) almost never left Rome and his residence in Campania during his rule (Clemente 1991: 631; Goodman 1997: 72; Fraser 2006: 10). Marcus Aurelius (cf., for example, Parker 1958: 14–28; Boak & Sinnigen 1965: 333–335; Birley 1966: 217–309; Foster 1974: 472–527; Goodman 1997: 73–74; Mazzarino 2000: 320–323, 334–343; Rodgers 2006: 70–71) and Lucius Verus (cf., for example, Parker 1958: 18–21; Boak & Sinnigen 1965: 333–334; Birley 1966: 152–217; Foster 1974: 472–489; Clemente 1991: 630; Goodman 1997: 73–74) were mostly involved in wars (Birley 1966: 152–309; Mommsen 1996: 316–322; Goodman 1997: 73–74). When Marcus Aurelius in AD 176 had to decide his successor, only Commodus was still alive, thus giving no choice (Clemente 1991: 630; Le Glay *et al.* 1996: 326).

[64] Almost completely unpublished assemblages, except Radaelli 2013, Traini & Mannelli 2013 and Radaelli, forthcoming (A) and (B) both with just quantifications and reflections.

[65] For the description of these main periods cf., above, Chapter 1, Section 1.1: 6–8.

[66] In Italian archaeology the grouping systems of many stratigraphic units is called 'Attività' ('Activity'): Giannichedda 2006: 41. For this research the term 'phase' will be used.

### 1.3.1 Period 1 – the Hadrianic age

During the Hadrianic age, when the *horreum* was built, several phases were discovered in some of the rooms. All of them are related to the creation of this building, its repairs, and maintenance, not to phases of use of it. These phases resulted in a few fragments of amphorae.

Phase 1 = Creation of levelling layers before the construction of the building. For the list of amphorae, cf. Appendix 2, Table 1.

Phase 2 = Construction of the building, the Palatine's substructures, and the road that divided them. No fragments of amphorae were found during this phase.

Phase 3 = Creation of levelling layers after the construction of the building. For the list of amphorae, cf. Appendix 2, Table 2.

Phase 4 = Units related to the creation of five sewers (a large part of them were not removed, thus only extremely few fragments were found). For the list of amphorae, cf. Appendix 2, Table 3.

Phase 5 = Levels were raised in order to create the first floors. For the list of amphorae, cf. Appendix 2, Table 4.

Phase 6 = Creation of the first *opus spicatum* floors. For the list of amphorae, cf. Appendix 2, Table 5.

Phase 7 = Levels were raised so as to create new *opus spicatum* floors. For the list of amphorae, cf. Appendix 2, Table 6.

Phase 8 = Creation of the second level of *opus spicatum* floors. For the list of amphorae, cf. Appendix 2, Table 7.

Phase 9 = Creation of a third level of *opus spicatum* floors. No fragments of amphorae were found during this phase.

Phase 10 = Restoration of the third level of floors. For the list of amphorae, cf. Appendix 2, Table 8.

Phase 11 = Creation of a small mortar basin, connected to one of the sewers. For the list of amphorae, cf. Appendix 2, Table 9.

### 1.3.2 Period 2 – the Antonine age

During the Antonine age, a very low quantity of stratigraphic units was found, due to the removal of all deposits during the subsequent period. They consist of a couple of restorations of floors and natural fillings of sewers connected to an hypothetical use of the rooms. Extremely few fragments of amphorae were found.

Phase 12 = Addition of earth to raise levels for the creation of a new floor. For the list of amphorae, cf. Appendix 2, Table 10.

Phase 13 = Creation of a new '*cocciopesto*' floor. No fragments of amphorae were found during this phase, but an axis possibly coined under Antoninus Pius was found[67].

Phase 14 = Natural fillings of two sewers. For the list of amphorae, cf. Appendix 2, Table 11.

### 1.3.3 Period 3 – the Severan age

The Severan age saw many interventions related to the destruction of the Hadrianic *horreum*, fillings of structurally dangerous vacuums (sewers), raising of levels connected to the new building activities, the construction of the new complex (the 'Terme di Elagabalo') with the rooms which are still visible today, and another series of raised levels. An extremely large amount of fragments was found during all phases which are related to all these building activities.

Phase 15 = The previous building was razed to the ground and levelling layers were subsequently created to obliterate it. For the list of amphorae, cf. Appendix 2, Table 12.

Phase 16 = Intentional fillings of sewers. For the list of amphorae, cf. Appendix 2, Table 13[68].

Phase 17 = Levels were raised in order to create the new complex. For the list of amphorae, cf. Appendix 2, Table 14.

Phase 18 = Construction of the new complex ('Terme di Elagablo'): foundations' pits and walls. For the list of amphorae, cf. Appendix 2, Table 15.

Phase 19 = Positioning of a *dolium*. For the list of amphorae, cf. Appendix 2, Table 16.

Phase 20 = Realisation of a small drain (for constructing purposes) and its obliteration. No fragments of amphorae were found during this phase.

Phase 21 = Creation of levelling layers in order to create a lime basin (for constructing purposes). For the list of amphorae, cf. Appendix 2, Table 17.

Phase 22 = The lime basin was filled because it was no longer used. Some fragments found in this phase have traces of concrete or lime. For the list of amphorae, cf. Appendix 2, Table 18[69].

Phase 23 = Levels were raised in order to create the floors of the Severan complex. For the list of amphorae, cf. Appendix 2, Table 19.

Phase 24 = Realisation of a mosaic floor for the building. No fragments of amphorae were found during this phase.

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[67] Personal communications of Prof. Lucia Saguì and Dr. Giacomo Pardini.
[68] Some amphorae coming from a single case were published in Radaelli 2013.
[69] Amphorae published in Traini & Mannelli 2013: 38–42.

### 1.3.4 Analysis of contexts from the 'Terme di Elagabalo'

Analysed contexts both for the Hadrianic and Severan ages are mostly linked to building activities rather than periods of life for the complexes. The actual function of each room belonging to both the Hadrianic and Severan buildings cannot be surely identified, lacking information offered by architectural remains, phases of use, decoration, or even floors. Nevertheless the morphology of these two complexes allowed to suggest their identification (or at least for the Hadrianic one) as *horrea*, storage buildings in which products (whose nature cannot be defined with certainty) were kept or sold.

Just for a single case the amount of pottery (and glass), its typology, and its state of preservation (several entire vases with traces of use) found in one of the Severan contexts (Phase 16 in Room 4) allowed to understand the function of one of the rooms of the previous complex (the second room from the East). It was very likely used as a *popina* where workers of this building, inhabitants of surrounding ones, as well as external customers could find something to eat and drink[70]. It also had a latrine for the biological needs of these customers[71].

A better defined dating of the first period than the generic Hadrianic age is unfortunately impossible, even looking at other dating classes (fine wares, lamps, African cooking ware[72], and coins[73]). Among in-phase vessels, in fact, just 22 dating ones were found[74], which cannot better reduce the chronology. 18 vessels come from Phase 2.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| Thin-walled pottery | Central Italy | Beaker | *Atlante II*, 1/120, tav. LXXXVI, 7=Hull 1963, 391A | AD 120–4th century AD[75] | 1 |
| African Sigillata | A | Jug | Lamboglia 12= Salomonson A13=Hayes 158, nn. 1-5 | half/second half of 2nd century AD–Severan age[76] (it is rarely found, so this chronology is not assured) | 1 |

[70] Radaelli 2013: 322–323.
[71] Two other latrines were identified in this complex: cf., above, Chapter 1, Section 1.1: 6.
[72] For in-phases vessels of glass in contexts dating Hadrianic age cf. Lepri 2013: 139.
[73] A few coins were found, but they mostly are residual ones: personal communication of Dr. Giacomo Pardini.
[74] Locally produced common wares cannot date contexts as their types have very long lifes, as for amphorae.
[75] *Atlante II*: 271.
[76] *Atlante I*: 45.

| | | | | | |
|---|---|---|---|---|---|
| African cooking ware | - | Casserole | Hayes 197=*Ostia III*, 267=Bonifay 2004a, fig. 120, 2 | first half of 2nd-4th/5th centuries AD[77] | 10 |
| African cooking ware | - | Pan | Lamboglia 10A=Hayes 23B | first half of 2nd-end of 4th/early 5th centuries AD[78] | 3 |
| African cooking ware | - | Dish/Lid | *Ostia III*, 332=Hayes 196, n. 1 | Trajanic/Hadrianc age-second half of 2nd century AD[79] | 3 |

Just 2 vessels come from Phase 7.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| Lamps | Italy | - | Bailey 1980, Type O, group VI, Q 1246 (decorated with ovules) | first half of 2nd century AD[80] | 1 |
| African cooking ware | - | Casserole | Hayes 197=*Ostia III*, 267=Bonifay 2004a, fig. 120, 2 | first half of 2nd-4th/5th centuries AD[81] | 1 |

Two coins come from Phase 11.

| Class | Form | Type | Chronology | V. |
|---|---|---|---|---|
| Coin | Axis | Coined by Hadrian | Hadrianic age[82] | 1 |
| Coin | Axis | Sabina (coined by Hadrian) | Hadrianic age[83] | 1 |

The Antonine age is very badly preserved in the 'Terme di Elagabalo' being almost completely removed by Severan activities to create the new complex. This period is attested with very few units linked to the restoration of floors and two natural filling of sewers. All of them unfortunately resulted in few ceramic fragments (not only amphorae whose amount is very low). Apart from the already mentioned coin referring to Antoninus Pius found in Phase 13[84], which can be considered a *terminus post quem* dating for the whole period, just two vessels can be mentioned, unfortunately not refining much the chronology of this period. One vessel comes from Phase 12.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African cooking ware | - | Casserole | Hayes 197=*Ostia III*, 267=Bonifay 2004a, fig. 120, 2 | first half of 2nd-4th/5th centuries AD[85] | 1 |

[77] *Atlante I*: 219; Bonifay 2004a: 225.
[78] *Atlante I*: 217.
[79] *Atlante I*: 212.
[80] Bailey 1980: 312.
[81] *Atlante I*: 219; Bonifay 2004a: 225.
[82] Personal communication of Dr. Giacomo Pardini.
[83] Personal communication of Dr. Giacomo Pardini.
[84] A few other coins were found, but they mostly are residual ones: personal communication of Dr. Giacomo Pardini.
[85] *Atlante I*: 219; Bonifay 2004a: 225.

The other one comes from Phase 14.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African cooking ware | - | Pan | Hayes 181, n. 1= Bonifay 2004a, type 4, fig. 114, 2 | advanced 2nd century AD for Bonifay[86], but it seems already found in contexts dated end of 1st–2nd century AD in Ostia[87] | 1 |

Finds recovered from units belonging to the phases dating Severan age (which are all referred to building activities), helped in determining their formation process, especially for the relatively large amount of fragments matching together, also coming from different units or phases[88]. The chronology of finds and their amounts permit to suggest that these discovered fragments mainly came from the immediately previous period of use of the building. They were objects stored within the rooms of the Hadrianic complex during the Late Antonine age and were destroyed along with the entire building and used for the creation of levelling layers for the new complex. This imply that they should be seen as 'false residuals' according to the definition expressed below in Chapter 3, Section 3.2.1, and not *strictu sensu* residuals because they were very likely in use in the previous building when they were broken and immediately after discarded when the new complex was under construction. Fortunately some in-phase fragments of dating classes (fine wares, lamps, African cooking ware[89], and coins[90]), were, on the contrary, discarded during these building activities. 27 vessels come from Phase 16.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African Sigillata | A | Cup | Lamboglia 1c=Hayes 8B= Bonifay 2004a, type 3, fig. 84, 5 | 3rd century AD[91] | 6 |
| African Sigillata | A | Cup | *Atlante I*, tav. XVII, 18=*Ostia I*, 86 | first half of 3rd century AD[92] | 3 |
| African Sigillata | A | Cup | Hayes 14B, n. 11=*Atlante I*, tav. XVII, 2 | first half of 3rd century AD[93] | 2 |

[86] Bonifay 2004a: 213.
[87] *Atlante I*: 215.
[88] Cf., as a matter of example, the sign '*' (asterisk) in the following tables with dating vessels. That sign means that vessels match together even if coming from different phases.
[89] For in-phase vessels of glass in contexts dating Severan age cf. Lepri 2013: 140–141. As already mentioned, types of local common wares cannot date contexts for having very long lifes.
[90] Many coins were found, but they mostly are residual (with also intrusive ones): personal communication of Dr. Giacomo Pardini.
[91] *Atlante I*: 26; Bonifay 2004a: 156.
[92] *Atlante I*: 35.
[93] *Atlante I*: 33.

| | | | | | |
|---|---|---|---|---|---|
| African Sigillata | A/C | Lid | Salomonson XXII (Hayes 146) | first half of 3rd century AD[94] | 1 |
| African Sigillata | A/C | Closed form | Unidentifiable | from the early 3rd century for this production[95] | 1* |
| Lamps | Italy | - | Bailey 1980, Type P/Q= Deneauve 1969, pl. LXXXII, 905, p. 192 with stamp [Lu]c(i) Fort(is)[96] | end of 2nd or early 3rd century AD[97] | 1 |
| Lamp | Italy | - | Bailey 1980, Type Q, group VIII, Q1397 | first half of 3rd century AD[98] | 1 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 18 | first half of 3rd century AD[99] | 7 |
| African cooking ware | - | Marmite | Raqqada 1973, Tav. LIII, D1 | end of 2nd–end of 3rd centuries AD[100] | 1 |
| Coin | - | Axis | - | Antonine age/age of Septimius Severus[101] | 1 |
| Coin | - | Axis | Coined by S. Severus | Severan age[102] | 1 |
| Coin | - | Axis | - | Antonine age/age of Septimius Severus[103] | 1 |
| Coin | - | Sesterce | | Antonine age/age of Septimius Severus[104] | 1 |

34 vessels come from Phase 17.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African Sigillata | A/C | Cup | Lamboglia 6 bis (Hayes 36, n. 1) | from the Severan age[105] | 1 |
| African Sigillata | A/C | Closed form | Unidentifiable | Cf. above | 0* |
| African cooking ware | - | Casserole | *Ostia I*, 267 | first half of 3rd century AD[106] | 2 |
| African cooking ware | - | Pot | *Ostia I*, 56=Hayes 183, n. 1, 184, n. 2 | from the early 3rd century AD[107] | 4 |

[94] *Atlante I*: 150.
[95] The A/C production is a transitional production between A (1st–3rd centuries AD: Gandolfi 2005b: 198) and C (3rd–half/second half of 5th centuries AD: Gandolfi 2005b: 203), thus can be dated during the early 3rd century AD.
[96] Larese & Sgreva 1996: 189, n. 307.
[97] Radaelli 2013: 314–315 and note 26.
[98] Bailey 1980: 369.
[99] *Atlante I*: 212.
[100] *Atlante I*: 224.
[101] Personal communication of Dr. Giacomo Pardini.
[102] Personal communication of Dr. Giacomo Pardini.
[103] Personal communication of Dr. Giacomo Pardini.
[104] Personal communication of Dr. Giacomo Pardini.
[105] *Atlante I*: 147.
[106] *Atlante I*: 223.
[107] *Atlante I*: 222.

| | | | | | |
|---|---|---|---|---|---|
| African cooking ware | - | Pan | Lamboglia 9A | end of 2nd/early 3rd–end of 4th/early 5th centuries AD[108] | 1 |
| African cooking ware | - | Pan | Hayes 181=Bonifay 2004, type 5C, fig. 114, 9 | end of 2nd–3rd centuries AD (possibly even early 4th century AD)[109] | 1 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 20=Hayes 185, n. 3 | rarely found in contexts dated first half of 3rd century AD[110] | 5 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 18 | first half of 3rd century AD[111] | 19 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 264 | from the Severan age[112] | 1 |

15 vessels come from Phase 18[113].

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African Sigillata | A/C | Closed form | Unidentifiable | Cf. above | 0* |
| African cooking ware | - | Pan | Hayes 181=Bonifay 2004a, type 5C, fig. 114, 9 | end of 2nd–3rd centuries AD (possibly even early 4th century AD)[114] | 2 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 20=Hayes 185, n. 3 | rarely found in contexts dated first half of 3rd century AD[115] | 1 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 18 | first half of 3rd century AD[116] | 6 |
| African cooking ware | - | Dish/Lid | Hayes 185 = Bonifay 2004a, type 9C, fig. 118, 7 | end of 2nd–half of 3rd centuries AD[117] | 1 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 263 | rarely found in the first half of 3rd and in the 4th centuries AD[118] | 3 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 17=Hayes 182 | end of 2nd/early 3rd–end of 4th/early 5th centuries AD[119] | 2 |

2 vessels come from Phase 23.

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[108] *Atlante I*: 215.
[109] Bonifay 2004a: 214.
[110] *Atlante I*: 212.
[111] *Atlante I*: 212.
[112] *Atlante I*: 214.
[113] This Phase also resulted in a coin (*nummus*) dating first half of the 4th century AD (clearly intrusive): personal communication of Dr. Giacomo Pardini.
[114] Bonifay 2004a: 214.
[115] *Atlante I*: 212.
[116] *Atlante I*: 212.
[117] Bonifay 2004a: 221.
[118] *Atlante I*: 214.
[119] *Atlante I*: 213.

| Class | Production | Form | Type | Chronology | V. |
|---|---|---|---|---|---|
| African cooking ware | - | Casserole | Hayes 184=Bonifay 2004a, type B, fig. 116, 9 | 3rd century AD[120] | 1 |
| African cooking ware | - | Dish/Lid | *Ostia I*, 18 | first half of 3rd century AD[121] | 1 |

These 78 vessels from different phases permit to ascribe all these interventions in the very first years of the 3rd century AD, but not much into this century because African Sigillata C (whose production starts in the early 3rd century AD[122]) totally lacks in all considered contexts from the 'Terme di Elagabalo'. For the nature of contexts, only linked to building activities and especially to the raising of levels (with very few exceptions related to a couple of restorations) and not to phases of use of both these complexes (the Hadrianic and Severan ones), this generic interpretation as *horrea* for both buildings derived from their morphology remains as such, although it is an extremely presumable one especially for the Hadrianic one for the amount and nature of finds (and especially amphorae) that were discarded during the construction of the Severan complex. The nature of finds and of contexts (no stratification was found over the small fragments of mosaic floors of the Severan complex) unfortunately cannot lead to any secure identification for the function of the entire Severan building or even of all the rooms where they were found. This is the reason why, despite the uncertainties of the method used, all comparisons undertaken in following Chapters will consider the 'Terme di Elagabalo' in their integrity (thus as a single entity during all periods). At the same time also Rome and Ostia will be considered as single entities so as to compare data with the 'Terme'.

## 1.4 Concluding remarks to the Introduction

These excavations brought attention to a previously unknown sector of Rome, a city where no such unexcavated, important, unique, and central places such as the area of the 'Terme di Elagabalo' exist, with its extension and unity of building activities during all periods. It also has a very particular position, being located along the road which, from the Colosseum's valley, lead to the Roman Forum and the Arch of Titus, in front of the Temple of Venus and Rome, and at the foot of the Palatine, the Imperial residence's hill. These peculiarities of history, location, unity of building activities for the complexes, their being linked to the Palatine's substructures during the chosen periods, and of course the fact that very few places have been so deeply and

[120] Bonifay 2004a: 219.
[121] *Atlante I*: 212.
[122] Gandolfi 2005b: 203; Cabras 2007: 31.

scientifically dug are really incomparable for the information they can provide. On the other hand, being all finds from the 'Terme di Elagabalo' almost totally unpublished, this large amount of fragments that were partly used, but above all discarded in this series of buildings, allows to consider these sherds a collection of material of unique importance in shedding light on commercial issues. At the same time, they may well represent a significant and totally new contribution to the knowledge of the ancient society and history of people in the Capital, constituting a fundamental increase in the understanding and knowledge of it, trying to learn more about what arrived in this central sector of Imperial Rome. Studies referring to trade in Roman times are usually based on finds discovered in port-sites (mainly Ostia) or in the *Emporium* (Testaccio area), not considering redistribution of goods within the Capital itself and especially in the city centre. In choosing this site all this information had been considered, leading to the assumption that the amphorae coming from the 'Terme di Elagabalo' surely contribute to a substantial improvement to the state of knowledge, not only because they can generate new interpretations and amendments to previous scholarship, bringing to a fundamental comprehension of products arriving to the Capital, but also because they can provide a snap shot of foodstuffs stored or sold at the heart of the City for the first time.

At the same time, one of the main reasons for choosing finds (and amphorae) from this site as the topic of this research lies in a will to affirm again the importance of pottery studies (and not only the most beautiful or most preserved ones[123]), because they are in some ways completely forgotten nowadays in Italian archaeology (but not only in Italy[124]) apart, perhaps, the use of these finds to simply gain a fast dating of phases found during excavations. This study will at first look at literature (Chapter 2: Literature review), the used methodology (Chapter 3: Methodologies, aims and outcomes), and the other considered sites (Chapter 4: The analysed sites in Rome and Ostia). Afterwards, in many chapters about the chronological periods (Chapters 5: The Trajanic age; 6: The Hadrianic age; 7: The Antonine age; 8: The Severan age) and about the traded products (Chapters 9: Wine; 10: Olive oil; 11: Fish sauces; 12: Other goods) it will be therefore strictly based on the amphorae that were discovered, trying to re-emphasize the strong relation of pottery with ancient economy and even social history[125]. Comprehending these elements permits a better understanding of patterns in trade flows in the Capital of the Empire and even to shed a small light onto a range of social and ideological themes for the definition of individual and group identities, as visible in Chapter 13: Conclusions.

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[123] Willis & Hingley 2007: 13.
[124] Cf., for example, Swift 2007: 22, 27.
[125] Peacock 1977a: 24; Vera 2010: 1.

Four Appendices will be added to the main core of the research in order to simplify the reading of the text (Appendices 1: Contents, volumes, and chronologies of discovered amphorae including two new forms; 2: Lists of amphorae from all analysed sites; 3: Fabrics from the 'Terme di Elagabalo') and to permit an evaluation of a couple of correlated themes (Appendix 4: The population of Rome and the food supplied).

# Chapter 2: Literature review

This Chapter focuses on the analysis of published literature about the so-called 'Terme di Elegabalo' complex in Rome (the basis of this research and first research question), the history of studies about Roman amphorae, and the ceramic studies in Rome (second research question). This literature review is undertaken so as to understand which is the situation of publications about these three topics.

## 2.1 The 'Terme di Elagabalo'

The building commonly known with this name (whose description can be found in Chapter 1) was never investigated seriously, extensively, and stratigraphically until Prof. Clementina Panella decided to enlarge her excavations in 2007. Before that year, the only activities in this area were the first dig during the late 19th century made by Rosa[126], the architectural study by Popescu in the late 1920s[127], and four sondages held by the Escuela Española de Arqueología dated 1989-1992[128]. The interpretation of this building in its different visible phases is due to Popescu: an *horreum* during the Severan age and a possible church during the subsequent periods (although it was possibly an erroneous interpretation). In 1983 an analysis of the Late Antique mosaic floor discovered in various parts of this building was published by Guidobaldi and Guiglia Guidobaldi, considering its chronology and the re-use of marble[129]. A small part of an article published by Royo in 2001 still tries to offer all suggested interpretations of this building[130].

Apart from these publications, some contributions had been published so far about the excavations held in this area from 2007. One of them was written by Prof. C. Panella, trying to explain the discoveries before 2008 (not only belonging to the so-called 'Area IV')[131]. The second is a more detailed report of remains of the various buildings found in this area till 2009 by Prof. Lucia Saguì which gives analyses of walls, interpretations and chronologies, and offers also a brief analysis of some pottery

[126] Rosa 1873: 80-82. A detailed report made by Pellegrini for the Italian Ministry of Education was also written: cf. Saguì 2009: 236 and note 4.
[127] Popescu 1930.
[128] Partly published in Arce *et al.* 1990; Mar 2005: 250-292; Mar 2008.
[129] Guidobaldi & Guiglia Guidobaldi 1983: 230-238.
[130] Royo 2001: 57-61.
[131] Panella 2008.

vessels that were discovered[132]. Some information about the situation just before and after the AD 64 fire across the Palatine's N-E Slopes excavations – and very little about the area in which the 'Terme di Elagabalo' is located – can be found in two articles published in the catalogue of the exhibition about Emperor Nero held in Rome[133]. Iron-age remains (especially from 'Room 10') were, on the contrary, published in 2011[134]. In the same year another article was published reporting the methodology used for a 3D scattergram photogrammetry that was undertaken so as to better understand this building's function and its walls' preservation, increasing the traditional graphic documentation such as plans, views, and sections[135]. The topic of floors was re-examined in a 2012 article by Prof. Saguì who briefly discussed the different floors discovered, dated from the Late Republican age till the Late Antiquity[136]. An article published in 2013, written by the author of this same research, offers a detailed study of finds discovered in the filling of a sewer found in one of the Severan age rooms, with an attempt of interpreting the use of the room during the previous period, and dietary issues[137].

Three volumes were recently published in the same year considering different topics. The first volume[138], along with offering descriptions of many remains discovered during the excavations in the area of the *Meta Sudans* and in the so-called 'Area II' of the excavations at the Palatine N-E Slopes, also offered a description of architectural and archaeological remains from the 'Terme di Elagabalo', updating for the first time the already mentioned 2009 article[139].

The second volume considers spatial organisation of the complex[140] in different articles. One of them describes and analyses a basin used during the realisation of the Severan building for containing water or possibly lime for construction, also briefly publishing ceramics found in its filling[141]. Another one reconsiders the use of the laser scanner methodology for a specific part of the building (the Late Antique *balneum* which occupied three rooms of the Western part of it), describing not only remains, services, entrances, and pathways, but also how the technology used helped in analysing them[142]. Another one describes and analyses the so-called *stibadium* and the surrounding rooms realised and re-organised during the Late Antiquity with the

[132] Saguì 2009.
[133] Panella 2011a; Panella 2011b.
[134] Quondam 2011.
[135] Panella *et al.* 2011b.
[136] Saguì 2012.
[137] Radaelli 2013. The amount of amphorae is included in this investigation.
[138] Panella 2013a.
[139] Saguì 2013.
[140] Panella & Saguì 2013a.
[141] Traini & Mannelli 2013. The amount of amphorae is included in this investigation.
[142] Giorgi 2013.

anterior rectangular room with columns, offering a detailed study of remains and interpretations for their functions[143]. The last one, starting from the hypothesis which identified a pit in the above mentioned rectangular room as a deposit for ice and/or snow used during feasting in the Late Antique *stibadium*, enlarged the study about the use of snow during the Roman and Late Antique times[144].

The third volume considers finds from specific contexts in various articles[145]. One of them, along with a context from the *Meta Sudans* excavations, describes and analyses some rooms (Rooms 3, 7, and 8 of figs. 1.5–6) which belonged to the Early Imperial building identified as a *domus* with fronting *tabernae*, the effects of the AD 64 fire and the resulting finds (not only pottery)[146] which were also re-examined in a 2014 article which offers detailed tables of finds[147]. Another article, considers all glass finds discovered across the complex in the Middle Imperial contexts, especially those belonging to the late 2nd/early 3rd centuries AD, offering a significant picture of morphological typologies and decorations[148]. The last one analyses two medieval deposits (dumps) created among older walls which had been reused in one of the Severan age's rooms (Room 8) and considers both pottery and glass finds[149].

Two other articles were published in 2015. One of them offers descriptions of all the new discoveries at the end of the archaeological campaign, with also an update about the Iron Age remains[150]. The other one gives a detailed and complete version of descriptions and interpretations of all discoveries and can be considered the ultimate architectural and archaeological publication of them, updating the already mentioned 2009 and 2013 articles[151]. On the other hand, a two forthcoming articles offer very brief overviews of a few points of this same investigation, although only in general terms and considering a few reflections of implications derived from finds[152].

## 2.2 Roman Amphorae: brief history of studies

With the birth of the archaeological studies in the modern era, the study of amphorae was almost neglected. That happened because they were considered, as for

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[143] Caratelli 2013.
[144] Giovanetti 2013.
[145] Panella & Saguì 2013b.
[146] Gualtieri *et al.* 2013: 21–90.
[147] Cardarelli & Castelli 2014.
[148] Lepri 2013. Another article is about analyses held on some glass finds, also coming from the 'Terme di Elagabalo' (Gliozzo *et al.* 2015).
[149] Orlandi & Lepri 2013. The same finds are discussed in Quondam *et al.* 2015.
[150] Saguì *et al.* 2015.
[151] Saguì & Cante 2015.
[152] Radaelli, forthcoming (A); forthcoming (B).

many other objects, not valuable material and without any artistic importance. When they were discovered, their lucky fate was to be usually hidden and forgotten in some storerooms, while their common destiny was to be thrown away without being analysed. With the years, however, amphorae began being studied, starting with typological researches. Using a sentence used by Spaulding, the type is a "combination of attributes favoured by the makers of the artefact, not arbitrary procedures of the classifier"[153]. This meaning marks a form that fulfils several characteristics[154], which was recognised by a very large number of scholars and publications, although rarely they focussed on the theoretical meaning of types and changes[155].

The first attempts to create a typological classification of Roman amphorae belong to the late 19th century (when the discipline of studying amphorae begun[156]), when the *Corpus Inscripionum Latinarum* volumes were published by the Berlin Academy. Epigraphic data borne by different containers found in Rome (Castro Pretorio and Monte Testaccio made by Dressel in 1899[157]) and Pompeii (by Schöne and Mau in 1909[158]) were recorded and accompanied by synoptic tables with the vessels' forms[159]. These tables are not complete and the Late Antique containers are missing (for the chronologies of contexts). Inscriptions were the main interest of those researchers, thus they offered scarce information about the objects themselves[160]. Despite these problems, Dressel's table is still nowadays the partial basis for amphorae classification.

The swift discovery of large amounts of amphorae during the excavations of important sites along the Rhine limes (primarily Haltern[161], Hofheim[162], and Niederbieber[163]) lead to new classifications, even though they were not extremely accurate as scholars did not consider Dressel's typology and they often overlooked those vessels that did not bear inscriptions. Often these new classifications did not match with the two *CIL* typologies, creating in this way, the very first confusion among forms[164]. Grenier was the first one to clarify this problem, suggesting the use of

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[153] Spaulding 1953: 305.
[154] Anderson 1984: 36–37.
[155] Stig Sørensen 2015: 85, 91.
[156] Garlan 2000: 11–20.
[157] *CIL* XV, 2, tav. II.
[158] *CIL* IV, *Vasorum Formae*; *CIL* IV, Suppl. 2, tavv. II–III. For the problems of this table cf. Panella 1976: 151–154.
[159] Bruno 2004: 358–359.
[160] Paterson 1982: 148.
[161] Loeschke 1909: 250–258.
[162] Ritterling 1913: 300–307.
[163] Oelmann 1914: 64–66.
[164] Even if they had been the very first attempts in a new subject of studies, these new published discoveries followed specific and detached ideas, already leading to denominate the same form with several different names. The only new provision they made – that is still used today – had been the creation of a single form to those that Dressel considered separate with his numbers 7 to 11.

Dressel's numbers to identify amphorae found all across the Empire. He also was the first one to consider these containers as useful sources of information about ancient trade[165]. Not only German military sites, however, offered important typologies. About fifteen years later Grenier's publication, the excavations of a first British site, *Camulodunum* (Colchester) were published[166], followed in 1968 by the military sites of Richborough[167], and, afterwards, Kingsholm in 1985[168].

A renewed interest about Roman amphorae began to happen again only in the 1950s. Some scholars, such as Pélichet (who worked on amphorae from Nyon in Switzerland)[169] and Almagro (who worked in Ampurias)[170] tried to continue Dressel's typology, giving new numbers to types that were not included within the original table. Pélichet, furthermore, considering for the first time a period of four centuries, noted that rims changed their profile, producing the first hypothesis that these changes were related to chronological differences. However, the first scholar who revised and changed Dressel's table was N. Lamboglia, who tried to provide new groups for the Late Republican amphorae[171]. Some years later, firstly Benoit[172] and then Zevi[173] offered new changes to Dressel's classification. On the contrary Robinson, while publishing the finds discovered in the Agora of Athens, decided to divide them into chronological groups, assigning them letters from F to N followed by a serial number and not considering Dressel's table[174].

Without any doubt, the works of Zevi[175] and then of Zevi & Tchernia[176] began to reveal, by a re-examination of the epigraphic evidence of Dressel's amphorae, the potential of these containers as an indication of the Roman economic activity and seaborne trade, suggesting, for the first time, issues related to their content and origin[177]. In 1970 a new typology was published by Beltrán Lloris[178], using amphorae

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[165] Grenier 1934: 601–642.
[166] Hawkes & Hull 1947.
[167] Cunliffe 1968.
[168] Hurst 1985. They all offered their typologies of amphorae and some of their names are still used nowadays.
[169] Pélichet 1946.
[170] Almagro 1953-1955.
[171] Lamboglia 1955: 241–270. He also tried to update them with the new discovery offered by the important Albenga ship-wreck, starting to give importance to another branch of amphorae studies: underwater excavations (cf. below).
[172] Benoit 1956.
[173] Zevi 1966.
[174] Robinson 1959.
[175] Zevi 1966.
[176] Zevi & Tchernia 1969.
[177] Bruno 2004: 359.
[178] Beltrán Lloris 1970.

found in Spain[179] and, when a sufficient amount of amphorae was discovered in the 'Terme del Nuotatore' in Ostia, a new organisation of forms was attempted. Even though not changing Dressel's typology but only reorganizing it, the latter site offered new types that were not included in that table and scholars gave correspondences with names for already known forms and also matters of trade flows[180].

All these studies led to a conference during which several scholars offered issues related to their studies and the methods used in creating typologies or identification of forms[181]. Almost in the same period, an article appeared which reorganised previous typologies for Punic amphorae[182]. Two years later, discoveries from Berenice (Benghazi, in Libya) were published and the book had a specific chapter about amphorae which offered a new typology, dividing forms into Early, Mid and Late Roman vessels and with numbers that follow a chronological order[183]. The same division was used for types discovered in Carthage, whose Late Roman amphorae names are still used for the Late Antique containers[184]. Then Hayes, publishing materials from the villa of Dionysos in Knossos (dated AD 150–250), created his own typology of amphorae (50 forms), offering descriptions, information about distribution in the island of Crete, and – sometimes – evolution of forms and references to Dressels' and Panella's typologies[185].

In 1984 a complete new typology that considered also Late Antique forms was published by Keay, analysing finds from the Spanish province of Catalunya[186], identifying 93 types with their variants, tracing their development from the earlier stages and their changes during time, offering chronologies, suggestions for their contents and origins, and informing about stamps, graffiti and *tituli picti* borne by some of them. After some earlier contributions, in 1985 another fundamental book was published, finally offering a basis for the typology of amphorae produced in the ancient province of Gaul *Narbonensis*[187]. Another very important book was published the following year by Peacock and Williams[188], offering a characterization of known forms divided into 55 types (called classes) with 11 additional forms about which less

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[179] He classified both local and imported amphorae in chronological order, creating 83 types which included also already known forms with their common names, identifying for some of them their origins and contents, and adding a separate section for those amphorae with uncertain origins.
[180] *Ostia III*: 460–462 ('contenitori monoansati') and 463–633 (by C. Panella); *Ostia IV*: 117–266 and 359–383 (by D. Manacorda).
[181] Vallet 1977.
[182] Van der Werff 1977-1978.
[183] Riley 1979.
[184] Riley 1981.
[185] Hayes 1983.
[186] Keay 1984.
[187] Laubenheimer 1985. Before that book (which gave for the first time the name 'Gauloise' to them) these types were called with various names.
[188] Peacock & Williams 1986.

information was available, giving for all of them descriptions, chronological data, drawings and pictures, concordances with other nomenclatures, and information about origins of amphorae using fabric analyses. A year later, in 1987, the first book of forms discovered in Augst was published. It considered all rims of the Baetican-oil container Dressel 20, offering a first study that tried to comprehend the chronological evolution of rims, handles and bodies[189]. This study still remains fundamental for the large quantity of drawings, although the offered evolution was afterwards revised[190].

Another important development was published in 1991 by Ramón Torres who organised Punic amphorae found in Ibiza[191], followed in 1995 by another text considering Punic amphorae in the Mediterranean[192]. In 1991 Sciallano and Sibella published a book which offered another list of forms with their most common names, presenting also drawings, pictures, contents, dating elements, distribution, and origins for each form, with an introduction about manufacture, transport, and epigraphic issues[193]. The same idea lead to the publication of another book (published in 1993 and available also online) that included various pottery classes, including amphorae from 18 geographical regions or chronological ranges (from the 7th BC to the 7th centuries AD), with basic typological information, images, chronologies, and fabrics[194].

In 1994 two volumes about amphorae from Augst and Kaiseraugst were published, with descriptions of all forms, drawings of all rims, handles, spikes and bases, giving them names that were commonly used and adding some other forms for types that were still not found or published elsewhere[195]. Only a year later, a fundamental review of forms produced in the island of Crete was published, which organised forms into at least 5 groups and also offered analyses of manufacture sites and a review of the knowledge about Cretan wine production[196]. Amphorae found in Upper Moesia were the topic of a monograph published in 1996 under the name of L. Bjelajac who identified 34 types (also offering names with which they were commonly known) and a small group of vessels that could not be identified with already known classifications[197]. The lower Danube region was the area chosen by P. Dyczek for his

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[189] Martin-Kilcher 1987.
[190] Beni Millet 1998, 2008.
[191] Ramón Torres 1991. Years later he updated chronologies and types (Ramón Torres 2007).
[192] Ramón Torres 1995.
[193] Sciallano & Sibella 1991. Descriptions of forms were lacking in this book. It was revised and in some ways translated in Italian some years later by Caravale and Toffoletti, offering also very brief descriptions of forms (Caravale & Toffoletti 1997). This same structure was used more recently by Bertoldi (2012) who tried to update information (and bibliography), adding new forms and offering also fabrics' data and images.
[194] Py *et al.* 1993.
[195] Martin-Kilcher 1994b and 1994a.
[196] Marangou-Lerat 1995. This contribution called forms for the first time with the name 'Cretoise' (before randomly named). It was partly re-organized years later by Portale & Romeo 2000 who refined chonologies and offered also new forms.
[197] Bjelajac 1996. This book was, however, posthomously published from unassembled and not revised sparsed notes (personal communication of Dr. Dragana Mladenović).

typology published in 1999[198] (then translated, revised, and published in English in 2001[199]). This typological book tried to use also scientific analyses in order to understand contents and origins, even though some of his suggestions are not totally acceptable. One of the last books that considered whole assemblages was provided by Remolá Vallverdu in 2000 who considered Late Antique forms discovered in *Tarraco*[200]. Another series of books collecting all finds discovered in one site were provided in 2003 and 2007 by Ehmig. The author analysed all the amphorae discovered in Mainz[201] and in its surroundings[202] with the same style and layout that Martin-Kilcher used in 1987 and 1994 for the amphorae found in Augst and Kaiseraugst, but in this case without offering a new typology. An online database dates 2005 and offers basic descriptions, drawings, pictures, fabric analyses, and bibliography about many amphorae therefore becoming a useful online resource (partly updated in 2014)[203]. Other two books about the study of all amphorae from single sites or excavations can be mentioned. They were published in 2013 (Ephesos[204]) and 2014 (Ostia[205]) and the latter also considered issues related to trade.

In many other cases, scholars started to specialise on single forms or productions that, although offering very significant elements for the understanding of productions and chronologies, lacked in general views of all existing forms. This attitude of 'specialisation' can be surely seen in some notable books. Étienne & Mayet published several studies about Spanish productions for wine[206], olive oil[207], and fish sauces[208], updating previous chronologies with new discoveries and Bonifay, in 2004, published a very important book that offered a complete revision of African productions[209].

Therefore, since Dessel's typology, several other forms of amphorae and new classifications were published. The excavation and publication of many production and consumption sites as well as ship-wrecks, both in the Western and Eastern areas of the

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[198] Dyczek 1999.
[199] Dyczek 2001. Even with the best intentions, both books lack in tables that might have helped with correspondances of names.
[200] Remolá Vallverdú 2000. His book offered an update to the knowledge of known types (with also 9 new types and 47 unidentified rims), chronologies, and contents for many amphorae divided by origins and types, providing a large number of tables with drawings of all rims and some bases.
[201] Ehmig 2003.
[202] Ehmig 2007.
[203] University of Southampton 2005, supervised by S. J. Keay and D. Williams.
[204] Bezeczky 2013.
[205] Rizzo 2014.
[206] Étienne & Mayet 2000.
[207] Étienne & Mayet 2002.
[208] Étienne & Mayet 2004.
[209] Bonifay 2004a.

Roman Empire, enhanced chronologies for already known types and provided improvements about origins and production areas. Disentangling among classifications is, however, rather difficult, because since Dressel's studies, the names had been given differently, not always offering correspondences with all nomenclatures[210].

Those names were mainly given in three ways:

1) from the name of scholars who identified or published them (for example: Dressel, Schöne-Mau, Almagro[211], Lamboglia[212], Pélichet[213], Beltrán[214], Zeest[215], Kapitän[216], Keay[217]);
2) from the site where they were found, followed by the publication's catalogue number of their recognised form (for example: Camulodunum[218], Ostia[219], Benghazi[220], Agora[221], Augst[222]);
3) from their origin (for example: Tripolitana[223], Africana[224], Cretoise[225], Gauloise[226]).

In conjunction with these studies, other branches started being explored. One of these considers ship-wrecks, with again N. Lamboglia[227] as one of the first ones interested in this field of underwater explorations, along with other scholars such as F. Benoit[228], B. Liou[229], and A. Tchernia[230]. Soon underwater investigations of ship-wrecks spread all over the Mediterranean, summarised in 1992 by Parker that offered a catalogue of what was discovered so far, especially in the Western Mediterranean[231].

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[210] Laubenheimer 1998: 86.
[211] Almagro 1953-1955.
[212] Lamboglia 1955.
[213] Pélichet 1946.
[214] Beltrán Lloris 1970.
[215] Zeest 1960.
[216] Kapitän 1971; 1972.
[217] Keay 1984.
[218] Hawkes & Hull 1947.
[219] *Ostia I*, *Ostia II*, *Ostia II*, *Ostia IV*.
[220] Riley 1979.
[221] Robinson 1959.
[222] Martin-Kilcher 1987; 1994a; 1994b.
[223] Panella 1977.
[224] Zevi & Tchernia 1969: 174.
[225] Marangou-Lerat 1995.
[226] Laubenheimer 1985.
[227] Lamboglia 1950.
[228] Benoit 1956.
[229] Liou 1973.
[230] Tchernia 1993a.
[231] Parker 1992. Even though several other ship-wrecks had been explored, Parker's book still remains the only example of synthesis (Wilson 2009: 226–227).

A different line of studies, started at the end of the 19th/early 20th centuries with the *CIL* publications, considers stamps and *tituli picti*[232]. In 1965 appeared the first book that tried to summarise already known stamps[233], while in 1966 Zevi published a study that recapitulated the discussion concerning origins, contents, and chronologies for Dressel types, also using inscriptions borne by amphorae found in Pompeii and Rome[234]. In 1995 T. Bezezczy studied the workshops of *Laecanius* that produced the form Dressel 6B[235], also basing his investigation on the stamps they bear[236]. Spanish scholars have been the main leaders of this branch of research during the last 40 years, for their interest in Monte Testaccio in Rome and its enormous amount of Spanish containers for olive oil[237].

A third line of studies is the one which uses amphorae to determine patterns for Roman commerce and to measure the ancient Roman economy and trade[238], which the very large quantity of contributions published about the economy of the Roman Empire, promoting arguments and theorising models that could identify and be applied to Roman times and to Rome[239], in many cases forgot. For many decades of the 19th century only stamped amphorae had been used for this purpose[240]. Studies by Riley[241] and Empereur[242] brought also unstamped vessels to be considered for various chronological periods. After the first attempts made by Zevi 1966, Zevi & Tchernia 1969, and in Ostia[243], this specific branch of studies received major attention during

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[232] In addition to the following publications, a corpus of stamps beard by Italian containers can be also mentioned. It has been prepared by C. Panella and V. Morizio for some years, even though it is not published yet (Panella & Morizio forthcoming).
[233] Callender 1965.
[234] Zevi 1966.
[235] Bezeczky 1995; 1998.
[236] Cf. also Starac 1999 and Starac 2010.
[237] Rodríguez Almeida 1972; 1977; 1980; 1983; Remesal Rodriguez 1977-1978; 1982; Blázquez Martínez & Remesal Rodriguez 1999; 2001; 2003; 2007; 2009; Berni Millet 1998; 2008. The five volumes about Monte Testaccio, even giving an extremely important amount of information about inscriptions borne by these containers, are largely and woefully lacking in quantities, especially for those objects that do not bear any epigraphic data.
[238] Peacock & Williams 1986: 2.
[239] Cf., for example (and far from being complete), Frank 1914; 1927; Jefferson Loane 1938; Rostovtzeff 1963; Duncan Jones 1974; MacMullen 1974; Weber 1976; Finley 1977; Hopkins 1980; D'Arms 1981; Levick 1985; Greene 1986: 9-16; Garnsey *et al.* 1983; Garnsey & Saller 1989; Brunt 1990; Duncan Jones 1990; Engels 1990; Jongman 1991; Frayn 1993; Duncan Jones 1994; Harl 1996; Parkins 1997 (with further bibliography); Finley 1999; Scheidel & von Reden 2002 (with further bibliography); Bang 2008. Many of these studies recognised the major importance of fiscal impositions and relatively peaceful times in creating commerce (cf., for example, Charlesworth 1968: 81–83), but every reconstruction of the ancient Roman economy based on a dominance of fiscal foodstuffs for supplying the Capital suffers the lack of evidence in a rather large normative compound (Vera 2010: 7). Others, on the contrary, followed the path of progress in technology to state the growth of Roman economy (cf., for example, Wilson 2002).
[240] Stoddart 1850; 1853; Dressel 1879; *CIL* IV, *Vasorum Formae*; *CIL* IV, Suppl. 2, tavv. II–III (made by Schöne and Mau in 1909).
[241] Riley 1979.
[242] Empereur 1982.
[243] *Ostia I*; *Ostia II*; *Ostia III*; *Ostia IV*; *Ostia VI*.

the years[244] (cf. various contributions in Baldacci *et al.* 1972; Vallet 1977; Lenoir *et al.* 1989[245]). Many of the already mentioned typological studies, as well as others dedicated to single productions, forms, or contexts[246], sometimes give information also about Roman trade. Panella 2001[247], 2002 and Tchernia 1986 can be added to all these contributions, for their respective importance. The first two articles, after many others[248], summarised all the known information for all productions and forms. The second one is a fundamental book for any analysis of the Roman economy based on the Italian wine-amphorae and related issues about changes in production areas within the peninsula and commercial routes.

A fourth branch of studies, that is the last in this list, but not least for its importance, is the one that considers petrographic analyses for understanding production technologies and origins. The incredibly large amount of contributions about single forms, production sites, manufacture technologies, sites of discovery, or origins (although they are still far from being complete) do not permit a full mention in these pages[249]. At the same time it would go beyong the limits of this research which will not use petrographic analyses (cf., below, Chapter 3, Section 3.2.2: 56–57).

## 2.3 Roman ceramics studies in Rome

Determining the exact moment when pottery became important in order to understand the history of Imperial Rome can be a difficult task[250]. The increasing, although very intermittent, amount of Italian interest and bibliography concerning finds during the last decades can be seen as a relevant step along the path which N. Lamboglia in some ways started, when he put in written words the need of "collecting everything [...] even though found in extremely small fragments"[251]. In fact, only the complete collection of finds can contribute to an analytical study of pottery "giving importance to fragment and particular without any aesthetic preconceptions"[252]. *Gli*

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[244] Cf., also, Peacock 1977b for the use of pottery to understand economy.
[245] Cf., also, Gelichi & Negrelli 2007 for the Adriatic coast; Dyczeck 2001, especially 307–337 for the Lower Moesia; Dixneuf 2009 for Egypt; Eiring & Lund 2004 for the Eastern Mediterranean.
[246] Cf., for Rome, Peña 1999 and Rizzo 2003. Cf., for Ostia and Rome, Rizzo 2014.
[247] Panella 2001b.
[248] Panella 1983; 1985; 1986a; 1986b; 1986c; 1989a; 1989b; 1991; 1992; 1993; 1998a; Panella & Tchernia 1994.
[249] One brief list can be seen in Dyczeck 2001: 39–46. Cf. also various studies by D. P. S. Peacock and Claudio Capelli.
[250] This Section offers a list of publications from the beginning of pottery studies in Italy to the contemporary situation in Rome, mainly focussing on the Capital itself that is the topic of this research. It is not meant to be exhaustive of the entire Italian history of ceramics studies.
[251] Lamboglia 1950: 6.
[252] Translation from Lamboglia 1950: 5.

*scavi di Albintimilium e la cronologia della ceramica Romana*[253] was, indeed, a very significant root for the modern and contemporary pottery studies in a country like Italy, because, at that time, it was still very far from the principles of stratigraphic excavation[254] and deep inside Benedetto Croce's aesthetic criteria[255].

Lamboglia's idea, which used pottery as a fundamental dating element, gained large success among scholars such as C. Panella, F. Zevi, A. Tchernia, and D. Manacorda to be the basis for several studies in Ostia ('Terme del Nuotatore'[256], 'Casa dalle Pareti Gialle'[257], 'Taberna dell'Invidioso'[258], 'Piazzale delle Corporazioni'[259]) leading to the 1970s interest for the everyday-used pottery, which is a clear example of what is called 'material culture'[260]. These excavations in Ostia, and especially those in the 'Terme del Nuotatore', seemed to be a real turning point in the archaeological research, because they were held in order to offer a place in which students could train themselves in excavating, direct research, and interpretations[261]. These activities led to the publication of six volumes that collected every aspect of these activities: from stratigraphy to pottery, from data to interpretations, with a fifth and sixth volumes published several years later (2013 and 2014[262]). These intentions produced significant collections of finds that, although being in some ways 'old' (for names and methods of layout), still represent high levels of research, that nowadays are possibly forgotten, with some rare exceptions.

Only during the 1980s, and especially when the finds coming from the Villa of Settefinestre (near the ancient colony of Cosa) were analysed, more modern methodologies in studying pottery had been used, leading not only to evaluate chronologies, but also manufactures, origins, and to understand socio-economic history of ancient times[263]. During the same years, five volumes were published about the 'urban excavations' held in the important site of the *Crypta Balbi*[264] in Rome. These books, which analyse different periods across the volumes, still offer the basis for the Late and post-Antique Rome, with all the *pros* and *contra* that a forerunner in this particular field may have.

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[253] Lamboglia 1950.
[254] For it cf. Harris 1983 (considering the date of its translation into Italian).
[255] For an analytical study of Italian Archaeology since 1861: cf. Barbanera 1998. About Lamboglia's publication cf. Barbanera 1998: 172–173.
[256] *Ostia I*; *Ostia II*; *Ostia III*; *Ostia IV*; *Ostia VI*.
[257] Zevi & Pohl 1970.
[258] Carta 1978.
[259] Pohl 1978.
[260] Carandini 1979. For a literature review of 'material culture' cf., for example, Thomas 2007; Hicks 2010; Roberts & Vander Linden 2011; Sánchez Climent 2013: 35–42; Knappett 2014. Cf. also Karlsson 2005 for a philosophical point of view.
[261] *Ostia I*: 7, Premessa.
[262] The sixth volume had been a work in process since that date: Carandini 2013. It was published (after the very preliminary report in Rizzo 2012) with the name of *Ostia VI*.
[263] Ricci 1985: 11. For the whole villa cf. Carandini 1985a.
[264] Manacorda 1982; 1984; 1985; Gabucci & Tesei 1989; Saguì & Paroli 1990.

Despite the good intentions coming from the analysis in Settefinestre, in Rome the situation in these years is not very bright. Apart for the relevant publications about the *Schola Praeconum*[265], a small number of researches were published in the 1980s and few of them also considered ceramic materials, that at times were not found in large amounts or were not the main purpose of these researches. Excavations along Fosso della Crescenza, in nowadays Rome's Northern periphery and not far from the ancient city of Veii, resulted in scarce amount of pottery finds which did not allow a strict dating of phases[266]. Researches held along via Portuense, in the corner between via G. Ravizza and via G. Caselli, were only meant to better understand an underground tomb realised in the tuff with walls completely covered with frescos[267], but the very few ceramic fragments which were found possibly did not even belong to the tomb[268]. On the contrary, the excavations held along via Stanislao Cannizzaro (in Rebbibia area) and published in 1986 (which lead to the discovery of part of a road and to some building remains interpreted as a *stabulum* or *hospitium* for travellers[269]) also analysed the not very large quantity of pottery finds which helped to date phases and permitted the interpretation of those remains.

This branch of archaeology was almost interrupted by a general indifference among both administrators and people involved in research. The 1990s were, indeed, a not very bright period for published reports about complete amounts of finds, because at that time academic research seemed more interested in socio-economic history based on other sources, rather than on finds[270]. Only a few exceptions can be noted during this period. Three excavations were published in 1990, the first one with the name '*Curia II*' (*Curia, Formun Iulium, Forum Transitorium*) which has not only analyses of all periods, phases, and sub-phases discovered, but also sections about pottery. Although with a few mistakes[271] this book still remains very important also because it provided many drawings[272]. Two other reports about excavations along via Portuense in Rome were published in the same volume of *Notizie degli Scavi* dating 1990. One is more interested in understanding the surroundings of already discovered tombs whose chronology remains very uncertain because foundations of modern buildings damaged all stratigraphy, and finds related to the closure of these tombs are

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[265] Whitehouse *et al.* 1982; 1985. Cf. also Whitehouse 1981.
[266] Fentress *et al.* 1983.
[267] These frescos make this tomb a significant example of funerary pictorial art of Roman times For descriptions of these paintings cf. Cianfriglia *et al.* 1985: 221–232; Venditti 1992: 52–62; De Maria 1998; Baldassarre *et al.* 2006: 312–316.
[268] Cianfriglia *et al.* 1985: 232.
[269] Staffa 1986: 662–663.
[270] Terrenato 1998: 189.
[271] For example some Cretoise amphorae were identified as common ware vessels.
[272] Morselli & Tortorici 1990.

too widely dated[273]. The other unfortunately recognised that stratigraphy relative to a found Roman road was completely distorted by ex-Purfina implants that were done in that area and chronological conclusions were almost impossible[274]. Although few pottery fragments were found during the activities held on a Roman cistern along via Cristoforo Colombo, published in 1993, the discovery was accidental as restorations were the real purpose of these interventions[275]. The publication of the excavations held on the Caelian Hill, on the contrary, lead to the discovery of many ceramic finds, especially related to the Late Antiquity and Medieval times, which (although being another forerunner as the *Crypta Balbi*) helped much in the definition of their chronologies[276]. Two different digging activities (trenches) were achieved close to Porta Pia, within the British Embassy property and published in 1993 and 1994[277], which lead to the discovery of several periods and phases and also ceramics and other materials, but in a few cases (as for the Phase 2 of the second excavation[278]) their dating is wrongly recognised. Excavations in the San Lorenzo area were published in 1996, with the title of *Aqua Marcia*, offering another significant study both of stratigraphy and finds (pottery included), despite the small amount of fragments that was discovered[279]. In 1999 a very first analysis of pottery fragments found during the excavations of a Late Antique apsidal *domus* on the Palatine's North-Eastern slopes in Rome was published. This book, although using finds as a basis for analysing the commercial situation of Rome during the Late Antiquity, sometimes lacks in quantities and some of the author's assumptions can be reappraised[280], also because not all fragments were published (he is at the moment organising the study of all other fragments[281]).

The general situation started to change a little only after the end of 1990s, when a renewed interest grew in various parts of Italy. This can be seen one of the reasons why, during the early 21st century, a new attitude appeared in the development of studies about pottery finds: try to publish as much as possible from very important sites across the city of Rome. The amount of books published during these years may seem large, but these publications appear as being more isolated books rather than a real increase in the will of publishing reports of the many archaeological excavations in

[273] Cianfriglia *et al.* 1990: 38, 69, 78, 83–85, 87, 95, 104, 108. The data are not sufficiently clear and do not allow a complete understanding of the use and various stages of this necropolis as well as to establish causes for the deposition of amphorae.
[274] Cianfriglia & Corsini 1990: 157.
[275] Ramieri 1993.
[276] Pavolini 1993.
[277] Bird *et al.* 1993; Gilkes *et al.* 1994.
[278] Gilkes *et al.* 1994: 112, 117–122.
[279] Volpe 1996.
[280] Peña 1999.
[281] In 2009 a book was published about the stratigraphy of the same site, without any pottery consideration (Hostetter & Rasmus Brandt 2009) that will be probably published in future (Peña 2009: 264, footnote 3).

the Capital. At the same time, unfortunately, this enthusiasm sometimes did not always create good publications in terms of quantifications, interpretations or methods. This attitude also led to the understanding – sometimes with scientific methodologies and techniques – of some particular classes (Olcese 2003 and Bertoldi 2011a about Rome's common wares[282]) and to the exhibition held in 2006 in the Olearie Papali in Rome (*Memorie dal Sottosuolo* with its catalogue[283]). It showed the public a very large amount of finds coming from excavations held all across the Capital (even though only the most preserved and beautiful pieces).

The importance of two volumes, published in 2001 and 2004 about the city, consists in analysing many Late Antique and Medieval contexts all across Rome, a period that was almost neglected since the *Crypta Balbi* and Caelian publications[284], but they are more single dissertations rather than offering a general view of the city during that significant period. F. Meylan Krause in 2002 published a book with finds coming from the *Domus Tiberiana* on the Palatine[285], but scholars are not fully satisfied with the results[286], the author not being an expert in pottery, the book being a punctual research, and lacking a more general understanding of the Roman economy during the analysed periods. On the contrary, G. Rizzo's book published in 2003 is a collection of very different places across the inner part of Rome, offering a good method in analysing ceramics. His chance to study such interesting places led to his publication, that is still very important for the archaeology of Rome: on one side because he offered good quantities of finds, on the other side because these finds lead him also to consider trade patterns in the city during the Early and Mid-Imperial ages[287] (something that very few scholars attempted in the following years). In 2004 an article was published about the necropolis along via di Grottaperfetta, but the article is more interested in the anthropological study of found skeletons and just very few pottery fragments were found[288]. On the contrary, the book that reports all phases and finds from the Auditorium villa offers significant dating elements for the Republican age, thanks to the distinct division of periods and phases that researchers had the chance to analyse, with also a general overview of the period[289]. In 2006 another book was published offering articles about different ceramic contexts dating from the Neronian

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[282] Both books have several problems. For example G. Olcese's book offer drawings taken from other publications, and some names of the forms are totally personal without taking care about names that tradition of studies uses (for example amphorae made in common ware are called two-handled ollas).
[283] Tomei 2006.
[284] Arena 2001; Paroli & Vendittelli 2004.
[285] Meylan Krause 2002.
[286] Cf. Peña 2004.
[287] Rizzo 2003.
[288] Pagliardi & Cecchini 2004. In 2010 another necropolis of that area was published (Pagliardi & Cecchini 2010), once more considering very few fragments.
[289] Carandini *et al.* 2006.

age till the 18th century discovered in the Imperial Forums and these articles also dealt with commercial and social implications derived from finds[290]. A single example of recent publications is about Ostia ('Domus dei pesci', whose excavations were held in 1995-1996[291]). This book follows the extremely important tradition of ceramics' studies in Ostia, already mentioned: every single aspect of excavations was analysed and all fragments are studied offering clear quantities and analyses of fabrics. Unfortunately only succinct commentary sections are written about finds and it has very brief general considerations.

An important year for pottery publications was 2008, when four books and two articles were published about five different sites. The first two books consider finds discovered during the excavations held in the Temple of Castor and Pollux in the Roman Forum, although the first volume about these excavations was published sixteen years before. Despite the methodology of excavating using trenches, the published finds are very accurate, offering new typologies for Republican wares, refined chronologies, and many drawings in the second parts of these two volumes[292], but unfortunately they lack general views. The intention to construct a car-park on the slopes of mount Gianicolo led to the discovery of an important Augustan garden and a Late-Antonine dump[293]. The results in studying finds have pros and cons. While amphorae, fine wares, glass, and other classes are studied with good methods, common ware is poorly analysed with, at times, forms wrongly identified, associated, or understood, with a complete lack of quantifications[294]. The fourth book published that year reports the excavations which had been held during several years for the realisation of a new residential lot not far from the Grande Raccordo Anulare of Rome. Although all discoveries were analysed with accurate methods and chronological phases were offered, when various authors dealt with pottery[295] they summed everything that was found, without considering with separate criteria fragments coming from stratified units and those coming from undated ones[296], and there is a total lack of general comprehension of all finds. The first article published this same year considers the excavations held close to Via Blaserna, on the right side of a wide bend of the Tiber bend and not far from Viale Guglielmo Marconi. Although eight periods were discovered and analysed, the chronology of a very interesting riverbank is

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[290] Meneghini & Santangeli Valenziani 2006.
[291] The report of these digging activities was published only in 2007 (Zevi 2007).
[292] Guldager Bilde & Poulsen 2008 (vol. II.1); Slej & Cullhed 2008 (vol. II.2).
[293] Filippi 2008.
[294] Quercia 2008; Porcari 2008.
[295] Cavalieri 2010.
[296] Marchi & Catalli 2008. This is the usual way of working when stratigraphy is not understood or when fragments are scarce.

confusing and not totally assured[297]. The second article considers finds discovered during the excavations held in the big outer Western exedra of the Trajanic Baths. Unfortunately it suffers of unclear quantifications of finds[298], not surpassed in a very brief re-edition of these finds published in 2010[299].

A totally different approach was held by E. Lissi Caronna (with G. Rizzo who analysed amphorae from a 5th century AD context) in 2009 when a long article was published (249 pages) about the excavations held in S. Stefano Rotondo in Rome (on the Caelian hill). The same methods of other articles published on the periodical *Notizie degli Scavi* were used: describing all periods and phases and examining all found fragments, offering diameters and measures, confrontations with known types and forms, and drawings of all finds[300]. Rizzo, fortunately, not only describes amphorae, but also tries to interpret data. Interpretations about ceramic finds and typological analyses are also offered in three articles published in 2010 about amphorae discovered during the excavations for the construction of Nuovo Mercato Testaccio[301] whose complete analysis of finds unfortunately may never be published for the lack of funds[302]. The further step into interpretations is totally lacking in three volumes published in 2011, two of them about the archaeological digging activities in via Marmorata (a part of the city, Testaccio, where warehouses of ancient Rome existed). Unfortunately most of the times the second volume lacks in quantities and those who studied ceramics seem not to have had a real understanding of chronological phases of the excavation, thus offering disappointing chapters. Also the third volume published that year, although considering common ware, also has a part dedicated to amphorae found during some excavations held in the Tor Vergata area, whose main publications pre-date to 2009[303]. The part about amphorae is again very disappointing, as there is a lack of good quantifications and it seems just a preliminary report of something wider not published yet[304]. Disappointing chapters are also offered by two volumes of the results of the excavations held in *Lacus Iuturnae*, published in 2012. The second volume about finds gives incomprehensible data, without interpretations or tables summarizing them across phases[305], obliging the reader to continuously look at volume 1 to read descriptions of sondages and units to relate

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[297] Cf., below, Chapter 4, Section 4.2.11: 82–83.
[298] Bertoldi 2008.
[299] Bertoldi 2010.
[300] Lissi Caronna & Rizzo 2009.
[301] Cafini & D'Alessandro 2010; Casaramona *et al.* 2010; Coletti & Lorenzetti 2010.
[302] Personal communication of E. Lorenzetti. Dr. Alessia Contino just completed a doctorate about the early African amphorae from this site (Personal communication of Prof. Simon Keay).
[303] Bertoldi 2009; Scandarelli 2009.
[304] Bertoldi 2011a: 44, 51–54 and tab. 30 (one fragment on that table actually comes from the second site: Necropolis of Carcaricola).
[305] Steinby 2012b.

finds with phases[306]. Unfortunately, phases are also randomly given among sondages, without any general division into periods and many times they are not even dated, leading to impossible evaluations.

Interpretations were, on the contrary, the bases for the book published by P. Johnson in 2012. Unfortunately it offers one of the typical misleading attitudes towards pottery: informing in the introduction that amphorae remains from various sites in Rome were the bases of his investigation (afterwards in the book almost totally neglected), the publication offers continuous abstractions and generalizations, giving only an appendix about finds which are quite forgotten within the pages, while interpretations and conclusions are not related to finds, but to topographical results which were the real intentions of the research[307]. In 2013 two books were published and, apart from architectural studies, also finds (ceramics, glass, and plaster remains) coming from the excavations at the Palatine's North-Eastern slopes were considered, along with implications and interpretations of these finds for the considered phases and contexts[308]. Another volume can be mentioned, published in 2013. It considers several ceramic assemblages found during excavations in the Imperial Forums, with many classes till the 18th century AD and with also, for some cases, brief considerations about commercial implications[309].

The continuous needs of new spaces, buildings, infrastructures, and services for the contemporary living city, created (and still create) a large amount of scattered digging activities that many times do not find a way into published reports. On one side this is caused by an absolute personal and disparate (not at all centralised) choice of what to study and publish. For example, the books reporting the two conferences about Rome's *Suburbium*[310], two books and and a few articles about excavations held for the Rome's Underground Line C[311], two books about the digging activities in Centocelle[312], and an article about *Lucius Verus*'s villa along Via Cassia[313] are all clear examples of this situation: all of them are almost completely lacking of pottery

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[306] Stainby 2012a.
[307] Johnson 2012.
[308] Panella & Saguì 2013a; 2013b. Cf. also Cardarelli & Castelli 2014 about finds from some Neronian contexts.
[309] Ceci 2013a.
[310] Pergola *et al.* 2003; Jolivet *et al.* 2009. They consider only very few finds.
[311] Serlorenzi & Saguì 2008; Egidi *et al.* 2010; Rea 2011b, Serlorenzi & Egidi 2013. They give details just of a pre-historian site at Platano Borghese and very sporadic (and unusable) notes across all these books or articles.
[312] Gioia & Volpe 2004; Volpe 2007. Even carefully reporting all the walls and tombs found and clearly indicating the existence of different periods, they give only very random information about pottery, with a complete lack of clear types and quantifications.
[313] Caserta *et al.* 2012. Even with a detailed report of all walls, it almost totally lacks in finds with the exception of Appendix 1 (by L. Saguì) about glass *sectilia* and a single mention of "many Mau XXXV amphorae" (without any quantification) used for planting (Caserta *et al.* 2012: 102 and figs. 82-84).

information. On the other side the cause could be (and usually is) ascribed to the costs of studying finds and/or publishing them[314], that are most of the time unaffordable both for private companies that decide to change urban landscapes and for State institutions (Universities included) which always suffer lack of means and resources[315], as well as – sometimes – the knowledge needed to promote large-scale projects. Some other times, when resources are incredibly available (as shown by above mentioned publications) those who studied ceramics sometimes did not have a real training in studying pottery or did not remember good methods to use also for publishing them.

In conclusion, many contributions were published during the years, but their level of accuracy is unfortunately not always the same, as it is visible in the above offered list. This research, based on the undeniable and potential evidence of the amphorae from the Mid-Imperial contexts in the 'Terme di Elagabalo' which are almost totally unpublished[316], will offer at least another significant tessera in the mosaic of finds in the Capital. The next Chapter will discuss the methodology used to analyse these fragments as well as other publications.

[314] Peacock 1982: 171; Greene 1992: 23.
[315] This current situation was somehow predicted by Hodges 1998: 259–260.
[316] With the exception of the above mentioned fillings of a sewer (Radaelli 2013) and lime-basin (Traini & Mannelli 2013), and the brief considerations in Radaelli, forthcoming (A) and (B).

# Chapter 3: Methodologies, aims and outcomes

A controversial statement by Matthew Johnson says: "artefacts tell us nothing about the past in themselves"[317]. Always remembering this affirmation is one of the most important aspects of studying any pottery assemblage, because it involves the real fact that objects are just and only objects and they cannot speak like living people who can refer stories[318]. In spite of this, handling and analysing pottery with the most accurate possible methods can lead to the answers to historical questions[319]. As for many other tangible objects that have arrived to the present day from a more or less distant past to which they are strictly linked[320], pottery (which is the most abundant artefact that archaeologists can find during an excavation[321]) can actually, in some ways, tell something about ancient societies[322] (although it cannot directly reply), because it is always a matter of interpreting its inner information relating to specific questions[323]. That is why, during the development of this analysis, the two research questions offered in the Introduction[324] had been continuously kept in focus: what kind of pottery and contexts were found in the 'Terme di Elagabalo'; which commerce can be deduced from the analysis resulting from the finds and how it fits in the current scholarship. To answer them, a first understanding of existing methodologies in the quantification of ceramic assemblages was attempted so as to determine which one could be useful for the fragments of amphorae under consideration.

## 3.1 Methodological review: quantification methods

This section is about methodologies undertaken in quantifying the amount of pottery (thus attributing measures to it) in ceramic assemblages[325]. This topic is a

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[317] Johnson 2010: 12.
[318] Manacorda 1998b: 296; Johnson 2010: 116–117. Jones 2007: 22–23, on the contrary, affirms that they can evoke memories.
[319] Caple 2006: XV; Sánchez Climent 2013: 33, 43.
[320] Jones 2007: 3; Thomas 2007: 16–17.
[321] Greene 1986: 156; Loseby 2007: 1. Ceramics are also predominant in field surveys: cf. Mills & Rajala 2011: 2.
[322] Caple 2006: 1 and 8–11; Sánchez Climent 2013: 32–33. Loseby 2007: 1 underlines that pottery was used by all sectors of societies.
[323] Insoll 2007: 9–10. It is also related to human behaviour (Weber 1991: 10). Then, 'Interpreting silent artifacts' (Quinn 2009) is an extremely revealing title for a book about petrography applied to some archaeological contexts.
[324] Cf., above, Chapter 1: 2.
[325] Orton & Tyers 1990: 81; Orton 1993: 169.

source of strong controversies[326] because very different methods had been used by scholars so as to determine the amount of vessels which became fragments[327], both from stratifications and field surveys[328], and the numerical values offered by these methodologies can be very different from one another. A brief survey will be offered here[329], so as to have a general overview of these methods in order to calculate the number of vessels from the ceramic assemblages under consideration.

The sherd count is the most widespread method. It is simple and fast[330] and it consists in just counting all fragments in a context or assemblage[331]. This counting, however, suffers from a very high level of variability[332], because it only depends on the degree of breakage of ceramic objects[333], due to the pottery itself[334] and to post-depositional processes, thus it may vary from site to site and from a stratigraphic unit to another[335]. At the same time it does not refer to amounts of original vessels[336].

The sherd weight method is another fast and simple one[337] and rather widespread, born at the end of 1950s[338]. It consists in using a scale to assess the weight of all fragments[339], so as to determine which fraction of the entire vessel's weight is represented by the single sherd[340]. This datum therefore depends only on the class and form to which a fragment belongs[341] and remains constant in assemblages[342]. This method is also used to adjust data offered by the sherd count[343].

Another methodology is called Minimum Number of Individuals (in italian 'Numero Minimo di Individui', thus abbreviated NMI), which is rather unpopular in Britain because it requires recalculations and it does not take fabrics as a primary element[344]. It consists in detecting those fragments which physically match together, then attributing them to vessels. This counting can be based on diagnostic parts

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[326] Orton *et al* 1993: 21, 166; Tyers 1996: 205.
[327] Orton & Tyers 1990: 83.
[328] Cf., for example, the theoretical frameworks for field surveys in Fentress 2000 and Millett 2000.
[329] Cf. also the synthesis made by Johnson 2012: 71 or by Peña 2007a: 154 (who used and theorised a different methodology cf. Peña 2007a: 156-165).
[330] Millett 1979: 77.
[331] Protocole Beuvray 1998: VII.
[332] Arthur & Ricci 1981: 125.
[333] Orton & Tyers 1990: 84; Orton 1993: 179; Orton *et al.* 1993: 169.
[334] Symonds & Haynes 2007: 68.
[335] Raux 1998: 12.
[336] Cf., for example, the methodology explained by Ceci 2013b: 1-4, which only used the number of fragments.
[337] Millett 1979: 77.
[338] Orton 1993: 171-172.
[339] Raux 1998: 12-13.
[340] Orton & Tryers 1990: 83-84.
[341] Symonds & Haynes 2007: 69.
[342] Orton *et al.* 1993: 169.
[343] Arthur & Ricci 1981: 126.
[344] Symonds & Haynes 2007: 69.

(above all rims, but also bases, handles, or decorations) and identifies indistinctive fragments (for example walls) which can be assigned to the same vessel of those matching (for example for their fabric[345]). At the same time it tries to surpass under-estimations when choosing which diagnostic part is considered (if there are, for example, n rims and n+1 bases, bases are used) and if there are just indistinctive parts or they cannot be attributed to any of the other already given vessels, they are identified as belonging to another vessel. This further step offers an adjustment of figures offered by rims only, and it is called NTI (in French 'Nombre Typologique d'Individus' = Typological Number of Individuals)[346].

The Estimated Vessel Equivalent (abbreviated EVE) is another methodology, also well accepted in Britain[347], but less used in Italy. It was born in the 1970s[348] and is mainly based on rims (at times also on bases) that can be assimilated to a circumference, as it considers which fractions of it these fragments represent[349]. It consists in measuring by using a rim chart the circular arc represented by all fragments (but not too small ones) and then transformed in percentages of the entire circumference, as it is assumed that for well standardised classes a complete rim corresponds to 360°, thus one vase = 100% of circumference[350]. This method seems to not take into account handles[351] and indistinctive parts of vases, thus under-estimates the presence of vases[352].

Another methodology, which combines some of those already mentioned, is called Number of Vessels Represented (abbreviated NVRep or EVRep). It considers two different variables: Brokenness which is the sherd count divided by the EVE, and Completeness that is the EVE divided by NMI. This method assesses functions of the post-depositional history and (but not for Completeness) ceramic types[353].

Other two methodologies can be also mentioned. One is about Rows (or records) in computer datasets. These datasets are designed so as to not accept different records having the same combination of information about three variables: fabric, form, and decoration[354]. The other one is The Number of Identified Specimens or Number of Individual Specimens (abbreviated NISP), which originally comes from zoo-

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[345] Raux 1998: 13.
[346] Protocole Beuvray 1998: XIII–XIV; cf. also Orton 1993: 173. There is also the Maximum Number of Individuals, which counts all distictive parts not matching together as different vessels, but this over-estimates the actual presence of vessels: Orton & Tyers 1990: 83; Raux 1998: 13.
[347] Symonds & Haynes 2007: 69.
[348] Orton 1993: 172.
[349] Arthur & Ricci 1981: 126.
[350] Orton *et al.* 1993: 172–173; Greene 1992: 43; Tyers 1996: 205; Raux 1998: 13–14.
[351] Orton & Tyers 1990: 84 say they are considered, but handles cannot be measured with this method.
[352] Raux 1998: 14.
[353] Orton & Tyers 1990: 86; Orton *et al.* 1993: 169–172; Raux 1998: 14.
[354] This method is explained in Rauxloh & Symonds 1999 and summarised in Symonds & Haynes 2007: 69.

archaeology and counts each vessels and fragment as one unit. Large controversies arose about this method related to the NMI, especially about matters of over-estimations[355].

## 3.2 Methodology of this research

After having evaluated all these methodologies, a significant decision for this research had to be made. The peculiarities of the chosen site as the basis of this study, the nature of the available publications about other sites, and the decision of considering amphorae for addressing the research questions all lead to use a specific methodology. That is why, for this research, two broad approaches and four phases had been used, always keeping in mind that the collected data (and the results shown in this research) are only a very small part of the whole[356], just a perception of reality[357], because having a complete and exhaustive view of the entire amount of goods that had been traded to the city is impossible. This is not only caused by the limited number of published (or considered) sites, but also by the reuse of amphorae (discussed below in Section 3.2.2: 53–54) for different purposes than containing products for long distance trade[358]. It involves the fact that dumped objects are not in use anymore, thus should not be considered for their previous uses. Recently this problem has been taken up again by P. Johnson who assumed that "rubbish is almost always dumped in disused areas or at the very least away from human habitation"[359], which is not totally acceptable especially for the 'Terme di Elagabalo' deposits, because they were created mostly using materials which were stored or dumped in the same complexes. Johnson also re-acknowledged the importance of considering how contexts were created (keeping them separated from the phase of consumption[360]), remembering that some public service very likely existed to regulate the act of discard[361].

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[355] For this argumentation in paleozoology cf. Marshall & Pilgram 1993.
[356] Loseby 2007: 2.
[357] Even though not aforethought and not completely wittingly, in some ways this statement has some references and connections to the so called 'post-processional' approach which consider archaeological data as disputable, emphasizing inner subjectivities of their interpretation. Cf., for example, Terrenato 1998: 190–191; Johnson 2010: 105–110; Trigger 2007: 451–452.
[358] Peña 2007b: especially 119–192, 250–271. It also involves the problem about the representativeness of waste in consumption, which involves the question of what is considered waste can or cannot be a true reflection of the actual consumption (Manacorda 2000: 73; cf. also Cool 2006: 13–14; Johnson 2012: 72–73).
[359] Johnson 2012: 73. Cf. also assumptions made in Peña 2007b: 277–283.
[360] Johnson 2012: 79.
[361] Robinson 1992: 122–124; Panciera 2000; Carreras Monfort 2011: 17. Liebeschuetz 2000, on the contrary, is not totally persuaded that it existed.

The used methodology for this analysis may appear old, as it had been already used for many years, but it is the only one surely applicable to these contexts because of the nature of publications, site, and finds. Despite this, phases 3 and 4 required a further step towards interpretations not only of existing publications, but also about what amphorae sherds infer in terms of commercial patterns. It also underlines the importance of a standardised methodology both for the analysis and publications of future researches.

### 3.2.1 Phase 1: collection, seriation, quantification, identification.

The first and possibly more obvious and commonly used approach[362] (but not so easy to be undertaken), had been mainly achieved by all the participants to the digging activities in the 'Terme di Elagabalo' who collected, washed, and marked (by hand) all the pottery fragments (even the very small ones, but not less than 0.5 $cm^2$ of surface) coming from all the rooms and units discovered. These fragments had been distinguished and divided by units (always referred to specific rooms of the Severan building) so as not to create useless amounts of fragments that might not have been ascribed to specific phases or periods. The subsequent step for this phase of pottery investigation had been to recognise all fragments in order to attribute them to the pottery classes to which they belong[363]. A very first classification was made, recognising fine wares, common wares, amphorae, lamps, and not-pottery fragments that were also analysed and divided into classes (for example types of metal, size of bones, marble, floors). All sherds were then counted to have general and total amounts for each class (as from the sherd count method).

The following step had been calculating the number of vessels. Although with the existence of statistical methods[364], a little modified version of very common and widespread models[365] had been used for the finds in the 'Terme di Elagabalo', joining together methodologies usually pertaining to NMI (and its adjustment NTI) and EVE[366], always keeping on mind that these are just estimations[367]. At first, an attempt to detect all those fragments that match together and, for this reason, belonging to the same object was undertaken. This activity was undertaken not only for sherds coming from

[362] Cf., for example, the methodology used at Troy explained in Pavúk 2010: 76–77.
[363] Read 2007: 19–20. For the 'Terme di Elagabalo' all finds were studied, even though for this research only amphorae are considered.
[364] Orton & Tyers 1990: 88–103; Orton *et al.* 1993: 173–175.
[365] Cf. also the methodology explained by García Vargas 2012: 254 about amphorae found in Seville.
[366] Despite Orton 1993: 181 and Corremans *et al.* 2010: 293 who both argue that EVE cannot be used for amphorae.
[367] Arcelin & Tuffreau-Libre 1998: 9; Orton 1999: 31.

the same units, but also from different units belonging to the same phases, to different phases of the same periods, and to different periods so as to acknowledge all the possible information. For example this attempt was undertaken for fragments coming from units which filled pits with those coming from stratified units cut for the creation of these pits. Fabrics were also used for discerning whether or not those fragments were part of the same amphora (different fabrics mean different objects). Rims' diameters, height, width, fabrics and preservation percentages of their circumference (taken from the EVE methodology) were also noted. These rims' morphologies had been the basis for calculating the number of vessels, trying to identify those that belonged to the same vase (not only for physical connections, but also because the five above mentioned variables permit to state that). Fabric analyses allowed the determination of whether or not indistinctive parts were belonging to the same vessel of these rims (as from the MNI methodology).

At the same time adjustments to these calculations were made, following the NMT methodology. When rims were not preserved (or when they are fewer than other diagnostic parts), also handles (usually present in two per vase) and bases had been used. This is caused by acknowledging that the presence of an handle or of a spike exceeding the number of vessels calculated only basing on rims surely informs about the presence of at least another vessel. When no diagnostic parts were preserved, fragments of walls or necks had been used, using the same consideration for handles and bases: if there are walls only, they must have belonged at least to an object. Fabrics were also essential in determining this refinement. For this case, with the number of vessels is obviously meant an estimated calculation, but the undertaken adjustments permit to state that these figures cover what was most likely the actual number of found vases[368].

All pottery fragments had been weighed to the nearest gram with an electronic scale (as from the sherd weight method). After that, the following step had been discerning all forms and types. The word "form" in this research signifies those shapes that fulfil several characteristics[369] originated by the manufacturer and recognised by many scholars[370]. On the other hand the word "type" means here those more accurate confrontations used for rims[371] that can give information about sub-types or, more often, about specific chronologies. This activity had been undertaken by using

[368] Hesnard 1998: 21.
[369] Anderson 1984: 36–37; Dufaÿ 1998: 109. Any specific type, sub-type or varieties (the latter as defined in Dufaÿ 1998: 109 or in Attema *et al.* 2003: 326, table 3: 'variants') belongs to this meaning of form.
[370] Cf., above, Chapter 2, Section 2.2.
[371] Other publications use different meanings of this word. For example it is different from the word definition made in Sinopoli 1991: 43–65; Read 2007: 84–88; Wylie 2002: 42–56 (for the debate about types). For a brief history of typological studies, cf. Anderson 1984: 22–31.These meanings can probably better fit to forms or even classes than to types as used here.

published typologies and collections of objects so as to offer more understandable and comparable data[372], also identifying their origin (locally produced or imported[373]) and their chronologies which are based on the latest available publications offering this information (they can be seen in Appendix 1)[374]. Although these chronologies seem precise, they are conventional abstractions derived from various associations of different contexts and ceramic assemblages[375] and they also refer to the current scholarship which may be better defined with future discoveries[376]. This chronological approach also helped in distinguishing among in-phase (primary deposition), residual (secondary deposition), and intrusive objects (disturbed deposition).

Pottery shreds that were dumped or discarded during a same chronological range (and not only within their manufacture dating) are identified as in-phase vessels. Their discard might have occurred during more or less punctual moments (unitary voluntary accumulation or repeated voluntary accumulation). Among in-phase artefacts, the dating ones can be distinguished as those that have a later chronology than all others, allowing scholars to date a specific stratigraphic unit or context[377], but not a too later one that would mark them as intrusive objects.

Intrusive objects can be, in fact, defined as those sherds that do not have a coherent dating with the unit or the context in which they were found, because they have an overly late one[378]. The recognition of intrusive vessels is based on chronologies offered in Appendix 1. They might be included within an older unit for excavating errors (under-excavating a unit), for biological interferences (such as roots of trees or plants, or moles' burrows), or for weak reliability of a stratigraphic unit (for example if it does not have any of its original limits, as cut and disturbed by subsequent activities). Another possibility is due when provisional limits of excavations exist: in

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[372] Horejs *et al.* 2010: 10.

[373] The threshold model proposed by Arnold 2006, can surely be useful for more ancient periods than the Roman time, when distances were reduced by more modern forms of transport and roads.

[374] The study of these finds was, at first, partially subdivided between many students for their theses, some of them reaching for a Bachelor degree ('Laurea Triennale'), a Master Degree ('Laurea Specialistica/Magistrale'), or the degree for the 'Scuola di Specializzazione in Beni Archeologici'. The author wants to thank Giusy Castelli for Room 1SE and part of Room 3; Lino Traini for part of Room 2 (just a couple of amphorae); Elena Arbolino for part of Room 3 and part of Room 6; Viviana Cardarelli for Rooms 7 and 8; Matteo De Nardis for part of Room 6; Giovanbattista Mannelli for part of Room 6; Luigi Pagliei for Room 4 (with the exception of US 4194). These students were supervised by Prof. Lucia Saguì and Doct. Giorgio Rizzo (as well as partly helped by the author of this research). All these theses and all confrontations for pottery fragments had been revised and carefully checked before undertaking this whole analysis. Pottery fragments coming from stratigraphic units of Middle Imperial date discovered in Rooms 1, 2 (amphorae), 4 (US 4194), 5, 9, 10, 15B/31 were all directly studied by the author of this research and checked with all other fragments.

[375] Cirelli 2006: 175. Martin 1998b, in fact, argues that chronologies are not referred to uses, but to discarding activities.

[376] Saguì 1998: 265.

[377] Giannichedda 2008: 55. No thermoluminescence analyses were done for absolute dating, as deviations are still too large for Roman times: Biers 1992: 75–76.

[378] Protocol Beuvray 1998: XII. The meaning of this word is completely different from the one expressed in Shepard 1968: 336–341.

this case, wood security panels are very often used in order to contain the earth for safety reasons, but at the same time creating a precarious limit that allows fragments to spatter from these artificial sections over older units.

Residuality is another controversial topic and there is not a general agreement among scholars about the definition and meaning of the word 'residual' in ceramic assemblages[379]. For this reason there are neither standard rules nor general definitions because contexts are never exactly the same of other ones[380], although even statistical methodologies had been experimented[381]. Residual objects, however, being very frequently found in the majority of excavations[382], have intrinsic significances both in the formation processes of stratigraphic units and in typological seriations as they may inform about particular forms[383], thus they should be always included in ceramic analyses[384]. Very generically speaking, a residual is a secondary deposed object that is not pertaining to the contexts in which it is found on the chronological point of view (being older than them)[385], something belonging to the past and which should not be where it is recovered[386], with a longer post-depositional history[387], and discarded well before the beginning of the creation of the context in which it is found[388]. Activities that might have occurred and created this re-depositioning are several, but in a high densely urbanised city like Rome where the reuse of earth was conscious and organised[389], they often consist of building activities (especially excavating foundations' trenches and then using the earth coming from them for other activities[390]) and natural occurrences (erosion or floods). Obviously something can be seen as a residual object only referred to and in strong relation with other materials with which it is discovered[391], because residuals are found along with other in-phase objects together which they were interred[392]. The period of time that must have passed from the end of its production so as to define an object as residual is usually

[379] Peña 1998a: 5.
[380] Saguì & Rovelli 1998: 175.
[381] Cf. Martin 1998a; Paganelli & Guidobaldi 1998: 154–161; Terrenato & Ricci 1998; Ceci 2013b: 5–9.
[382] Arcelin 1998: 41.
[383] De Rossi & Mandarini 1998: 47; Manacorda 1998a: 274; Terrenato & Ricci 1998: 90. For the stratigraphic importance cf, for example, Zeggio & Rizzo 1998.
[384] Millett 1979: 78; De Rossi 1998: 288; Olmer 1998: 56; Pavolini 1998: 255; Panella 1998b: 266–267; Volpe 1998b: 269.
[385] Orton 1993: 176.
[386] Morel 1998b: 282; Volpe 1998a: 244; Giannichedda 2008: 54.
[387] Orton & Tyers 1990: 96.
[388] Bigliati & Coletti 1998: 107; Cecamore 1998: 119; Manacorda 1998a: 275; Peña 1998a: 5; Terrenato & Ricci 1998: 89; Zanini 1998: 293–294.
[389] Carandini 1998: 257.
[390] Terrenato & Ricci 1998: 102.
[391] Giannichedda 2008: 54.
[392] Giannichedda 2006: 35; 2008: 57; Keller 2012: 486.

determined case by case and differs among individual researchers[393]. Often (although almost never clearly stated in publications) residuals are secondary deposed objects which are found in contexts dated at least a generation (25-30 years) after the conventional end of their production[394]. This is the definition followed in this research and the recognition of residuals was held basing once again on chronologies offered in Appendix 1. At the same time it also included the awareness that the custom of keeping valuable artefacts (or in the case of amphorae, valuable contents) existed, sometimes even for more than a single generation (heirlooms) before they were discarded[395]. However, although this definition is appropriate for many finds, for other cases it seems inappropriate, since this 'policy of a generation', arbitrarily set, is rather vague. Some objects which can be defined as residual ones using the just given definition could actually be still in use and/or circulating (even for a certain period of time) beyond the moment when their manufacture ended[396], especially amphorae which had very long lives[397]. Therefore the chronological distance between the end of their use/circulation and their discard can be very short[398]. For this reason, some objects probably may be better defined as 'false-residuals'[399], defining them as objects whose end of their use dates immediately before the chronology of the contexts in which they were discarded. Thus, basing on the definition already expressed for residual objects, a 'false residual' one is an object whose use was extended beyond the already mentioned generation (25-30 years), thus was discarded within the end of its production and the dating of the assemblage in which it is found. It can therefore attributed to in-phase objects.

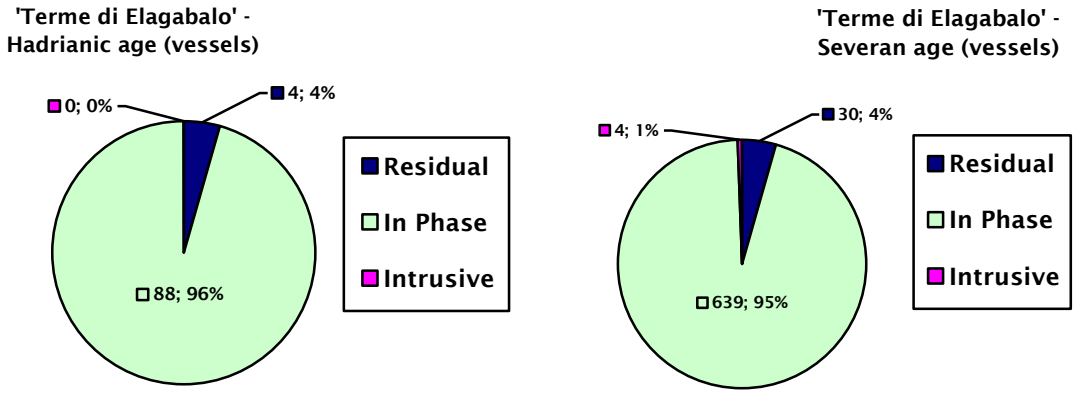


**Fig. 3.1: Amounts of in-phase, residual, and intrusive vessels of amphorae in the 'Terme di Elagabalo'.**

[393] Morel 1998b: 285; Peña 1998a: 5. Even Saguì & Rovelli 1998: 178 question about this topic.
[394] The definition is different than the one used by Peña 1998a: 6-7.
[395] Peña 1998a: 7; Terrenato & Ricci 1998: 89; Volpe 1998b: 269.
[396] Tyers 1996: 37; Guidobaldi 1998: 263; Santangeli 1998.
[397] Villedieu 1998: 29. Cf. also the example offered by Peña 1998b: 290.
[398] Morel 1998b: 282.
[399] Radaelli 2013: 319, note 32. Cf. also Giannichedda 2008: 53-58.

In the 'Terme di Elagabalo' in-phase amphorae are predominant (fig. 3.1: 96% for the Hadrianic and 95% for the Severan ages) and much diversified. They represent many origins from North Africa to Gaul and from the Western to the Eastern parts of the Mediterranean. Some sherds, belonging to different phases, physically match together, thus informing that these different phases (especially those pertaining to the Severan age) were created during the same time period and using earth recovered from the same site. Few of them had been reused with other functions. Some fragments found in phase 22[400] have, in fact, traces of concrete or lime which suggest their reuse for containing these building materials during the construction of the new complex. Other in-phase vessels are also at the end of their production – at least looking at conventionally accepted dates – but they cannot be considered residual ones because they were still traded or used when they were discarded and entered in these new units (thus belonging to the 'false residuals' category as defined above).

In the period dated Hadrianic age in the 'Terme di Elagabalo' only 4 vessels are residual (4% of the total) and belong to the form Dressel 1[401], whose production ends in the 1st century BC. In the period dated Severan age the amount of residuals increases to 30 vessels but the percentage represented is still 4% (fig. 3.1). Their chronologies can be referred in general terms once again to the same period[402], with the exception of 6 vessels of Dressel 7–11 which were in-phase vessels till the Hadrianic age, but residual ones after this period because their manufacture ended at the beginning of the 2nd century AD[403]. Presumably these residuals originally belonged to units created during the construction or life of previous buildings which existed in the same area (the Late Republican *domus* with fronting *tabernae*[404]). These units were reached by foundation trenches done both for the Hadrianic and Severan buildings which altered them and brought these fragments into most recent contexts[405]. The presence of such little residual amphorae is itself remarkable, suggesting that the majority of finds were in use when they were discarded. On the other hand, four vessels are intrusive. They were all found in Severan age contexts (fig. 3.1: 1%) and belong to North-African forms[406]. Their chronology is from the mid-3rd to the 5th centuries AD, thus informing about subsequent activities (pits, tunnels, trenches) that altered older deposits. These activities may be very likely referred to the reorganisation of the building during those

[400] For the lists of phases, cf., above, Chapter 1, Section 1.3.3.
[401] Cf., below, Chapter 6, Section 6.1.1: 109 and 110, fig. 6.2.
[402] Cf., below, Chapter 8, Sections 8.1.1: 146; 8.1.3: 148; 8.1.4: 151; 8.1.5: 154.
[403] Cf., below, Appendix 1.
[404] Cf., above, Chapter 1, Section 1.1: 5–6 and fig. 1.2.
[405] As described also by Bigliati & Coletti 1998: 114–115.
[406] Cf., below, Chapter 8, Section 8.1.4: 152.

centuries (especially during the 4th century AD) when it was drastically altered with the creation of new walls and the different articulation of rooms[407].

Both residual and intrusive objects will mentioned in Chapters 5-8 about chronological periods for their importance in understanding depositional activities (as explained just above), but they will not be considered in the analysis of implications of amphorae, their contents, their volumes and for the understanding of trade flows (Chapters 9-12) in their respective periods.

### 3.2.2 Phase 2: litres and fabrics.

The above described activities were just the beginning for a step forward to a second phase. Amphorae are usually considered the key to understand trade and political-economic history of Roman times[408], because they were born with close connections to agriculture (especially caused by depletion of olive trees and vine monoculture[409]) or storage activities, when there was a *surplus* of products which could be intended for storage or commerce[410]. They were, in fact, realised to be containers for liquid or semi-liquid foods[411], both for private homes and for medium or long distance trade[412]. Another reason lies in their being mass-produced[413] and morphologically recognizable even in the ancient world[414]. Unfortunately, some scholars have been more interested recently in changing this view and the representativeness of data that amphorae can provide. This is caused by their reuse as trade-containers for other foodstuffs also coming from different areas rather than the ones for which and in which they had been originally created[415], or as stock-containers,

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[407] Cf., above, Chapter 1, Section 1.1: 7-8 and fig. 1.4.
[408] Cf., for example, Anderson 1984: 21; Peacock & Williams 1986; Archer & De Sena 2003: 47.
[409] Panella 2002: 624.
[410] Panella 1989b: 130; Greene 1992: 58; Morley 2007: 573. This theme was also analysed by consumer behaviour scholars, following Marx's assumptions for which a *surplus* is an enormous amount of products that is not absorbed by an effective demand: cf., for example, Sweezy 1943; Baran & Sweezy 1977 [1966]; Mattick 1971; Mandel 1976.
[411] Their shape met strict functional needs: a wine-amphora often has a long neck and a narrow rim in order to not waste the content while transported and their inner surfaces might have been covered with resin or pitch to avoid absorption; a fish-sauce one usually has a long and wide neck in order that the semi-solid content could be reached with tools such as a ladle; oil containers were mostly with a low and narrow neck and large bodies (Hayes 1997: 27-28; Panella 2001b: 181; Opaiţ 2007: 101; Opaiţ 2010c: 154-155).
[412] Panella 2002: 623; Vickers 2010:13-14.
[413] This term is used, for example, in Caple 2006: 18.
[414] Biers 1992: 26. As amphorae were realised in extremely specific sizes, the word was also used to measure units. An *amphora* corresponds to about 26.20 litres (equal to 2 *urnae*, 8 *congii*, 48 *sextarii*, 96 *heminae*) and it was used since the first century BC substituting the *quadrantal* (cubic foot). With an extended meaning, it was also referred to the capacity of a ship, whose weight/volume was calculated by the number of amphorae: cf. Olmer 2001: 277.
[415] Cf., for example, Auriemma 2000: 41-45; Cavaliere 2000: 70-71; Carreras Monfort 2011: 24-25.

or with other recognised uses not related to trade[416] (for example drainage[417]). In this way they expressly deny the validity of whatsoever study which aims to reconstruct patterns of supply in foodstuffs[418]. Although the reuse of amphorae very likely happened, it cannot be seen as a general rule, but as an exception[419] and it can also be difficult to be evaluated just from dumping assemblages without costly techniques so as to analyse the real content of all sherds of amphorae found in all assemblages.

Therefore this study is still mainly (even though not exclusively) focussed on these trade-containers, because they can actually provide information for their primary and leading implications to commerce[420]. At the same time these containers were made with porous material. Thus, part of their contents was absorbed by the walls: wine becomes vinegar and oil turns rancid[421]. For this reason, amphorae can be mainly considered disposable objects and that is why in many archaeological contexts they are found in fragments. The identification of their contents (although sometimes it is only presumed) is taken from the latest available publication and can be seen in Appendix 1.

Amphorae are the basis for another kind of quantification, which implies another problem: the amount of content[422]. Apart the already mentioned problem regarding the reuse of amphorae which very likely happened, this other problem results in the unidentifiable exact amount of content that these amphorae contained[423]. Unfortunately, not all forms were discovered in their integrity so as to assess the amount of litres they actually contained. At the same time, although being mass-produced[424] a strong variability existed among types of the same form, determined by manufacture in specific workshops[425]. Despite this, when possible, their average content in litres will be suggested, using information taken from the latest available publications. When these ones do not offer any suggestions, an approximate calculation will be made from entire drawn vessels offered in them. These drawings had been subdivided into parts that can be assimilated to geometrical forms: usually

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[416] Rodríguez Almeida 2000: 125–126; Peña 2007b: 47–56, 61–192, 341 (point 3), 345. In San Francesco a Ripa (Filippi *et al.* 2014), for example, amphorae were used to create walls.
[417] This re-use was very recently attested in Rome for example in 'Largo Brindisi' (Rea 2011a: 29), 'via Altamura' (Rea 2011a: 36), 'via Sacchi' (Ferrandes 2008b and Attilia 2008) in Rome, as well as during excavations at the *Meta Sudans* (Ferrandes 2013: 91–95). Cf. also various contributions in Pesavento Mattioli 1998; two examples in Padua in Cipriano & Mazzocchin 2003 and Mazzochin & Tuzzato 2010; and references in Disantarosa 2009: 152–153.
[418] Peña 2007b: 345.
[419] Opaiţ 2010c: 153.
[420] Peacock 1982: 154–155; Bruno 2004: 356–358; Panella 2011c: 11.
[421] For this second situation cf. Kiritsakis & Dugan 1984.
[422] Hesnard 1998: 21.
[423] Wilson 2009: 231–232.
[424] This term is used, for example, in Caple 2006: 18.
[425] This is caused by being hand-made. Cf. Shepard 1968: 318; Paterson 1982: 156.

cylinders[426], frustum of cones[427], cones[428], and spheres[429]. After having calculated the volumes of all these subdivisions, they had been summed so as to reach an approximate volume for the entire vessel in $cm^3$, which had been transformed into litres (1,000 $cm^3$ = 1 litre)[430]. The amounts of litres contained by all forms and types considered for this investigation are again offered in Appendix 1.

Unfortunately the form of amphorae alone does not always imply a specific area in which an object was produced. In fact, the wide circulation of these containers, in some cases, led to imitations which arose from stable commercial connections, economic dependencies, or the will to copy vessels carrying particularly valuable commodities[431]. In order to better understand the origins of particular forms of amphorae, fabric analyses become fundamental[432]. The fabric is the physical, typological, mineralogical, and morphological configuration of all elements that composed the raw material used to manufacture ceramics. Different production areas have different mineralogical structure for the available clays[433], thus this analysis helps in identifying the place (or area) where an amphora was likely manufactured. The most efficient way in determining fabric properties of archaeological ceramics (and an extremely increasing method in the last decades[434]) is a petrographic analysis (often using thin-sections) in order to better identify main mineral components and inclusions that might have naturally occurred or been added during manufacture as tempering agents[435] and their sizes (textural analysis[436]). Thin-sections become meaningful when samples are well prepared[437] and when there are enough comparison data not only from sherds, but also from local clays and from kiln-materials, so as to reach a high level of accuracy and to offer valid suggestions for the provenance of specific amphorae[438]. Unfortunately often these analyses offer answers to archaeological

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[426] Volume = $\pi R^2 h$.
[427] Volume = $1/3\pi h(R^2+r^2+Rr)$.
[428] Volume = $1/3\pi R^2 h$.
[429] Volume = $4/3\pi R^3$.
[430] A different approach for calculating the volume of amphorae is offered by Ikäemo & Peña 2009: 40 referring to the one explained by McCaw 2007.
[431] Panella 2001b: 181; Morley 2007: 573; Pecci 2015: 24.
[432] Paterson 1982: 150.
[433] Shepard 1968: 12; Sinopoli 1991: 10, 167.
[434] The amount of books and conferences about this topic is extremely large and it cannot be fully analysed here. Several examples of archaeometry applied to pottery studies are, for example, in Waksman 2007.
[435] Shepard 1968: 18–19, 24–31, 156–162; Williams 1979: 74; Anderson 1984: 32; Greene 1992: 35–36; Caple 2006: 124–125. Grog (also known as firesand or *chamotte*) is surely an inclusion added during manufacture.
[436] Cf., for example, Williams 1979: 75; Freestone 1991: 404–407.
[437] Stoltman 2001: 298.
[438] For this reason, any analysis of fabrics should be compared with the geological situation of manufacture areas, because it allows to define origins for both objects and contained products: Villa 1994: 338.

questions in the terms of assumptions about 'not incompatibility' or 'not exclusion'[439], because kilns that produced particular forms or types were not very often discovered[440]. For these reasons, sometimes the origin is assured, other times it is only presumed, and in other cases it is rather generic.

For this specific study, no thin-sections analyses were carried out. This decision was made because the extremely large amount of finds (which is bound to remain within the Italian border by law) would have resulted both highly expensive and impossible to be examined as a whole. At the same time, with the exception of those sherds found in the 'Terme di Elagabalo', not all the considered finds could have been reached to take samples: those from other excavations (cf. below) are hidden somewhere and it may be extremely difficult – if not impossible – to know where they are[441]. If only a part of them had been analysed while other parts had not, this would have created a large difference in information about all sites and excavations that will be considered in this investigation. This decision was also taken because, unfortunately, there are not enough available comparison data for all the discovered provenance areas and kilns that produced specific forms or types. Therefore these analyses would have not increased the knowledge of these containers. In spite of this, every single diagnostic fragment found in the 'Terme di Elagabalo' that could have been ascribed to specific forms, types, and origins was macroscopically analysed (a couple of times also shoulders and walls were used, as more diagnostic parts were lacking). This analysis also was made for those forms that are still not ascribed to specific origins. Fabric samples (small fragments showing a fresh fracture) were taken from these parts, in order to have them continuously available, and the most possibly detailed description of their macroscopic appearance was written. Even though different ways of describing fabrics exist[442], all descriptions made for this research (that can be seen in Appendix 3 with also meanings of their abbreviated names) contain the following information: colour (using the Munsell Soil Color Charts[443]), hardness (hard, compact, or friable[444]), feel (rough or soapy)[445], type of fracture (regular or irregular), inclusions, and vacuoles/porosity[446] (type and a generic scale for both of

[439] Rizzo 2014b: 407.
[440] Riley 1982: 2, 4; Howard 1982: 145–146; Peacock 1982: 165-166; Peacock & Williams 1986: 9; Hayes 1997: 15.
[441] Cf., below, Chapter 4, Section 4.2 for the excavations in Rome which resulted in fragments of amphorae which are considered for this study.
[442] Cf., for example, Orton *et al.* 1993: 67–75.
[443] The Munsell Chart is just one of alternative systems that can be used. Cf. Orton *et al.* 1993: 136–138.
[444] The Mohs scale is usually used: cf., for example, Horejs 2010: 21 with further references.
[445] Horejs 2010: 21 (calling it 'break').
[446] Horejs 2010: 21.

them)[447]. Using this list of fabrics most fragments were identified and attributed to an origin (and above all fragments of walls, otherwise completely indistinctive).

All the above mentioned information belonging to both phases 1 and 2 was recorded on an electronic database for easier access and transportability[448]. The largest possible number of rims and few other diagnostic parts were also drawn in a scale of 1:1[449] (cf., below, Tables of Drawings in scales of 1:4, 1:5, or 1:6). A complete list of finds can be found within the relevant tables in the below offered Appendix 2. Two new forms of amphorae were also discovered and they are described in Appendix 1, Section 1.2.

Before explaining phase 3 of this analysis, a small reflection has to be made. Although amphorae are the most common containers for long distance trade, in ancient times other containers existed, such as *dolia*[450], or realised with perishable materials that rarely can provide archaeological remains such as skin containers and barrels[451]. Skin containers seems to be very ancient, although the first mentions come from the Middle East in documents dating 18th and 9th centuries BC[452]. They were used to transport water in domestic cases[453], milk[454], wine[455], and also olive oil[456], likely for not very long distances. Therefore they were likely used especially for terrestrial commerce[457], or so as their contents could be poured into amphorae[458], or to transport contents from amphorae to the retailing shop or into homes. Barrels, on the contrary, seem to have been of Gallic[459] or Etruscan origin (as suggested by Desbat[460]) and they were surely already used in the 5th century BC[461], but the majority of finds (some of

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[447] Arthur & Ricci 1981: 127; Horejs 2010: 22.
[448] Even knowing that (as for any technological device) databases can become, in future, obsolete and be replaced by other more modern methods (as questioned in Horejs *et al.* 2010), a database seemed the only solution in order to have continuous access to data and easy transport, rather than thousands of paper sheets.
[449] Almost all types were drawn, but a particular attention was used when a fragment did not have similarities in published records. These drawings reflect specific rules: for them cf., for example, Pennacchioni 2004: 38–56. For this case, sections are on the left side and they are not black filled, nor textured.
[450] Hesnard 1997; Iavarone & Olcese 2013: 221.
[451] Marlière 2002: 187–192; Brun 2003: 100–106; Rizzo 2003: 203; Bruno 2004: 354; Corremans *et al.* 2010: 292; De' Siena 2012: 122–124.
[452] Marlière 2002: 14.
[453] Marlière 2002: 20–21.
[454] Jalmain 1990: 152.
[455] Marlière 2002: 21–22.
[456] Marlière 2002: 22.
[457] Jalmain 1990: 152. For this kind of transport, also for barrels, cf. also Molin 1990.
[458] Marlière 2002: 21, 190.
[459] Baratta: 1994: 234; Marlière 2001: 186.
[460] Desbat 1997: 118; Gagneaux-Granade 2003.
[461] Dal Ri & Rizzi 2005: 222. These finds brought Gagneaux-Granade 2003: 24 to suggest an origin of barrels from Northern Italy.

them also bear inscriptions[462]) can be dated from the 1st BC to the 4th/5th centuries AD[463] and their iconographic representations date the same period of time[464]. They might have originally contained beer and then used also for wine[465], even for seaborne trade[466] and for the supply to military sites[467], but they might have used to transport fish sauces as well, as recently suggested[468]. Both these other containers, possibly for their being rarely found, are often used as a matter of explaining decreases in the discovery of specific forms of amphorae or origins during defined periods[469], slowly from the 1st and especially from the end of 2nd/early 3rd centuries AD[470]. In the early 3rd century AD skin containers and barrels are, in fact, mentioned in Ulpian's *Digest* both as commercial containers[471]. Unfortunately it is impossible to determine the actual role of them in the Roman commerce and to calculate the amount of foodstuffs that was traded by them[472] because they are rarely found. For this reason this problem cannot be overcome, although it should be always considered in any discussion about Roman trade.

### 3.2.3 Phase 3: choosing sites for comparisons and problems

From all contexts of Middle Imperial date found in the 'Terme di Elagabalo' a total amount of 61,654 fragments were discovered. They belong to several ceramic classes and to non-ceramic material, as visible in fig. 3.2.

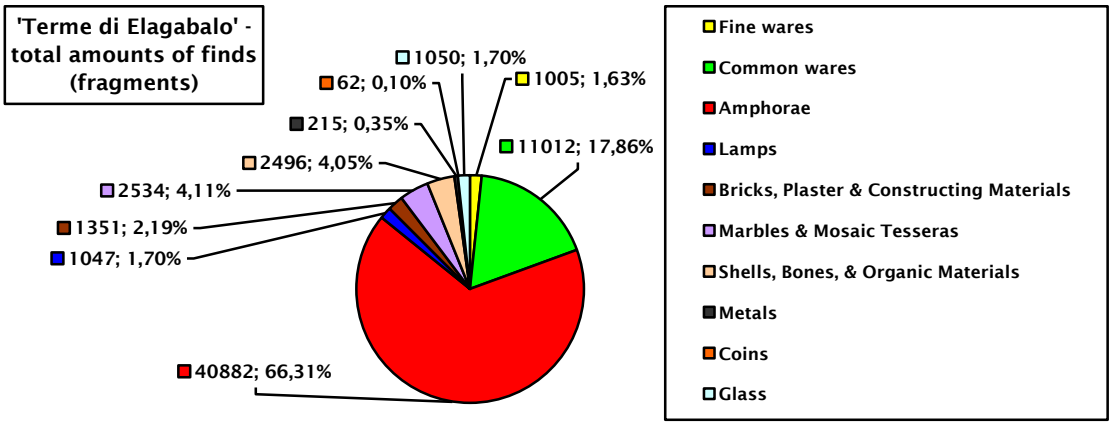


**Fig. 3.2: 'Terme di Elagabalo': Proportions of all finds categories.**

[462] Baratta 1994: 248-250, 252-256; Marlière 2002: 102-117.
[463] Marlière 2001: 181-191; Marlière 2002: 41 and 43-89.
[464] Marlière 2002: 117-157.
[465] Tchernia 1997: 123; Marlière 2002: 173-174.
[466] Marlière 2002: 190 and 192-196 about the supply of armies.
[467] Baratta 2004: 489-491.
[468] Baratta 1997: 110; Baratta 2001: 152; Wilson 2009: 234, 237.
[469] Marlière 2002: 11.
[470] Tchernia 1986: 285-292.
[471] Cf. references in Marlière 2002: 21 and notes 68-69.
[472] Panella 1992: 200; Baratta 2001: 153.

This research, although taking into account general information coming from all other finds which can lead to a better understanding both of depositional criteria and refined chronologies for the found phases and periods (cf., above, Chapter 1, Section 1.3.4), is mainly based on amphorae. They were chosen because they reach the figure of 40,882 fragments (that is a very large quantity) and corresponding to about 66% of the total amount of finds discovered in units belonging to all considered periods, thus being the most represented class in these contexts. Despite the large number of sherds, in order to draw valid conclusions about the commercial patterns to Rome, comparisons and adjustments with other sites become necessary. It is also needed for filling the gap relating to the Trajanic age, a period that is not found in the 'Terme di Elagabalo' and for surpassing the lower presence of fragments in contexts dating Hadrianic and Antonine ages (which are less representative of the respective periods than the Severan age). Therefore, this third phase of investigation involved an intense study concerning published assemblages of amphorae coming from different excavations in Rome which have the same periods considered for this investigation (if the published reports permitted this evaluation[473]). These resulted from publications of digging activities carried out by excavators at various times during the exploration of the city. Unfortunately the Capital suffers a chronic lack of published reports of pottery assemblages, not only belonging to the chosen period of time[474]. For these reasons, also other sites nearby the Capital had been preliminary chosen, considering archaeological contexts found in Ostia, *Portus*, Settefinestre, and Cosa.

The preliminary insertion of these other sites into this research was made for different reasons.

1) Ostia and *Portus* had been two of the main ports of Rome[475], located at the mouth of the Tiber where cargos from ships had been unloaded to be laid again on other boats or rafts (*naves caudicariae*, *lenunculi*, *lintres*, *scaphae*) directed to the Capital[476]. For this reason they are representative of a part of goods directly consumed by their inhabitants and part of others that were meant to arrive to Rome.
2) Cosa and Settefinestre are important sites on the North and not far from Rome. The first is a very important port along the Tyrrhenian coast, especially

[473] Peacock 1982: 171.
[474] Cf., below, Chapter 13, Section 13.4: 279–281.
[475] Keay 2012a: 39–41. He suggests (on page 44), however, that Ostia could have been used for bureaucratic issues, rather than physically linked to handling cargoes, for which *Portus* was primary dedicated.
[476] Rickman 1980b: 267; Cracco Ruggini 1985: 231. Cf. also Friggeri 1985; Di Salvo 1992: 144–182; Campbell 2012: 209, 213 (fig. 8); Remesal Rodríguez 2012: 271; Marzano 2013b: 39–40. Cf. also Rasmus Brandt 2005: 26–27 and 40–42; Aguilera Martín 2002: 9–49 and 2012 for an history of sailing along the Tiber; and Keay 2012a: 33–39 for the ports within the Capital.

during the 1st century BC for the production in its hinterland of Dressel 1 amphorae, and which had a continuation of consuming activities during the following centuries[477]. The second is a production villa where other products arrived, which had been widely studied and published[478]. Being both trade-centres, they seemed useful comparative sites as well as representative both of part of goods arriving there to be directly consumed and of other produced in their respective hinterlands and directed to Rome.

Hoewever, during the development of this thesis, the majority of these sites were excluded from this investigation for different reasons. The decision of excluding *Portus*, despite its importance till the 7th century AD[479], was taken for two main reasons that resulted in no improvements in the understanding of trade patterns during the chosen period. The first reason falls into the available published data that are far from being complete. Only the field survey[480] considers a relatively large amount of finds, but they can only be generically dated Mid-Imperial age[481]. Another excavated context

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[477] Cosa was founded Latin colony in 273 BC (Migliorati 1988a: 71), after the conquest of Vulci and Volsinii (McCann 2002: 9). It is located in the gulf of the modern city of Orbetello (McCann *et al.* 1987: 15, 24), about 140 km on the Nort-West of Rome (McCann 2002: 9). Both the city and harbor had been widely dug, but finds are still not fully published. Its importance (especially for the commerce related to Dressel 1 amphorae) lasted from its foundation till the last half of the 1st century BC, when possibly after some earthquakes which were followed by restorations (Carandini *et al.* 2002: 209), imports did not take the place of exports and the port became a backwater (McCann 2002: 39). During the 2nd century AD beneath the *Curia* a *mithraeum* was installed, leading to the end of public functions for the *Forum* (Carandini *et al.* 2002: 209). The city, however, saw an increase of imports with finds of foreign amphorae during the 2nd and 3rd centuries AD (Lyding Will 1987: 171) especially linked with local wealthy villa owners (McCann 2002: 46). One of these villas, which also arose elsewhere in the area (Celuzza 2002a: 201–204) is the one built at the end of 1st/early 2nd centuries AD just along the shore in the place where the ancient port existed before (Celuzza 2002a: 201–202; McCann 2002: 47) that was very likely part of the imperial state property (Celuzza 2002a: 204). During the the 3rd century AD Cosa was under renovations possibly because it became a functional site for the redistribution of supplies for the armies (Fentress 2002; Regoli 2002: 222–223). During the second half of the 3rd century AD, the *Portus Cosanus* ended its life (Celuzza 2002b; McCann 2002: 50).

[478] The Villa of Settefinestre, situated on a hill in Cosa's hinterland, was built around 40 BC, including 125 hectares of arable land and also as many for forest and pasture (Carandini 1985a: 144–149), and belonged to the Roman senatorial family of *Sestii* (Carandini 1985a: 101–102). Excavations had been held from 1976 to 1981 and several period and phases were discovered. Period I was dated from the Ceasar/Octavian till the Flavian age and saw the realisation of the first villa (cf. Carandini 1980: 8–9; 1985a: 149–171). Period II was dated from the Trajanic to the Antonine age and saw enlargements, a change into cultivations (into crop and bent grass, as well as slaves and pigs) and the acme of its life, although it was possibly owned by a provincial person (Celuzza 2002a: 196; cf. also Carandini 1985a: 171–183). Period III was dated Severan age (from the last quarter of the 2nd century AD) and saw this villa (as well as surrounding areas: Regoli 2002: 218–222) passing through a crisis: mills were destroyed, rooms were closed, the use of land changed (mostly dedicated to corn, pasture and meadow: cf. Carandini 1980: 9; 1985a: 183–185), parts became marshes (Regoli 2002: 218) and quickly the villa did not have many reasons to survive and for this cause was soon abandoned and suffered despoliations (subsequent Periods: cf. Carandini 1980: 9).

[479] Arnoldus-Huyzendveld *et al.* 2005: 11, 12: Keay & Millett 2005: 291, 294. Cf. also Keay 2012a: 44–48.

[480] For the field-survey methodology cf. Keay *et al.* 2005.

[481] Mele 2005.

(Palazzo Imperiale[482]) was only preliminarily published, with a total lack of quantifications. Basilica Portuense, after an insufficient preliminary report[483], was fully published in 2013 (Periods IC dated Hadrianic age; ID dated Antonine age; and IE dated Severan age[484]) but, being the sole published assemblage and having very low figures for the identified amphorae, it becomes less relevant for this investigation. The second reason derives from the director of the excavations in *Portus* himself, Prof. Simon Keay: from the preliminary study of all recovered ceramics it seemed, in fact, that "virtually no material of 2nd century AD date" was found during these excavations[485]. Both these reasons make this site unusable for the purposes of this study.

The reasons for excluding Cosa lies in the insufficient amount of publications about ceramic assemblages in this widely dug ancient city. Just three excavations were published: the 'underwater excavations' held in the waters of the city's port as well as terrestrial ones in the ancient lagoon fishery located just on the South-East of it, whose amount of amphorae which can be extracted from the published list can only be generically dated Mid-Imperial age[486]; the House of the Birds (East Block, Cistern dated half/second half of 2nd century AD) which lead to the discovery of very few amphorae[487]; and the House of Diana (Phase V, dated first half of the 2nd century AD), whose amount of published amphorae could have been the only usable material[488]. At the same time, excluding the city of Cosa makes meaningless an inclusion of Settefinestre, as it is located in the hinterland of that same city. Moreover the published amounts, belonging to the recognised Periods II and III (the only two relevant to this research for their chronology), seems only amounts of fragments and not numbers of vessels[489]. For these reasons even this site is excluded from this investigation.

Therefore, apart from the 'Terme di Elagabalo' which is the basis of this research and excavations held elsewhere in Rome, just Ostia will be considered. The reason of including Ostia comes from the scholarship about trade patterns to Rome, because this city had always been a comparative site for the Capital. Very often information coming from its port had been applied to Rome itself[490], although recently these comparisons have been under serious revision (cf. below, Chapter 10, Section 10.2: 227).

All the collected data will be compared, assessing differences or similarities between Rome and Ostia, creating an inter-site evaluation of finds. This inter-site

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[482] Zampini 2011.
[483] Di Giuseppe 2011.
[484] Di Giuseppe & Maiorano 2013.
[485] Personal communication of Prof. Simon J. Keay.
[486] Cf. quantifications offered in Lyding Will 1987.
[487] Possibly 10 vessels of Africana I, one of them stamped with PAS (*CIL* XV, 3084a; *CIL* XV, 4026c; *CIL* II, 180): Bruno & Scott 1993: 186–188, note 14 and fig. 46, n. 5.
[488] Cf. quantifications offered in Cerri *et al.* 2003: 300 and Rabinowitz & Fentress 2002.
[489] Cf. quantifications offered in Cambi & Volpe 1985.
[490] Rizzo 2014b: 393.

method (inspired by the works of, for example, Courtney 1997, Fincham 2002, Rizzo 2003, Egri 2007, and Rizzo 2014b) is a standard strategy to have a clearer view and all the possible information in order to understand what kind of products were traded in a specific period of time. At the same time, however, comparisons become meaningful when analysed data are standardised so as to offer the same type of information. Unfortunately, during this collection several problems occurred.

The first problem in caused by every researcher's own methods of quantification and selection of fragments[491]. They are very rarely clarified, although it is probable that NMI was used[492]. Other times methods for studying ceramic materials are very difficult (if not impossible) to be discerned from these published works.

The second problem is caused by the non existence of fixed rules in publishing finds[493]. Many researches are not aware of what is important and what is useless. At the same time they do not always offer the same type of information, sometimes even within the same publication[494]. Some only publish the number of vessels without the amount of fragments, others just the number of fragments without the corresponding vessels, others again only percentages of a not given total generating an extremely useless amount of data. In some other cases the number of fragments or percentages are provided randomly within the same article, often without any criteria[495].

A third problem is caused by an unrecognised specific dating of phases. Some publications do not offer divisions of phases or periods, but they only give a generic dating, sometimes belonging to an entire century. This generic chronology cannot help much in understanding continuities or changes related to different historical periods.

A fourth problem comes from the sampling size of the considered sites. Excavations resulted in very different amounts of amphorae sherds (from 1 fragment to a few thousand), not only compared to one another, but also in the same site across different periods (as for the 'Terme di Elagabalo' during the Hadrianic or Antonine ages compared with the Severan one). Their intrinsic statistic significance is obviously unequal.

For this specific study, data coming from those publications will be provided (using, as a matter of facilitating the reading of this work, tables in Appendix 2) and trying to refine information so as to make these data more comparable: 'modernising' obsolete names of types (as research has developed much since the 1970s) with an attempt of standardising all nomenclatures across all excavations and an updating of

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[491] Horejs *et al.* 2010:11-12.
[492] Sellès 1998: 102.
[493] Horejs et al. 2010: 9.
[494] As argued by Horejs *et al.* 2010: 11-12.
[495] Cf., for example, Martin *et al.* 2002 (about Ostia) whose data are not considered for this study, as they totally lack in specification of forms and origins are grouped together without distinctions.

their suggested origin with recent publications[496]; understanding the number of vessels from the figures of diagnostic parts offered in publications; and calculating the amounts of litres of foodstuffs from these numbers of vessels. The numbers of vessels will be extracted by all considered publications which clearly and completely inform about these quantities. Other times, publications can be obscure in the treatment of fragments, leading to the need of calculating the number of vessels. As they seldom inform about rims' diameters or their preserved percentage of circumference, this part of the EVE method cannot be used for them. Only the NMI methodology will be used, assessing the minimum number of vessels from rims and then comparing these figures with data coming from other diagnostic parts (handles and bases, or walls just in the case these are the only preserved parts) using the refinement coming from the NTI methodology.

As for already mentioned sites, unfortunately also some publications from excavations held elsewhere in Rome or in Ostia will not be considered. Their exclusion comes from different causes and intrinsic problems: because the above mentioned extractions or calculations for the number of vessels cannot be achieved; because the amphorae found do not conclusively belong to complexes; because chronologies of phases or periods are too wide, unrecognised, or wrongly identified; or because the amount of amphorae are too scarce for any serious evaluation in terms of fragments or vessels. Sites from elsewhere in Rome and Ostia that will not be considered for this investigation are listed below in alphabetical order:

- Ostia, Caserma dei Vigili[497];
- Ostia, Insula di Diana[498];
- Ostia, Riverside of Fiumara Grande[499];
- Ostia, Sondages along via Severiana[500];
- Rome, Auditorium villa[501];
- Rome, Boccone del Povero, villa and necropolis[502];
- Rome, Collina di Mazzalupo, Via di Boccea/GRA[503];
- Rome, *Domus Tiberiana* (only the dump which was dated to the Hadrianic period–6th century AD)[504];

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[496] For the complete list of forms and types cf., below, Appendix 1.
[497] Zevi 1970.
[498] Treviso 2013. Excavations published in Marinucci 2013.
[499] Zevi 1972. The found walls might have belonged to storage facilities: Keay 2012a: 43.
[500] Pavolini 1982.
[501] Di Santo 2006a and 2006b. Excavations published in Ricci 1998; Carandini *et al.* 2006; Virgili *et al.* 2010.
[502] Bertoldi 2011a: 51–54 and tab. 30. Excavations published in Bertoldi 2009.
[503] Zampini 2008. Excavations published in Marchi & Catalli 2008. Cf. also Cavalieri 2010.
[504] Meylan Krause 2002: 33–39.

- Rome, Fosso della Crescenza[505];
- Rome, *Lacus Iuturnae*[506];
- Rome, Monte Testaccio[507];
- Rome, Necropolis of Carcaricola[508];
- Rome, Porta Pia, excavations in the British Embassy[509];
- Rome, Rebibbia, Via S. Cannizzaro[510];
- Rome, Roman cistern along Via Cristoforo Colombo[511];
- Rome, Temple of Castor and Pollux in the Roman Forum[512];
- Rome, Trajan's Baths, outer Western exedra[513];
- Rome, Via di Grottaperfetta[514];
- Rome, Via Marmorata[515];
- Rome, Via Portuense, corner with via Belluzzo[516];
- Rome, Via Portuense, corner with Via Ravizza[517];
- Rome, Via Portuense, loc. Pozzo Pantaleo[518];
- Rome's periphery, not far from Ostia and *Portus*, Via Portuense/Via Campana[519].

Sites and contexts that will be considered and analysed can be seen in Chapter 4, Sections 4.1 and 4.2 and their respective amounts of amphorae can be seen in the relevant tables in Appendix 2.

### 3.2.4 Phase 4: comparisons across sites

When an amphora finished its first use of being a commercial container, several situations might occur[520], of which breakage and the following discard were the most common cases[521]. Although, to consider waste deposits as a reflection of consumption

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[505] Fentress *et al.* 1983.
[506] Pacetti 2012. Excavations published in Steinby 2012a and 2012b.
[507] For example, Blázquez Martinez *et al.* 1994, Blázquez Martinez & Remesal Rodríguez 1999, 2001, 2003, 2007, 2009.
[508] Bertoldi 2011a: 51–54 and tab. 30. Excavations published in Scandarelli 2009.
[509] Bird *et al.* 1993; Gilkes *et al.* 1994.
[510] Staffa 1986.
[511] Ramieri 1993.
[512] Slej 2008. For the whole excavations cf. Nielsen & Poulsen 1992; Gouldager Bilde & Poulsen 2008; Slej & Culled 2008; Sande & Zahle 2009.
[513] Bertoldi 2008; 2010.
[514] Pagliardi & Cecchini 2004; 2010.
[515] Bertoldi 2011b. Excavations published in Capodiferro & Quaranta 2011a and 2011b.
[516] Cianfriglia *et al.* 1990.
[517] Cianfriglia *et al.* 1985.
[518] Cianfriglia & Corsini 1990.
[519] Serlorenzi *et al.* 2004.
[520] Cf. Peña 2009 for all the possible uses of an amphora after its 'first use'.
[521] Peña 2009: 51.

may bear possible uncertainties because contents might have been consumed elsewhere than the place where containers were discarded (as very recently stated by Johnson[522]). At the same time, evidence of data offered by publications are fragile, not always referred to phases of use for the buildings in which they were discovered. Despite these problems which cannot be overcome, comparisons help to unlock a new way to the second research question which will involve an understanding of trade during ancient times. The Empire's centre was certainly the most important place where goods arrived to be consumed, partly redistributed (although Rizzo 2014b offers different opinions[523]) or were produced[524], but having such a wide and important area in Rome's city centre which is completely unpublished has been something extremely rare so far. This study is, in fact, meant to understand these 'objects' significances'. They can be meant as the shift in meanings about them from the primary function for which they were manufactured (containing products), through their main use (transporting goods), the scope for which they were purchased (people's needs), to their arrival in their depositional context (dumps) which is usually the starting point of analysis, into a general comprehensions of what these data inform about, that is frequently their commercial implications. Adding quantities (and evaluating the relevance of figures[525]), understanding and outlining the amount of goods (in litres) transported by amphorae to central Rome and their origins are giving completely new information about Western trade. As this commerce was surely developed by a strong demand[526], this study will extend the knowledge about food supply in the Capital during this period of time.

Although the content of some amphorae is not always completely sure, the second research question is about imported foodstuffs to the Capital, also understanding their intrinsic differences in quality that might have implied differentiations in their import. For this reason, the method used is the standard sorting procedure for this type of analysis as the one employed by De Sena and Ikäemo in their article about Pompeii[527]. Following the definition of innovations against inventions, for which "*innovations* improve on existing ways [...] of doing things"[528], the adapted innovative method for this phase can be summarised into four sub-phases.

1) Types of amphorae will be divided into macro-groups referring to their content (even though it is only presumed: wine, olive oil, fish sauces, and other products) and origins, using the calculated number of vessels and derived litres to create

[522] Johnson 2012: 79, 81.
[523] Rizzo 2014b: 406 and note 61.
[524] Panella 1985: 180; Tchernia 1986; Panella 2001b.
[525] As stated by Tchernia 2011a: 110-111.
[526] Caple 2006: 140; Tchernia 2011a: 123-124. For the meaning of Demand in Marketing cf., for example, Cannon 1996: 13-14; Stokes & Lomax 2008: 66-72.
[527] De Sena & Ikäemo 2003: 304-305.
[528] Padgett & Powell 2012: 5.

graphs (information about content, origin, and volume is taken from the below offered Appendix 1).

2) All origins of found products will be sought in ancient sources so as to determine if Romans were aware of prices and qualities of these products and differences among them.
3) The four chronological periods considered in this research (the Trajanic, Hadrianic, Antonine, and Severan ages) will be compared including all origins and contents so as to determine fluctuations in the amount of products and their origins across them.
4) Amounts of products contained in amphorae will also be compared between Rome and Ostia, thus offering information about what had been traded during these periods in these two cities.

These comparisons can help the analysis to reach the second research question, which is closely tied to commercial patterns in Rome during the Mid-Imperial age. The best solution to know all the amphorae imported to Rome would be to eliminate all the buildings in Rome, excavating every single $cm^3$ of earth, and to analyse all the ceramics found, but this cannot be undertaken for obvious reasons. Thus, despite the possibility of using statistical techniques[529] (especially in order to overcome the problem of unequal sample sizes of amphorae from the analysed contexts[530]), the text will use on one side written explanations of a large quantity of comparative graphs among periods and cities so as to be visually understandable[531], on the other side an intense use of ancient sources so as to distinguish qualities and prices (when possible) of products. Unfortunately for many archaeological sites, ceramic assemblages are often limited and referred to higher social ranks and those who had financial power. This is not caused by a restricted interest of scholars who might have preferred the 'riches', but it is produced by the surviving evidence of these ranks that is often more abundant than finds related to and representing lower ones, in spite of what assessed by Roth that the majority of assemblages are related to non-élite activities[532].

Unfortunately this prejudicial effect of considering 'luxury contexts' cannot be easily overcome. On one side because what the remains inform about is usually linked to the amount of finds and the opportunity of excavating 'wealthy sites'[533]. On the other side because people's consumption was strictly linked to wealth display and

[529] For example standard deviation, among other techniques.
[530] Aguilera Martín & Revilla Calvo 2004: 1470 suggested the same problem: "las condiciones de concentración y conservación del material, en cada caso, son muy diferentes" (translation: "presence and preservation conditions of materials, for all cases, are very different").
[531] Cf. the quotation in Orton 1999: 29.
[532] Roth 2007: 4-5.
[533] Hin 2013: 322 (The author used different scales in the analysis, cf. Stecher 2013: 325-328).

social ranking[534]. At the same time ancient sources usually describe events and facts focussing on aspects related to higher social ranks (to which they, their principals or their audience belonged)[535], sometimes even distorting them for their own purposes[536], thus over-shadowing events relating to the remaining part of the population[537]. Ancient authors therefore offer a relative, incomplete and partial knowledge of events which involved individuals, not considering their needs[538]. As stated by Courtney, in fact, the factors that affected people's decision in buying are their standards of living, purchasing power, costs of objects related to other ones, durability, availability in the marketplaces, ethnic groups[539] and other cultural factors (because each group has its own norms of lifestyle)[540]. It is therefore quite commonly and rightly believed, in fact, that "the higher the social group the greater the access to distant markets is likely to be"[541].

In order to better achieve all these comparisons and to evaluate differences in assemblages, a refinement of considered sites was attempted. Contexts were subdivided into several groups, identified by the function and by the location of the buildings in which the analysed assemblages were found. This grouping system and the derived analysis was attempted so as to understand if there were differences in the composition of assemblages especially in relation with specific social ranks living in the cities being considered and particular patterns of redistribution within them. The analysis followed all chronological periods, different products in all preliminarily considered sites ('Terme di Elagabalo', elsewhere in Rome, Ostia, Settefinestre, and Cosa), and compared all the created groups so as to determine similarities or differences in found assemblages. Unfortunately this kind of analysis showed to be unproductive in terms of results and interpretations, offering no valid information about both undertaken directions. In fact, as convincingly stated by Wallace-Hadrill[542] and supported by Lo Cascio[543], in Rome there did not exist an "urban zoning", a division in areas with different social composition and built-spaces, thus appearing "formless and multiform: everything was jumbled together"[544]. For example, the

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[534] As typical of modern anthropological studies: cf. for example Ember & Ember 1996.
[535] Marzano 2013: 17; Radaelli, forthcoming (A).
[536] Gowers 1993: 31; Loseby 2007: 3; Nadeau 2010: 442.
[537] Delumeau 1962: 301, in fact, argues that history almost ignored everything that was part of everyday lives even if they are far from being un-necessary.
[538] Radaelli, forthcoming (A).
[539] Courtney 1997: 99.
[540] Courtney 1997: 100.
[541] Courtney 1997: 99. For literature and methodological reviews about market exchanges in Archaeology (although referring to different periods and geographical areas, with very few mentions to the Roman times) cf. Garraty 2010; Stark & Garraty 2010.
[542] Wallace-Hadrill 2000: 214; 2001: 142.
[543] Lo Cascio 2008a: 75.
[544] Dupont 1992: 136.

*Suburra* area (just behind the Augustan and Transitorium Forums) usually is known for being noisy, sordid, and overcrowded[545], especially with low-status people[546], but luxurious houses were also found[547] as happened in other areas of Rome[548]. In this way, determining an exact correspondence of areas and social statuses (with the exception of the Imperial residence on the Palatine hill) may be rather impossible. For all these reasons this additional direction of the analysis was abandoned.

All the above-mentioned comparisons – which are the sole possible method to state differences or similarities in pottery assemblages – will become assumptions about the supply of specific products. The idea is that the higher the presence of an amphora, then the higher was the import of the contained product (and lower presence = lower import), although products from diverse origins could have had a different role in this commerce and some commodities were only used in lower quantities. The attempt to evaluate patterns of commerce basing on common goods (amphorae) so as to assess a "ceramic change" that "reflects a complex inter-relationship between producers and consumers"[549], will also provide attempts to understand whether or not it is possible to recognise patterns of Roman Imperial consumption basing on data especially from the 'Terme di Elagabalo' and sites elsewhere in Rome and trying to understand reasons that incited people in acquiring things[550]. During this brief latter analysis, some theories that are not strictly coming from Archaeology itself will be used, evaluating ideas borrowed from scholars in social sciences such as Psychology, Sociology, and Anthropology, with some of them taken from Economics and Marketing. The relationships between interpretations are obviously highly interdependent as the possibility of recognising one of them depends on the interpretation of the others and *vice-versa*, but they are undertaken in order to better understand commercial patterns.

In conclusion, this study tries to state the importance of ceramics that are the only way of reaching the past with concrete methods, although the truth cannot be found in Archaeology. The final outcome of this study is, in fact, to try to offer an answer to the second research question offered in the Introduction in order to attempt to understand ancient trade patterns in Rome during the Mid-Imperial age. This evaluation might permit an understanding of how data from the 'Terme di Elagabalo' fit in the current scholarship. The next Chapter will inform about all the considered sites in Rome and Ostia for this research.

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[545] Salles1983: 170; Staccioli 1985: 8; Betts 2011: 130.
[546] Salles 1983: 170–172; Dupont 1992: 150; Rodríguez Neila 2011: 33.
[547] Wallace-Hadrill 2000: 209.
[548] Liberati Silverio *et al.* 1991: 58. The *transtiberim* is another of these areas: Salles 1983: 173.
[549] Courtney 1997: 98.
[550] Bagozzi *et al.* 2002: 1.

# Chapter 4: The analysed sites in Rome and Ostia

This Chapter will briefly describe all the excavations, held during very different years across the whole city of Rome and at Ostia, which are used in this research. It offers brief summaries of periods discovered during these interventions. It will be divided into several Sections, according to the sites that will be discussed[551].

## 4.1 Elsewhere in Rome

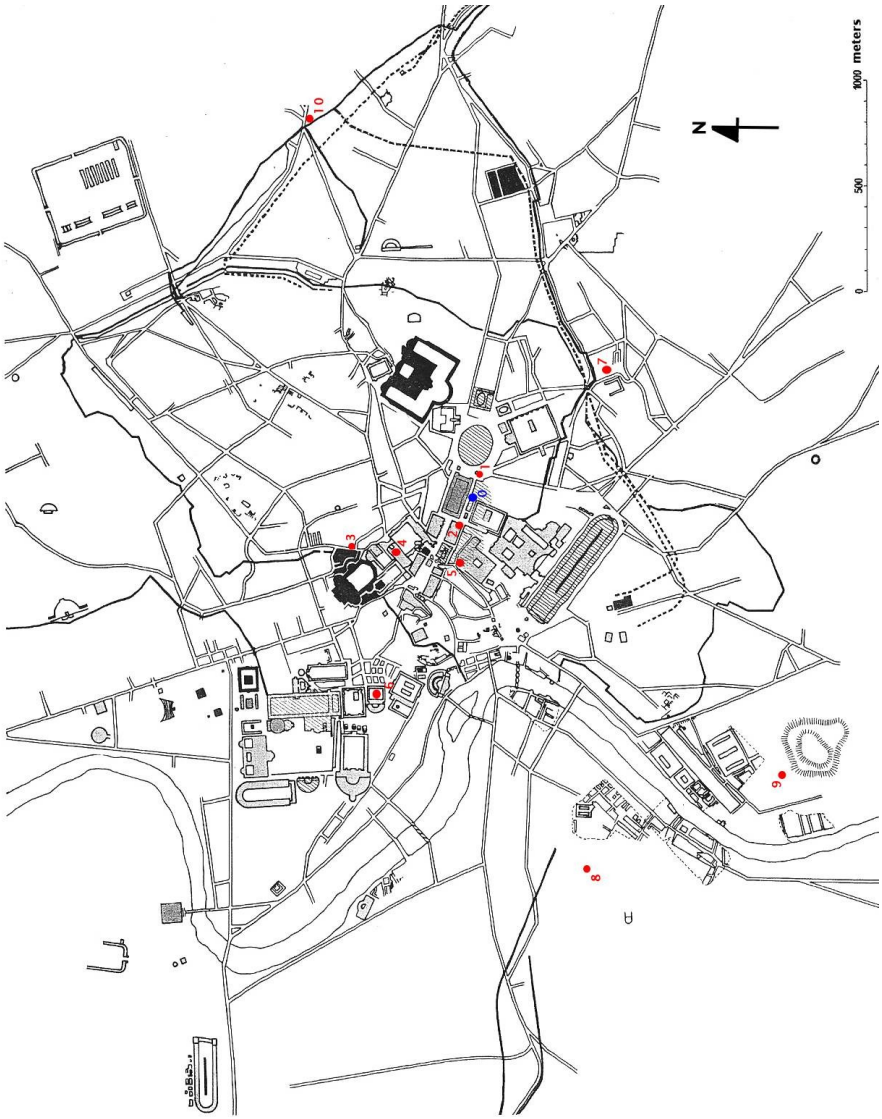


**Fig. 4.1: Map of ancient central Rome with the location of the analysed sites (after Palombi 2012: 36, with modifications).**

[551] The following list considers published excavations by September 2015 which resulted in fragments of amphorae. Reports published after that date are not considered in this study.

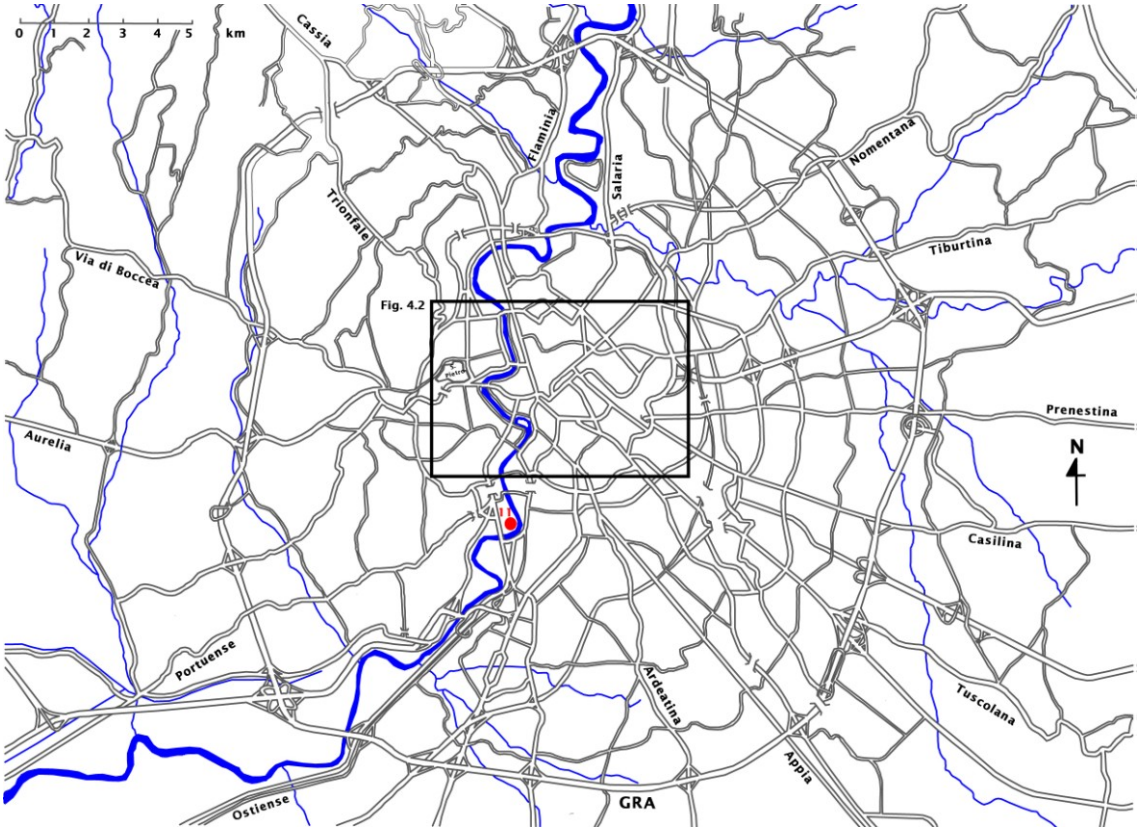


**Fig. 4.2: Map of contemporary Rome with the approximate area covered by fig. 4.2 and the eleventh considered site (after Istituto Geografico De Agostini 1995: 205, with modifications).**

At the beginning, 28 sites across Rome and its *Suburbium*[552] had been considered for this research. After the selection and the exclusion of some of them for their intrinsic problems[553], they are now reduced to 11 sites (figs. 4.1 and 4.2).

### 4.1.1 *Meta Sudans* (fig. 4.1, n. 1)

Ancient sources[554] ascribe the construction of the *Meta Sudans* fountain to Domitian (between AD 85 and AD 96) and two sesterces dated AD 80[555] represent this fountain beside the Colosseum, both already completed. The present remains consist

[552] For the definition of Rome's *suburbium* cf. Witcher 2005 and 2013.
[553] Cf., above, Chapter 3, Section 3.2.3: 63–64.
[554] Cf. Lugli 1952: 60, n. 71; Lugli 1955: 82, n. 26; 100, nos. 110–112; 235, nos. 1–2; 296–297, nos. 218–228; Lugli 1960: 116, nos. 389, 390.
[555] Mattingly 1930: 262, nos. 190–191, tav. 50, 2. Two other sesterces minted after the death of Titus in AD 81 (Mattingly 1930: 262 and 358, in note) can be added to them, because they are very similar to the others.

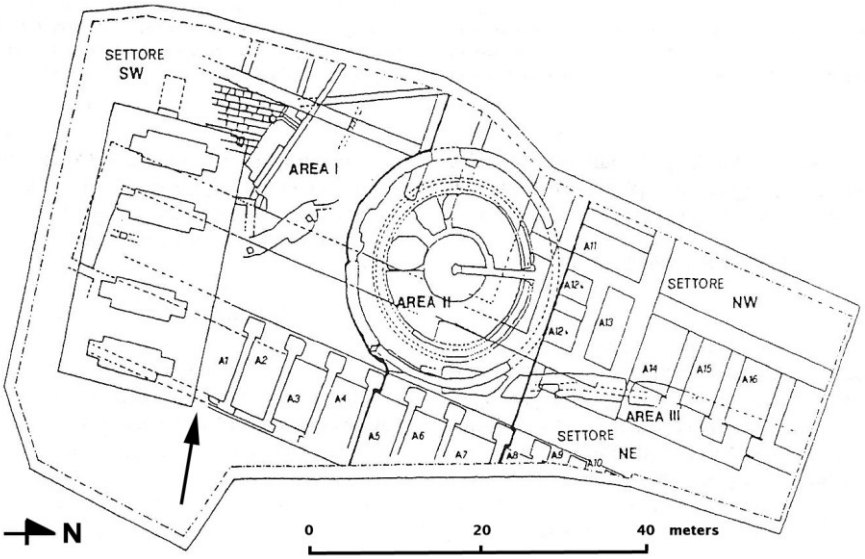


**Fig. 4.3: Plan of structures discovered during the excavations at the *Meta Sudans* with an arrow indicating the area of discovery of analysed finds (after Rizzo 2003: 9, fig. 2, with modifications).**

of only two concetric mortar foundations pertaining to the basin and salient of it[556]. It was an *unicum* in Rome's topography both for the name and its shape[557] (apart for its Augustan predecessor, found underneath it[558] after several assumptions[559]).

Nothing remains of the salient, apart from the images offered by ancient coins[560], Colini's study[561] before the demolition[562], and some old pictures of the area[563]. This fountain could have had a salient of about 60 feet (17.70 m) in height. Gatti's drawing shows how the salient was: divided into two parts by a cornice. The lower one did not have cladding (thus was likely covered with marble plates) and was possibly animated by niches. The upper one was made of bricks and had a conical shape recalling *metae* of circuses[564].The water supply is still an open problem[565], but it must have arrived from

[556] This is caused by age as well as voluntary demolition operated in 1936: Coarelli 2008: 203. These mortar nucleus are made of bricks and consist of a central pit (originally 10 m deep), a circular external small sewer leant against the foundations of the basin, another semi-circular small sewer (in the part towards the Palatine only) between the foundations of the salient and basin, and a radial duct directed towards the North that, starting from the central pit, was connected with the other two (Panella 1990: 77).
[557] Panella 2001a: 62. Cf. also Gabbrielli 2000a.
[558] Panella & Zeggio 2004: 65–69, 73–77 and 80–87; Panella 2006: 87; Cante 2013. It was also located in the crossroads among five Augustan regions (Lugli 2000: 11).
[559] Sen., *Ep.*, VI, 56, 4; Colini 1937: 38–39; Lugli 1946: 369–370; Panella 1996: 90.
[560] Apart the above mentioned ones, two sesterces and an axis of Severus Alexander (Carson 1930*:* 128–129, nos. 156–158, tab. VI) and two medallions of Gordian III (Cohen 1955: 37–38, nos. 165–166).
[561] Colini 1937: 31, fig. 13. Cf. also Platner & Ashby 1929: '*Meta Sudans*'; Lugli 2000: 11.
[562] Cf., above, Chapter 1, Section 1.1: 3.
[563] Cf., for example, the picture dated 1860 published in Becchetti *et al.* 1991: 35, another dated around 1870 published in Bull & Einaudi 1978: 24; the one published in Panella *et al.* 2011a: 5, or the ones in Lugli 2000: 12–14.
[564] Panella 2001a: 62. Cf. also Castagnoli *et al.* 1958: 104. For the symbolic meaning of this shape cf. Longfellow 2011: 25, 33–49.
[565] These are the principal assumptions: 1) this duct is too low and was not discovered; 2) some of the small channels found were meant to host *fistulae* and not for drainage; 3) supply tubes were superficial and were removed during post-Roman times: cf. Panella 1990: 79–80.

cisterns situated on the *Caelium* or Esquiline hills through a forced duct (or inverted siphon) so that the pressure was enough to reach the top of the fountain[566].

From the excavations undertaken around this monument, G. Rizzo studied not only some Neronian age addition of earth after the AD 64 fire, but also the filling of a ditch, made to create a sewer, which was found on the North-Eastern side of the Arch of Constantine (fig. 4.3, indicated with an arrow). This filling was dated Antonine age[567].

For the list of amphorae, cf. Appendix 2, Table 21.

### 4.1.2 Palatine's Northern Slopes (fig. 4.1, n. 2)

The Palatine Northern slopes is another very important site, where Andrea Carandini's team had been working since the 1980s. Their excavations included several remains among *Sacra via*[568], *Clivus Palatinus*, Vestals' house[569], *Nova via* and the Arch of Titus[570], already dug by G. Boni in the early 20th century and now identified as aristocratic houses which belonged to several significant personalities from the 2nd century BC to the Julio/Claudian age[571].

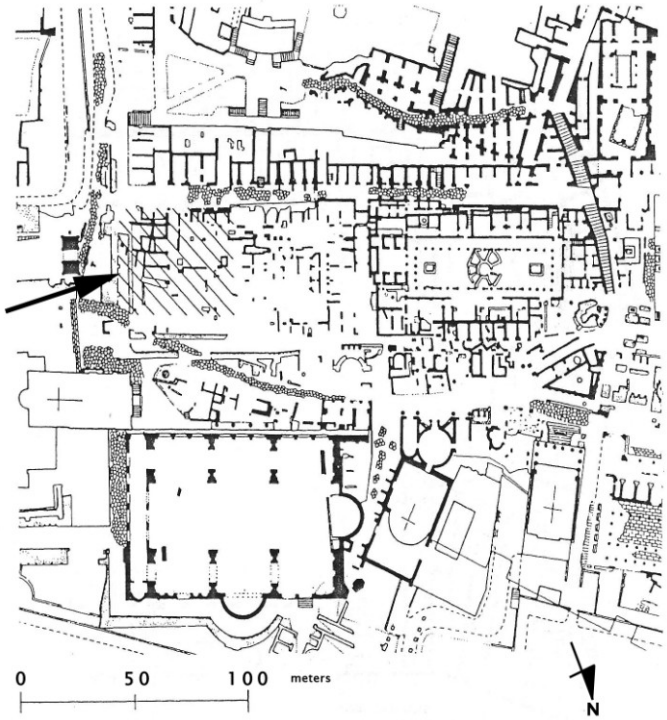


**Fig. 4.4: Area of the excavations at the Palatine's Northern slopes with an arrow indicating the area of discovery of analysed finds (after Rizzo 2003: 11, fig. 3, with modifications).**

The context analysed by G. Rizzo comes from a leveling layer that laid against foundations of rooms made of bricks in the easternmost portion of Via Nova and on the North of it, between the Arch of *Titus* and the Vestals' house (fig. 4.4, indicated

[566] Panella 1990: 78-79. About how this fountain operated cf. Panella 1990: 80-81 and 2001a: 62-65. For a project of re-creating this fountain cf. Gabbrielli 2000b.
[567] Rizzo 2003: 7-10.
[568] For a brief description of it cf., for example, Coarelli 2008: 93-95.
[569] For a brief description of the complex Vestals' house and temple cf. Coarelli 2008: 99-105.
[570] For a brief description of this monument cf., for example, Coarelli 2008: 115-117.
[571] Rizzo 2003: 10.

with an arrow). It was dated late Flavian/early Trajanic age, immediately after the creation of these rooms[572].

For the list of amphorae, cf. Appendix 2, Table 20.

### 4.1.3 Trajan's Markets (fig. 4.1, n. 3)

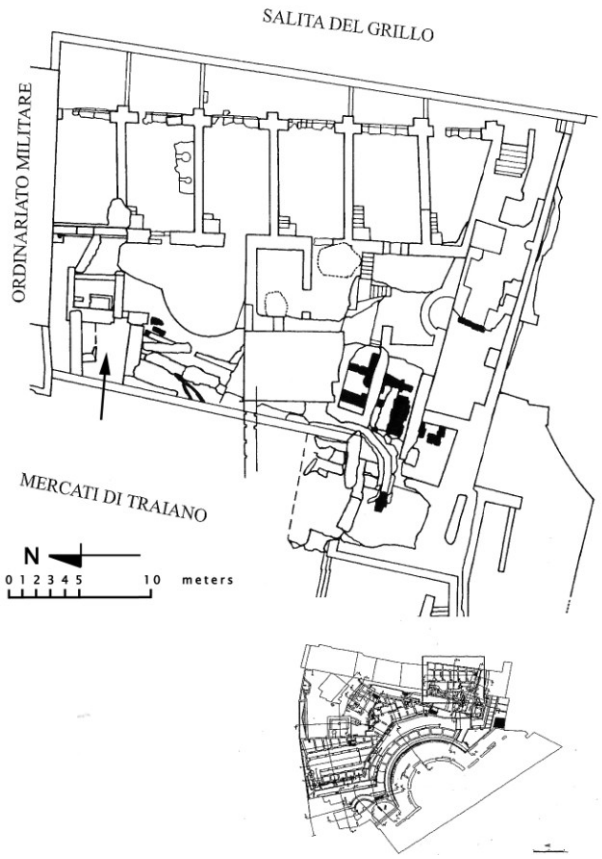


**Fig. 4.5: Area of the excavations behind the Trajan's Market with an arrow indicating the area of discovery of the analysed finds (after Ceci 2006: 26, fig. 1, with modifications).**

Along the modern Salita del Grillo, just on the back side of the Trajan's Markets[573] in 1995-1996 some excavations were held leading to the discovery of structures which were dated from the Archaic to the Imperial ages. One of the complexes was identified as an aristocratic *domus* that was created during the 2nd century BC over more ancient walls dated 4th century BC. This residential building was still in use when one of the rooms was closed and completely filled with a dump. This room was probably a kitchen because a typical cooking counter and a thick layer of soot and coal were found.

Monica Ceci analysed the intentional obliteration of this room which was possibly caused by some restorations of the Trajan's Markets (fig. 4.5, indicated with an arrow). Most finds were dated second half of the 2nd century AD, while the actual filling can probably be dated Severan age, likely around AD 200. It was possibly made with materials coming from different dumps across the city[574].

For the list of amphorae, cf. Appendix 2, Table 22.

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[572] Rizzo 2003: 11.
[573] For a brief description of this building cf. Coarelli 2008: 147-150.
[574] Ceci 2006: 25.

### 4.1.4 Forum Transitorium (fig. 4.1, n. 4)

The pottery studied by Alessandra Marucci came from the filling of a sewer found during the 1995-1996 excavations along mortar foundations of the North-Western Portico of Forum Transitorium[575] (fig. 4.6, indicated with arrows). This sewer was probably made during the Domitian age[576] and is made of lateral parts of bricks (Northern ones were leant against these foundations), 50x30 cm tiles created the flow plan, and the covering was realised with two tiles (bipedali) in the shape of a roof (so-called 'a cappuccina'). The original thick floor preparation dated Domitian age preserved this sewer and the lower part of the descending duct made of bricks[577]. This sewer was divided by two pits dug during an uncertain period, but likely before the early 1930s when demolition interventions were undertaken in this area. The entire stratigraphy discovered was dated from the Domitian age to the end of 10th/early 11th century AD[578], but only two phases were examined and published:

- Period 2, Phase II, Sub-Phase 2 (dated Trajanic age) saw a first filling of the sewer just above the flow plan[579] (for the list of amphorae, cf. Appendix 2, Table 23);

- Period 2, Phase III, Sub-Phases 3-5 (dated second half of the 2nd/early 3rd centuries AD) saw another filling of that

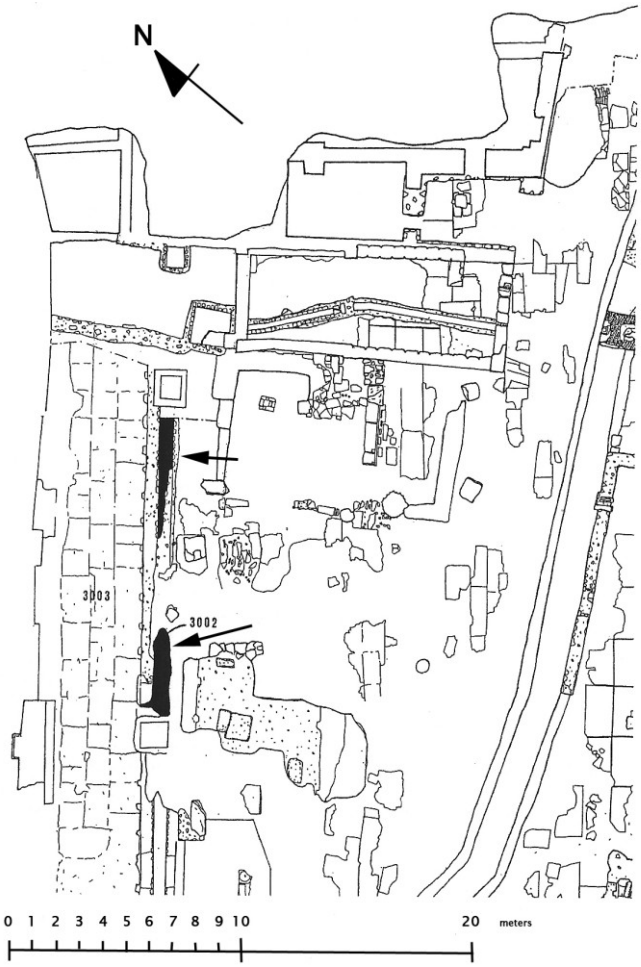


**Fig. 4.6: Area of the excavations in the *Forum Transitorium* with two arrows indicating the areas of discovery of the analysed finds (after Marucci 2006: 58, fig. 1, with modifications).**

[575] For a brief description of this complex cf. Coarelli 2008: 135-137.
[576] Marucci 2006: 59, 90.
[577] Marucci 2006: 57.
[578] Marucci 2006: 58 and 60 for the cutting activities dated this period.
[579] Marucci 2006: 60, 90-91.

sewer[580] (for the list of amphorae, cf. Appendix 2, Table 24).

### 4.1.5 Domus Tiberiana (fig. 4.1, n. 5)

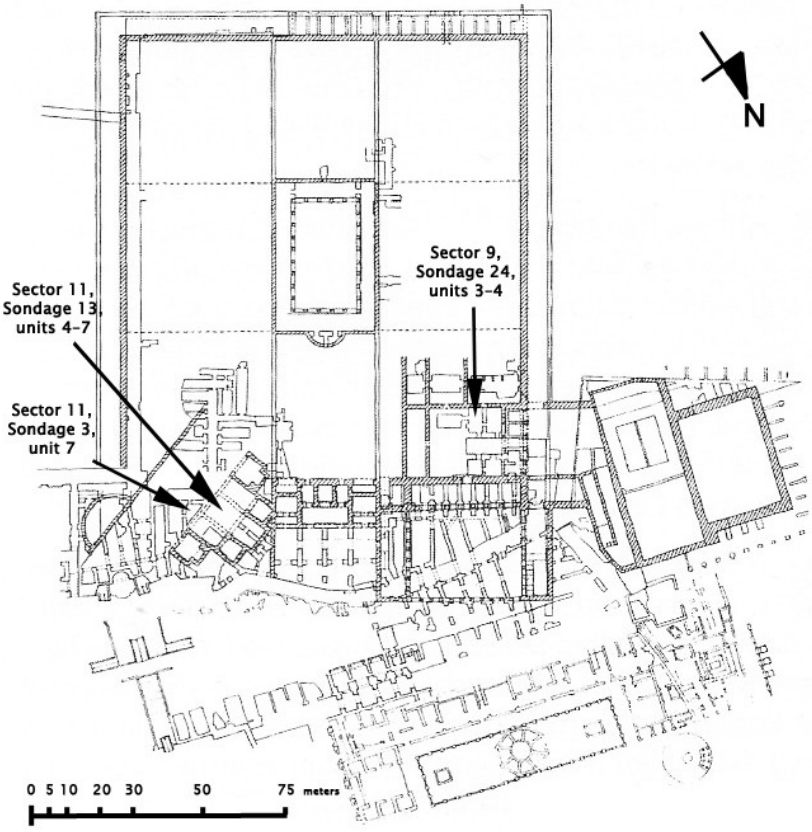


**Fig. 4.7: Plan of *Domus Tiberiana* with arrows indicating the considered excavated sectors (after Coarelli 2008: 175, with modifications).**

The *Domus Tiberiana* occupies most of the North-Western portion of the Palatine's hill, between the Temple of Cybele and the slopes towards the Forum. During the 16th century it was occupied by Horti Farnesiani, thus offering few strips of earth to be explored. Little information is, in fact, available about remains, with the exception of a *peristiulium* discovered by P. Rosa (1861-1863)[581], eighteen rooms on the Southern side (partly covered with frescos), a long barrel-vaulted *cryptoproticus*, and the Northern side[582]. Part of the complex was likely created by Tiberius, possibly reusing the house where he was born[583], but it acquired the asset of a whole building only during the Principate of Nero (as recent researches showed) being included in his *Domus Aurea* project immediately after the AD 64 fire[584]. This complex underwent subsequent massive restorations

[580] Marucci 2006: 60, 91-92.
[581] Coarelli 2008: 175-176.
[582] Coarelli 2008: 176.
[583] Coarelli 2008: 174.
[584] Wallace-Hadrill 2000: 192. For a brief description of this complex cf., for example, Coarelli 2008: 228-237.

realised by Domitian (connected with the *Domus Augustana*[585]), with a library which was possibly added[586]. The complex was occupied until AD 847[587].

From the whole amount of finds published by Marie-France Meylan Krause[588], only two periods are considered: Period V (Hadrianic age) and Period VI (Antonine/Severan age)[589]. One context (Sector 11, Sondage 2, Units1-2*)* called 'dépôt/dépotoir' (dump) has an overly wide chronological range (Hadrianic age-6th century AD[590]), thus it is not considered for this investigation (cf., above, Chapter 3, Section 3.2.3: 56). Two contexts will be used here as belonging to Period V (fig. 4.7, indicated with arrows), although resulting in small quantities of amphorae possibly caused by excavating using sondages:

- Sector 9, Sondage 24, Units 3-4 saw a complete change of levels with an addition of earth, sealed by an *opus spicatum* floor dated AD 123[591] (for the list of amphorae, cf. Appendix 2, Table 25);

- Sector 11, Sondage 3, Unit 7 is located in the Eastern corner of the excavations, where a Domitian-age floor was raised with an addition of earth rich in pottery, covered by marble slabs, and then sealed by a 5 cm clay layer[592] (for the list of amphorae, cf. Appendix 2, Table 26).

A single context considered in this investigation belongs to Period VI (fig. 4.7, indicated with an arrow), again with a small amounts of amphorae:

- Sector 11, Sondage 13, Units 4-7 consisting in the destruction of some of the upper rooms covering some stairs which was sealed by an addition of earth[593] (for the list of amphorae, cf. Appendix 2, Table 27).

### 4.1.6 *Crypta Balbi* (fig. 4.1, n. 6)

Excavations in the Crypta Balbi are extremely important for post-Antiquity in Rome, as finds are dated from the 1st BC to 19th centuries AD, leading to the creation of a Museum that belongs to the National Roman circuit. Several periods were discovered,

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[585] For a brief description of this building cf. Coarelli 2008: 177-189.
[586] Coarelli 2008: 175.
[587] Meylan Krause 2002: 1.
[588] The pottery comes from the 1984-1987 excavations made by the Swiss Institute of Rome and undertaken in several parts of the complex (Meylan Krause 2002: X).
[589] Meylan Krause 2002: 2. These two periods were found in several parts of the excavations, but especially those found in Sector 9 located in the North-Western substructures (Meylan Krause 2002: 9) and 11 situated in the North-Eastern substructures and corresponding to a part widened by Domitian (Meylan Krause 2002: 26).
[590] Meylan Krause 2002: 26, 31-33.
[591] Meylan Krause 2002: 9, 14.
[592] Meylan Krause 2002: 39-40, 42.
[593] Meylan Krause 2002: 43-44, 46.

which include: very few remains dated first century BC[594]; the construction of the complex Teatre and *Crypta* built by L. Cornelius Balbus and inaugurated in 13 BC during a severe Tiber flood and affected by the AD 80 fire[595]; restorations after that fire; the changing asset during the Late Antiquity and the slow abandonment of the complex[596]; the creation, during the Early Middle ages (9th–10th centuries), of the church of Santa Maria Domine Rose in the Crypta and the *Castellum* (or *Castrum*) *Aureum* over the remains of the Theatre[597]; the establishment of houses for several families during the Late Middle ages (11th–14th centuries)[598]; the creation of the church of S. Caterina dei Funari and its conservatory as well as changes in owners (15th–18th centuries)[599]; and several changes in owners, the enlargement of via delle Botteghe Oscure, and the excavations (19th–20th centuries)[600].

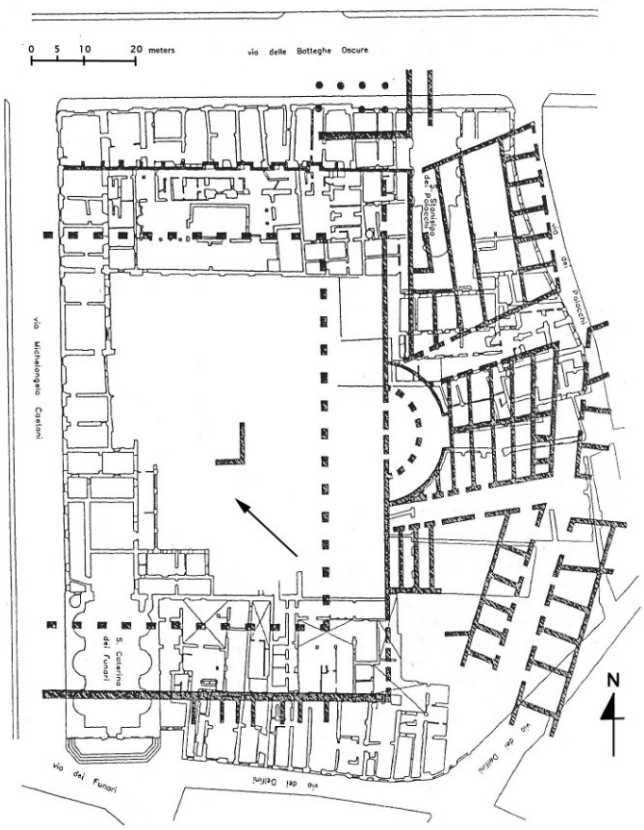


**Fig. 4.8: Plan of remains at *Crypta Balbi* with an arrow indicating the area of discovery of the analysed finds (after Rizzo 2003: 13, fig. 4, with modifications).**

Finds studied by G. Rizzo came from the Eastern basement rooms of the conservatory of S. Caterina della Rosa (Sondage VIII, fig. 4.8 indicated with an arrow). Many phases were found (trenches, a despoliation pit used as a dump, rehashes, and units related to a not better identifiable building phase) and the analysed ceramics were identified as clearly residual, but originally coming from a context dating Trajanic age[601].

For the list of amphorae, cf. Appendix 2, Table 20.

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[594] Manacorda *et al.* 2000: 10.
[595] For this phase cf. Manacorda *et al.* 2000: 11–12; Coarelli 2008: 369–371.
[596] Manacorda *et al.* 2000: 18–20.
[597] Manacorda *et al.* 2000: 21–28.
[598] Manacorda *et al.* 2000: 29–32.
[599] Manacorda *et al.* 2000: 33–40.
[600] Manacorda *et al.* 2000: 41–44.
[601] Rizzo 2003: 12.

### 4.1.7 Santo Stefano Rotondo (fig. 4.1, n. 7)

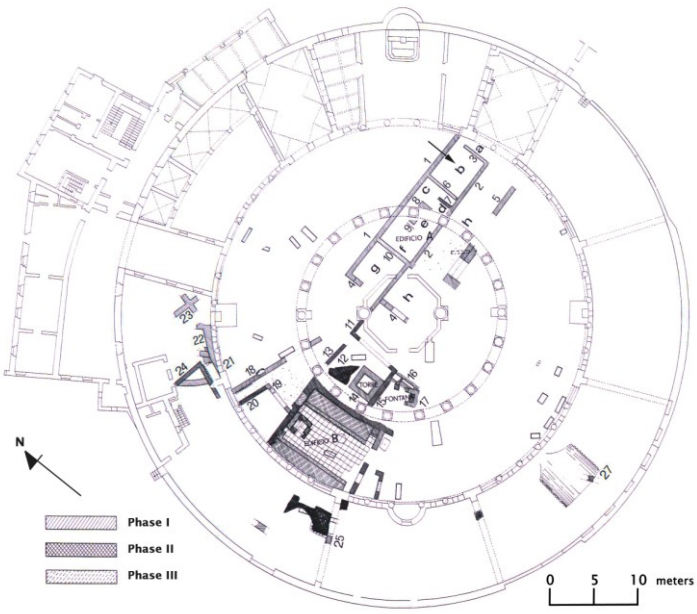


**Fig. 4.9: Plan of remains under the Church of S. Stefano Rotondo (after Lissi Caronna & Rizzo 2009: 42, fig. 6, with modifications).**

Some archaeological excavations, held during the end of 1960s and above all during the 1970s, were held in addition to some restoration works within the church of Santo Stefano Rotondo, on the Caelian hill[602]. During these excavations, several remains were found under the floor of the church pertaining to the complex known as *Castra Pregrina* (Buildings A[603] and B[604] where soldiers inhabited, a tower[605], a so-called 'fountain'[606], and other rooms with unknown functions[607]), its belonging Mithraeum (created in Building B), two long walls, and a small apsis[608]. The majority of remains were obliterated with a levelling layer found all over the area when the church was constructed during the 5th century AD[609]. Two contexts were discovered that can be referred to the Mid-Imperial age:

- Building A, Room b, Phase 3, Unit 2 (fig. 4.9 indicated with arrow), dated Antonine age[610] (cf. Appendix 2, Table 33);
- Levelling layer to build the church, dated 70s of the 5th century AD, but with many vessels whose chronology belongs to the second half of the 2nd century AD[611] (found in many rooms all over the area; cf. Appendix 2, Table 34).

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[602] Lissi Caronna 2009: 33, 124–126.
[603] Lissi Caronna 2009: 46–66, 99–120.
[604] Lissi Caronna 2009: 88–90, 120–121.
[605] Lissi Caronna 2009: 69–73.
[606] Lissi Caronna 2009: 73–88, 121–124.
[607] Lissi Caronna 2009: 66–69, 90–99.
[608] These remains were dated immediately before the realisation of the Church: Lissi Caronna 2009: 33.
[609] Lissi Caronna 2009: 126. Other data were published by Martin *et al.* 2008 (whose amount of amphorae is not considered here, as dated first half of the 3rd century).
[610] Lissi Caronna 2009: 107.
[611] Rizzo 2009: 272. Only those fragments whose chronology can be ascribed to the Mid-Imperial age were enucleated from the published list of finds.

### 4.1.8 Gianicolo - Via Sacchi (fig. 4.1, n. 8)

The book published in 2008 is the report of the 2003-2005 excavations along the Southern part of via Sacchi (towards viale Glorioso) at the Southern slopes of Gianicolo hill (fig. 4.10, indicated with an arrow). They were the result of a private proposal to construct an automatic car park and arrived to 18 m of depth[612]. The surrounding area itself is full of remains dated Classical age[613].

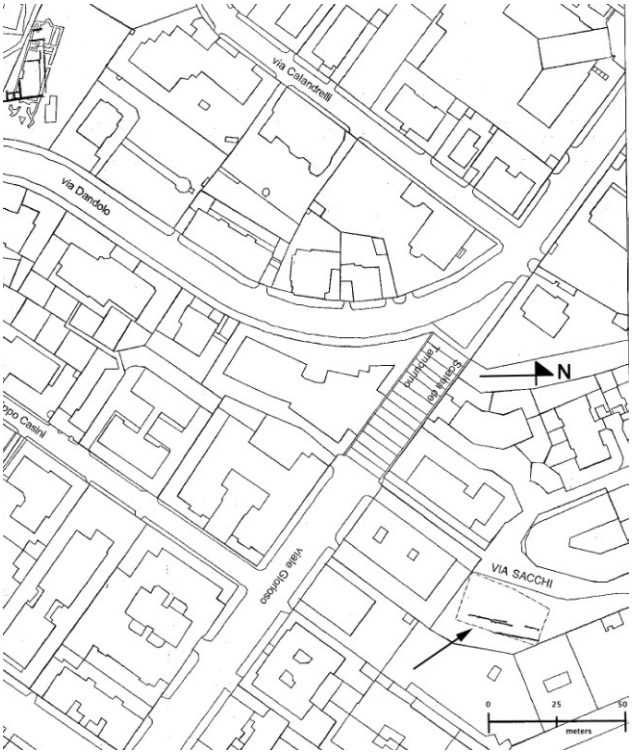


**Fig. 4.10: Location of the excavations along Via Sacchi (with an arrow indicating them) where the analysed amphorae come from (after Filippi 2008: 77, fig. 12, with modifications).**

Excavations allowed to find several phases and periods[614]. The last discovered Period corresponds to a large dump, with a dense series of dumping activies and was active from the Antonine age till the end of the 2nd century AD (US 4, US 401-465, phase VIII), although it was not drawn in a plan so as to understand its location within the area of the excavations[615]. The amount of amphorae discovered in this dump will be considered for this study[616].

For the list of amphorae, cf. Appendix 2, Table 28.

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[612] Filippi 2008: IX.
[613] Attilia 2008. Unfortunately they are more spot-finds rather than offering a complete understanding of the ancient *regio XIV* (*Trans Tiberim*) belonging to the re-organization of regions operated by August in 7 BC (about this reorganization cf., for example, Suet., *Aug.*, XXX, 1; Cass. Dio., *Hist. Rom.*, LV, 8, 6-7; Plin., *HN*, III, 66; Castagnoli *et al.* 1958: 47-49; Coarelli 1988: 54-56; Sommella 2001: 76-82; Fraschetti 2005: 184-242; Coarelli 2008: XXII-XXIII).
[614] The first Period was ascribed to the Arcaic age and consisted in a cultivated area for several traces of furrows (Filippi 2008: 39-43). The second Period corresponds to traces of hydraulic trenches and of a doric Temple (decorative fragments found in the filling of these trenches) and was dated 3rd-2nd centuries BC (Filippi 2008: 45-63). The third Period consisted in a massive landfill (dated Republican age) followed by the creation of a terraced garden, delimited by amphorae, open towards the East and whose characteristic lies in the use of *ollae* in parallel lines dividing the garden into two parts. This garden (dated Augustan age) underwent some changes in a subsequent phase (Filippi 2008: 65-81). A subsequent Period was ascribed to the Neronian/Flavian age and consisted in another landfill, likely naturally created (*humus*: Filippi 2008: 83-84).
[615] Filippi 2008: 84-96.
[616] Ferrandes 2008b.

### 4.1.9 Testaccio - Nuovo Mercato (fig. 4.1, n. 9)

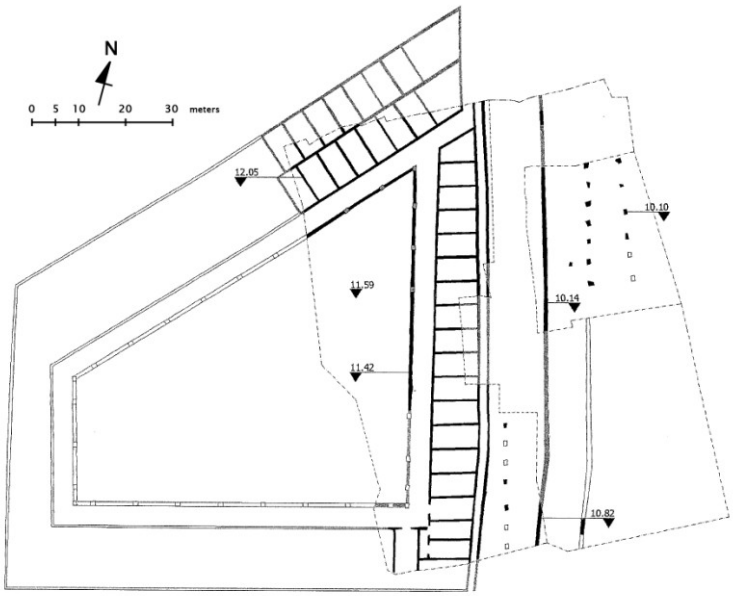


**Fig. 4.11: Plan of remains of the two horrea in the excavated area for the construction of Nuovo Mercato Testaccio where all finds were discovered (after Coletti & Lorenzetti 2010: 157, fig. 1, with modifications).**

Excavations were held across a vast area on the Northern side of Monte Testaccio and were the result of the creation of a new market for the district[617]. Some ancient buildings were found, which were restored and renewed several times. The most ancient remains consist of a wide structure made of *opus reticulatum* with internal subdividing walls made of amphorae possibly dated Late Republican age[618]. The destruction of this phase seemed to have occurred during the end of 1st century AD, but the area was obliterated afterwards, during the early 2nd century AD by a thick alluvial deposit which sealed the previous phase. Around the mid-2nd century AD, at least two *horrea* were built, separated by a narrow street, (fig. 4.11), with walls made of concrete and bricks. The western one has several rooms (*tabernae*) around a large courtyard, while the eastern one has aisles divided by pillars[619]. Unfortunately no phases of use were discovered[620] because at the end of 3rd/early 4th centuries AD this building was despoliated and afterwards abandoned[621]. For the amount of finds and their forms, both buildings were interpreted as wine-amphorae deposits[622]. These complexes seemed strictly connected to the *Emporium* and linked to one of the Tiber ports[623].

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[617] Serlorenzi & Sebastiani 2007: 3.
[618] Andreaccio *et al.* 2008; Sebastiani & Serlorenzi 2011: 77–85. These walls were more deeply analysed only in the Northern area of the excavations, where a deposit of Dressel 20 amphorae was found (Sebastiani & Serlorenzi 2011: 85–86), although in the Southern sector a second phase of use was identified and consisted in a raising of levels and the creation of several rooms. These walls mainly consisted in elongated amphorae (especially Adriatic and Dressel 1b) as well as tuff flakes and small blocks (Giacopini *et al.* 2010: 99).
[619] Gallone *et al.* 2008; Coletti & Lorenzetti 2010: 155; Sebastiani & Serlorenzi 2011: 86–95.
[620] Casaramona *et al.* 2010: 113.
[621] Festuccia *et al.* 2008; Carboni 2008; Cafini *et al.* 2008; Coletti & Lorenzetti 2010: 155.
[622] Casaramona *et al.* 2010: 113.
[623] Cafini & D'Alessandro 2010: 93; Casaramona *et al.* 2010: 113.

For the list of amphorae, discovered in the whole excavation, cf. Appendix 2, Table 29[624].

### 4.1.10 *Aqua Marcia* (fig. 4.1, n. 10)

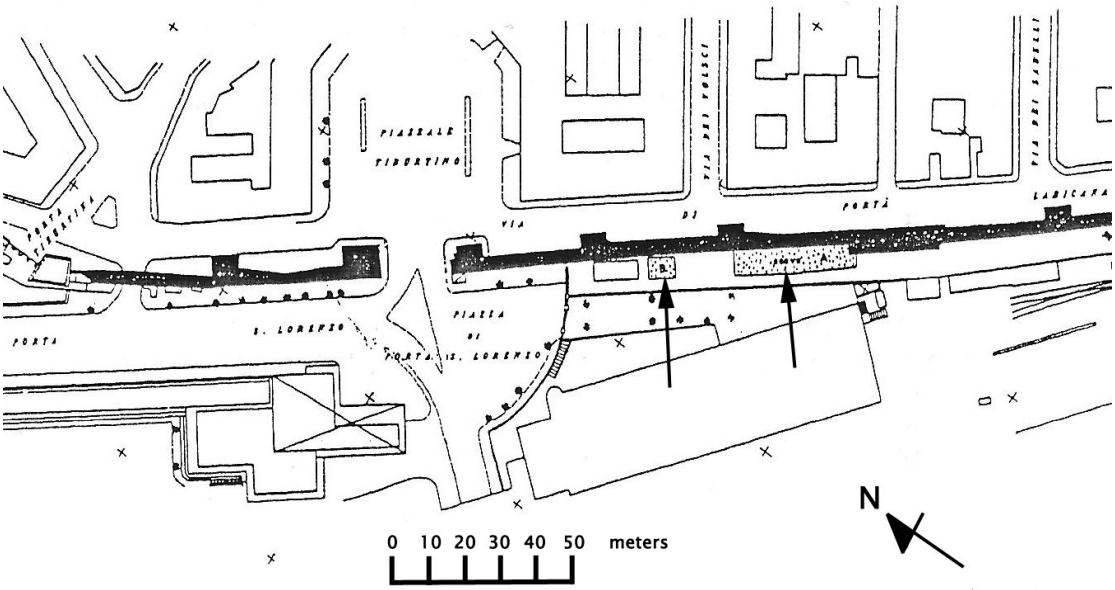


**Fig. 4.12: Location of the excavations along the Aqua Marcia aqueduct with arrows indicating them (after Rizzo 2003: 19, fig. 9, with modifications).**

These excavations (sondages held from 1988 to 1990, fig. 4.12 indicated by arrows) were held so as to better understand and preserve part of the Aurelian walls, between Porta Tiburtina and Porta Maggiore. Excavations were situated just East of the modern Piazza di Porta San Lorenzo, and showed an intricate stratigraphy from the 3rd century BC to the contemporary age[625]. The results of the whole excavation were divided into several periods[626]. Period 5 (Phases 11-16), which is the only one referred to the Mid-Imperial age, is generically dated from the beginning to the end of the 2nd century AD and corresponds to several activities: the creation of a building (possibly a portico with a façade made of small pillars) whose walls are made of *opus mixtum* of

[624] A brief report was already published in Coletti & Lorenzetti 2008. Data about Cretan amphorae are taken from Coletti & Lorenzetti 2010, but a more detailed study was made in Casaramona *et al.* 2010.
[625] Volpe 1996: 15-18; Rizzo 2003: 17-20.
[626] Period 1 consists of a linear wall, with a Nord-South direction and made of irregularly quadrangular blocks of cappellaccio tuff (idenfied as a foundation) built into precedent alluvial deposits and dated 3rd century BC (it was afterwards - during the 2nd century BC - abandoned: cf. Volpe 1996: 19). Period 2 was dated about 144 BC and the realisation of the *aqua Marcia* aqueduct belongs to it. The discovery of six pillars and immediately subsequent activities may belong to this phase, although their chronological identification was very difficult (cf. Volpe 1996: 19-26). Period 3 dates Augustan age and corresponds to the deposition of an olla, a raising of levels linked to restorations and the passage of people (Volpe 1996: 27-31). Period 4 corresponds to restorations undertaken during the Principate of Titus. It saw a continuous wall made of mortar and bricks which covered all the pillars (and filled the arches between the pillars) and a severe raising of levels with additions of earth (cf. Volpe 1996: 32-36).

*cubilia* (tuff) and small blocks located on the East of the aqueduct and whose foundations were dug into precedent units; another raising of levels and changes in the above mentioned building; and the creation of another complex (the so-called '*insula*' whose front is still visible along via di Porta Labicana looking at Aurelian Walls that absorbed it) identified as a cistern[627].

For the list of amphorae, cf. Appendix 2, Table 30.

### 4.1.11 Via Blaserna (fig. 4.2, n. 11)

Digging activities (sondages) took place in 2005–2006 for the intention to construct private buildings, offices, a hotel, and parking lots close to Via Blaserna, which is situated on the right side of a wide bend of the Tiber, not far from Viale Guglielmo Marconi[628]. Eight periods were discovered and analysed, four of them belonging to the Roman age/Late Antiquity[629]. During Period 3 (dated early 2nd–third quarter of 3rd centuries AD) a previous wall made of *opus reticulatum* collapsed and, following its alignement, a necropolis was created with about 21 tombs, all with inhumations (and in very bad preservation) which were ascribed to two phases: during the Hadrianic age and in the

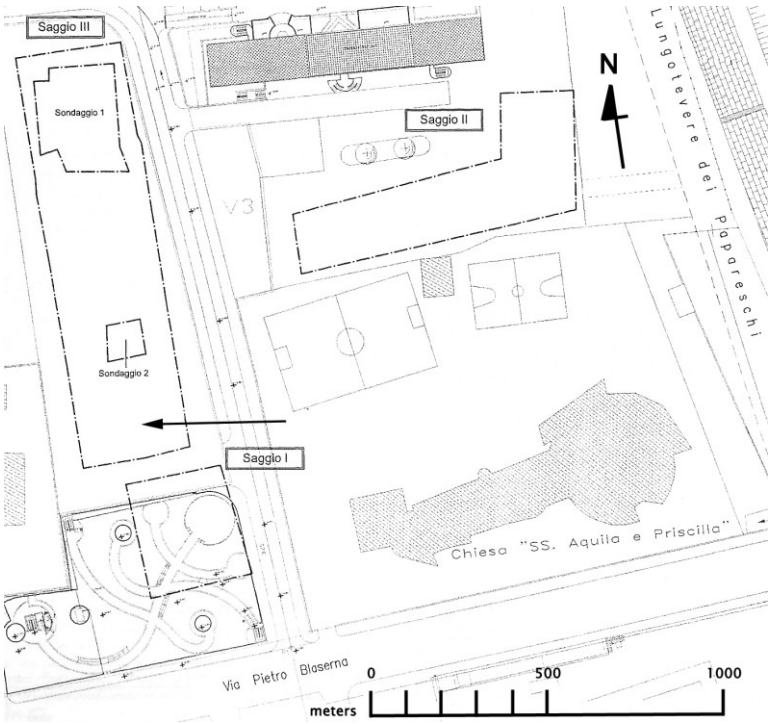


**Fig. 4.13: Location of the excavations close to Via Blaserna with an arrow indicating the location of the riverbank (after Cianfriglia & Francini 2008: 390, fig. 294, with modifications).**

[627] Volpe 1996: 36–52; Rizzo 2003: 17–20. For the discovered amphore cf. Panetta 1996. Period 6 corresponds to the creation of the Aurelian walls (about AD 270–280: Volpe 1996: 52–55). To Period 7 was ascribed the creation of 'Acquedotto Felice' during the second half of the 16th century (Volpe 1996: 55–57). Period 8 corresponds to some 18th century excavations in the area (Volpe 1996: 57–59). More modern interventions and activities were ascribed to the last period (Volpe 1996: 60).

[628] Cianfriglia & Francini 2008: 388.

[629] Period 1 consists of alluvial deposits predating antropic acritivities (Cianfriglia & Francini 2008: 389). Period 2 was dated from the 1st to the early 2nd centuries AD and consists of a wall made of *opus reticulatum* and a flooring (Cianfriglia & Francini 2008: 389–390).

third quarter of the 3rd century AD (6 tombs)[630]. Period 4 was dated from the end of 3rd to the half of 4th centuries AD[631] and saw the realisation of three walls made of re-used *cubilia*, several agricultural trenches, the creation (or second phase of use or reuse?) of an interesting riverbank in the Southern part of Sector III (US 150: fig. 4.13 indicated with an arrow) almost made only of fragments of amphorae[632] whose chronology is unclear. At first it is said that it was created in the early 3rd century AD, then it is assigned to Period 4, but a few pages later it is dated end of 2nd/early 3rd centuries AD and the table referring to finds clearly shows that some forms belong to their Period 4. For these reasons errors likely happened in identifying different deposition stages of this riverbank. Nevertheless a possible phase of use can be dated end of 2nd/early 3rd centuries AD. Most of the area was then covered by another alluvial deposit which lead to an abandonment of the area (4th century AD)[633].

For the list of amphorae cf. Appendix 2, table 31 (Hadrianic phase of the necropolis with very few fragments) and table 32 (the riverbank).

## 4.2 Ostia

Ostia was founded during the 4th century BC[634] and is situated along the Tiber, close to its mouth[635] (this is the meaning of the word *ostum* from which the city was named[636]). The first archaeologically documented implant of the city is the so-called *castrum* (for the rectangular shape of its plan, similar to military camps[637]: cf. fig. 4.14 with a dashed line) typical of other *coloniae maritimae*[638], surrounded by tuff walls and possibly also by a rampart[639]. During the 3rd century BC, housing activities were undertaken beyond these walls[640] and, from the 2nd century BC, functions of the city

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[630] Cianfriglia & Francini 2008: 390–394.
[631] Cianfriglia & Francini 2008: 394.
[632] Ciangfriglia & Francini 2008: 400–402 and figs. 309–314.
[633] Cianfriglia & Francini 2008: 394. During Period 5 (half of the 4th–early 8th centuries AD), the area was abandoned after another alluvial deposit that very likely created a marsh (Cianfriglia & Francini 2008: 394–396). Period 6 (second half of the 8th to 14th centuries AD) consists in other agricultural trenches and a series of re-used marble blocks to delimit a marsh (Cianfriglia & Francini 2008: 396). Period 7 (15th–19th centuries) saw other alluvial deposits but in the mid-19th century it was definitively transformed in agriculture-dedicated land with a ditch filled with a late 19th century dump (Cianfriglia & Francini 2008: 397). Period 8 is the last identified one (20th century) and it saw agricultural activities, a massive addition of earth with many building wastes which formed the base for industrial warehouses (Cianfriglia & Francini 2008: 397).
[634] Meiggs 1973: 20–25; Calza & Becatti 1975: 7. For the strong debate about the origins of Ostia cf. Pavolini 2006: 20–22 and also Zevi 2001a.
[635] Meiggs 1973: 111–115; Stöger 2011: II.
[636] Pavolini 2006: 4, 20, 22–23.
[637] Meiggs 1973: 116–117; Chamay 2001: 16–17; Zevi2001b: 10–12; Pavolini 2006: 22, 27–29.
[638] Migliorati 1988b: 221; Pavolini 2006: 23; Stöger 2011: III.
[639] Pavolini 2006: 27.
[640] Meiggs 1973: 25–27; Zevi 2001b: 14; Pavolini 2006: 28.

changed and slowly emerged a relative independence from Rome (at least from the point of view of local policy), although Ostia kept an extremely important function for the redistribution of grain to the *Urbs*[641], so as to be assaulted by Marius in 87 BC[642]. During the Caesarian age (possibly after 63 BC) a new wall was built around the city to protect it, not changing the inner asset of roads[643].

The Early Imperial age saw a definitive increase to its commercial role for the Capital, which lead to another significant phase for building activities[644] (cf. for example: the city's theatre[645] and the large space behind it, later called 'Piazzale delle Corporazioni'; a new Forum[646]; and the Temple of Rome and Augustus[647]). A new aqueduct can be assigned to the same period (realised during the Principate of Tiberius or Caligula) that permitted the construction of the first public baths[648]. During the same years some of the first *horrea* were also built[649] and a new harbour[650], confirming the commercial importance of Ostia[651].

Another important building period can be dated Domitian age, which saw a raising of levels for the whole city of about 1 m and interventions almost everywhere[652]. During the Trajanic age (in AD 111), the creation of an office, the administrator of public buildings, lead to another large renovation in the city[653] which lasted also during the Hadrianic age and was completed during the Antonine age only when Ostia reached its largest size[654]. These activities increased its commercial role and so being, during the 2nd century AD, a flourishing and populous city[655]. During this century, in fact, many not only social[656], but also urban changes appeared with new standards of intensive housing[657]. On one side they are due to the reorganisation of harbours, on the other side to political reasons[658].

However, during the second half of the 3rd century AD, the decline of Ostia began, related to the increasing importance of *Portus*, where many commercial

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[641] Meiggs 1973: 27–34, 117–128, 278–298.
[642] Meiggs 1973: 34; Pavolini 2006: 24.
[643] Meiggs 1973: 34–36; Pavolini 2006: 24, 30–31, 49–50.
[644] Meiggs 1973: 41–50.
[645] For brief descriptions of this building cf. Calza & Becatti 1975: 25–26; Pavolini 2006: 68–70.
[646] For a brief description of this complex cf. Pavolini 2006: 101–104.
[647] Cf. Pavolini 2006: 106–107.
[648] Pavolini 2006: 32. The first known baths are the ones along 'via dei Vigili': Pavolini 2006: 61.
[649] *Horrea Ortensia*: cf. Calza & Becatti 1975: 55; Pavolini 2006: 236–238.
[650] Meiggs 1973: 54–58.
[651] Cf. Chevalier 2001 for a list of ancient sources mentioning Ostia and its ports.
[652] Meiggs 1973: 64–67; Pavolini 2006: 32–34.
[653] Meiggs 1973: 58–62; Chamay 2001: 20–21; Pavolini 2006: 25; Keay 2012a: 43.
[654] Meiggs 1973: 67–82; Pavolini 2006: 36; Stöger 2011: IV.
[655] Cf., about calculations, Meiggs 1973: 532–534. Cf. also Zevi 2000: 527 and D'Arms 1981: 125 and note 14.
[656] Cf., *contra*, Mouritsen 2001.
[657] DeLaine 2001: 94–96; Pavolini 2006: 34–36.
[658] Gros 2001: 121; Shepard & Olivanti 2009: 69.

activities were transferred[659]. The city decreased its importance and, although several private houses were built during the 3rd and 4th centuries AD[660], in the 5th century AD it passed through another severe crisis with only very few building activities (for example religious buildings[661]). This crisis lead to the complete abandonment of the ancient city in the 9th century AD[662].

Fig. 4.14 shows five excavations that were held into buildings across Ostia that will be considered in this study, after the selection and the exclusion of some of them (4 excavations) for their intrinsic problems[663].

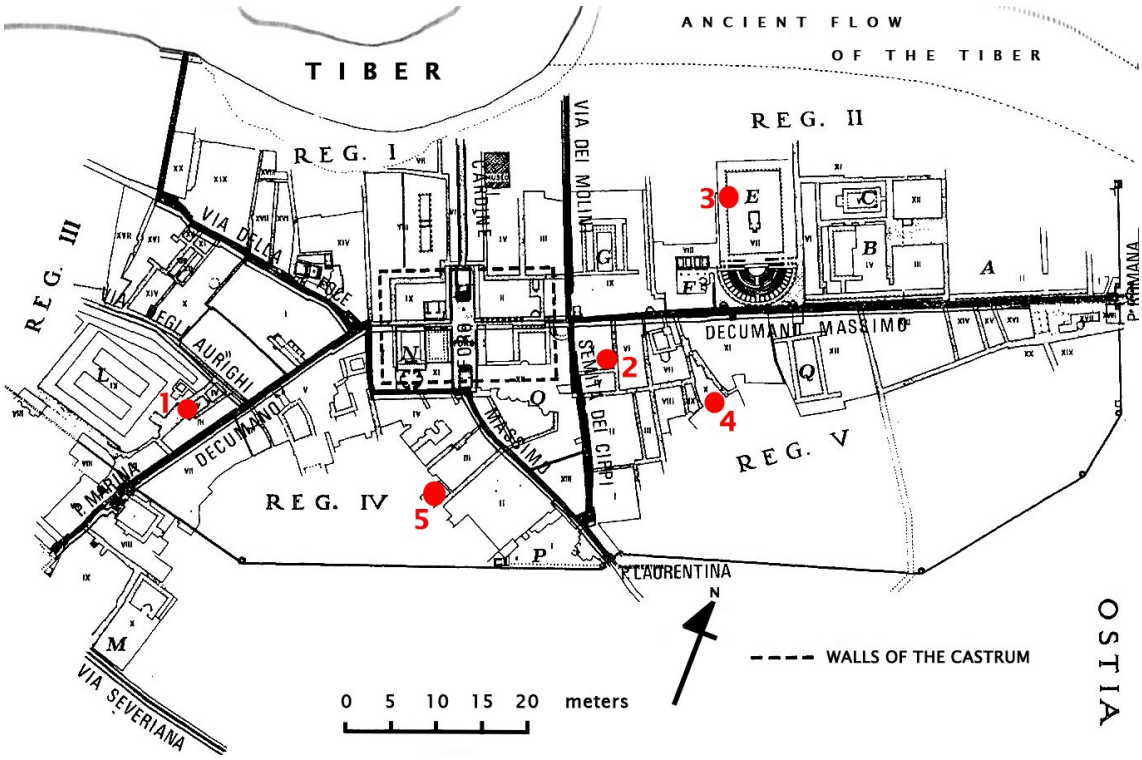


**Fig. 4.14: Map of Ostia with the location of all analysed sites (after Pavolini 2006: 33, with modifications).**

[659] Meiggs 1973: 83–90; Pavolini 2006: 37.
[660] Meiggs 1973: 90–91; Calza & Becatti 1975: 11; Kockel 2001: 88–89; Pavolini 2006: 37–38; Stöger 2011: IV. For this period cf. also Boin 2013: 83–164.
[661] Cf., for example, the Christian church of Pianabella (Pavolini 2006: 251–252). Cf. also Meiggs 1973: 91–99; 388–403. For this period cf. also Boin 2013: 165–200.
[662] Pavolini 2006: 38–39. For a description of the period cf. Meiggs 1973: 100–101. For the 6th and 7th centuries AD in Ostia cf. Boin 2013: 201–236.
[663] Cf., above, Chapter 3, Section 3.2.3: 63.

### 4.2.1 Casa delle Pareti Gialle (fig. 4.14, n. 1)

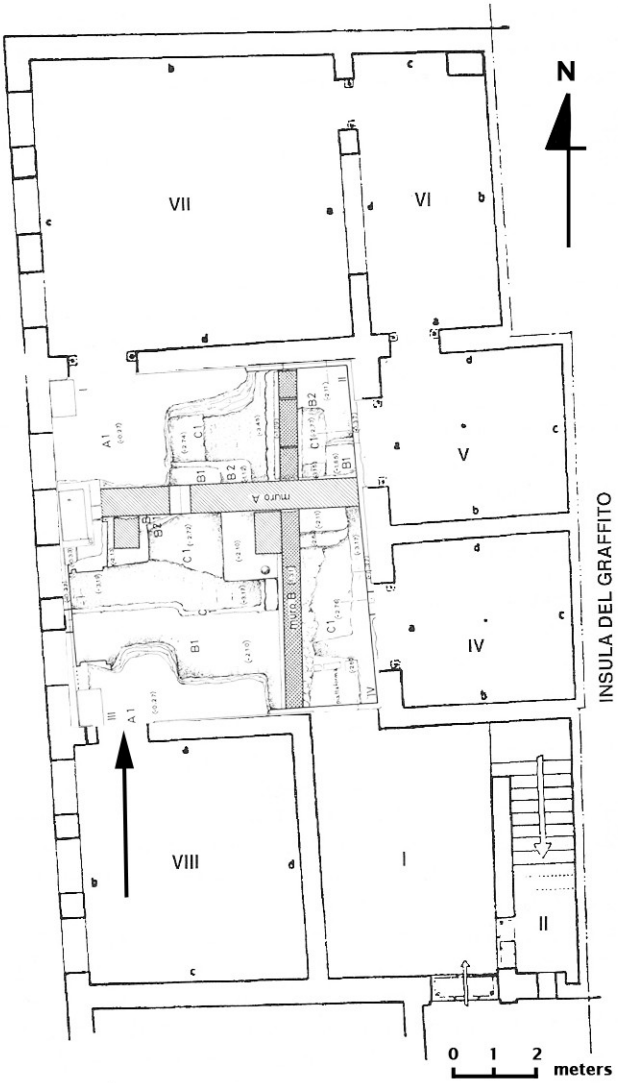


**Fig. 4.15: Area of the excavation in the 'Insula dalle Pareti Gialle' (indicated by an arrow) overlaid with the plan of the complex (after Zevi & Pohl 1970: 44, fig. 1 and Pavolini 2006: 161, with modifications).**

In 1967 the mosaic from the central room of the so-called 'Casa dalle Pareti Gialle' (III, IX, 12) was taken away, leading to an excavation under it[664] (fig. 4.15, with an arrow indicating the excavated room). This *insula* was built around AD 128 and its planimetric structure suggests a very rational use of the space, meant to capitalise on it with an *atrium*-corridor scheme on its low ground meant for representative functions. The house has a *vestibulum* that leads to the central room or to some stairs (on the South-Eastern corner) so as to reach the first floor possibly inhabited by servants[665]. The central room leads to four other rooms, one of them (on the North-Western corner) identified as a *triclinium* (for a widow that communicated with another room interpreted as a passage for plates or food) and another one (on the South-Western corner) interpreted as a reception room[666]. During these excavations, three phases were discovered[667], but only Phase A will be considered here. Within it, three units were dug, two of them crossing all the sectors (I, II, III, IV) in which the excavation was divided. Being excavations held in the 1970s, when stratigraphy in Italy was at the very beginning, these units seem not to be stratigraphic

[664] Zevi & Pohl 1970: 43.
[665] Pavolini 2006: 160.
[666] All these rooms still have parts of frescos, made of different styles because they were realised during different periods (Pavolini 2006: 161–163).
[667] For the description of all phases cf. Zevi & Pohl 1970: 43–74.

units, but more likely layers of earth removed (the word used in the report is 'strato' = layer). These are the units that will be considered here:

- Phase A, Unit A4: Levelling layer (Trajanic age; cf. Appendix 2, Tables 35-38);
- Phase A, Sector IV, Filling of the foundation trench for the Southern wall (Trajanic Age; cf. Appendix 2, Table 39);
- Phase A, Unit A3: Levelling layer (Hadrianic age; cf. Appendix 2, Table 40).

### 4.2.2 Taberna dell'Invidioso (fig. 4.14, n. 2)

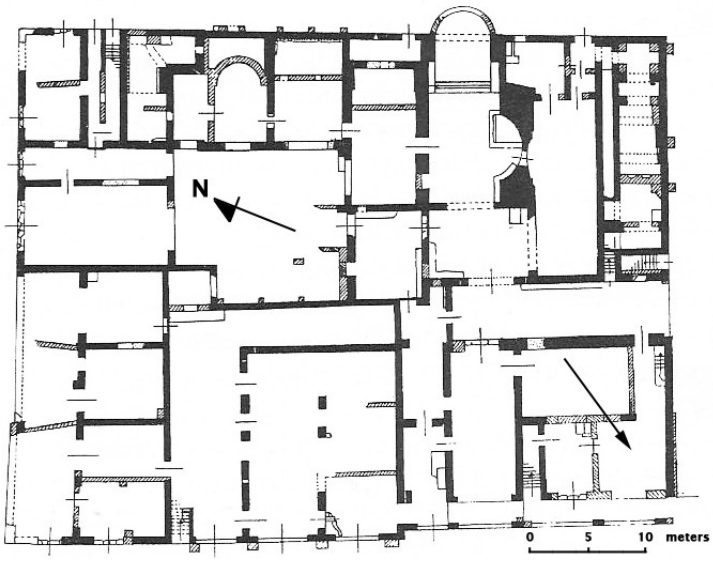


**Fig. 4.16: Plan of the complex of *Insula* and 'Terme dell'Invidioso' with an arrow indicating the excavated *taberna* (after Pavolini 2006: 221, with modifications).**

The so-called 'Taberna dell'Invidioso' (fig. 4.16, with an arrow indicating it) belongs to the building complex known as 'Insula dell'Invidioso' (V, V, 1), adjacent to the so-called 'Terme dell'Invidioso' in Ostia (V, V, 2), delimited by the *Decumanus Maximus* (on the North), 'Semita dei Cippi' (on the West), 'Via dell'Invidioso' (on the South), and 'Via del Sole' (on the East). These baths were built with walls made of *opus reticulatum* around the mid-1st century AD, were rebuilt with bricks during the Antonine age and saw a decorative phase (mostly with mosaics) in the first half of the 3rd century AD[668]. The 'Insula dell'Invidioso' was built during the Antonine age in the South-Western corner of the complex, it is made of two small shops facing the road with a small portico and saw several restorations during the first half of the 3rd century AD to which the mosaics belong[669]. During the late 1970[670] a floor mosaic (with a marine scene with the inscription *inbidiosus* that gave the name to the complex[671]) was removed so as to be restored, leading to an excavation under it[672]. These excavations lead to the discovery of more ancient phases, especially of walls belonging to a first complex dated mid-3rd century BC, which informed for the first time

[668] Zevi 1978a: 9; Pavolini 2006: 222.
[669] Pavolini 2006: 221.
[670] Zevi 1978a: 11.
[671] Pavolini 2006: 221.
[672] For the description of all periods cf. Zevi 1978a: 12-13.

about an expansion of the building activities outside the so-called *castrum*[673]. Among all the recognised periods during the excavations[674], Period 6 is the only one dated Mid-Imperial age, made of four phases that will be considered for this investigation[675], although, as for the previous excavation, the units seem not to be stratigraphic units, but more likely layers of earth removed:

- Phase I: During the Trajanic age an addition of earth created a levelling layer (Unit IV: cf. Appendix 2, Table 41);
- Phase II: Two rooms with a mosaic floor were created, dated Hadrianic or Antoninus Pius's age (Unit III: cf. Appendix 2, Table 42);
- Phase III: Two new floors obliterated the mosaics (both are dated Marcus Aurelius's age): in one of the rooms only an earth floor was created; in the other room an *opus spicatum* floor was realised (Unit II: cf. Appendix 2, Table 43);
- Phase IV: During the Severan age another addition of earth created a new levelling layer that was the base for the mosaic (Unit I: cf. Appendix 2, Table 44).

### 4.2.3 Piazzale delle Corporazioni, Western Portico (fig. 4.14, n. 3)

This complex (II, VII, 4) is possibly one of the most famous ones in Ostia, although its function is still not known[676]. It was planned during the Augustan age to be linked to the theatre (II, VII, 2), had a perimeter wall made of *opus reticulatum*, a covered corridor on three sides, and eleven accesses with pillars leading to the central courtyard from the North. During the Claudian age, levels were raised and the first portico was built with a single line of Corinthian columns[677]. The central temple (II, VII, 5) on a high *podium*, with a *pronaos* made with two marmoreal Corinthian columns, and whose divinity is still discussed was likely created during the Domitian age. Another raising of levels, the creation of a second line of columns for the portico, and the closure of the Northern accesses were all ascribed to the Hadrianic age[678]. Part of the first mosaics were realised during the same period, but the majority of them belong to later restorations[679], possibly before the period when the sixty small rooms (*stationes*) were created (3rd century AD) along the inner part of the portico, as their

[673] Zevi 1978a: 13–15; Pavolini 2006: 221.
[674] For the detailed description of all periods cf. Zevi 1978b: 19–43.
[675] For the complete description of these phases cf. Zevi 1978b: 35–43.
[676] Cf., for example, Pohl 1978: 215–216 who also refers to scholarship about this theme. Keay 2012a: 43 suggests, from Meiggs 1973: 283–287, that it was a meeting point for representatives of shippers and merchants active in the city itself and *Portus*.
[677] Pavolini 2006: 70. Parts of the decoration of this phase were found during these excavations: cf. Pohl 1978: 194–213.
[678] Pavolini 2006: 70.
[679] These mosaics are very important for the information they provide about the commerce in Ostia. For brief descriptions of these mosaics cf. Calza & Becatti 1975: 26; Pavolini 2006: 72–73.

walls made of *opus listatum* cover them[680]. Other parts of the complex were always free of buildings, possibly consisting of a garden[681]. Before repositioning some restored mosaics, several phases were found all along the Western portico of this building (fig. 4.17, arrows indicating the beginning and the end of the excavated area). Among all these phases[682], only two units will be considered here[683], although again they are not stratigraphic units, being called 'strato' (layer) and some of them are called 'misto' (mixed) which seem to mean over-excavations or under-excavations:

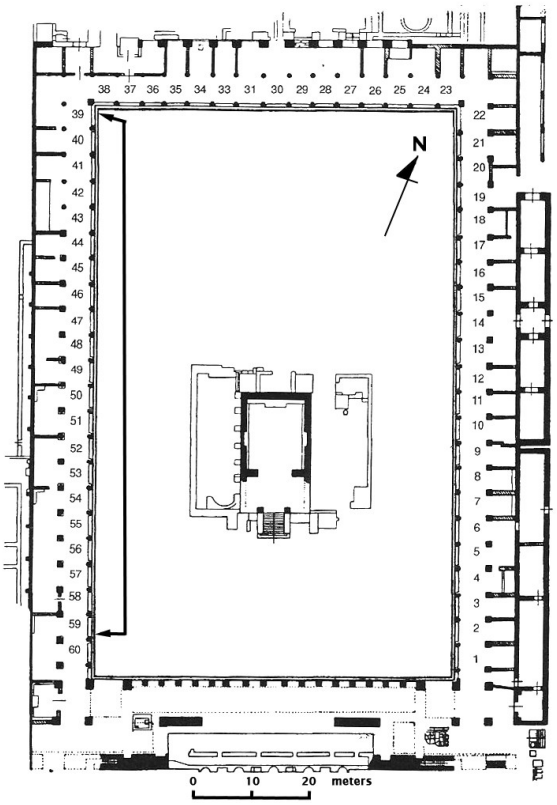


**Fig. 4.17: Plan of the complex known as 'Piazzale delle Corporazioni' with arrows indicating the whole excavated area (after Pavolini 2006: 71, with modifications).**

- Unit II, with over-excavation of Unit III (dated just after the Hadrianic age, cf. Appendix 2, Table 45);

- Unit II: levelling layer (30–40 cm) realised during the Hadrianic age, so as to raise levels to the present height[684] (for the list of finds cf. Appendix 2, Table 46);

- Unit I and with under-excavation of Unit II: new flooring of the building realised during the Hadrianic age[685] (for the list of finds cf. Appendix 2, Table 47).

### 4.2.4 Terme del Nuotatore (fig. 4.14, n. 4)

This complex (fig. 4.18), one of the first known public baths of the city, was deeply and scientifically excavated (after some sondages realised during the late 1930s/early 1940s) in different rooms from 1966 to 1970 (with a small sondage in 1973) leading to understand all its phases as well as issues related to commerce. The complex was built during the late Flavian age (AD 80–90) with walls made of *opus*

[680] Pavolini 2006: 71.
[681] Pavolini 2006: 70.
[682] For a detailed description of all discoveries cf. Pohl 1978: 167–193.
[683] For both of them no divisions of areas done for the catalogue in that publication will be used (with the only exception of 'Unit II with over-excavation of Unit III' from 'Pit A').
[684] Pohl 1978: 372.
[685] Pohl 1978: 428.

*reticulatum* and bricks. It was massively changed during the Trajanic, Hadrianic and Antoninus Pius's ages. Small restorations were held during the Marcus Aurelius's and the Severan age before being totally abandoned around AD 230–250. The entrance was from a secondary road and it is obliquely oriented following the direction of a secondary *posterula* on the Southern side of the Republican walls, and not from the *decumanus*[686].

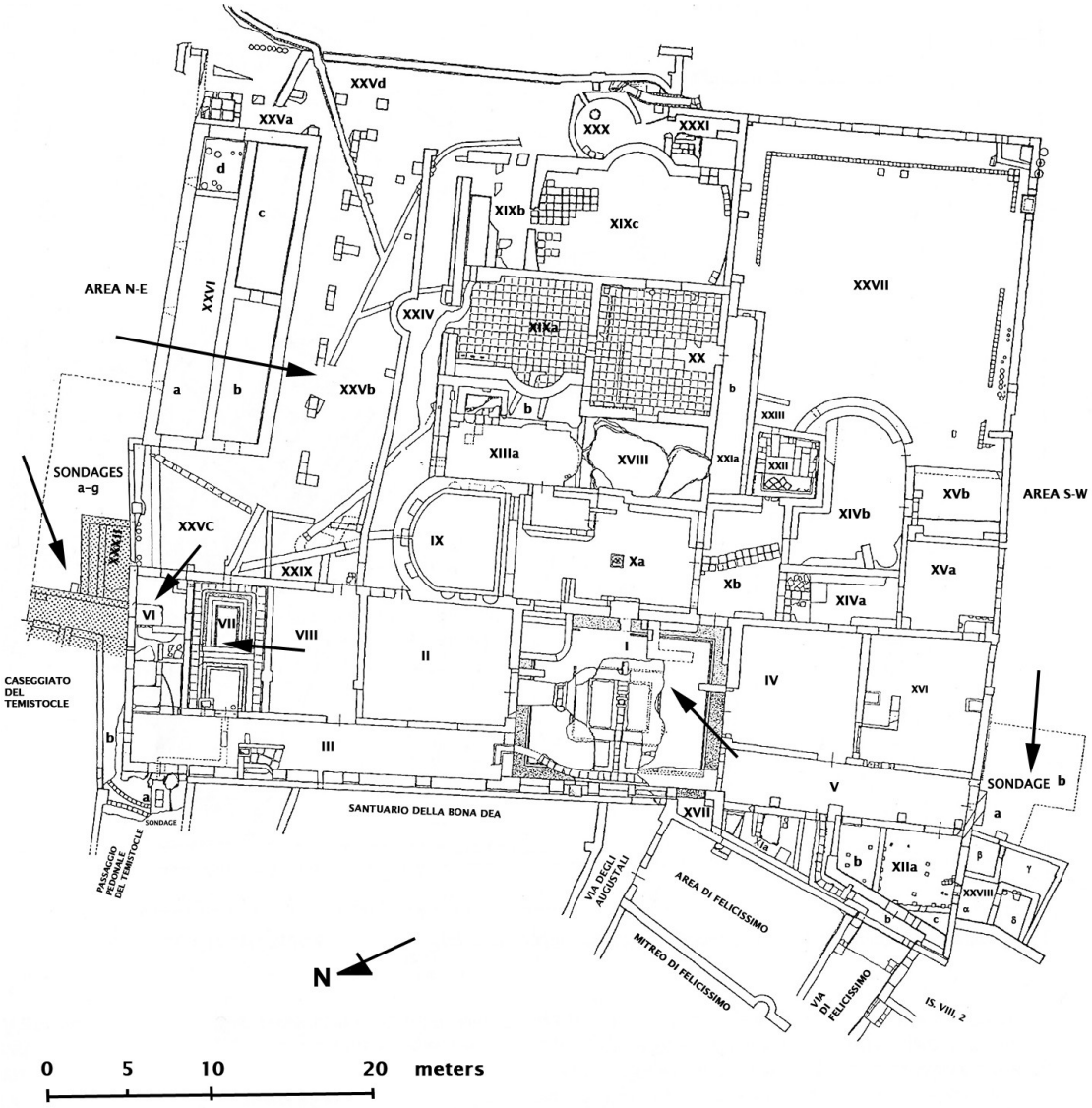


**Fig. 4.18: Plan of the 'Terme del Nuotatore' with arrows indicating the rooms from which finds are considered (after Panella 2014: 20, fig. 2, with modifications).**

This building is composed of many rooms[687], some of them (especially in the North-Eastern side, around an open-aired area) identified as functional rooms for the baths. A two-storey monumental cistern was also found (fig. 4.18, XXVI) and it is

[686] Pavolini 2006: 229.
[687] Pavolini 2006: 230.

subdivided into several parts[688]. Four of the recognised phases are considered for this study, some of them divided into sub-phases[689]. The amphorae come from the following Rooms/Areas (fig. 4.18 indicated with arrows) and units only (although, again, units seem not to be exactly stratigraphic units, as they are called 'strati' = layers, using the plural):

- Room I, units II (dated AD 160-200/230[690], cf. Appendix 2, Table 48);
- Room I, units III (dated Flavian age to AD 160[691], cf. Appendix 2, Table 49);
- Rooms VI, units II (dated AD 190-235/240[692], cf. Appendix 2, Table 50);
- Room VI, units III (dated AD 155/160-190[693], cf. Appendix 2, Table 51);
- Room VI, units IV (dated AD 90-155/160[694], without fragments of amphorae);
- Room VII, units II (dated AD 190-235/240[695], cf. Appendix 2, Table 52);
- Room VII, units III (dated AD 155/160-190[696], cf. Appendix 2, Table 53);
- Room VII, units IV (dated AD 90-155/160[697], cf. Appendix 2, Table 54);
- Area SO, units III (dated AD 190-200/225[698], cf. Appendix 2, Table 55);
- Area SO, units IV (dated AD 80/98-138[699], cf. Appendix 2, Table 56);
- Area XXV, units IV (dated AD 90-140[700], cf. Appendix 2, Table 57);
- Area XXV, units III (dated AD 190/200/225[701], cf. Appendix 2, Table 58).
- Area XXV/XXIV, Sondage B, units IV (dated Trajanic/Hadrianic age[702], cf. Appendix 2, Table 59);
- Area NE, Period 3b (dated late Flavian/Trajanic age[703], cf. Appendix 2, Table 60);
- Area NE, Period 4 (dated Harianic/Antonine age[704], cf. Appendix 2, Table 61);

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[688] Pavolini 2006: 231.
[689] Phase 1b (AD 90-120) saw upkeep interventions and building modifications (for a detailed description of all activites cf. Medri 2013: 53-55 and Di Cola 2013a). Phase 2 (AD 120-160) saw big restorations with several changes in the implant and a potentation of its functions (for a detailed description of all activites cf. Medri 2013: 56-60 and Di Cola 2013b). Phase 3a (AD 160-170) saw a few other restorations (for a detailed description of all activites cf. Medri 2013: 60-63 and Di Cola 2013c). Phase 3b (AD 170-190) saw small changes in the North-Western part of the building (for a detailed description of all activites cf. Medri 2013: 60-63 and Di Cola 2013d). Phase 4a (AD 190-210) saw large interventions which changed the function of some of the rooms (for a detailed description of all activities cf. Medri 2013: 63-66 and Di Cola 2013e).
[690] *Ostia II:* 20-22, 40-47, 262. Unit IIB of Sondage β did not give any finds: cf. *Ostia II*: 48.
[691] *Ostia II*: 17-20, 48-50, 261-262. Unit IIIA of Sondages α, β, and γ did not give any finds: cf. *Ostia II*: 48.
[692] *Ostia III*: 36-38, 92, 94.
[693] *Ostia III*: 38-41, 92, 94.
[694] *Ostia III*: 41-42, 92, 94. Even if some pottery fragments were discovered in this unit, among them not even a single fragment of amphora was found.
[695] *Ostia III*: 55-60, 67-77, 92, 94 (sector A, sector B, sewer 49 a, b, c, e, f, g, and sewer 50).
[696] *Ostia III*: 61-64, 78-87, 92, 94 (sector A, sector B, sewer 49 a, b, c, e, f, g, and sewer 50).
[697] *Ostia III*: 87-89, 91, 94 (sewer 49 g).
[698] *Ostia III*: 100-103, 180-191, 656-657 ('cuts' A and B).
[699] *Ostia III*: 100-103, 191-236, 655-656 ('cuts' A and B).
[700] *Ostia IV*: 311-312, 403-405.
[701] *Ostia IV*: 316-317, 406-411.
[702] *Ostia IV*: 395-401.
[703] Panella 2014: 23-26, 34.
[704] Panella 2014: 26-29, 34.

- Area NE, Period 5 (dated Late Antonine age[705], cf. Appendix 2, Table 62).

### 4.2.5 Domus dei Pesci (fig. 4.14, n. 5)

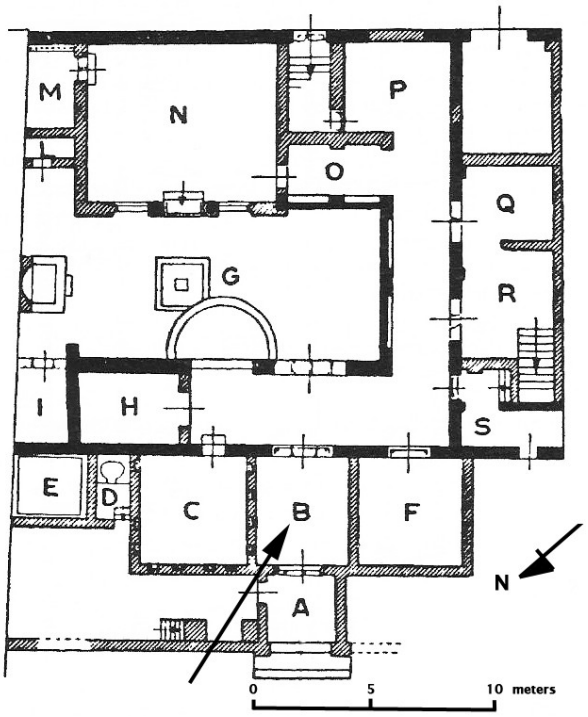


**Fig. 4.19: Plan of 'Domus dei Pesci' with an arrow indicating the excavated room (after Pavolini 2006: 202, with modifications).**

The so-called 'Domus dei Pesci' was discovered during excavations held in 1938–1942. It is located on the Western side of the Southern portion of the *Cardo Maximus*, facing the Northern side of 'via della Caupona' (IV, III, 3)[706]. The name comes from a mosaic whose central *emblema* offers the depiction of a fish[707]. This mosaic is in the *vestibulum*[708], the main entrance of the house (fig. 4.20, A), located on the opposite side of the service entrance along 'via della Caupona'. This *domus* was possibly built over another one that had a courtyard with a portico[709], although very few remains of it were found[710]. The chronology of the first period of this house is unclear, but was ascribed to around the 2nd or mid-3rd centuries AD[711]. The construction of the Northern rooms can be ascribed to a second period as well as restorations in the rooms around the courtyard, the realisation of a new fountain, and the closures of the spaces among the pillars in the same courtyard. This second phase is even more unclear[712], but can be possibly dated during the second half of the 3rd [713] or the early 4th centuries AD[714].

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[705] Panella 2014: 29–33, 34.
[706] Zevi 2007: 21.
[707] For the large debate about the meaning of it and following interpretations for the owners cf. Zevi 2007: 21–26 and (briefly) Pavolini 2006: 203.
[708] Zevi 2007: 21; Pavolini 2006: 203.
[709] Pavolini 2006: 201–202.
[710] These remains consist of: pillars of the inner courtyard made of bricks, possibly a fountain in the same courtyard, and small portions of Northern and Southern perimetral walls made of *opus mixtum* (Pavolini 2006: 202; Zevi 2007: 27).
[711] Pavolini 2006: 202; Zevi 2007: 27.
[712] For the debate cf. Zevi 2007: 28–31.
[713] Pavolini 2006: 202.
[714] Zevi 2007: 31–32.

In the room that lies on the northern side of the house, just on the East of the above mentioned *vestibulum* (fig. 4.19, room B, indicated with an arrow), a mosaic was taken away to be restored, leading to some excavations (held in 1995–1996) under it[715]. Five periods were discovered[716], but only Period 3 will be considered here, being dated early 2nd-early/half 3rd centuries AD. Within this Period, several wrought-floors and levelling layers were correlated to corresponding 4 phases[717]:

- Period 3, Phase I (early 2nd century AD, cf. Appendix 2, Table 63);
- Period 3, Phase II (second half of the 2nd century AD, cf. Appendix 2, Table 64);
- Period 3, Phase III (early 3rd century AD, cf. Appendix 2, Table 65);
- Period 3, Phase IV (first half of the 3rd century AD, cf. Appendix 2, Table 66).

## 4.3 Concluding remarks to the analysed sites in Rome and Ostia

The above offered list may seem large, but unfortunately it does not cover all the excavations held in these two cities not only because many are not considered for their respective problems (cf., above, Chapter 3, Section 3.2.3: 63–64), but also because it is very difficult to obtain a complete analysis of ceramic finds from digging activities that take or took place in them. A very large part of them are not fully studied and published on one side for economic reasons[718], other times because they have the problem of being characterized by a very wide chronology spectrum and by extremely large quantities[719]. At the same time these excavations resulted in different quantities of amphorae (some of them offered large amounts, while others lower quantities), sometimes due to the excavations' extensions or because other classes were found with larger quantities.

The next Chapter begins the analysis of discovered amphorae from the contexts dating to the first Period of this investigation (Trajanic age), basing on the numbers of vessels divided by site of discovery. The following Chapters (6–8) will continue this analysis divided by all other considered chronological periods. The analysis will therefore move to the contained products in litres derived from the offered numbers of vessels (Chapters 9–12).

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[715] Zevi 2007: 21.
[716] For the description of all periods cf. Zevi 2007: 32–49.
[717] For a detailed description of those phases cf. Zevi 2007: 38–43.
[718] Cf., above, Chapter 2, Section 2.3: 41.
[719] Manacorda *et al.* 1990: 487; Giannichedda 2006: 36.

# Chapter 5: Chronological periods: the Trajanic age

This Chapter (as well as the following ones, numbered 6 to 8) will offer a first analysis of all amphorae in all contexts dating to the relevant chronological period with a large use of graphs. The last sub-Section of this and the following Chapters will be dedicated to a first analysis of products as shown by amphorae, considering all finds from all sites. As already mentioned elsewhere, the Trajanic age is not represented in the 'Terme di Elagabalo', thus only Rome and Ostia are discussed in this Chapter. The following Sections will analyse the number of vessels[720] of various forms of amphorae, divided by cities in which they were discovered and then by their origins, in order to better understand the figures presented in the respective charts. The total amount for this period, considering both Rome and Ostia, is 4,472 vessels.

## 5.1 Elsewhere in Rome

The contexts that will be considered for this synthesis are, for Rome:
- Via Nova (Appendix 2, Table 20): 9.90% of the total for the Capital;
- *Crypta Balbi* (Appendix 2, Table 20): 4.32%;
- *Forum Transitorium*, Phase 2, Sub-Phase 2 (Appendix 2, Table 23): 1.50%;
- Testaccio, Nuovo Mercato, pre-*horreum* phase (Appendix 2, Table 29): 82.80%;
- *Aqua Marcia* (Appendix 2, Table 30): 1.48%.

The total amount for this period is 3,244 vessels, while percentages for the various origins can be seen in fig. 5.1, with a predominance of 'Oriental', Italian, and Iberian amphorae.

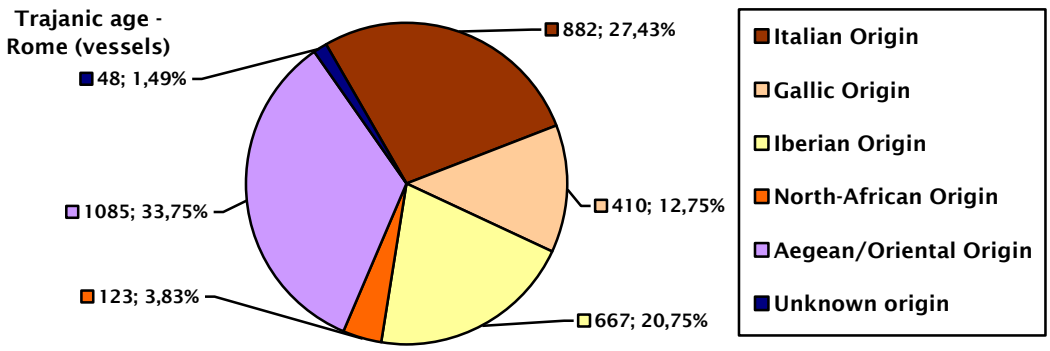


**Fig. 5.1: Amounts and percentages of amphorae from various origins in Rome, Trajanic age.**

[720] For the definition of it in this research cf., above, Chapter 3, Section 3.2.1: 47-48.

### 5.1.1 Italian Origin

Italian amphorae reach 882 vessels, representing 27.43% of the total. They are relatively diversified (fig. 6.2). Apart from three forms that can be clearly considered residual (ancient MGS, Lamboglia 2, and a relevant amount of Dressel 1), the majority of finds belong to a few forms whose date range perfectly fits to the Mid-Imperial age and are commonly found during this period. These in-phase forms are dominated by Tyrrhenian Dressel 2-4, Dressel 6A, and 'Anfora di Spello' (all containing wine), while other forms are found in smaller amounts.

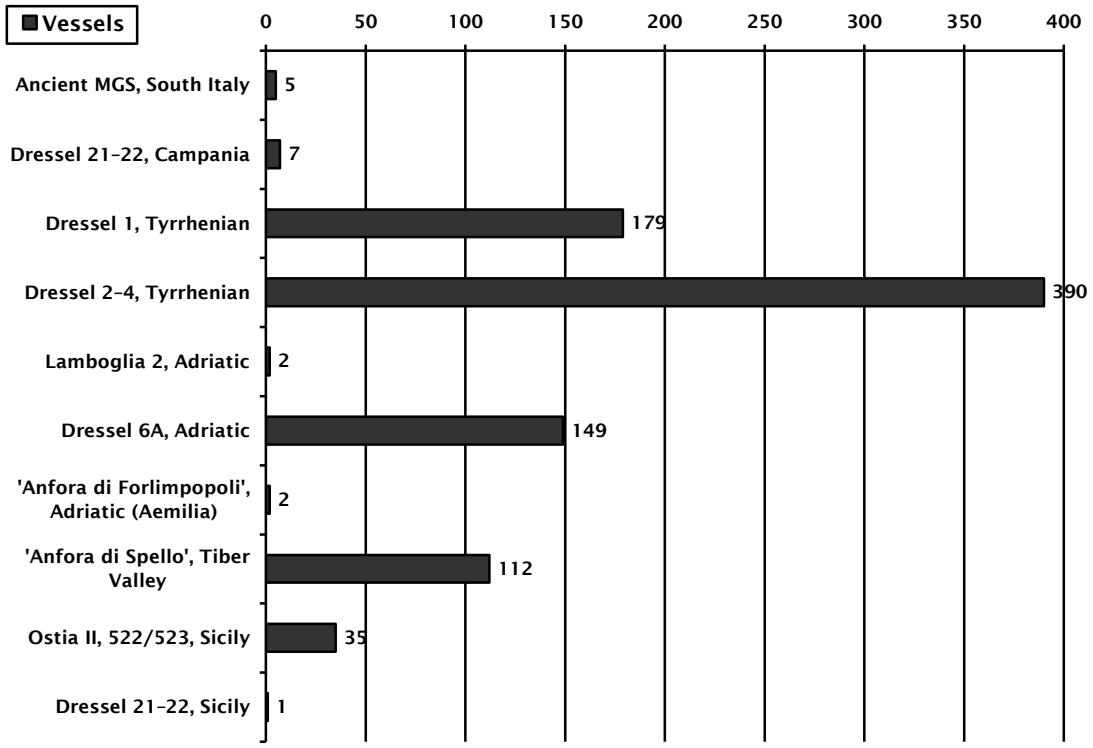


**Fig. 5.2: Rome. Amounts of Italian amphorae, Trajanic age.**

### 5.1.2 Gallic Origin

Gallic origin reaches 410 vessels, representing 12.75% of the total. These amphorae are less diversified than the Italian ones (fig. 5.3). A single vessel of Gauloise 7 from Gaul *Narbonensis* is clearly residual. In-phase forms are dominated by Gauloise 4, while other ones are found with lower figures.

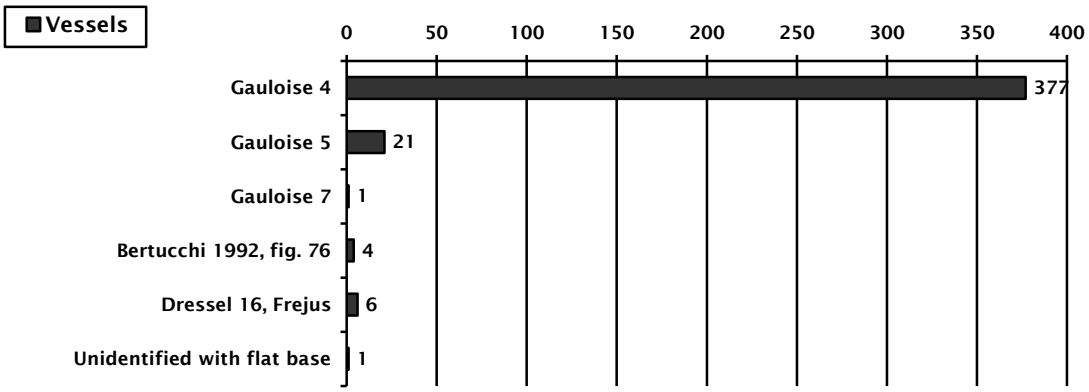


**Fig. 5.3: Rome. Amounts of Gallic amphorae, Trajanic age.**

### 5.1.3 Iberian Origin

Several Iberian amphorae were found, well representing the three main production areas and their typical forms (fig. 5.4). This origin reaches 667 vessels, representing 20.75% of the total. All of them can be considered in-phase forms.

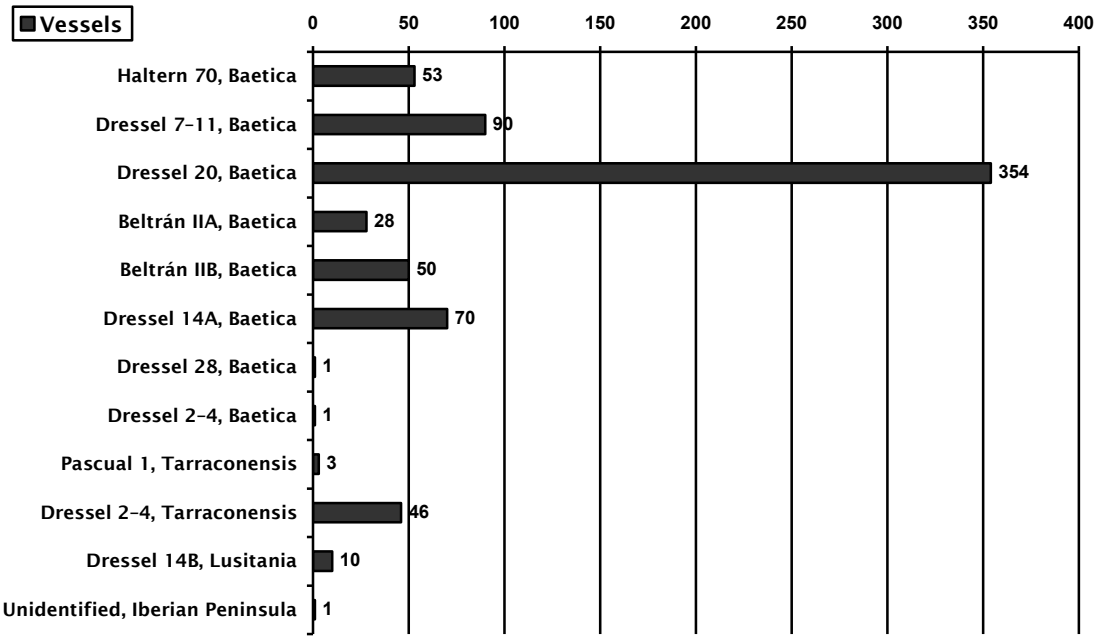


**Fig. 5.4: Rome. Amounts of Iberian amphorae, Trajanic age.**

*Hispania Baetica* is the most represented, with a large predominance of Dressel 20, Dressel 7-11, and Dressel 14A, but *Hispania Tarraconensis* and *Lusitania* were also found. The exact origin within the Iberian Peninsula was not recognised or suggested for a single vessel.

### 5.1.4 North-African Origin

From the North-African coast 123 vessel were found, representing 3.83% of the total. They conceal several forms coming from two areas: modern Tunisia and Libya (fig. 5.5). Ten fragments were attributed to unclear African forms.

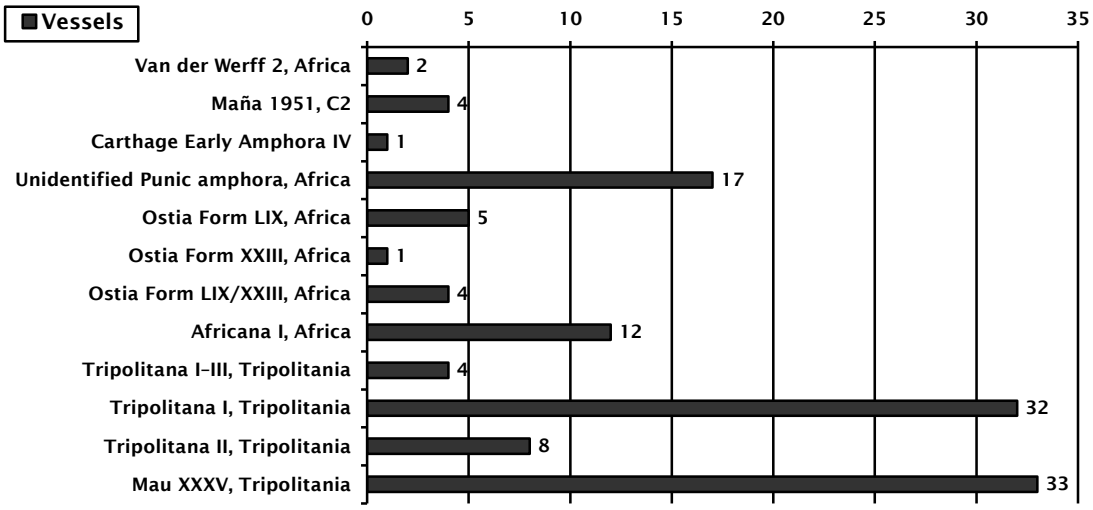


**Fig. 5.5: Rome. Amounts of North-African amphorae, Trajanic age.**

Some amphorae of Punic traditions were discovered (Van del Werff 2; Maña 1951, C2; Carthage Early Amphora IV; and few unidentified ones). All of them are residual vessels. In-phase forms come from *Africa Proconsularis* and ancient *Tripolitania*. Mau XXXV and Tripolitana I are the mostly discovered ones, with also relevant amounts of Africana I.

### 5.1.5 Aegean / Oriental Origin

The Aegean/Oriental basin of the Mediterranean reaches 1,085 vessels, representing 33.75% of the total. This origin is very varied as several different sub-areas and a very large quantity of in-phase forms were found. Any specific form or origin was denoted for 5 fragments (fig. 5.6). The mostly found form is Camulodunum 184, followed by Agora F65/66, Knossos 19, and Cretoise 4. Some other forms were identified for the first time in Nuovo Mercato Testaccio in Rome[721]

[721] The majority of them were found also during the subsequent Period (building of the *horreum*), apart from Coletti & Lorenzetti 2010, fig. 4, 2 that was found only during the pre-*horreum* phase.

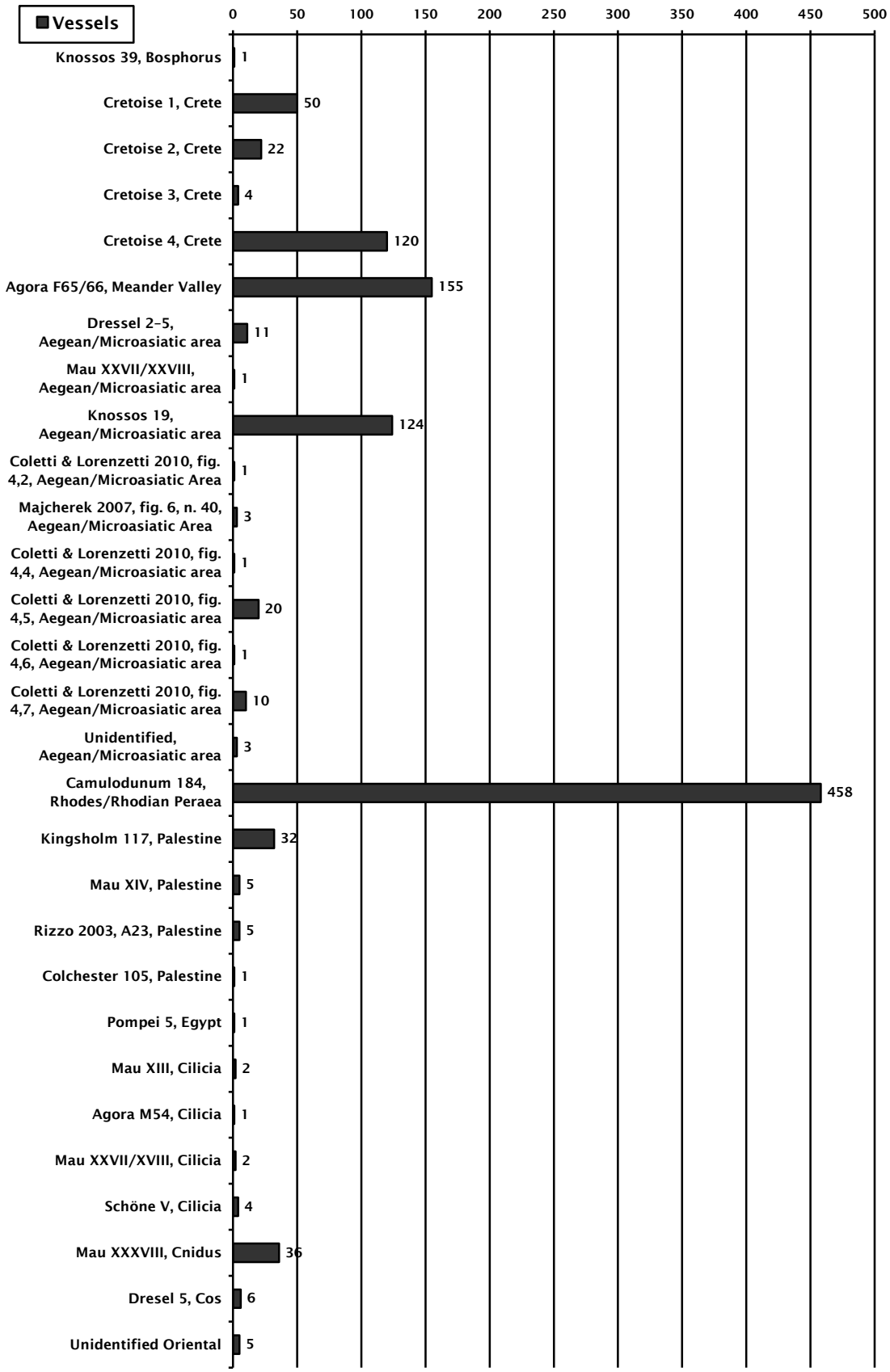


**Fig. 5.6: Rome. Amounts of 'Oriental' amphorae, Trajanic age.**

### 5.1.6 Unknown Origin

For 48 vessels no origin was suggested nor was it identifiable. They represent 1.49% of the total. They were not drawn in the respective publications and no suggestions were made.

## 5.2 Ostia

The amphorae discovered in Ostia come from the following contexts:

- Casa delle pareti gialle, Phase A, Sectors I-IV, Unit A4 and Filling of the Southern wall's foundation trench (Appendix 2, Tables 35-39): 20.99%;
- Taberna dell'Invidioso, Period 6, Phase I, Unit IV (Appendix 2, Table 41): 27.59% of the total for Ostia;
- Terme del Nuotatore, Area NE, Period 3b (Appendix 2, Table 60): 23.82%;
- Domus dei Pesci, Period 3, Phase I (Appendix 2, Table 63): 27.59%;

For this period, 424 vessels were found in this city. Iberian amphorae are little more found, followed by Gallic, Italian and North-African ones. Contrarily to Rome, the 'Oriental' part of the Mediterranean is the less found origin (fig. 5.7).

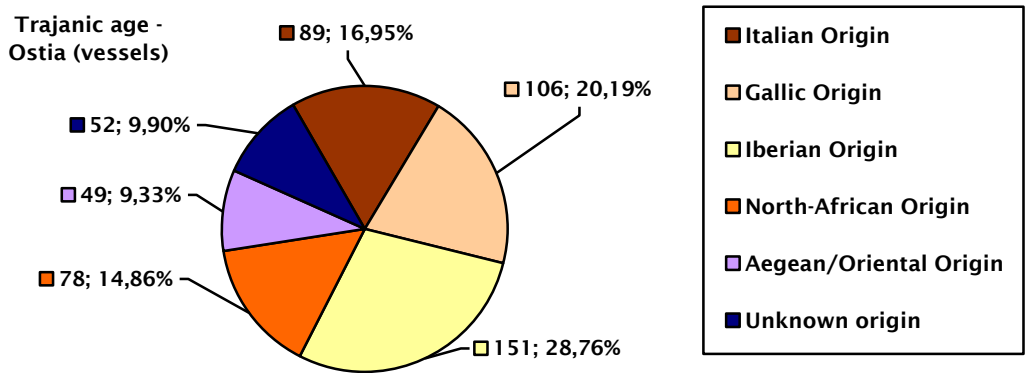


**Fig. 5.7: Amounts and percentages of amphorae from various origins in Ostia, Trajanic age.**

### 5.2.1 Italian Origin

Italian manufacture reaches 89 vessels (fig. 5.8), representing 16.95% of the total. One fragment is not specified whether it is a Dressel 6A or a 6B, while another fragment seems to be a Dressel 21-22 from Sicily, but this identification cannot be assured. At the same time, as for Rome, some clearly residual amphorae were found (Dressel 1 from the Vesuvian area; Dressel 1, Dressel 1B, and MGS VI all from the Tyrrhenian coast). In-phase vessels are dominated by Dressel 2-4 from the Tyrrhenian

coast and by 'Anfora di Spello' from the Tiber valley, while other forms are less attested.

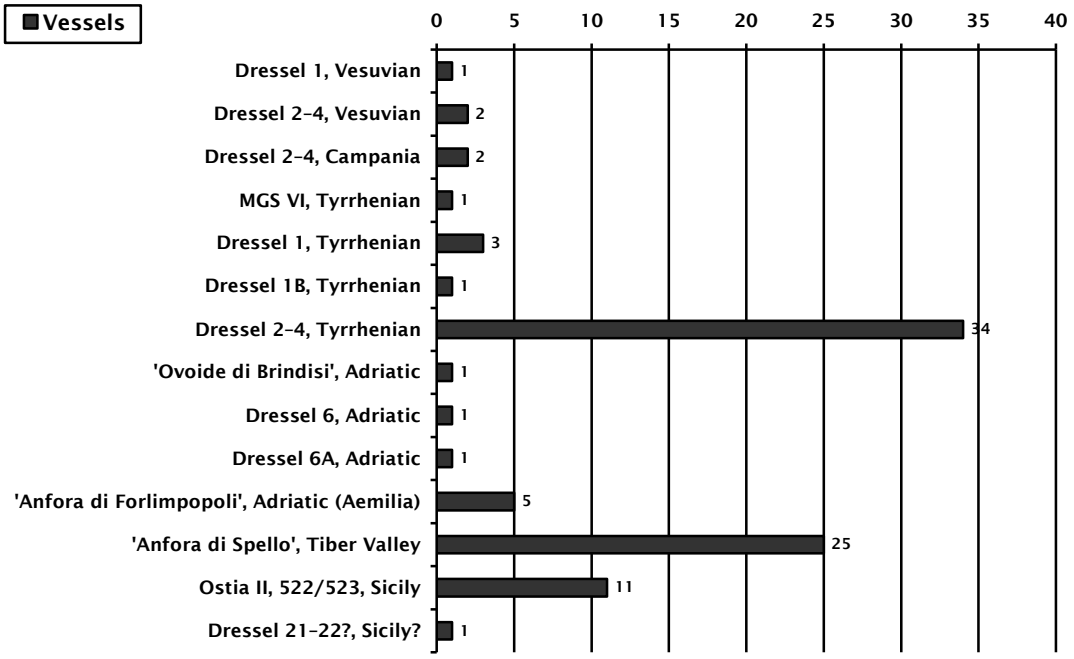


**Fig. 5.8: Ostia. Amounts of Italian amphorae, Trajanic age.**

### 6.2.2 Gallic Origin

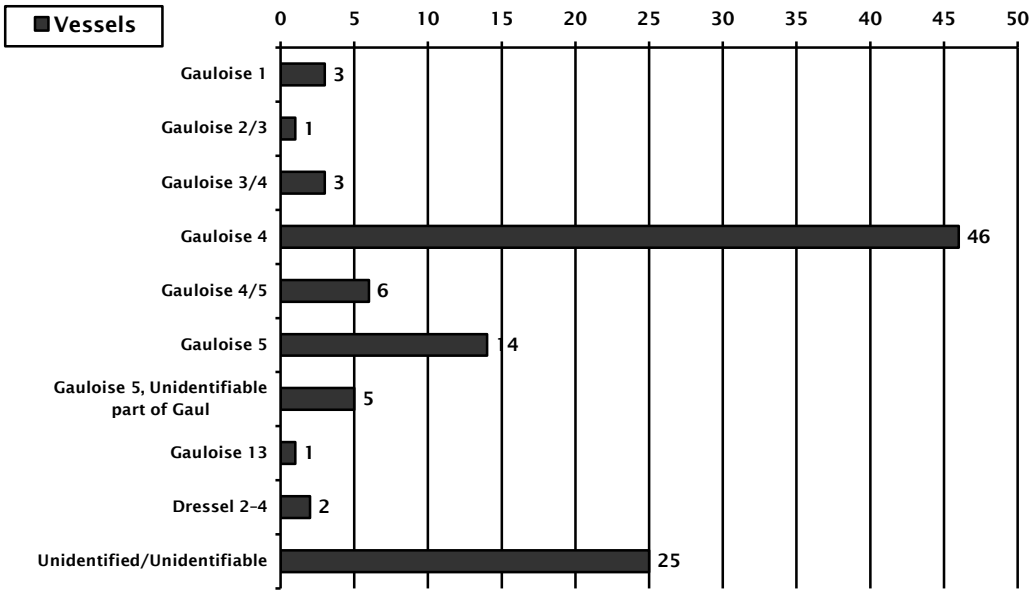


**Fig. 5.9: Ostia. Amounts of Gallic amphorae, Trajanic age.**

20.19% of the total come from Gaul, corresponding to 106 vessels (fig. 5.9). A single fragment of Gauloise 13 is clearly intrusive, as this form has a later chronology.

The specific origin within Gaul was not identified for 5 fragments of Gauloise 5 and, for this reason, they are probably not from the *Narbonensis* Province. On the contrary, the form to which 25 fragments belong was not recognised or recognisable. The majority of finds belong to the form Gauloise 4, as happened also in Rome.

### 5.2.3 Iberian Origin

Vessels manufactured in the Iberian Peninsula are 151, representing 28.57% of the total. Contrarily to Rome, in Ostia a single residual vessel was found, belonging to the form of Pascual 1 from *Tarraconensis*. Some vessels (21), however, belong to unidentifiable *garum* amphorae, possibly consisting in fragment of handles as these parts are very similar to one another across different forms. Dressel 20, Dressel 14B from *Lusitania* and Dressel 7-11 are predominant among in-phase vessels (fig. 5.10).

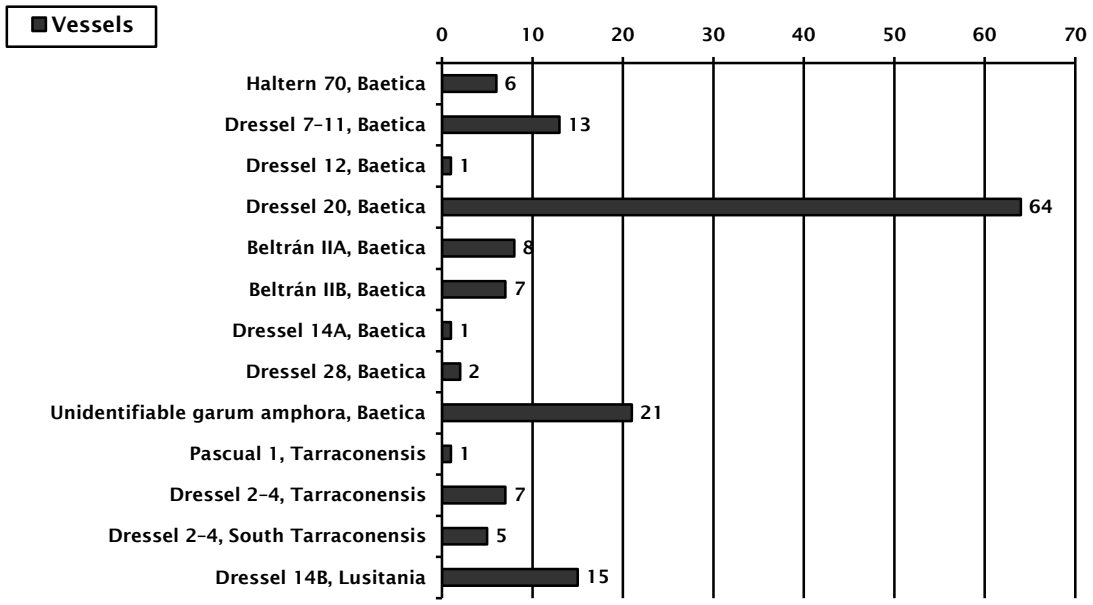


**Fig. 5.10: Ostia. Amounts of Iberian amphorae, Trajanic age.**

### 6.2.4 North-African Origin

The North-African coast reaches 78 vessels, representing 14.86% of the total, being a little more diversified than finds in Rome. Three vessels of Africana IIA are intrusive ones, because the most ancient varieties of this amphora (IIA1 e IIA2) are dated from the half/second half of the 2nd to the first half of the 3rd centuries AD[722]. Twelve vessels belong to amphorae deriving from Punic traditions (Van der Werff 3;

[722] Bonifay 2004a: 111.

Oberaden fig. 24, n. 5; Carthage Early Amphora IV; Mau XL; Dressel 18; unidentified Punic amphorae) which are residual forms. A single vessel belongs to the form *Ostia VI*, 310 which is still not enough known for understanding whether or not it is a residual form. Two vessels from *Africa Proconsularis* and seven from a generic North Africa belong to unidentified forms. Among in-phase vessels, Mau XXXV and Ostia Form LIX are the mostly found (fig. 5.11).

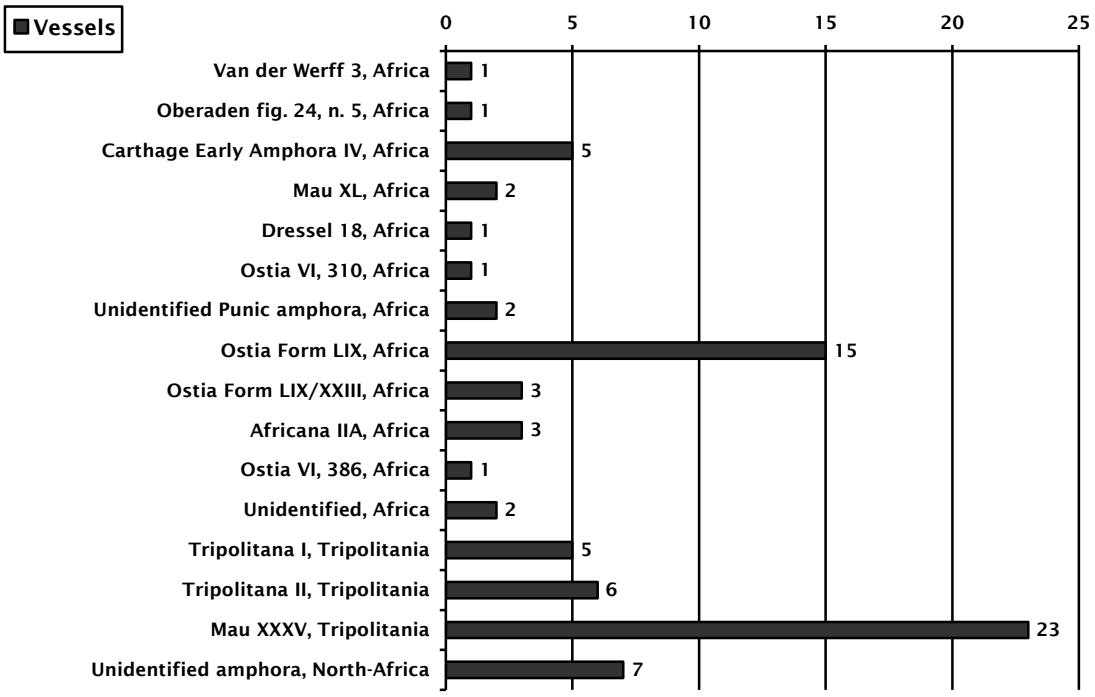


**Fig. 5.11: Ostia. Amounts of North-African amphorae, Trajanic age.**

### 5.2.5 Aegean / Oriental Origin

From the Eastern side of the Mediterranean 49 vessels were found, representing 9.33% of the total. In Ostia, 'Oriental' amphorae during this phase are a little less diversified than Rome, even though some different areas were still found. A single vessel belongs to an unidentifiable 'Oriental' form and another one to a not better identified Cretan form. Compared to Roman finds, only a few vessels belong to the Camulodunum 184 (7) and just 2 to the Palestinian Kingsholm 117. At the same time, three forms were identified for the first time during the study of amphorae from the excavations in the Terme del Nuotatore and published in *Ostia VI*, although one was given to a form which can be similar to a Dressel 25 (fig. 5.12)

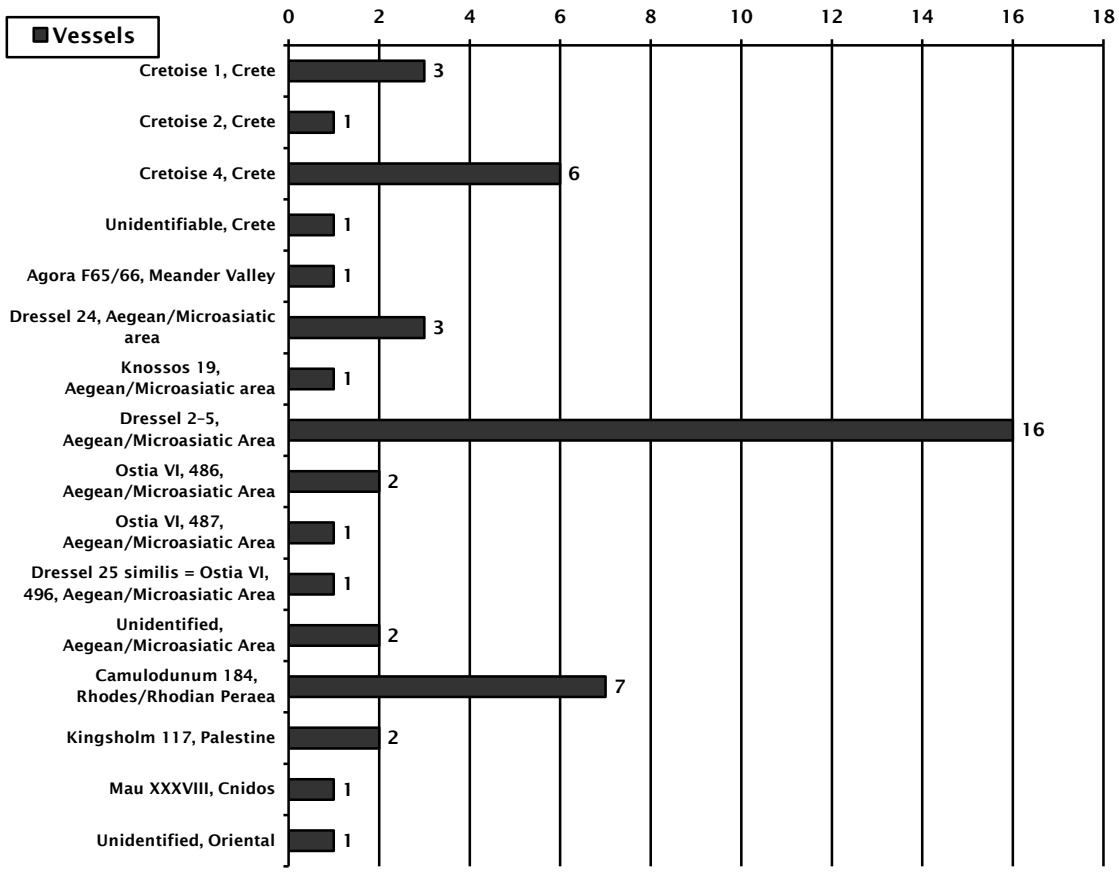


**Fig. 5.12: Ostia. Amounts of 'Oriental' amphorae, Trajanic age.**

### 5.2.6 Unknown Origin

9.90% of vessels belong to forms for which no suggestions nor identifications of their origin are mentioned in the published reports, corresponding to 52 vessels. They pertain to four Dressel 2-4 without a suggested origin and two fragments of an Ostia Inv. 16821, but this is not certain and it is not explained which form this mention means. The remaining ones (46) were not identified or even drawn in the respective publications (fig. 5.13).

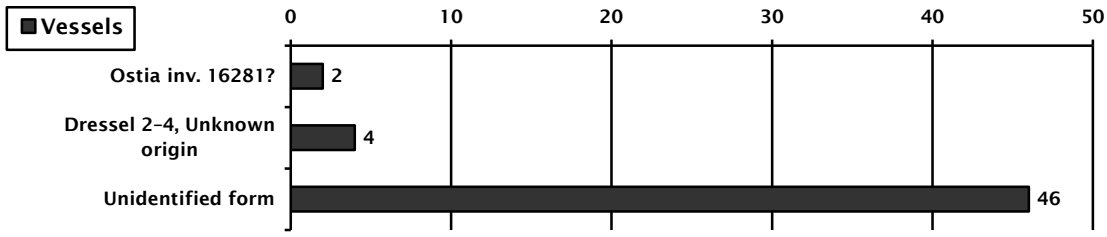


**Fig. 5.13: Ostia. Amounts of amphorae from unknown origins, Trajanic age.**

## 5.3 Foodstuffs traded and their origins

This Section is meant to offer a brief and general view of various traded foodstuffs. It will consider data offered both by Rome and Ostia for the period relevant to this Chapter and using the number of vessels. Despite their importance for understanding depositional processes, neither residual nor intrusive amphorae will be considered, because they originally belonged to different periods of the buildings in which they were found.

### 5.3.1 Wine

In Rome (fig. 5.14), 'Oriental' wines are predominantly present, followed by Italian ones. These two represent more than 2/3 of the total amount of amphorae. Other origins are less found, with a significant figure of Gallic wines only.

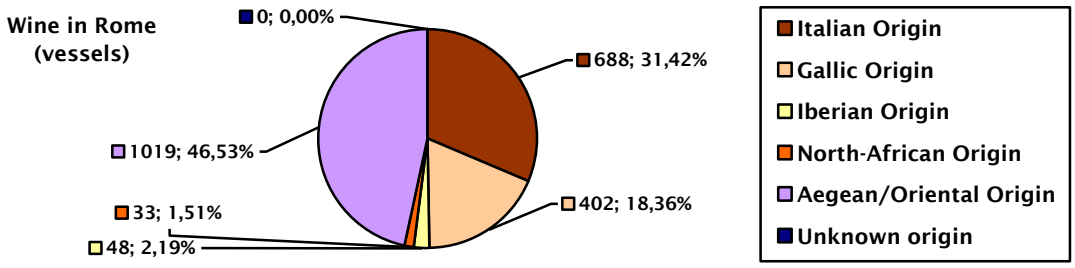


**Fig. 5.14: Amounts and percentages of wine-amphorae from various origins in Rome, Trajanic age.**

In Ostia (fig. 5.15) the situation is rather different: Italian and Gallic wine-amphorae become the most found ones with equal numbers of vessels. These two together reach more than 66% of wine containers. 'Oriental' wine-containers are significantly less than those found in Rome, while both North-African and Iberian ones are found more in Ostia than in Rome.

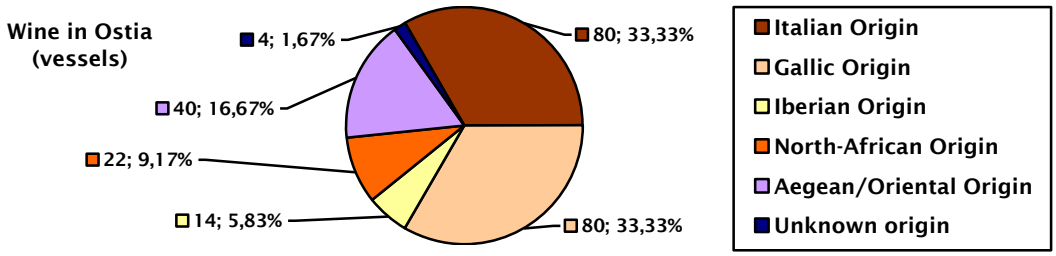


**Fig. 5.15: Amounts and percentages of wine-amphorae from various origins in Ostia, Trajanic age.**

### 5.3.2 Olive oil

In Rome (fig. 5.16) Baetican oil amphorae are the most represented with more than 85% of vessels. Significant is also the presence of almost 14% of North-African amphorae. Oriental containers are negligible.

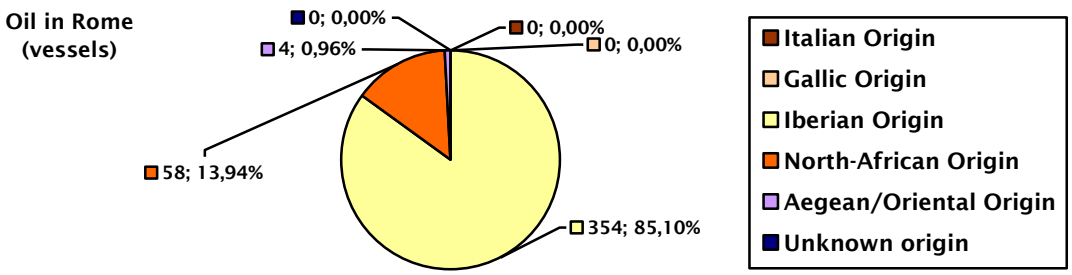


**Fig. 5.16: Amounts and percentages of amphorae containing olive oil from various origins in Rome, Trajanic age.**

In Ostia (fig. 5.17), the total number of vessels is less than 100, thus the offered percentages are just matters of describing the situation. Baetican oil amphorae are still predominant. North-African ones are again well represented. Only three vessels come from the 'Oriental' part of the Mediterranean.

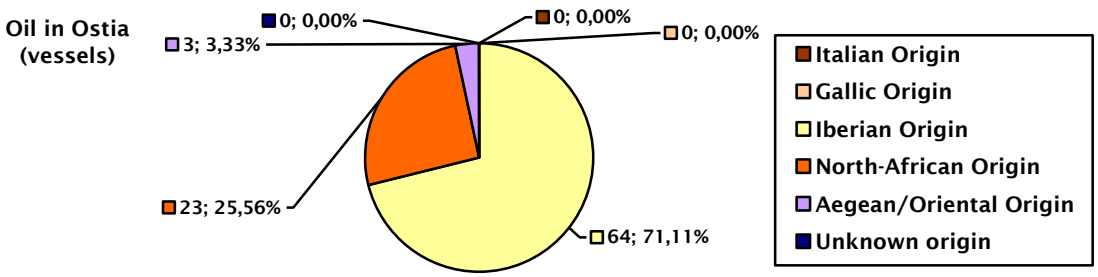


**Fig. 5.17: Amounts and percentages of amphorae containing olive oil from various origins in Ostia, Trajanic age.**

### 6.3.3 Fish Sauces

In Rome (fig. 5.18), as already happened for olive oil, Iberian amphorae containing fish sauces dominate with an almost 92%. The other origins (Gaul, Italy and North-Africa) are much less represented.

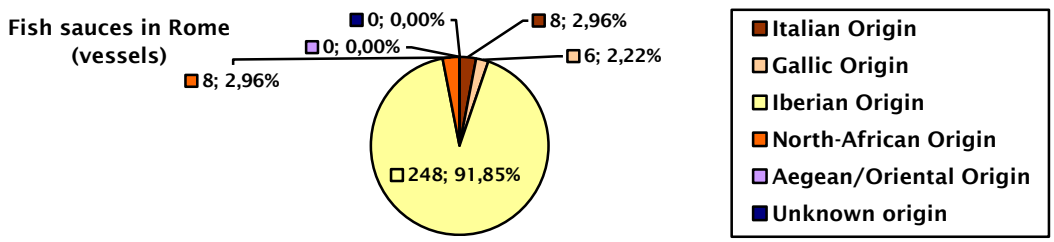


**Fig. 5.18: Amounts and percentages of amphorae containing fish sauces from various origins in Rome, Trajanic age.**

A similar situation occurs in Ostia (fig. 5.19). Once again the total number of vessels is less than 100. One single vessel comes from Italy.

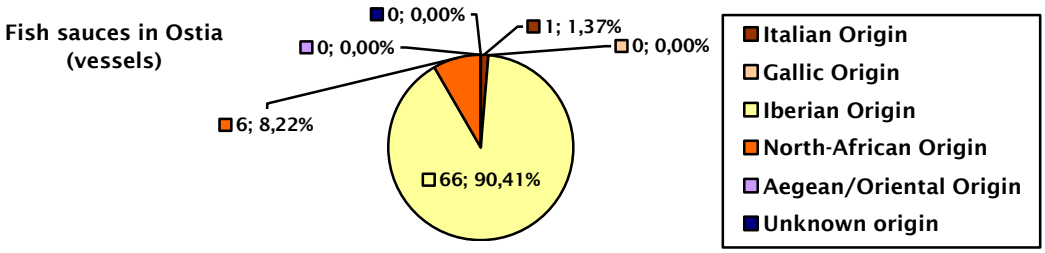


**Fig. 5.19: Amounts and percentages of amphorae containing fish sauces from various origins in Ostia, Trajanic age.**

### 6.3.3 Other products

Fig. 5.20 represents the number of vessels for amphorae containing (or probably containing) other products rather than the previously analysed ones. Iberian *deftutum* is the most represented, with 53 fragments of Haltern 70, mostly discovered in Rome. A single amphora containing dates (Colchester 105 from Palestine) was only found in Rome.

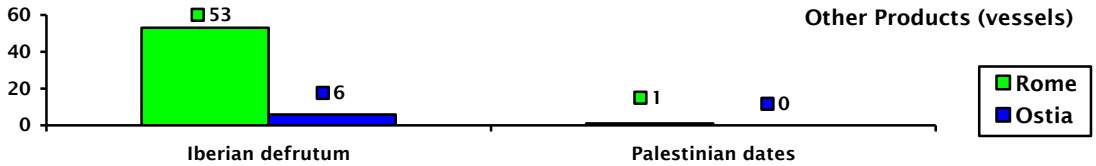


**Fig. 5.20: Amounts of amphorae containing other products found in Rome and Ostia, Trajanic age.**

### 6.3.4 Undefined products

Fig. 5.21 shows the number of vessels and percentages for amphorae found in Rome and whose content is not even suggested. Amphorae from unidentified origins

and 'Oriental' ones are predominant, the latter corresponding also to forms identified for the first time.

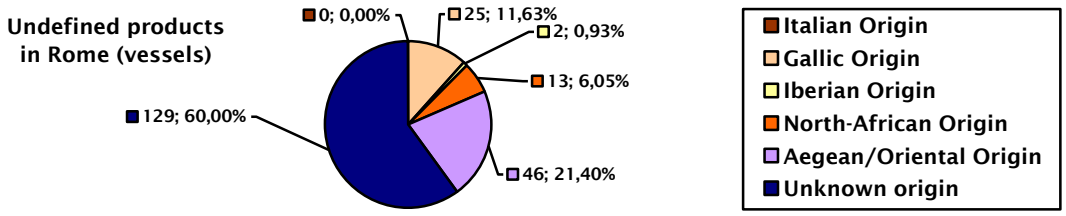


**Fig. 5.21: Amounts of amphorae whose content is unknown found in Rome, Trajanic age.**

Also in Ostia (fig. 5.22) amphorae from unidentified origins are prevailing over other origins. These ones are almost all attested (with the exception of Iberian containers). As for Rome, they mainly consist in unidentified forms or forms identified for the first time, thus with a content which is still not known.

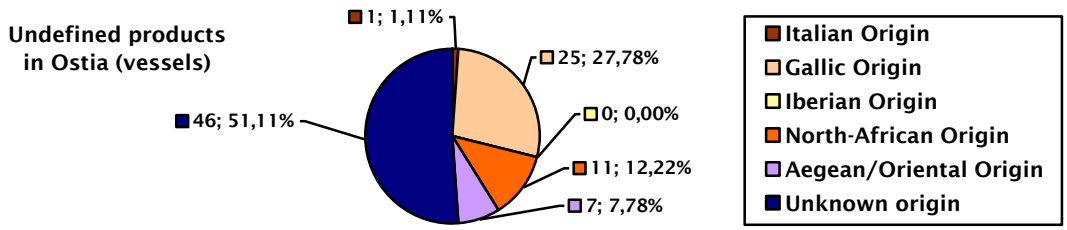


**Fig. 5.22: Amounts of amphorae whose content is unknown found in Ostia, Trajanic age.**

## 5.4 Concluding remarks to the Trajanic age

Both cities resulted in residual and also intrusive vessels. Residuals might have belonged to buildings that existed before the Trajanic constructing activities or to previous phases of use of the same buildings where they were found. Intrusive vessels may be caused by wrong identifications of forms and/or phases of the buildings. For these reasons, they are not considered for any assumption.

In a few cases the number of vessels was less than 100, thus avoiding serious discussions about percentages among origins. In Rome wine-amphorae mainly come from Italy and the Eastern Mediterranean, while in Ostia Gaul and Italy are the prevailing origins. Amphorae containing olive oil and fish sauces come mainly from the Iberian peninsula, but even North Africa is well attested. Containers for other products were mainly discovered in Rome, with just a few vessels in Ostia. Apart from some similarities, the amphorae discovered in the Trajanic contexts found in these two cities showed a considerable diversity between them.

# Chapter 6: Chronological periods: the Hadrianic age

This Chapter considers all sites: the 'Terme di Elagabalo' (0.70%), elsewhere in Rome (95.84%), and Ostia (3.46%). As in the previous Chapter, this one will analyse the numbers of vessels of various forms and the last sub-Section of it will briefly consider products as shown by amphorae. The total number of vessels found in contexts pertaining to the Hadrianic age is 13,120.

## 6.1 'Terme di Elagabalo'

Amphorae found across this building come from phases 1 to 11 (Appendix 2, Tables 1–9). All forms will be mentioned in the following charts, divided into their respective origins, while in the relevant Sections the identified types will also be expressed. The total amount of fragments for this phase is 1,412, while the number of vessels is 92, corresponding to a small 0.70% of the total for the three considered sites for this period. Therefore the following percentages (fig. 6.1) must not be seen as determinant, but only matters of describing different origins. Iberian and Oriental origins seem predominant, with also moderate quantities of Italian amphorae.

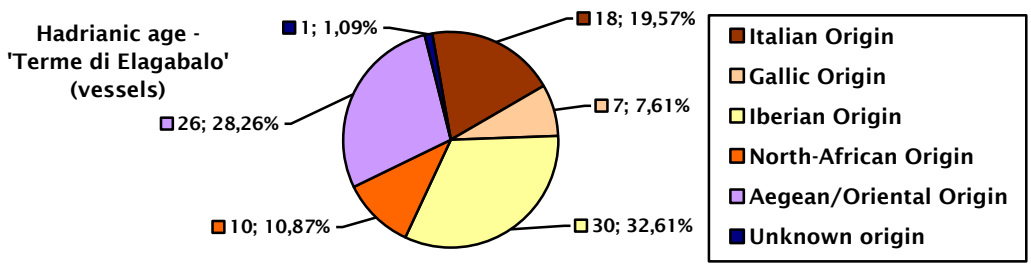


**Fig. 6.1: Amounts and percentages of amphorae from various origins in the 'Terme di Elagabalo', Hadrianic age.**

### 6.1.1 Italian Origin

Among all vessels from the Italian peninsula (fig. 6.2), 4 are residual ones and belong to the form Dressel 1 (identifiable with the types: Martin-Kilcher 1994, 2035; *Ostia II*, 546; and *Ostia III*, 80 which is a Dressel 1B).

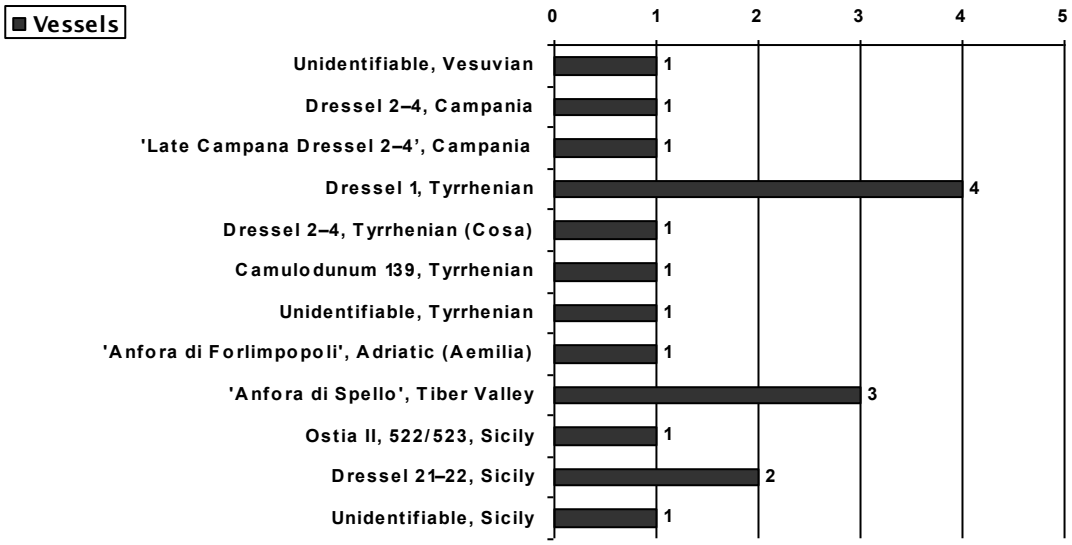


**Fig. 6.2: 'Terme di Elagabalo'. Amounts of Italian amphorae, Hadrianic age.**

The so-called 'Anfora di Spello' reaches 3 vessels (2 unspecifiable as found with fragments of handles and walls only, and one *Ostia III*, 369). They are followed by 2 vessels of Sicilian Dressel 21-22 (with a drawn type: cf. Table **I**, **11**). Other Italian amphorae were all found with single vessels: a Dressel 2-4 from Campania (unspecifiable too as found with a handle), a Dressel 2-4 from Cosa (with the type *Ostia IV*, 494), a Camulodunum 139 (found with the type Martin-Kilcher 1994, 3749: Table **II**, **29**), a so-called 'Late Campana Dressel 2-4' (with the type Ferrandes 2008b, fig. 6, 46), an 'Anfora di Forlimpopoli' (unspecifiable as found with a handle and walls), and a Sicilian *Ostia II*, 522/523 (unspecifiable as found with a base, a handle, and fragments of walls). Some amphorae were not identifiable, as found with fragments of walls only: 1 vessel each from the Vesuvian area, the Tyrrhenian coast, and Sicily.

### 6.1.2 Gallic Origin

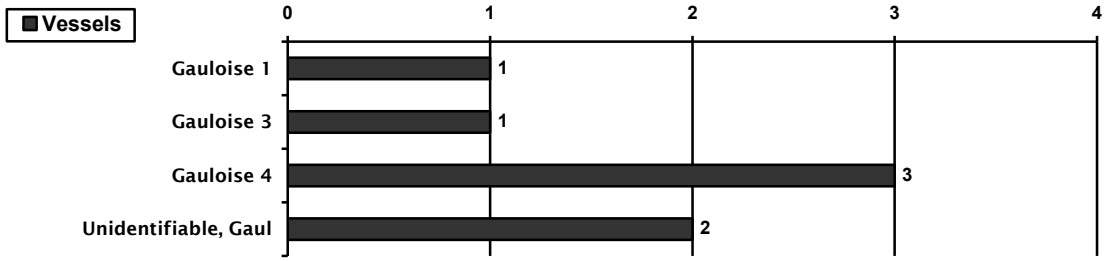


**Fig. 6.3: 'Terme di Elagabalo'. Amounts of Gallic amphorae, Hadrianic age.**

Just 7 vessels were found for ancient Gaul *Narbonensis* (fig. 6.3). The most present is Gauloise 4 with 3 vessels and the types: Martin-Kilcher 1994, 2646 (Table

**IV**, **56**); Martin-Kilcher 1994, 2617 (Table **IV**, **59**); and an unspecifiable one (as found only with a handle). Two vessels belong to an unidentifiable form (as found only with fragments of walls, separated for their different fabrics). Gauloise 1 was found with one vessel (2 fragments of the same base). Gauloise 3 with the type Martin-Kilcher 1994, 2557 (Table **IV**, **60**) can be considered at the end of its production, but not yet a residual form.

### 6.1.3 Iberian Origin

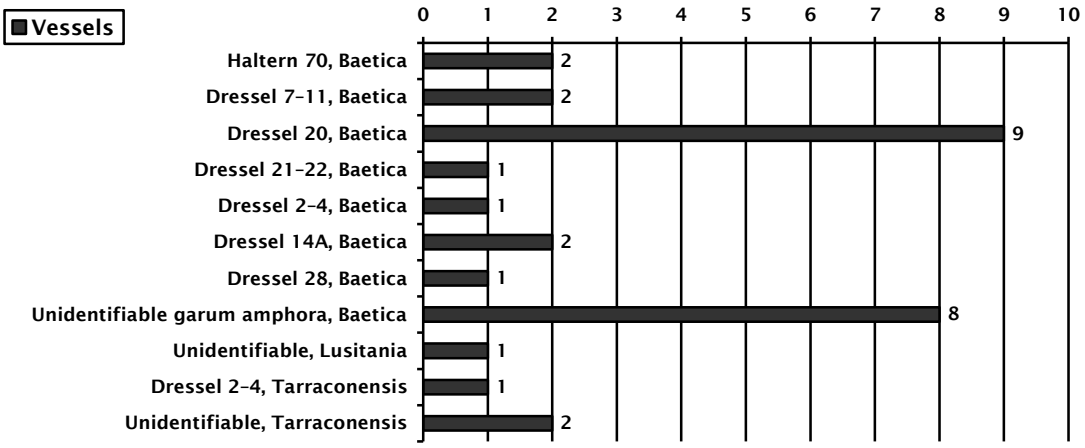


**Fig. 6.4: 'Terme di Elagabalo'. Amounts of Iberian amphorae, Hadrianic age.**

Dressel 20 is the most found Baetican form (fig. 6.4) with 9 vessels, all belonging to different types: Martin-Kilcher 1987, 550 (Table **VI**, **88**); Martin-Kilcher 1987, 119 (Table **VI**, **89**); Martin-Kilcher 1987, 3 (Table **V**, **64**); Martin-Kilcher 1987, 965 (Table **V**, **65**); the drawn one (Table **VI**, **85**); and 5 handles (2 identified with Martin-Kilcher 1987, 1365; 1 with Martin-Kilcher 1987, 1176; and two unspecifiable ones). Respectively with 2 vessels were found Haltern 70 (with the types Martin-Kilcher 1994, 3874 = Table **VII**, **101** and the drawn one = Table **VII**, **103**); Dressel 14A (with the same drawn type Table **VIII**, **118**); and Dressel 7-11 (drawn type Table **VII**, **105**; and another unspecifiable) which can be considered at the very end of their production. With one unidentifiable vessel each were found a Dressel 21-22, a Dressel 2-4, and a Dressel 28 with the type Table **IX**, **138** (fig. 55). For 8 vessels a more specific *garum* amphora was impossible to be suggested, as they were found with a base, handles and walls.

One vessel of Dressel 2-4 (found with a handle and walls only) and two unrecognisable ones (fragments of walls only) come from *Hispania Tarraconensis*. Another unrecognisable form (found with only fragments of walls) comes from *Lusitania*.

### 6.1.4 North-African Origin

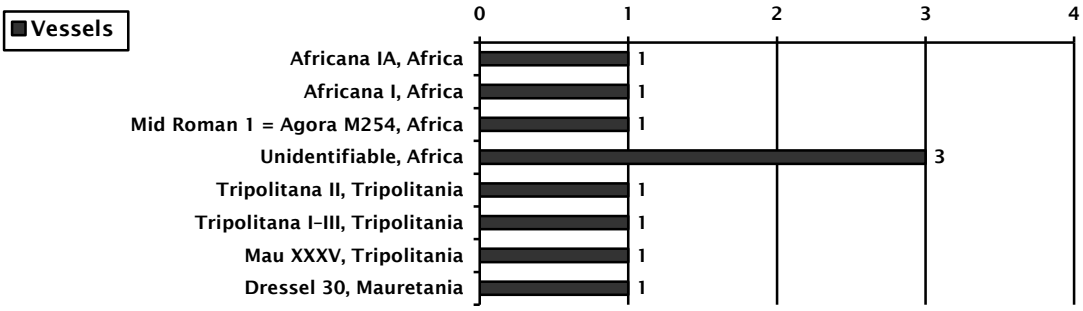


**Fig. 6.5: 'Terme di Elagabalo'. Amounts of North-African amphorae, Hadrianic age.**

Only unidentifiable African amphorae reach the figure of 3 vessels. All other forms were found with single ones (fig. 6.5). Africana IA was found with the type Bonifay 2004a, type 21 A, fig. 56, 1; Tripolitana II with the type Keay 1984, type XI, fig. 47, 5 (Table **XIV**, **234**); Tripolitana I–III cannot be identified as its rim is totally ruined; and Mau XXXV was found with the drawn type Table **XV**, **246**. It is interesting to note the presence of the Mauritanian imitation of Gauloise 4 amphorae, called Dressel 30 = Keay 1984, Type I, which was not discovered during the previous period.

### 6.1.5 Aegean / Oriental Origin

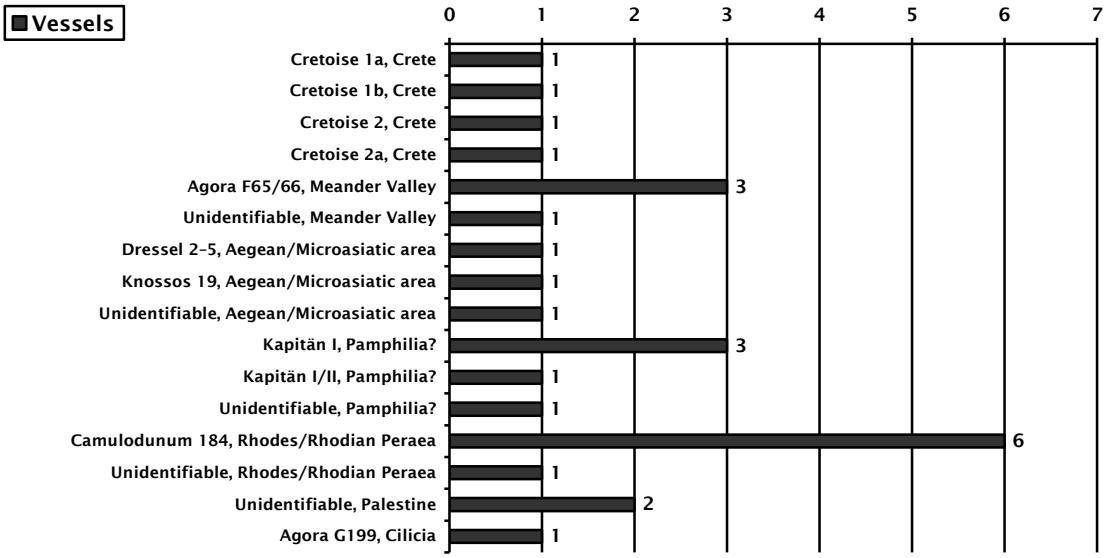


**Fig. 6.6: 'Terme di Elagabalo'. Amounts of 'Oriental' amphorae, Hadrianic age.**

Among 'Oriental' forms (fig. 6.6), the most found one is the Rhodian Camulodunum 184 with 6 vessels and types: Ferrandes 2008b, fig. 5, 27 (Table **XX**,

**365**); Martin-Kilcher 1994, 2380 (for 4 different vessels, one is Table **XX**, **367**); and two unidentifiable types (as found with handles and walls only). It is followed by 3 vessels both for Agora F65/66 (all unidentifiable ones, as found with a handle, two bases and walls) and Kapitän I, whose origin from Pamphilia is not assured, found just with fragments of handles. From the island of Crete were found, all with one vessel, forms Cretoise 1a (type Marangou-Lerat 1995, fig. 31, A29 = Table **XV**, **266**), Cretoise 1b (type Marangou-Lerat 1995, fig. 39, A55 = Table **XV**, **272**), Cretoise 2a (type Marangou-Lerat 1995, fig. 54, A87) and a more generic Cretoise 2 (drawn type Table **XVI**, **275**).

The generic Aegean/Microasiatic area is represented by forms Dressel 2–5 (with only walls and shoulders), Knossos 19 (with handles, shoulders and walls) and a not specifiable form (as just found with walls). All of them were found with one vessel each. A single vessel of a generic Kapitän I or II, possibly also from Pamphilia, cannot be given to a specific form, as found only with fragments of walls. Another vessel can be ascribed to the form Agora G199 from Cilicia. The provenance was identified by their fabric for 4 vessels, but not their specific form. They come from the Meander Valley (1 vessel), possibly Pamphilia (1 vessel), Rhodes or the Rhodian Peraea (1 vessel), and Palestine (2 vessels).

### 6.1.6 Unknown Origin

Only a single vessel was identified by its fabric as belonging to the same type of amphora (Plate **XX**, **384**) found during a subsequent period whose origin is not assured.

## 6.2 Elsewhere in Rome

Across the city of Rome only three contexts are dated Hadrianic age:

- *Domus Tiberiana*, Period V, Sector 9, Sondage 24, units 3-4 and Sector 11, Sondage 3, unit 7 (Appendix 2, Tables 25–26): 0.12% of the total for Rome;
- Testaccio, Nuovo Mercato, *horreum* phase (Appendix 2, Table 29): 99.88%;

Despite this small number of sites, the total amount of vessels for this period is 12,574 (especially coming from Nuovo Mercato Testaccio) reaching 95.84% of the total for the three sites. Percentages for the various origins can be seen in fig. 6.7. It shows a predominance of 'Oriental' amphorae, followed with great distance by Italian and Iberian ones. Other productions are less represented.

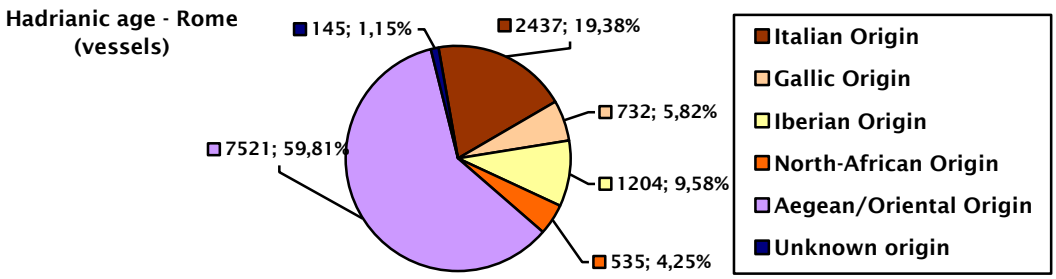


**Fig. 6.7: Amounts and percentages of amphorae from various origins elsewhere in Rome, Hadrianic age.**

### 6.2.1 Italian Origin

Italian amphorae reach 2,437 vessels, representing 19.38% of the total. Among them (fig. 7.8), 82 Dressel 1 and 1 'Anfora di Brindisi' are surely residual. They were found just in Nuovo Mercato Testaccio. In-phase vessels are headed by 1,963 Dressel 2-4 from the Tyrrhenian coast. This predominance is caused by the nature of deposits in Nuovo Mercato Testaccio[723]. They are followed by 184 Dressel 6A, whose chronology cannot lead to consider them as residual, but as for Dressel 2-4, they may come from a previous period of Nuovo Mercato Testaccio. Even 'Anfora di Spello' and *Ostia II*, 522/523 from Sicily are found with significant quantities. Notable in this period, as it was not found during the Trajanic age, is the presence of a single vessel of the alum container Richborough 527 from Lipari.

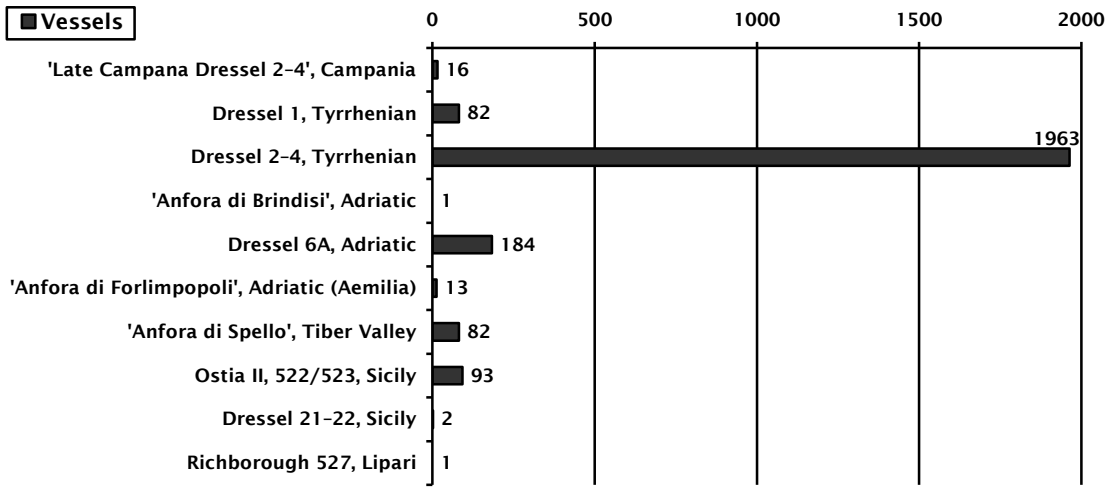


**Fig. 6.8: Elsewhere in Rome. Amounts of Italian amphorae, Hadrianic age.**

[723] Cf., above, Chapter 4, Section 4.1.9.

### 6.2.2 Gallic Origin

5.82% of the total come from Gaul, as 732 fragments were found (fig. 6.9). One vessel each of Gauloise 7 and Gauloise 2 are residual ones, while another vessel of Gauloise 3 (as for the 'Terme di Elagabalo') can be considered at the end of its production, but not yet a residual form. The most found in-phase amphora is Gauloise 4, especially discovered in Nuovo Mercato Testaccio.

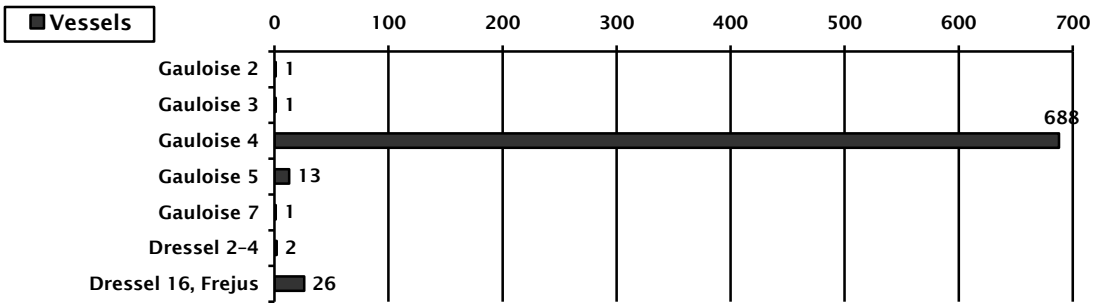


**Fig. 6.9: Elsewhere in Rome. Amounts of Gallic amphorae, Hadrianic age.**

### 6.2.3 Iberian Origin

A total of 1,204 vessels come from *Hispania*, being 9.58% of the total. Only 4 vessels of Pascual 1 from *Tarraconensis* can be considered residual ones and they were found again in Nuovo Mercato Testaccio. In-phase forms are, as for the Trajanic age, again dominated by Dressel 20 amphorae, followed by Dressel 7-11 (at the end of their production) and other containers for fish sauces (Beltrán IIB, Dressel 14A, Beltrán IIA) or wine (Dressel 2-4 from Baetica). Significant is the presence of a single vessel of Dressel 17 found during this period only (in the *Domus Tiberiana*).

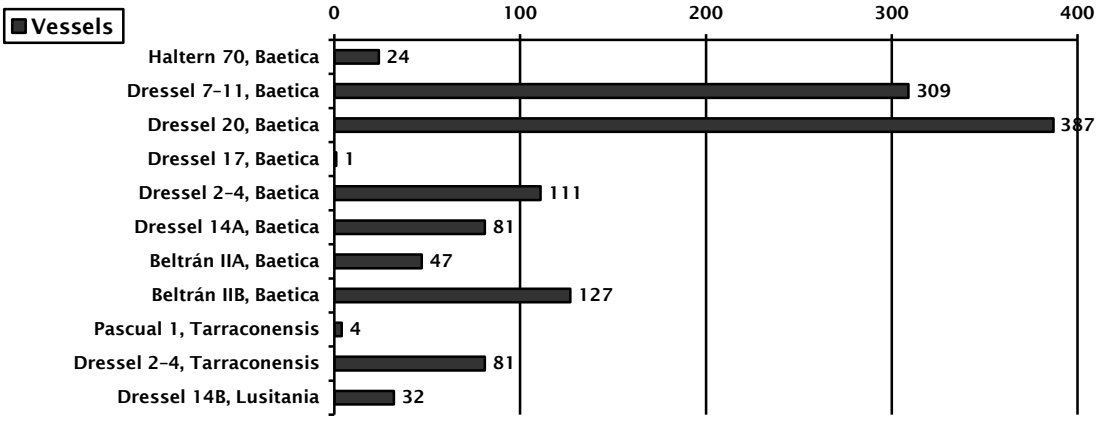


**Fig. 6.10: Elsewhere in Rome. Amounts of Iberian amphorae, Hadrianic age.**

### 6.2.4 North-African Origin

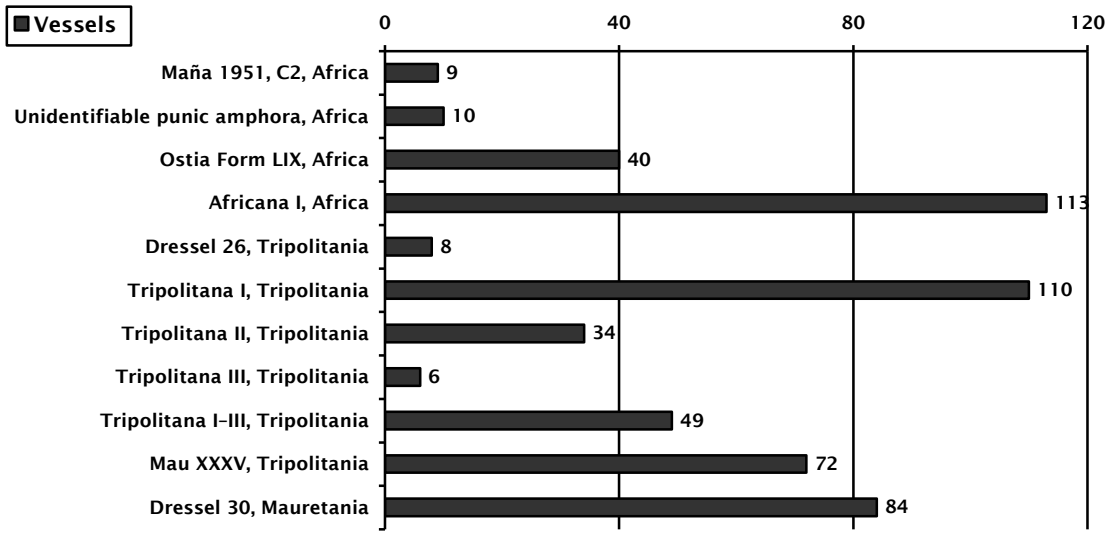


**Fig. 6.11: Elsewhere in Rome. Amounts of North-African amphorae, Hadrianic age.**

North-African amphorae reach 535 vessels (fig. 6.11), being 4.25% of the total. Just three forms are residual ones: Maña 1951, C2; other unidentifiable Punic amphorae; and Dressel 26 (the ancestor of the Tripolitanian amphorae) whose presence is notable because it is found for the first time. The majority of in-phase forms originated in Tripolitania, although the most found form is Africana I. Furthermore, Mauretanian Dressel 30 has a significant presence, being not found during the previous period.

### 6.2.5 Aegean / Oriental Origin

Aegean/Oriental amphorae reach the figure of 7,521 vessels, corresponding to 59,81% of the total. As for the Trajanic age, during this period the 'Oriental' situation in Rome is also very varied with several in-phase forms (fig. 6.12). Cretoise amphorae are the most abundant, especially Cretoise 1 which is the most found amphora with 4,690 vessels. Some other forms from the Aegean/Microasiatic area, as already happened during the Trajanic age, were found for the first time at the excavations in Nuovo Mercato Testaccio. Other forms appear for the first time during this phase: Opaiţ 1980, Type XIII = Coletti & Lorenzetti 2010, fig. 4, 1; Kapitän I; Kapitän II; and the later variety of Schöne V (Coletti & Lorenzetti 2010, fig. 5, 2 = Reynolds 2005, fig. 19–22), showing a first import of their contained products.

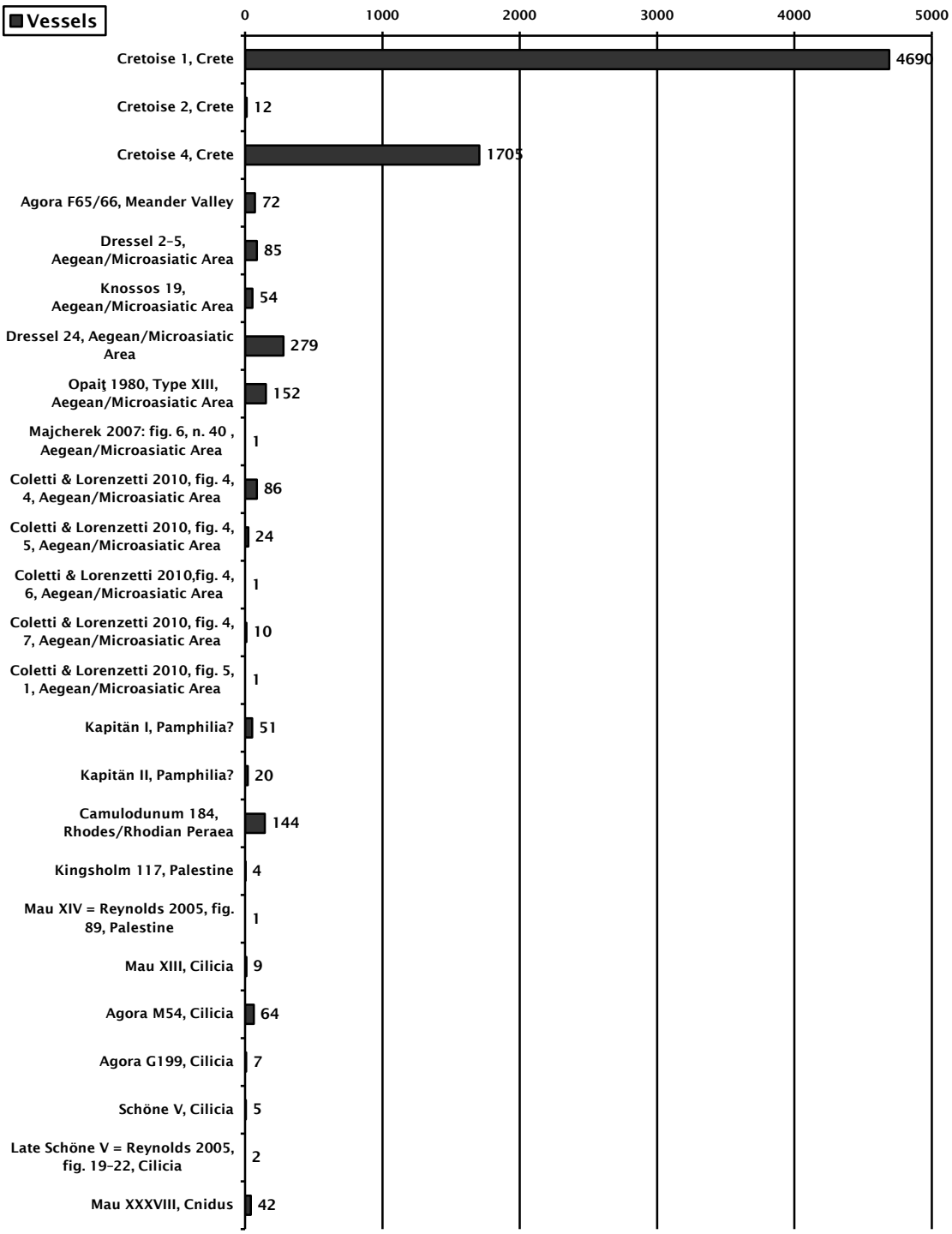


**Fig. 6.12: Elsewhere in Rome. Amounts of 'Oriental' amphorae, Hadrianic age.**

### 6.2.6 Unknown Origin

For 145 fragments (1,15% of the total) no suggestions were made, neither related to the belonging form nor to their origin.

## 6.3 Ostia

For Ostia, the following contexts will be considered here:

- Casa delle Pareti Gialle, Phase A, Unit A3 (Appendix 2, Table 40): 8.37% of the total for Ostia;

- Taberna dell'Invidioso, Period 6, Phase II, Unit III (Appendix 2, Table 42): 0.22%;

- Piazzale delle Corporazioni, Portico Ovest, Unit II, Sondages A-F; Unit I (a-b-c-d), and Unit I with under-excavation of Unit II (Appendix 2, Tables 46-47): 44.71%;

- Terme del Nuotatore, Area SO, Units IVA, B, C, 'cuts' A and B; Area XXV, Units IV; Area XXV/XXIV, Sondage B, Unit IV (Appendix 2, Tables 56-57, 59): 46.70%.

During this period 454 vessels of amphorae were discovered in Ostia (corresponding to 3.46% of the total for the three considered sites), while percentages of the various origins can be seen in fig. 6.13. It shows that the majority of vessels come from the Iberian peninsula, followed by Gaul, Italy and North-Africa. Eastern Mediterranean and unidentified origins were found with almost equal amounts.

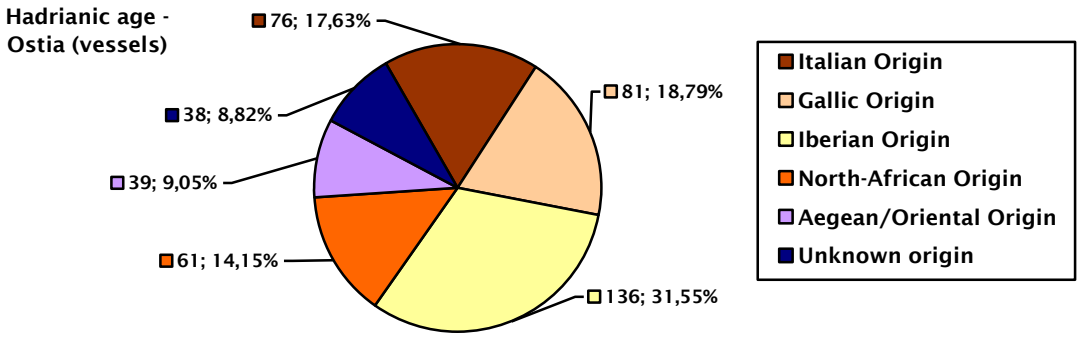


**Fig. 6.13: Amounts and percentages of amphorae from various origins in Ostia, Hadrianic age.**

### 6.3.1 Italian Origin

Italian manufacture is represented by 76 sherds, corresponding to 17.63% of the total. For 11 fragments, given to the form Dressel 2-4, a more specific production area was not suggested and another one may be a Dressel 6, although it is not specified if it is a 6A or a 6B. Four vessels of Dressel 1 from the Tyrrhenian coast can be considered residual ones. In-phase vessels are headed by 'Anfora di Spello', *Ostia II*, 522/523, and Dressel 2-4 from Campania. Even other Dressel 2-4 were found and coming from the Vesuvian area. Significant is also the presence of some 'Late Campana Dressel 2-4' (fig. 6.14).

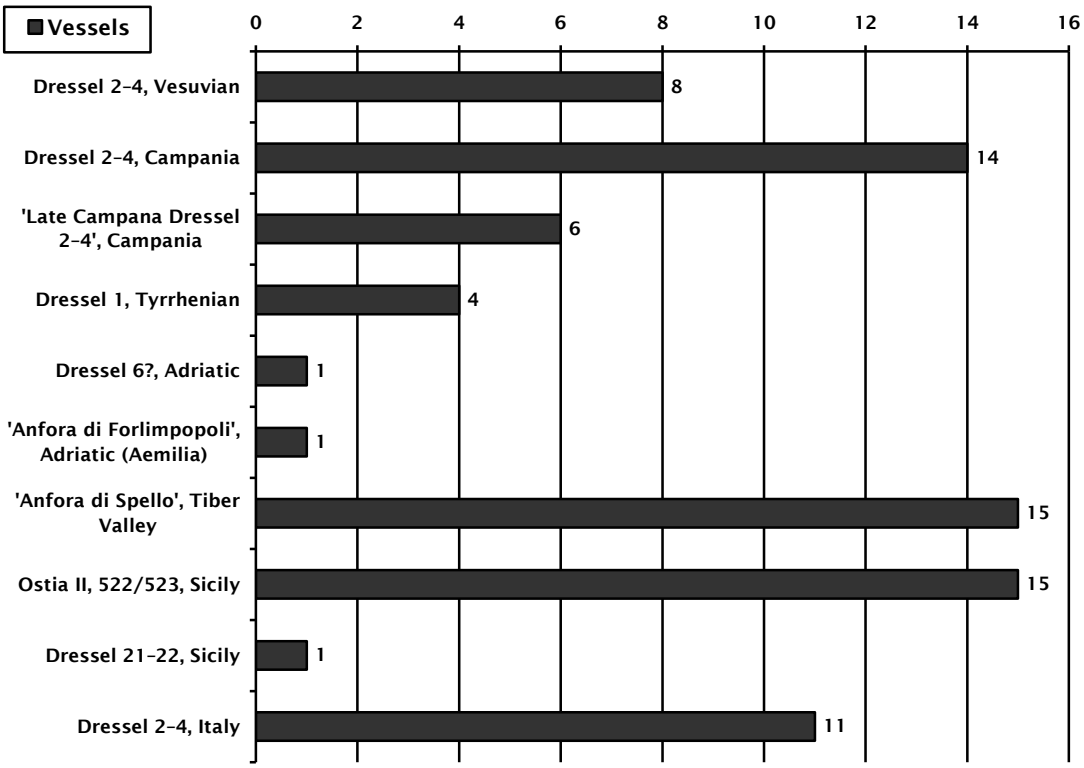


**Fig. 6.14: Ostia. Amounts of Italian amphorae, Hadrianic age.**

### 6.3.2 Gallic Origin

Ancient Gaul is represented by 81 vessels, corresponding to 18.79% of the total. For 12 of them a more specific form was not identified. Gauloise 5 is the mostly found form (fig. 6.15), contrarily to the previous period.

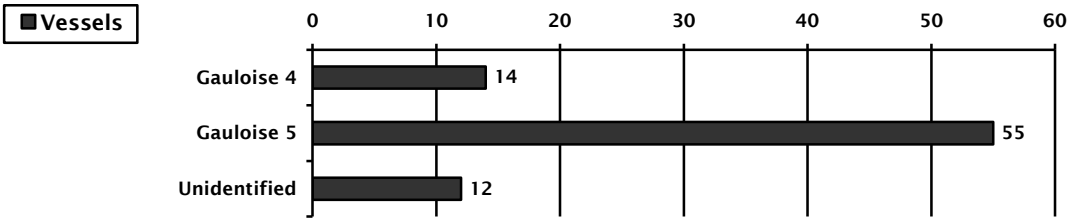


**Fig. 6.15: Ostia. Amounts of Gallic amphorae, Hadrianic age.**

### 6.3.3 Iberian Origin

The Iberian Peninsula reaches 136 vessels, representing 31.55% of the total. The most frequently found form is Dressel 14B from *Lusitania*, followed by unidentifieable *garum* amphorae, Dressel 20, Dressel 7-11 (still not residual forms), and Beltrán IIB from *Baetica*. The majority of forms contained fish sauces (fig. 6.16).

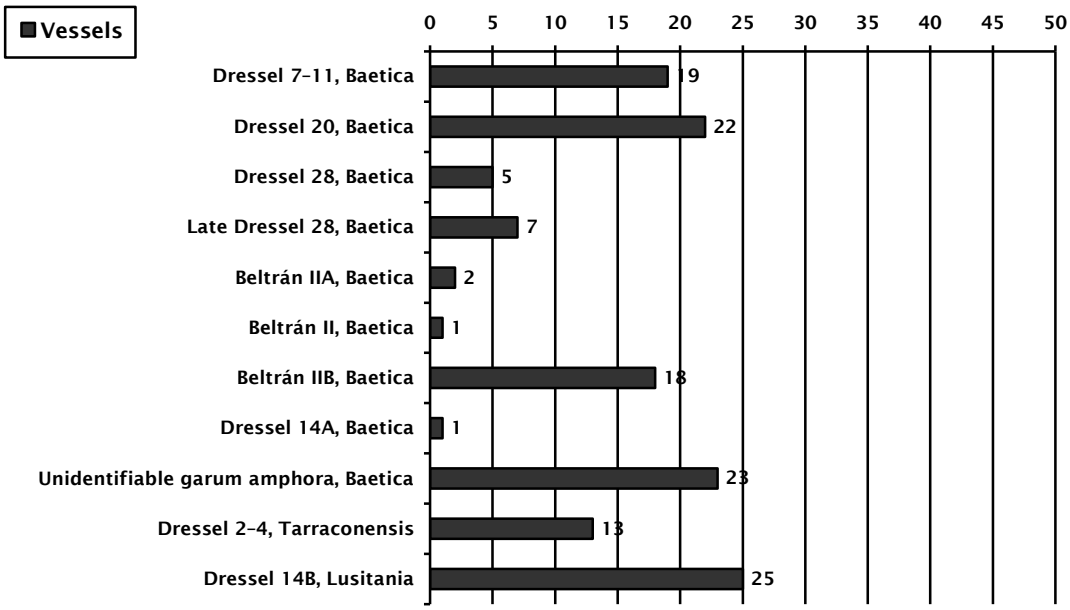


**Fig. 6.16: Ostia. Amounts of Iberian amphorae, Hadrianic age.**

### 6.3.4 North-African Origin

73 sherds come from North-Africa, representing 10.86% of the total. Two vessels of Van der Werff 1 are residual amphorae. In-phase forms are headed by Ostia Form LIX, followed by Mau XXXV, while other forms are less attested. The forms *Ostia III*, 374, and Uzita tav. 50, 10 start being found during this period, showing first imports of their contained products. As for the other two sites, also in Ostia Dressel 30 amphorae from *Mauretania Caesariensis* start being found (fig. 6.17).

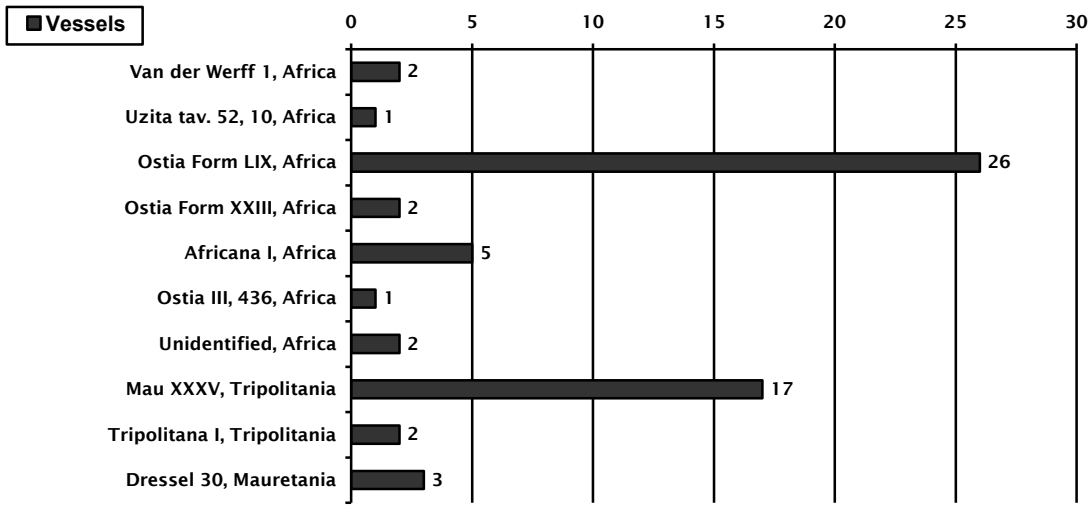


**Fig. 6.17: Ostia. Amounts of North-African amphorae, Hadrianic age.**

### 6.3.5 Aegean / Oriental Origin

The Eastern basin of the Mediterranean reaches 39 fragments, corresponding to 9.05% of the total. The 'Oriental' situation seems to be less representative, in terms of number of forms, rather than Rome in this period and also other periods. The majority of finds belong to the Rhodian Camulodunum 184, while all other forms are much less found (fig. 6.18)

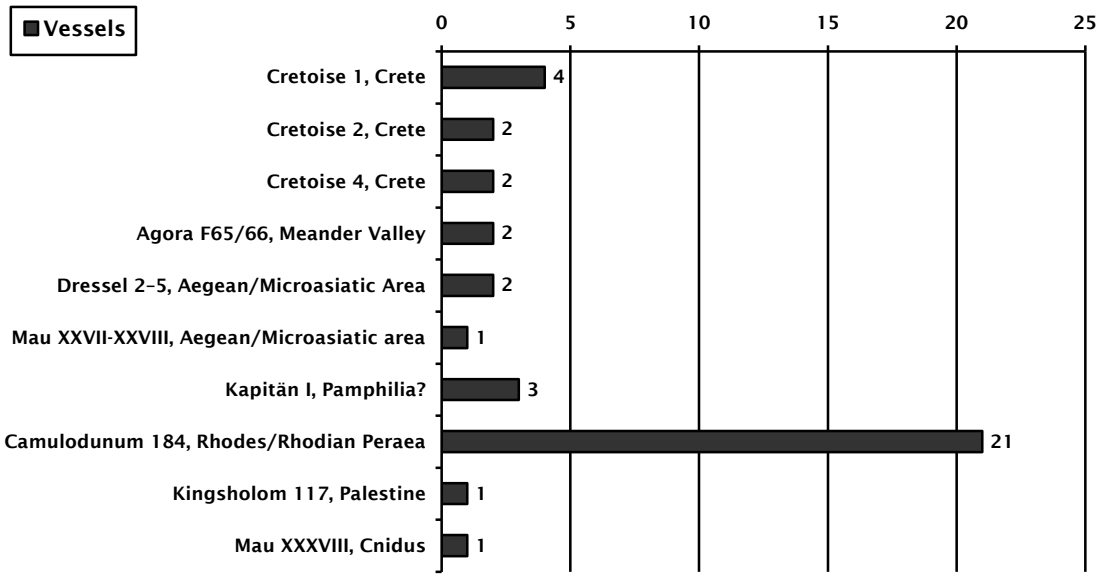


**Fig. 6.18: Ostia. Amounts of 'Oriental' amphorae, Hadrianic age.**

### 6.3.6 Unknown Origin

For 38 fragments no origin was suggested nor was it identifiable, representing 8.82% of the total. Although 13 vessels can be identified as Dressel 2-4, their origin was not specified in publications. The other vessels were not identified or even drawn (fig. 6.19).

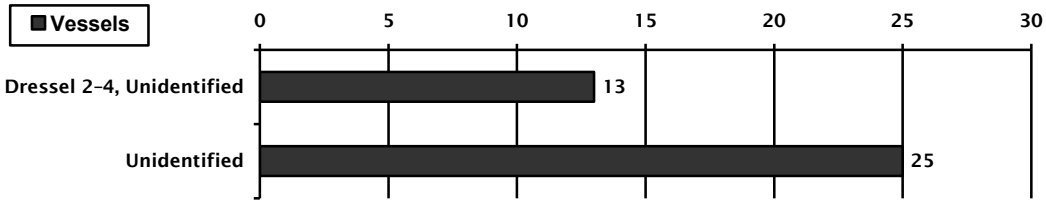


**Fig. 6.19: Ostia. Amounts of amphorae from unknown origins, Hadrianic age.**

## 6.4 Foodstuffs traded and their origin

As for the previous Chapter, this Section will summarise amounts of foodstuffs. It will consider data offered by the 'Terme di Elagabalo', Rome, and Ostia during the Hadrianic age. Neither residual nor intrusive amphorae will be considered, being in a misleading position in the respective buildings.

### 6.4.1 Wine

Half of the wine-amphorae in the 'Terme di Elagabalo' come from the Eastern Mediterranean. The other half is headed by Italian amphorae, followed by Gallic ones. Iberian and North-African containers are equally found (fig. 6.20).

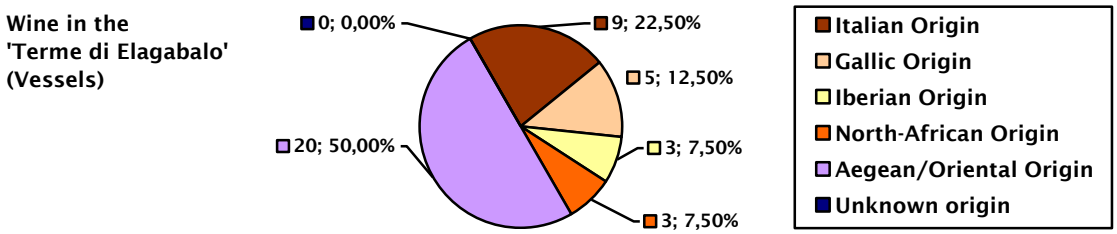


**Fig. 6.20: Amounts and percentages of wine-amphorae from various origins in the 'Terme di Elagabalo', Hadrianic age.**

In Rome, although figures and percentages are not the same as in the 'Terme di Elagabalo', the situation is not very different. 'Oriental' amphorae are still the majority, (almost reaching 70% of finds), while Italian wine-containers are still in second place (fig. 6.21). This shows an increase in Oriental imports from the Trajanic age.

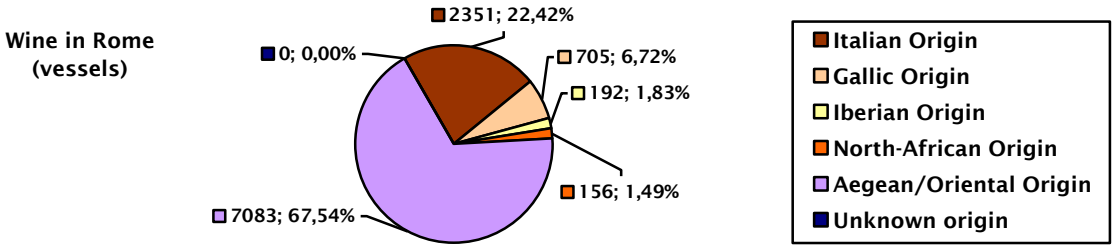


**Fig. 6.21: Amounts and percentages of wine-amphorae from various origins in Rome, Hadrianic age.**

In Ostia the situation is totally different (fig. 6.22). Italian containers are in first place, followed by Gallic ones. 'Oriental' wine-amphorae reach third place, with only 16% of finds. Iberian and North-African ones have almost equal figures and unidentified origins are attested by 5% of all finds. Despite the different figures, this situation is similar to the Trajanic age.

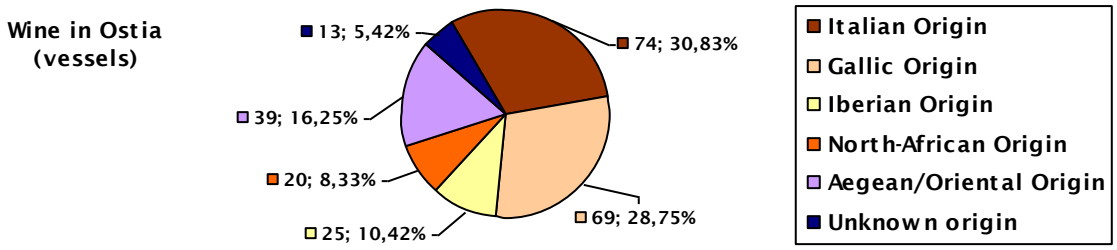


**Fig. 6.22: Amounts and percentages of wine-amphorae from various origins in Ostia, Hadrianic age.**

### 6.4.2 Olive oil

The amount of vessels discovered in the 'Terme di Elagabalo' (9 vessels from *Hispania* and 3 from North-Africa) does not permit any serious evaluation.

In Rome the situation is different than the one seen during the Trajanic age. Oriental amphorae containing oil are the mostly found with almost 38% of finds (seriously increased from the previous period), followed by Iberian containers that reach 34% (decreased from the Trajanic age). North-African amphorae are well represented too, reaching 28%. Other origins did not result in any finds (fig. 6.23).

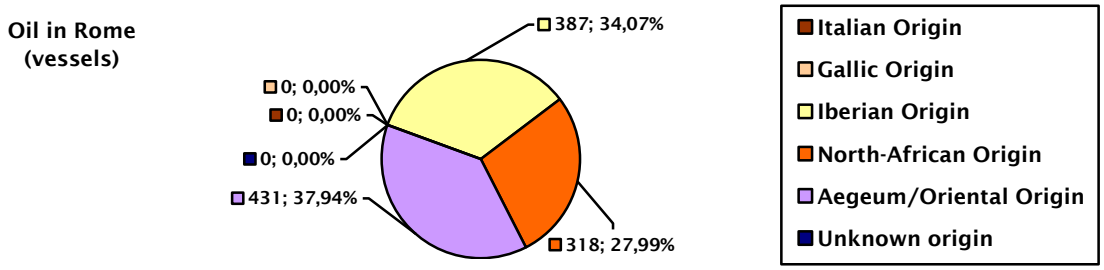


**Fig. 6.23: Amounts and percentages of amphorae containing olive oil from various origins in Rome, Hadrianic age.**

Also in Ostia the amount of vessels are too low to express any real trend. They only reach a figure of 57, divided into 22 vessels from Hispania and 35 from North-Africa.

### 6.4.3 Fish sauces

Also for fish sauces the amount of vessels found in the 'Terme di Elagabalo' (2 vessels from Italy, 13 from *Hispania*, and 1 from North-Africa) does not allow any serious discussion.

In Rome, amphorae containing fish sauces are dominated by Iberian ones (more than 88%), followed by North Africa (almost 7%) and Gaul (4%). The presence of 2 fragments from Italy is negligible (fig. 7.48). This situation is not much changed from the Trajanic age.

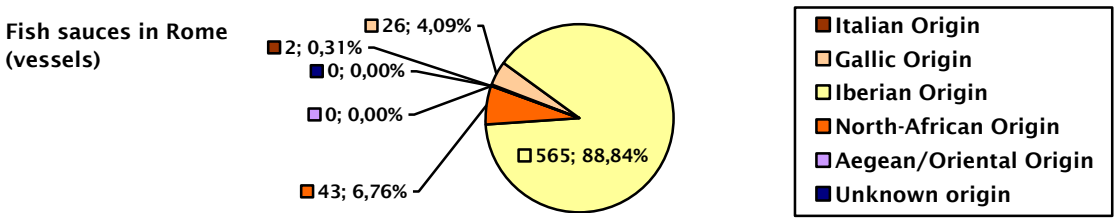


**Fig. 6.24: Amounts and percentages of amphorae containing fish sauces from various origins in Rome, Hadrianic age.**

Iberian containers dominate (almost 98%) also in Ostia (fig. 6.25). There is also a negligible presence both for amphorae coming from North Africa (decreased from the Trajanic age) and Italy.

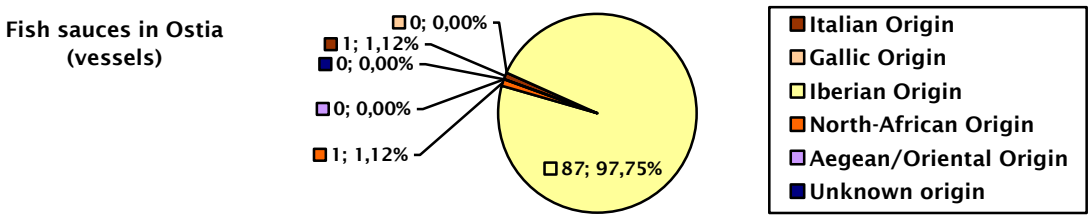


**Fig. 6.25: Amounts and percentages of amphorae containing fish sauces from various origins in Ostia, Hadrianic age.**

### 6.4.4 Other products

Two other products had been traded by amphorae discovered among sites (fig. 6.26 which shows a significant difference with the one offered for the Trajanic age). Apart from two vessels discovered in the 'Terme di Elagabalo', the majority of them were found in Rome. Ostia did not result in any finds.

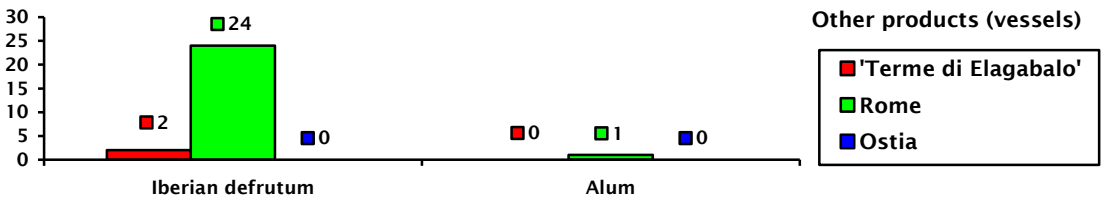


**Fig. 6.26: Amounts of amphorae containing other products found in all sites, Hadrianic age.**

### 6.4.5 Undefined products

In the 'Terme di Elagabalo' (fig. 6.27) the amphorae whose content is not sure or impossible to be suggested mainly consist of unidentifiable forms and coming from all origins.

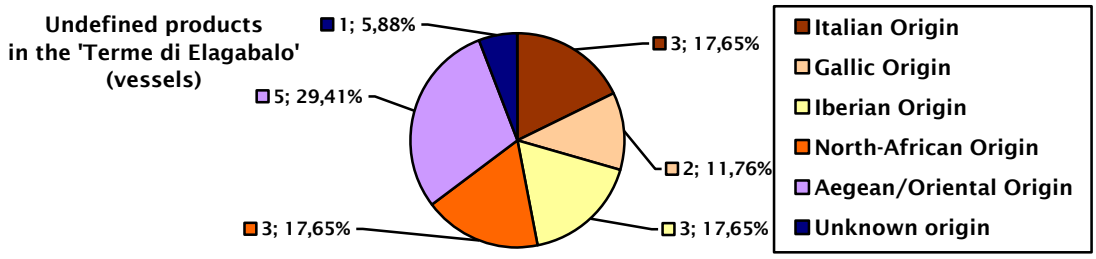


**Fig. 6.27: Amounts and percentages of amphorae with unknown content from various origins in the 'Terme di Elagabalo', Hadrianic age.**

In Rome (fig. 6.28) the amphorae containing undefined products mainly consist of fragments without identification of their origin and new 'Oriental' forms.

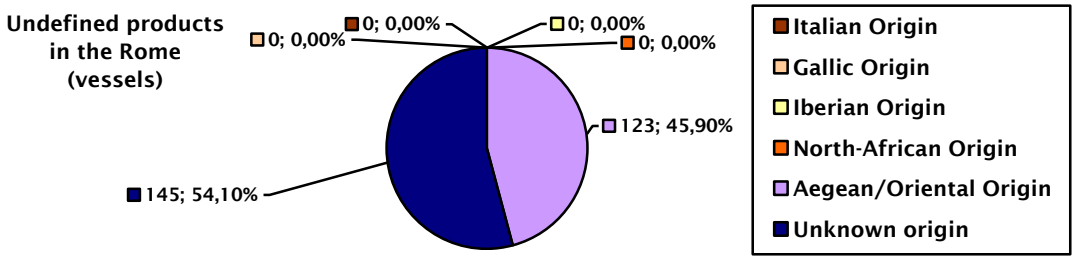


**Fig. 6.28: Amounts and percentages of amphorae with unknown content from various origins in Rome, Hadrianic age.**

Also in Ostia (fig. 6.27) the majority of amphorae containing undefined products consist of fragments without identification of their origin, with also a few unidentifiable forms from Gaul and North-Africa.

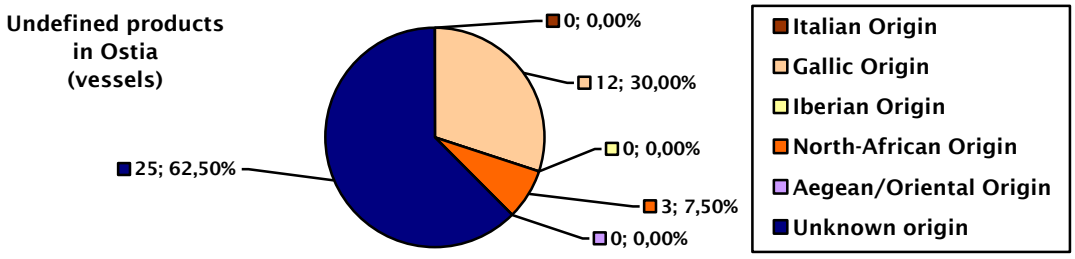


**Fig. 6.29: Amounts and percentages of amphorae with unknown content from various origins in Ostia, Hadrianic age.**

## 6.5 Concluding remarks to the Hadrianic age

During this period (as for the previous one) some residual vessels were found and, for reasons already expressed for the Trajanic age, they are not considered for any assumption.

The amount of vessels in the 'Terme di Elabagalo' is low, but they showed that the majority of wine-amphorae came from the Eastern part of the Mediterranean, followed by Italian containers. This datum is confirmed by finds in Rome which showed different amounts and percentages, but a similar situation. In Ostia, on the contrary, the majority of finds correspond to Italian and Gallic containers, with Oriental ones reaching only third place. Amphorae containing olive oil and fish sauces are still mainly coming from the Iberian Peninsula, although both the 'Terme di Elagabalo' and Ostia offered too low amounts for serious discussions. As for the previous period, also during the Hadrianic age amphorae containing other products were mainly found in Rome (also considering the 'Terme di Elabagalo').

As for the Trajanic age, also the period considered for this Chapter discloses other diversities between Rome and Ostia. The presence of amphorae from the 'Terme di Elagablo' permit to evaluate comparisons. It seems to give information which is coherent to the one offered by Rome, but to the one in Ostia.

# Chapter 7: Chronological periods: the Antonine age

This Chapter considers again all sites: the 'Terme di Elagabalo', elsewhere in Rome (36.44%), and Ostia (63.37%). The total amount of vessels found in contexts pertaining to the Adrianic age reaches the figure of 5,897. The amounts in the 'Terme di Elagabalo' are extremely low (just a 0.19% of the total for the three sites).

## 7.1 'Terme di Elagabalo'

During this period, contexts from this building correspond to phases 12 to 14 (Appendix 2, Tables 10-11). Unfortunately, an extremely small amount of amphorae was discovered (only 14 fragments of walls and two of handles), because this period was radically altered by subsequent activities. The number of vessels is therefore not representative of the period (it reaches only 11 vessels). No graphs will be used, as they would be totally useless. In the following Sections, the found vessels will be described with their amounts, although specific forms were difficultly attributed for the majority of finds. Both Gaul and Unidentified origins are not attested by finds.

### 7.1.1 Italian Origin

Tiber Valley reaches 2 vessels, while other areas are all present with single vessels: a Dressel 2-4 from Campania and unidentifiable forms both from the Tyrrhenian coast and Sicily.

### 7.1.2 Iberian Origin

This origin is attested with two vessels of unidentifiable forms: one from *Baetica* and the other one from *Tarraconensis*.

### 7.1.3 North-African Origin

A single vessel come from Tripolitania, but its original form is unidentifiable.

### 7.1.4 Aegean / Oriental Origin

All 3 discovered vessels belong to unidentifiable forms. They come from different origins: Aegean/Microasiatic area, possibly Pamphilia, and Palestine.

## 7.2 Elsewhere in Rome

Three contexts from Rome are considered for this period:

- *Meta Sudans* (Appendix 2, Table 21): 21.22% of the total for Rome;
- Gianicolo, Phase VIII, US 4, US 401-465 (Appendix 2, Table 28): 74.31%;
- S. Stefano Rotondo, Building A – Room b, Second layer; Levelling layer to build the Church – residuals (Appendix 2, Tables 33-34): 4.47%;

The total amount of vessels for this period is 2,149, while percentages for the various origins can be seen in fig. 8.1. It shows a predominance of Iberian containers, followed by North-African and 'Oriental' ones. Italian amphorae do not surpass 15%, while the two other origins are less attested.

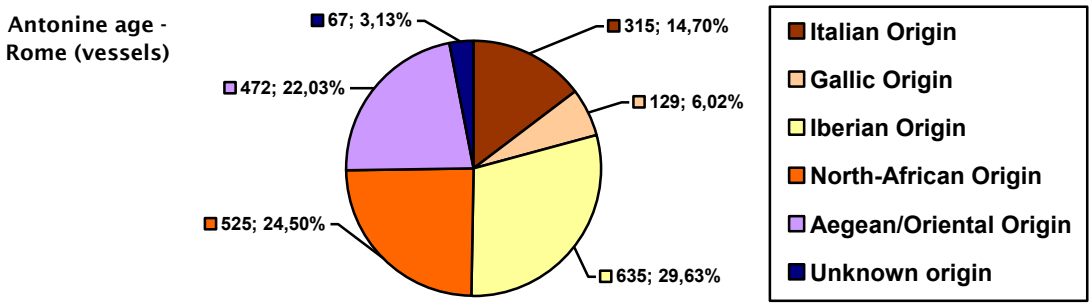


**Fig. 7.1: Amounts and percentages of amphorae from various origins elsewhere in Rome, Antonine age.**

### 7.2.1 Italian Origin

Italy reaches 315 vessels, corresponding to 14.74% of the total. This period has a more diversified situation than the two previous periods (fig. 7.2). Several residual amphorae were found (MGS VI from Campania; MGS VI, Dressel 1, and Dressel 1A from the Tyrrhenian coast). In-phase vessels are headed by 'Anfora di Spello', followed with great distance by *Ostia II*, 522/523 and Dressel 2-4 from the Tyrrhenian coast, while other forms are much less found.

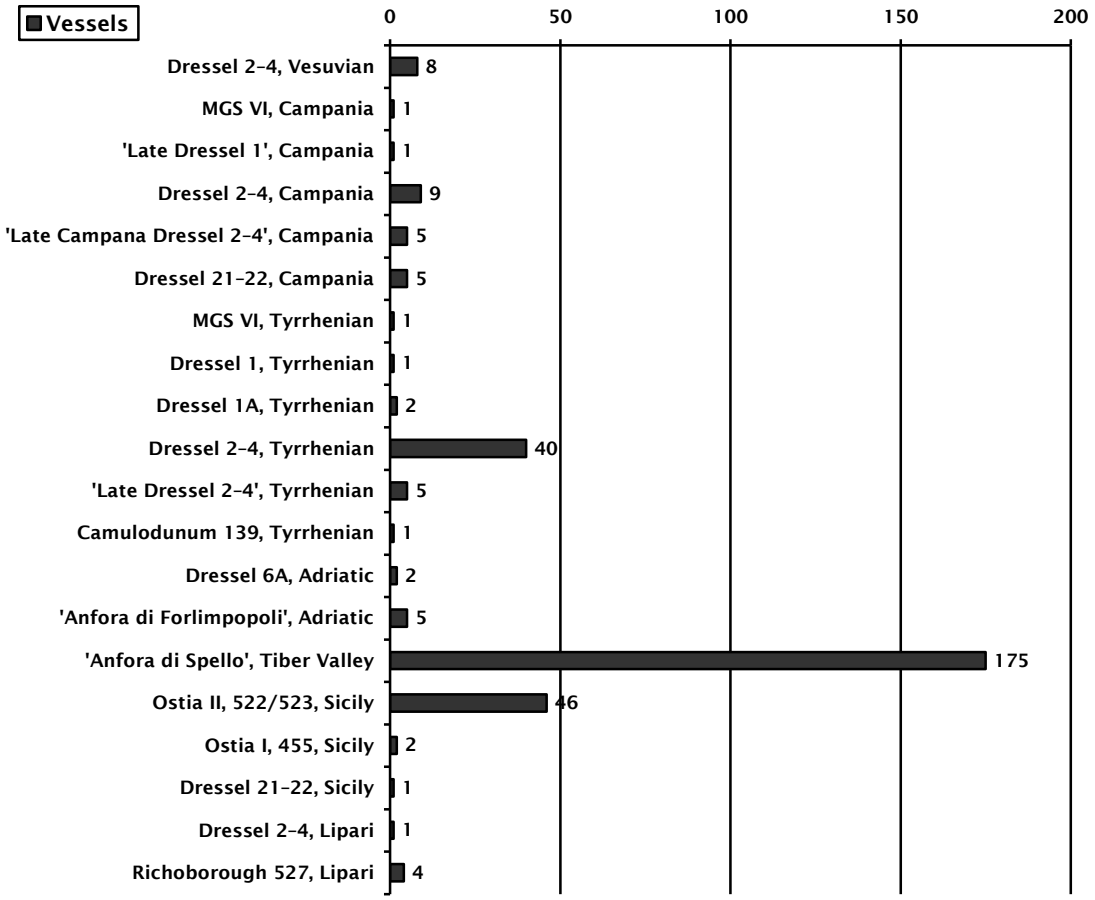


**Fig. 7.2: Elsewhere in Rome. Amounts of Italian amphorae, Antonine age.**

### 7.2.2 Gallic Origin

Gaul reaches 129 vessels, representing 6.02% of the total. It is dominated by the presence of Gauloise 4, followed with a great distance by Unidentified forms with flat bases (fig. 7.3). Among other forms, the discovery of the one called Ferrandes 2008b, fig. 7, 5 (identified for the first time in Via Sacchi) and of an unidentified fragment from Marseille (very likely a residual vessel) is significant.

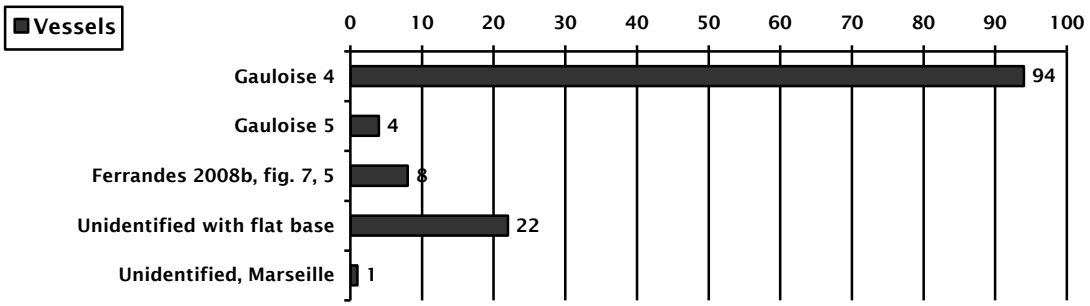


**Fig. 7.3: Elsewhere in Rome. Amounts of Gallic amphorae, Antonine age.**

### 7.2.3 Iberian Origin

Iberian amphorae reach 635 vessels, representing 29.63% of the total. Five vessels of Oberaden 74 from *Tarraconensis* (found during this phase for the first time), 1 vessel of Dressel 12 from *Baetica*, and 13 vessels of the group Dressel 7-11 can be considered residual ones during this period. Unfortunately 17 vessels found in this period were neither ascribed to any form nor to specific origins. Contrarily to already analysed periods, Dressel 14A lead discoveries, surpassing Dressel 20 amphorae which, although still well attested, fall to second place. Noteworthy is the presence, for the first time, of the evoluted sub-forms both of Beltrán IIA and IIB (fig. 7.4).

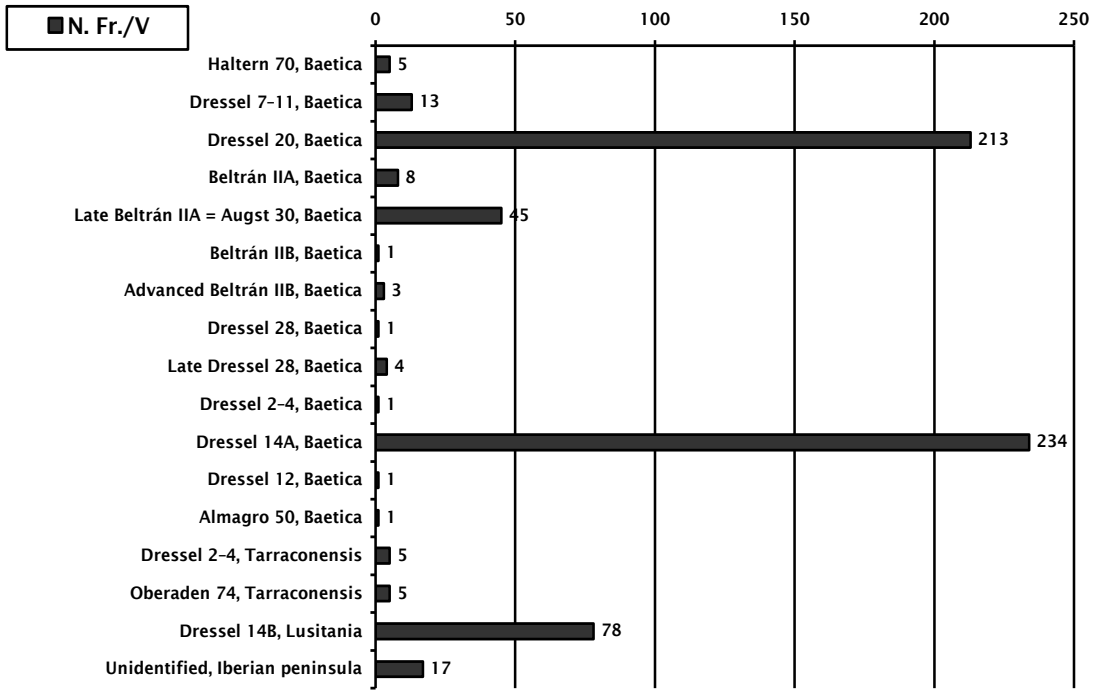


**Fig. 7.4: Elsewhere in Rome. Amounts of Iberian amphorae, Antonine age.**

### 7.2.4 North-African Origin

North Africa reaches 525 sherds, representing 24.50% of the total. North-African amphorae are very diversified (fig. 7.5), with a larger variety of forms than previous periods. Some of them are residual ones: Van der Werff 1 and 2; Ferrandes 2008b, fig. 9, 82; Ferrandes 2008b, fig. 10, 98; 'Pseudo Dressel 1', and Unidentified Punic amphorae. Being them mainly found in Via Sacchi, on the Gianicolo's slopes, they might have entered in these later contexts carried by floods or contained in the earth used for filling the dump, while others might have been part of previous periods of the buildings in which they were found. Africana IIB is an intrusive vessel, as this sub-type

started being produced later[724]. In-phase containers are headed by Africana I, followed by Tripolitanian Mau XXXV. Sherds of Africana IIA and the generic Africana II can be considered dating vessels. Also the presence of *Ostia IV*, 447 (as it is mainly found during the next period) and of Leptiminus I (found for the first time) can be noted.

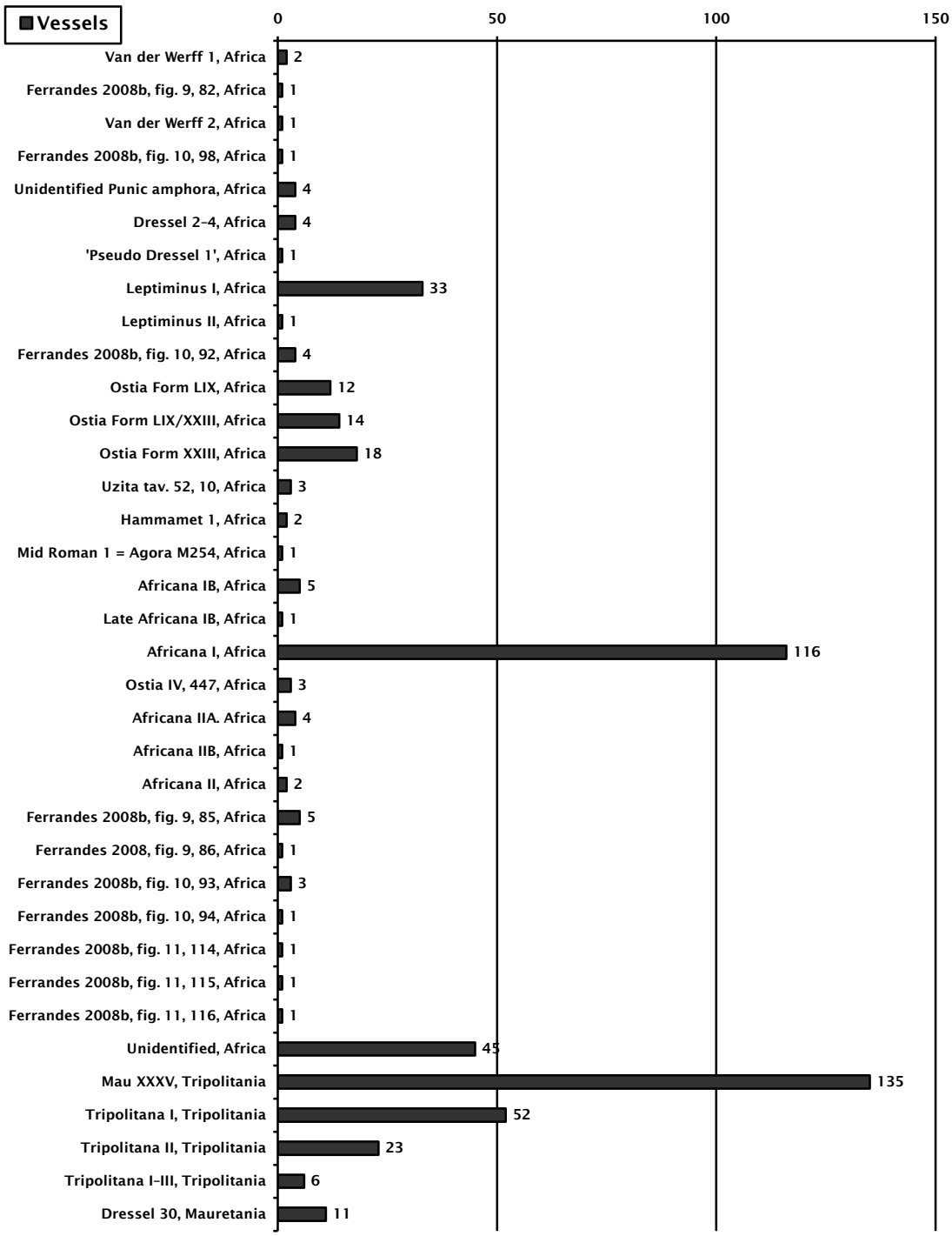


**Fig. 7.5: Elsewhere in Rome. Amounts of North-African amphorae, Antonine age.**

[724] Bonifay 2004a: 111, 114.

### 7.2.5 Aegean / Oriental Origin

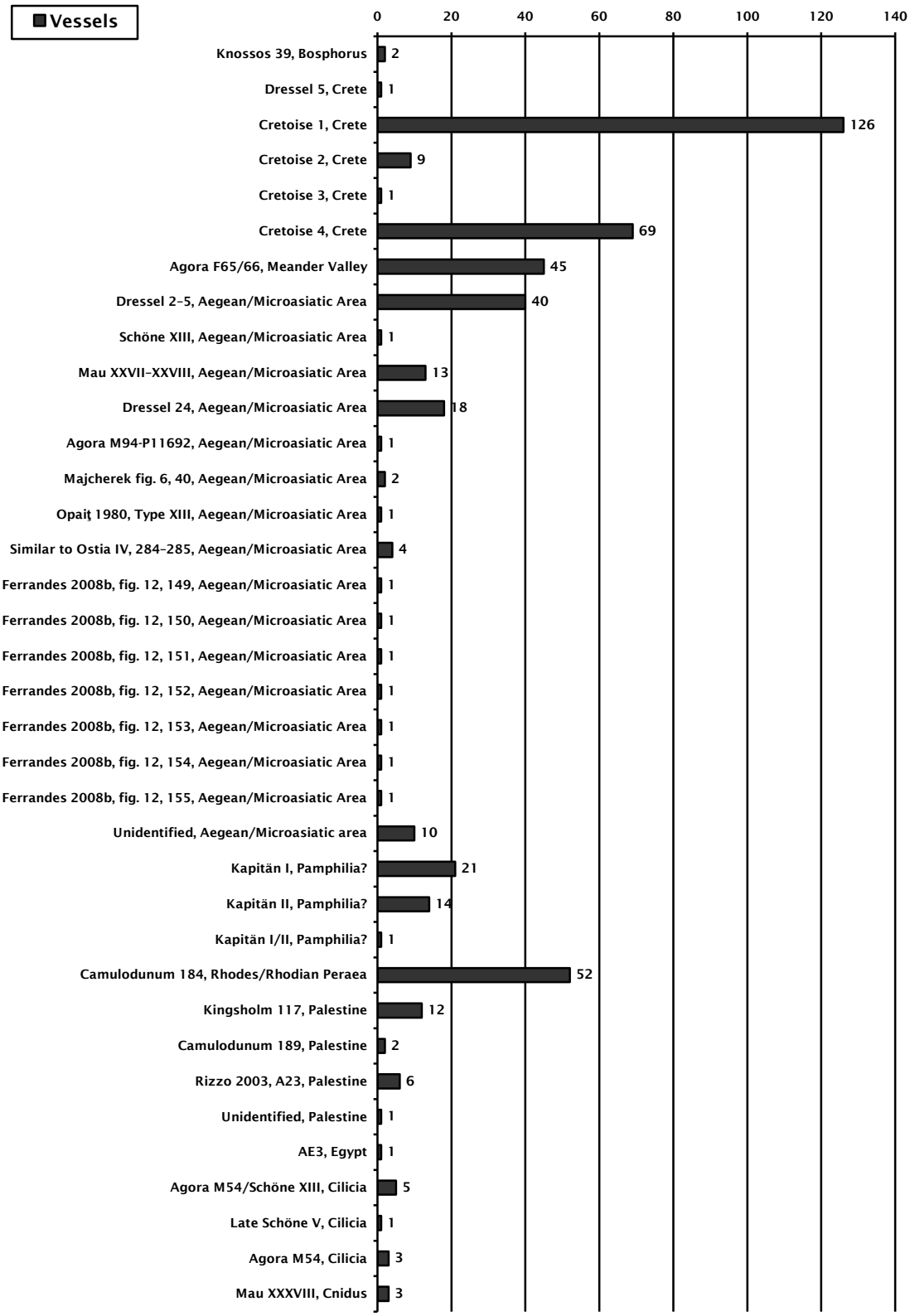


**Fig. 7.6: Elsewhere in Rome. Amounts of 'Oriental' amphorae, Antonine age.**

The Aegean/Oriental basin of the Mediterranean reaches 472 vessels, representing 22.03% of the total. As for other origins, the 'Oriental' amphorae are very

varied (fig. 7.6), with a large variety of in-phase forms. Some of them were identified or found for the first time during the excavations in via Sacchi[725]. Cretoise 1 is the mainly found form, followed by Cretoise 4 and Camulodunum 184. Also Agora F65/66 from the Meander Valley and Dressel 2-5 from the generic Aegean/Microasiatic area are well attested. Other forms are less found, although the presence of the form Knossos 39 can be noticed, as it was found for the first time during this period.

### 7.2.6 Unknown Origin

For 67 fragments no suggestions or identifications for their origin are indicated in publications, representing 3.13% of the total. Some of them lead to clarify new forms, although their origin was not identified. The majority of fragments did not even lead to an identification of the form.

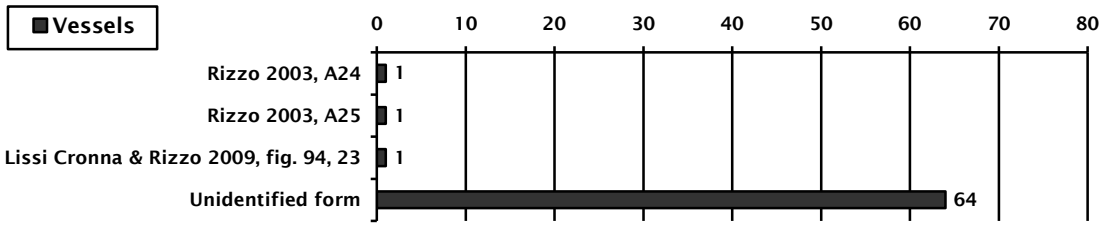


**Fig. 7.7: Elsewhere in Rome. Amounts of amphorae from unknown origins, Antonine age.**

## 7.3 Ostia

For Ostia, the following contexts will be considered here:

- Taberna dell'Invidioso, Period 6, Phase III, Unit II (Appendix 2, Table 43): 0.05%;

- Piazzale delle Corporazioni, Portico Ovest, Unit II with over-excavation of Unit III, Sondage A (Appendix 2, Table 45): 0.21% of the total for Ostia;

- Terme del Nuotatore, Room I, Units III, Sondages α, β, γ; Room VI, Units III; Room VII, Units III, sectors A-B, sewers 49 a, b, c, e, f, g and 50; Room VII, Units IV, sewer 49 g; Area NE, Periods 4 and 5 (Appendix 2, Tables 49, 51, 53-54, 61-62): 97.99%;

- Domus dei Pesci, Period 3, Phase II (Appendix 2, Table 64): 1.74%.

In Ostia, 3,737 vessels of amphorae were discovered, mainly coming from the Terme del Nuotatore (especially from the Area NE which resulted in very large amounts). Fig. 7.8 shows the percentages of these different origins, with a

[725] Ferrandes 2008b, fig. 12, 149-155; Similar to type *Ostia IV*, 284-285; and Agora M94 - P11692.

predominance of North-African containers, followed by Iberian ones. Italian amphorae reach third place, followed by Gallic ones with a small distance. 'Oriental' amphorae are less found, together with Unknown origins.

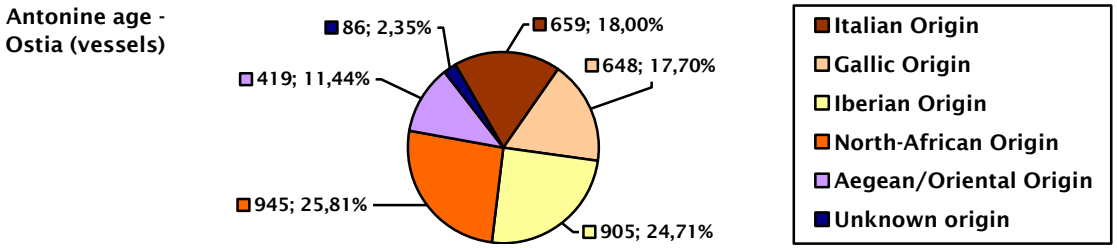


**Fig. 7.8: Amounts and percentages of amphorae from various origins in Ostia, Antonine age.**

### 7.3.1 Italian Origin

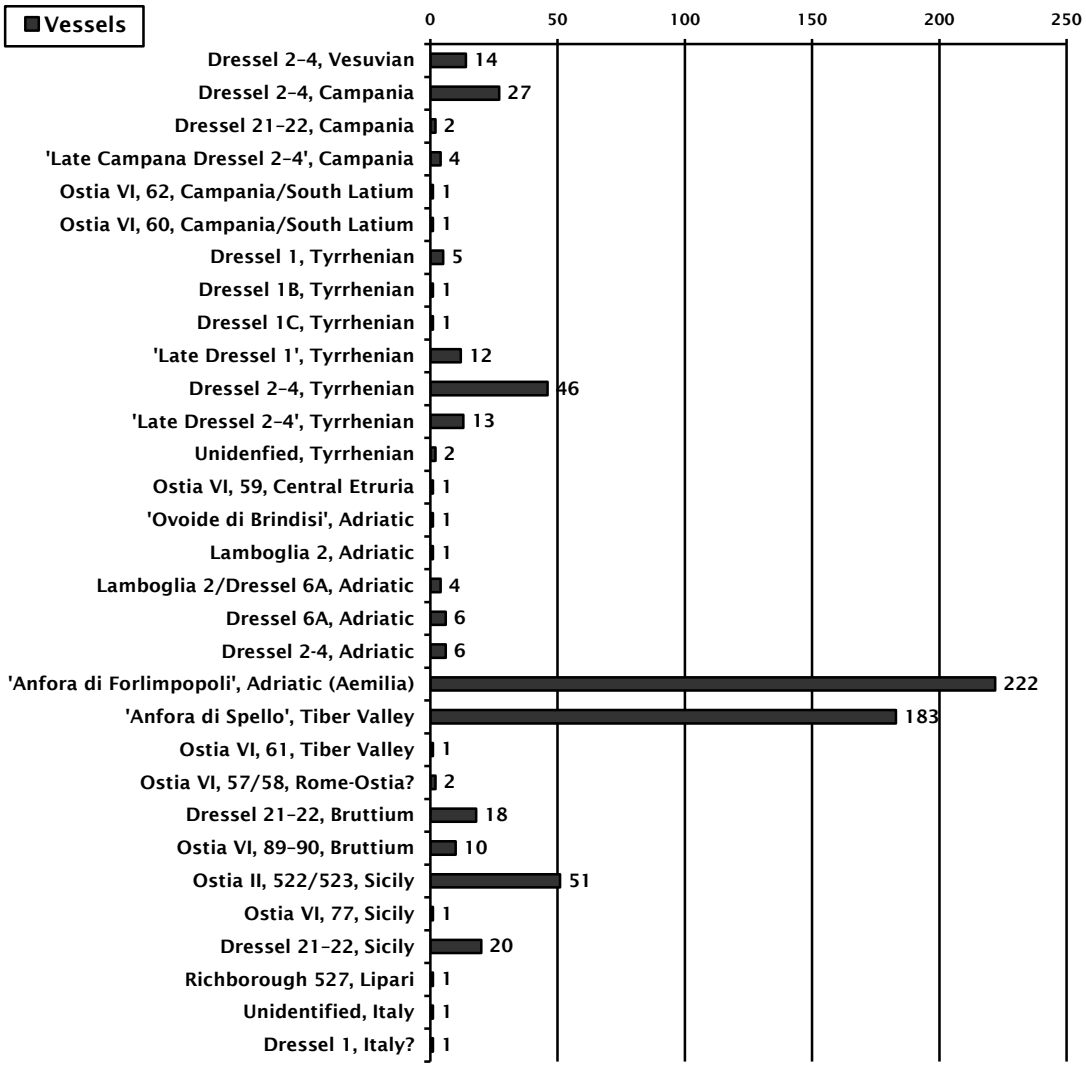


**Fig. 7.9: Ostia. Amounts of Italian amphorae, Antonine age.**

Italy reaches 659 sherds, representing 18.00% of the total. The variety of Italian amphorae is much increased from the previous periods (fig. 7.9). Ten vessels are residual ones: Dressel 1, Dressel 1B, and Dressel 1C from the Tyrrhenian coast; 'Ovoide di Brindisi' and Lamboglia 2 from the Adriatic coast; and Dressel 1 whose specific origin within the Italian peninsula was not mentioned. In-phase amphorae are headed by 'Anfora di Forlimpopoli' and 'Anfora di Spello', while other forms are much less attested. Some forms were identified for the first time during the excavation of the Area NE in the Terme del Nuotatore (*Ostia VI*). Significant is also the presence of some amphorae produced in the *Bruttium* (modern Calabria), as this origin was not found during any of the previous periods.

### 7.3.2 Gallic Origin

*Gallia Narbonensis* reaches 648 vessels, representing 17.70% of the total. Some forms are residual ones, reaching the total of 9 vessels: Gauloise 2/3, Gauloise 3, Gauloie 7, and Dressel 16. In-phase forms are headed by Gauloise 4, followed by Unidentifiable forms and, with great distance, by Gauloise 5. Other forms are much less attested.

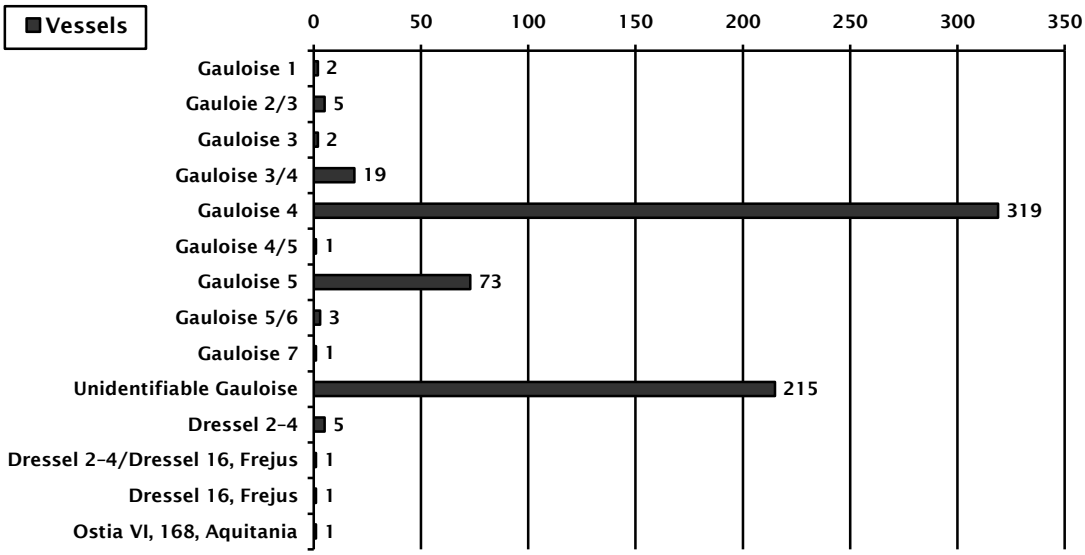


**Fig. 7.10: Ostia. Amounts of Gallic amphorae, Antonine age.**

### 7.3.3 Iberian Origin

The Iberian Peninsula is represented by 905 vessels, being 24.71% of the total. Also from this origin some residual forms were found, reaching a total of 46 vessels. They correspond to Dressel 7-11 and Dressel 12 from *Baetica* and Oberaden 74 from

*Tarraconensis*. Dressel 14A dominate in-phase forms, followed by Dressel 20, Dressel 14B and unidentifiable *garum* amphorae. Noticeable is the presence of a 'Late Dressel 2-4' from *Tarraconesis* and the local imitation of a Gauloise 4, both not found during other periods (fig. 7.10).

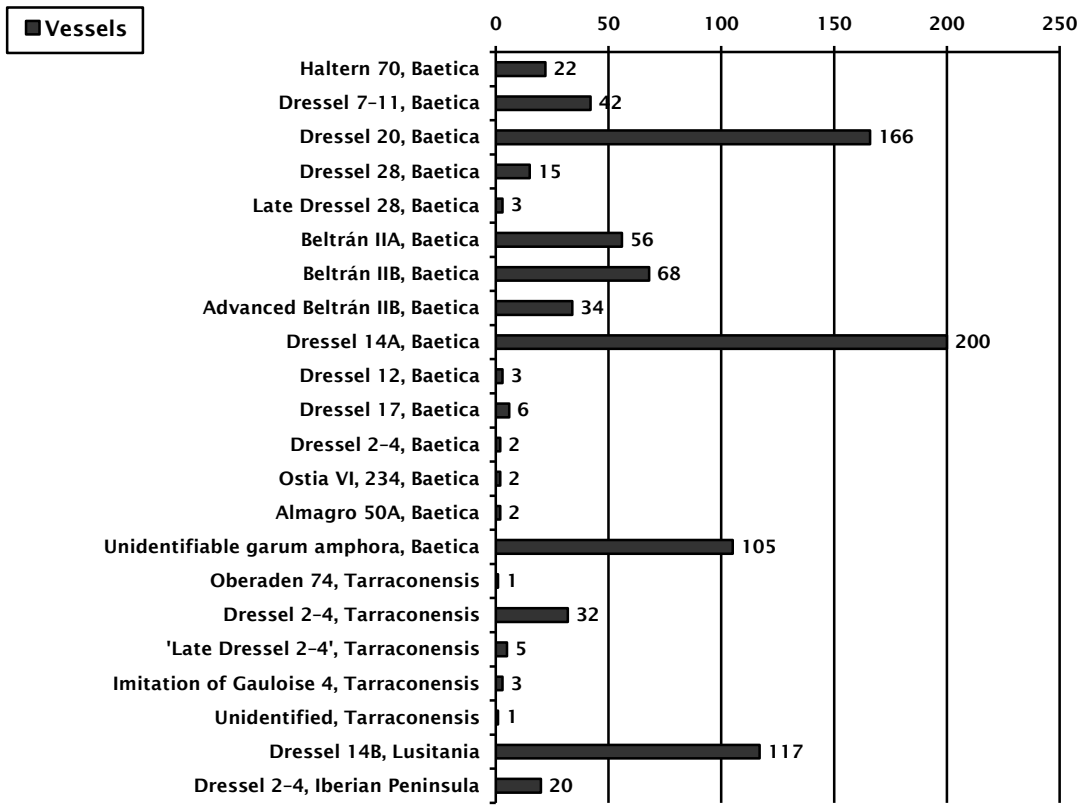


**Fig. 7.11: Ostia. Amounts of Iberian amphorae, Antonine age.**

### 7.3.4 North-African Origin

North Africa reaches 945 vessels, representing 25.81% of the total. This origin shows a large variety of forms, which is itself noticeable, with again many of them identified for the first time in the Area NE of the Terme del Nuotatore (*Ostia VI*). A considerable amount (81) of residual vessels was also found. They belong to the forms: Maña 1951, C2; Van der Werff 1, 2, and 3; Oberaden fig. 24, n. 5; Vindonissa 592; Mau XL; *Ostia VI*, 310; Carthage Early Amphora IV; Dressel 18; *Ostia VI*, 341; Dressel 26; and Unidentified Punic amphorae. The so-called 'Pre-African' forms (Ostia Forms LIX, XXIII, and those situated in between of the two) dominate in-phase vessels, followed by Mau XXXV. Unfortunately for 58 vessels a better origin than a generic North Africa was not recognised. Significant is the presence of Mid Roman 8 amphorae manufactured in Cyrenaica, found during this period for the first time.

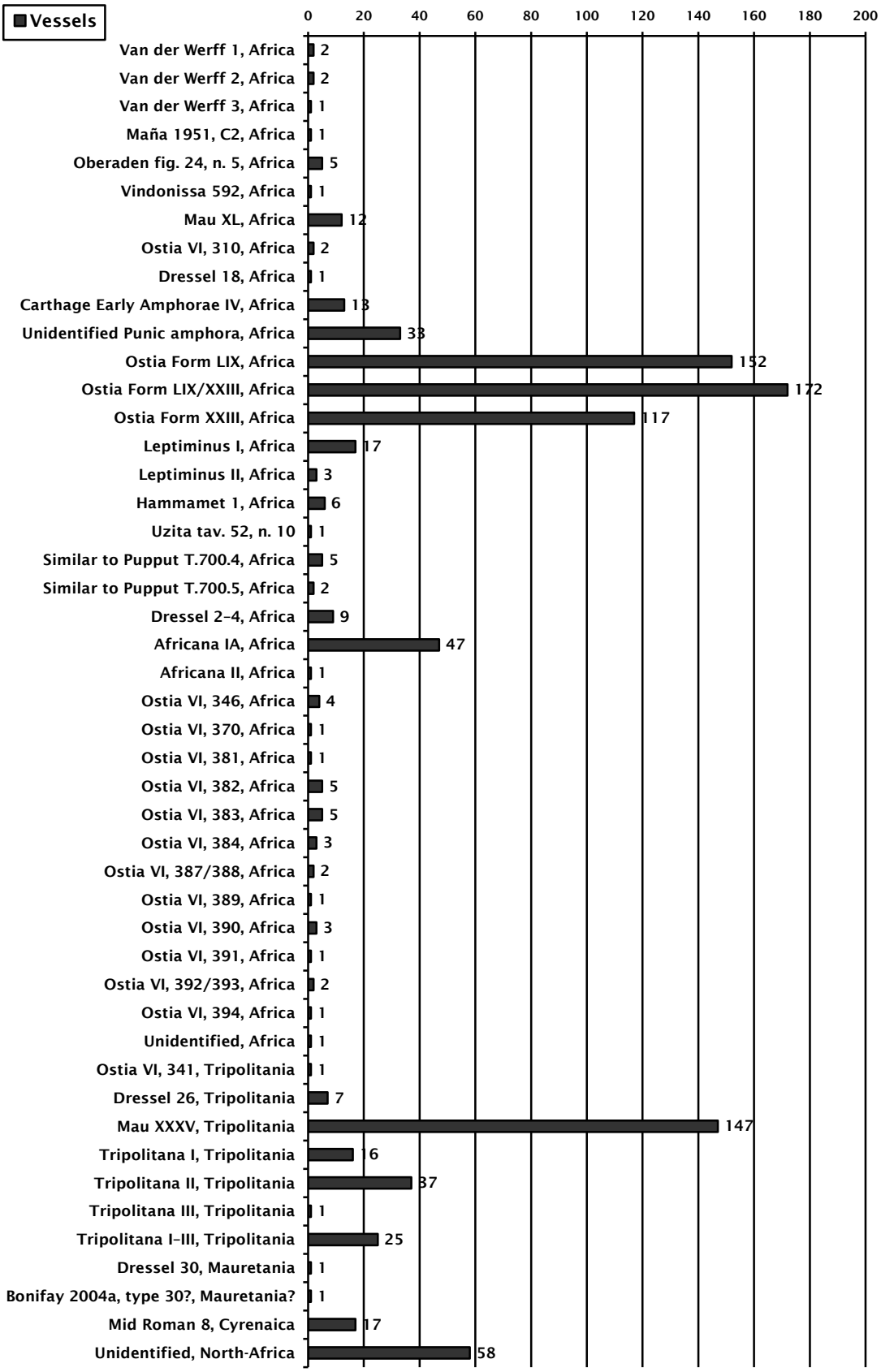


**Fig. 7.12: Ostia. Amounts of North-African amphorae, Antonine age.**

### 7.3.5 Aegean / Oriental Origin

The Eastern Mediterranean reaches 419 vessels, representing 11.44% of the total. This 'Oriental' situation is extremely varied and, for this reason, it requires a division into two figures so as to include all forms that can be considered in-phase ones (figs. 7.13-14). Once more many forms were identified for the first time in the Area NE of the Terme del Nuotatore (*Ostia VI*). Noticeable is also the presence of many forms originally coming from the Bosphorus, Cyprus, and Lebanon as these origins were not found during previous periods.

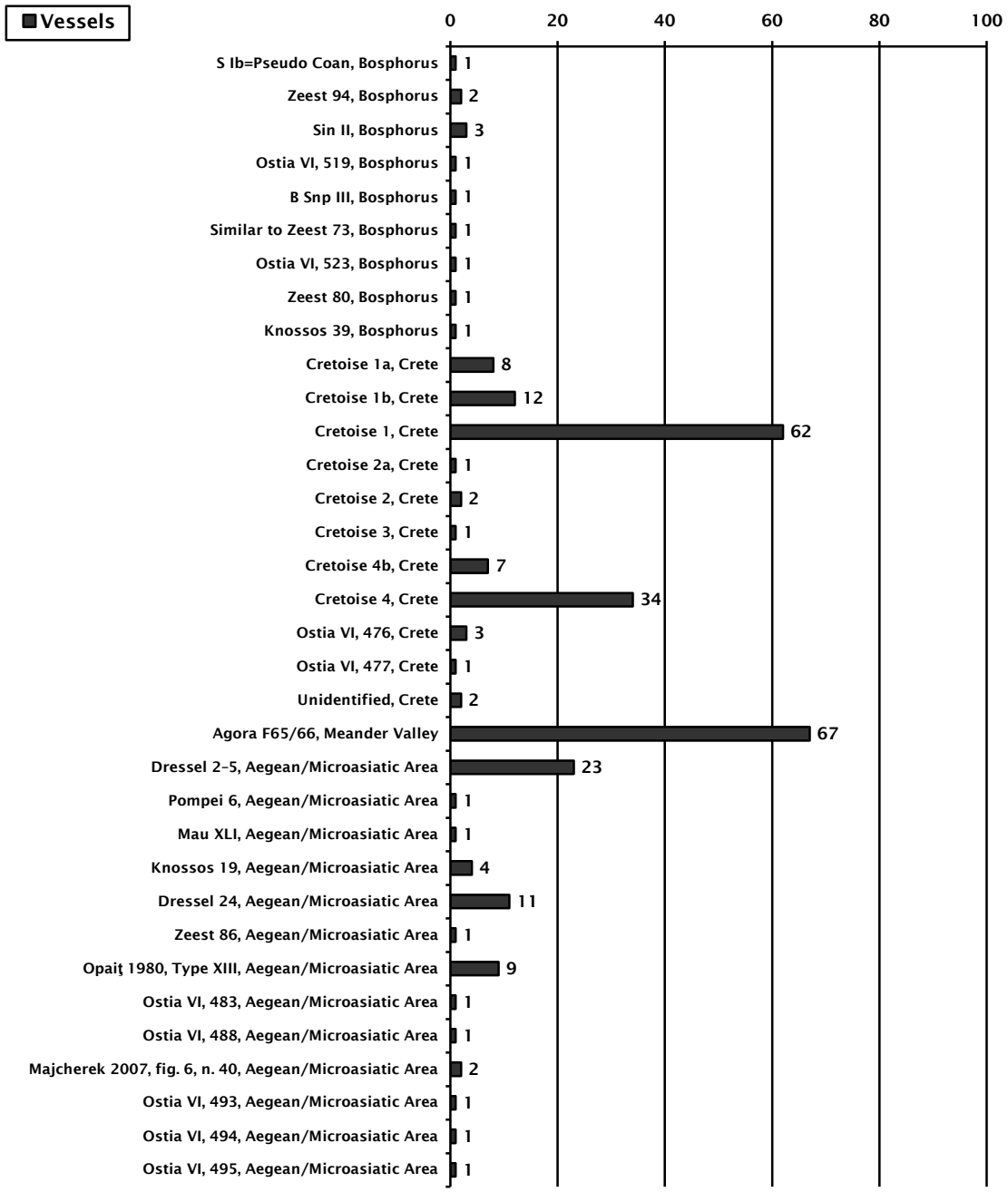


**Fig. 7.13: Ostia. Amounts of 'Oriental' amphorae, Antonine age. Part 1.**

Eastern Mediterranean vessels are headed by Rhodian Camulodunum 184, followed by Agora F65/66 from the Meander Valley and Cretoise 1 amphorae, while other forms are much less found with the exception of Unidentified Aegean/Microasiatic amphorae with 39 vessels and Cretoise 4 with 34 vessels.

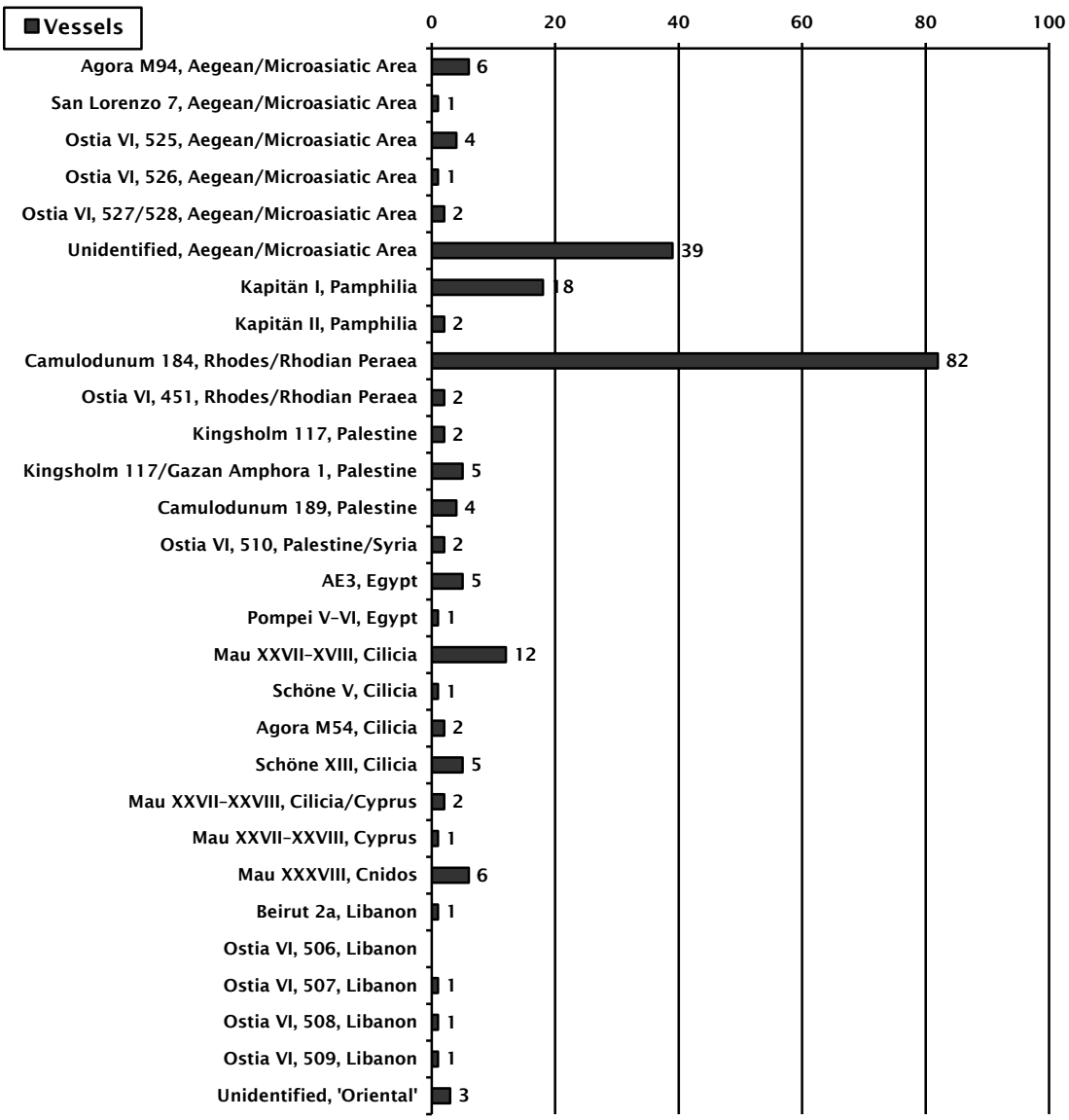


**Fig. 7.14: Ostia. Amounts of 'Oriental' amphorae, Antonine age. Part 2.**

### 7.3.6 Unknown Origin

For 86 fragments no origin was suggested nor was it possible to be identified, representing 2.35% of the total. Many forms were discovered for the first time in the respective publications, although their origin was not recognised. However, the majority of vessels belong to unidentified forms (fig. 7.15).

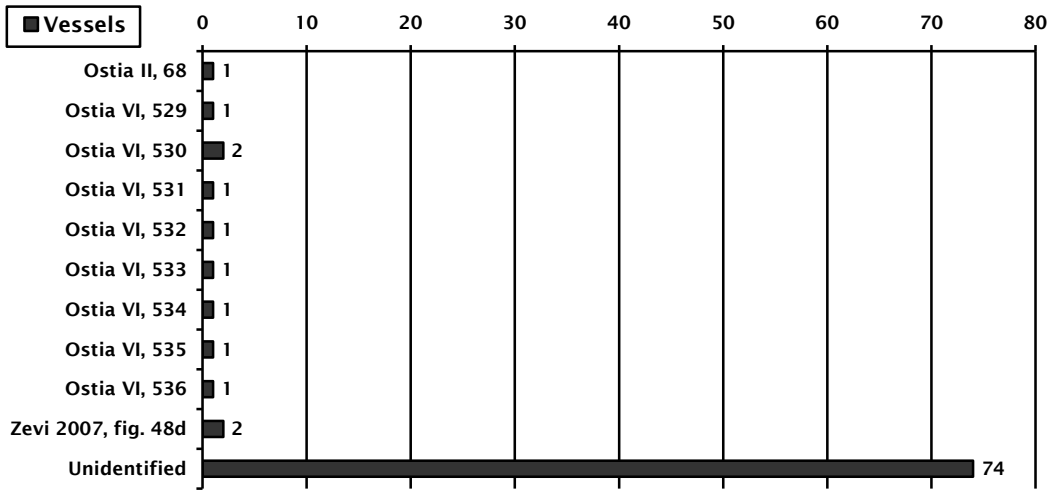


**Fig. 7.15: Ostia. Amounts of amphorae from unknown origins, Antonine age.**

## 7.4 Foodstuffs traded and their origin

As for previous Chapters, this Section will offer a brief and general view of various traded foodstuffs, considering vessels offered by Rome and Ostia. The amounts from the 'Terme di Elagabalo' will be included in the graphs about Rome, as they are too low and cannot lead to any assumption. Residual and intrusive amphorae will not be considered.

### 7.4.1 Wine

The majority of amphorae containing wine in Rome (fig. 7.16) come from the Eastern part of the Mediterranean with more than 43% (seriously decreased from the Hadrianic age). Italian ones reach almost 40% (increased from previous period). Other origins are less attested, apart from Gaul that exceeds 10% (slightly increased from the Hadrianic age).

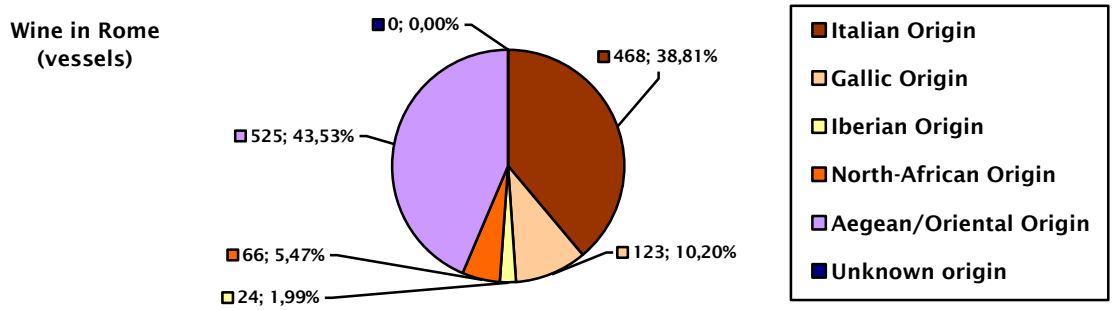


**Fig. 7.16: Amounts and percentages of wine-amphorae from various origins in Rome, Antonine age.**

In Ostia (fig. 7.17) Italian amphorae reach a prevailing presence, with more than 36%. They are followed by Gallic containers and by Eastern Mediterranean ones which, contrarily to Rome, reach only third place. North Africa and Iberia show lower amounts, as arealy seen in Rome.

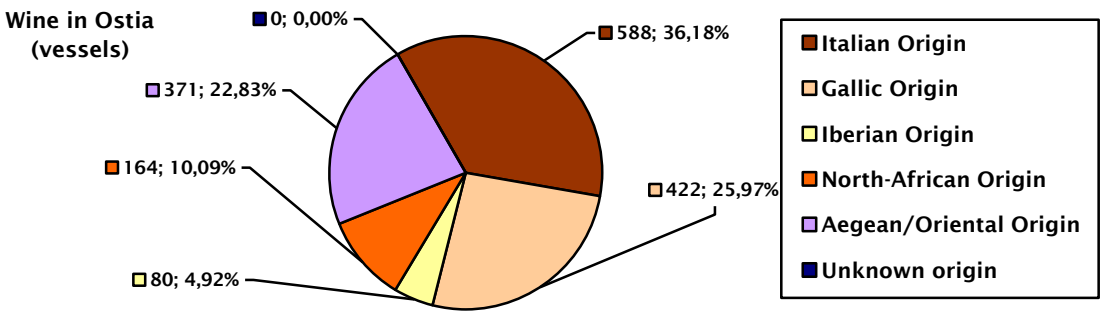


**Fig. 7.17: Amounts and percentages of wine-amphorae from various origins in Ostia, Antonine age.**

### 7.4.2 Oil

Amphorae containing olive oil in Rome (fig. 7.18), contrarily to previous periods, come predominantly from North Africa (surpassing 50% of finds), although *Hispania* is still well attested with about 43%. The presence of an almost 4% of 'Oriental' containers is noticeable because during the Hadrianic age (cf., above, fig. 6.23) the majority of finds belonged to this origin.

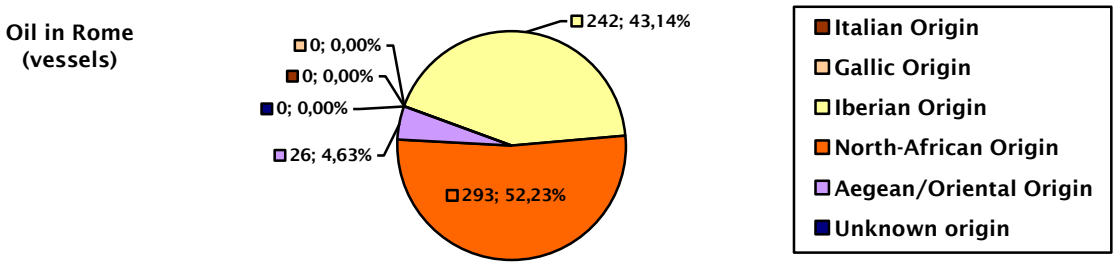


**Fig. 7.18: Amounts and percentages of amphorae containing olive oil from various origins in Rome, Antonine age.**

In Ostia (fig. 7.19), although data cannot be compared with the Hadrianic age because it gave too low amounts, the situation is similar. The prevailing presence of North-African amphorae becomes more evident than Rome (74%). Iberian ones still reach second place. 'Oriental' containers are still attested with a lower amount.

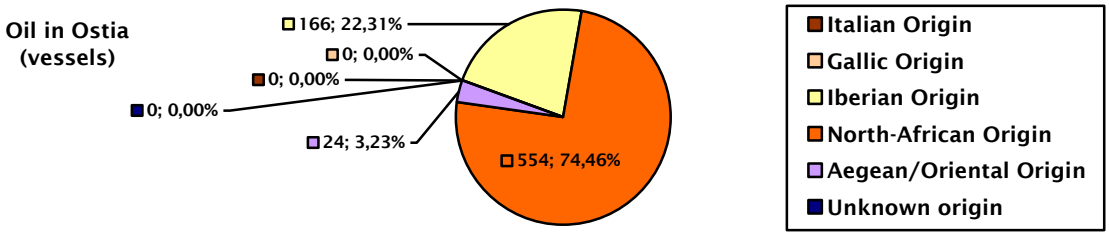


**Fig. 7.19: Amounts and percentages of amphorae containing olive oil from various origins in all sites, Antonine age.**

### 7.4.3 Fish sauces

In Rome (fig. 7.20) amphorae containing fish sauces are dominated by *Hispania* with almost 85% of finds. North Africa is relatively well represented with 14% (increased from the Hadrianic age). Some Italian containers were found too, only reaching 1%. Containers from Gaul disappear, comparing data with both previous periods.

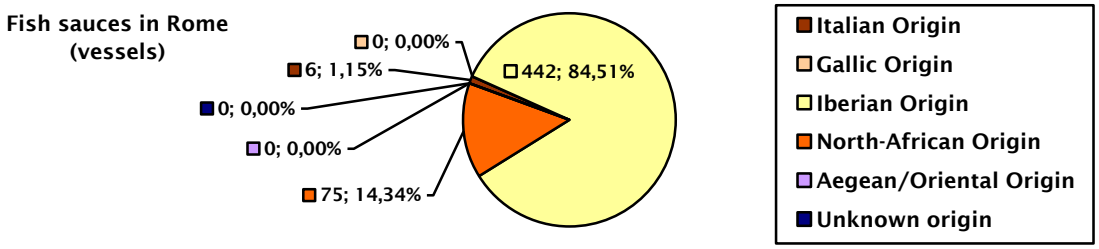


**Fig. 7.20: Amounts and percentages of amphorae containing fish sauces from various origins in Rome, Antonine age.**

This Iberian supremacy is also clearly visible in Ostia (fig. 7.21) with a similar percentage compared to Rome and with a decrease from the previous period. North-African and Italian amphorae are, on the contrary, increased from the Hadrianic age. The latter ones are more found and the former ones are less found than in Rome. Also very small quantities of Gallic and Oriental containers were found, although with negligible percentages.

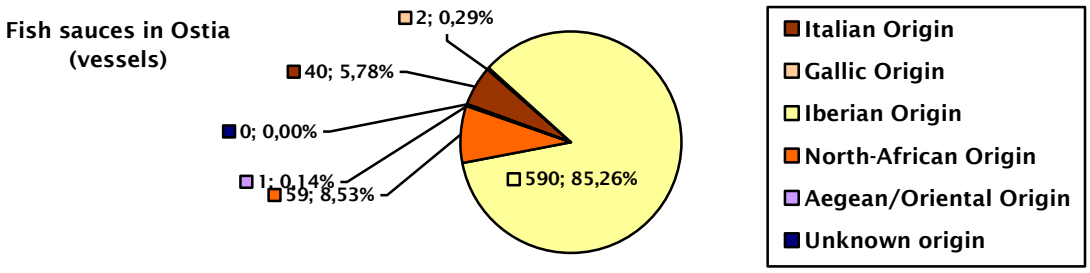


**Fig. 7.21: Amounts and percentages of amphorae containing fish sauces from various origins in Ostia, Antonine age.**

### 8.4.4 Other products

As for other periods, some amphorae contained different products than the ones described above (fig. 7.22): Alum container Richborough 527 from Lipari, Haltern 70 amphorae containing *defrutum*, and Camulodunum 189 transporting dates from Palestine. They are both found in Rome and Ostia. While Alum was found mainy in Rome, dates and above all *defrutum* were found mainly in Ostia.

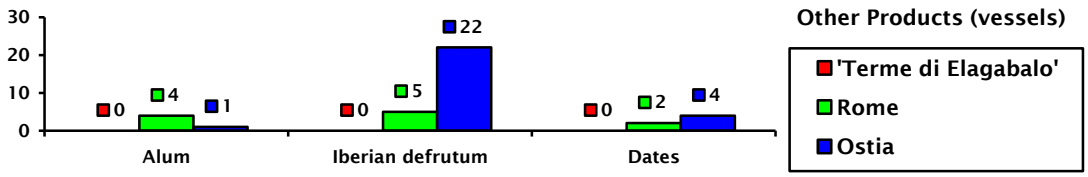


**Fig. 7.22: Amounts of amphorae containing other products found in all sites, Antonine age.**

### 8.4.5 Undefined products

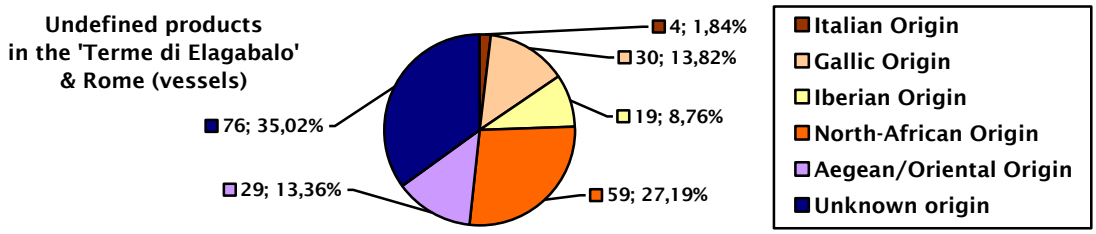


**Fig. 7.23: Amounts and percentages of amphorae with unknown content from various origins in the 'Terme di Elagabalo' and Rome, Antonine age.**

In the 'Terme di Elagabalo' and Rome (fig. 7.23) the majority of unknown products are contained in amphorae whose origin was not identified (although much decreased from the previous period). Other vessels mainly consist of unidentified forms. They are headed by North-African amphorae, followed by 'Oriental' (decreased from the Hadrianic age), Gallic, and Iberian ones. Italian ones are less represented.

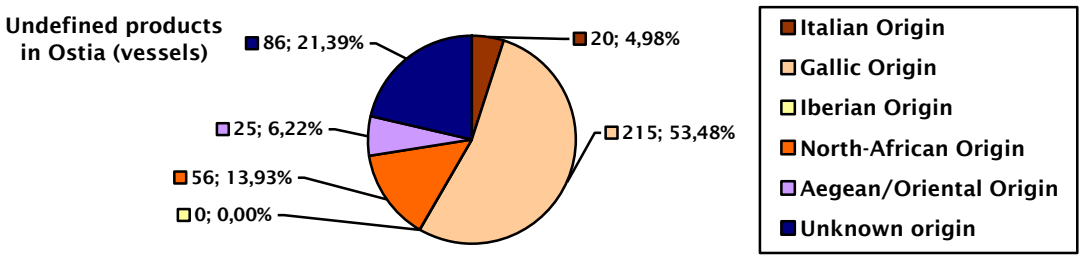


**Fig. 7.24: Amounts and percentages of amphorae with unknown content from various origins in Ostia, Antonine age.**

In Ostia (fig. 7.24) a little more than 21% of the amphorae whose content is not known is represented by unidentified origins. Among identified origins, Gallic amphorae are the majority (53%, increased from the Hadrianic age). North-Africa, the Eastern part of the Mediterranean, and Italy are less attested (although much increased from the previous period).

## 7.5 Concluding remarks to the Antonine age

During the Antonine age, the situation becomes more varied than the previous periods, with again several residual and a few intrusive vessels which were not considered in the brief analysis about traded products. Being the amounts in the 'Terme di Elagabalo' insufficient for understanding the period, comparisons with sites elsewhere in Rome had been fundamental. This period shows largest amounts and diversities of amphorae, not only in Rome (above all for the discoveries in Via Sacchi), but also in Ostia (especially for the quantities in the so-called Area NE of the 'Terme del Nuotatore').

In the period relevant to this Chapter these two cities showed some contrasting data, especially looking at wine and other products. In Rome the majority of amphorae containing wine come from the Eastern part of the Mediterranean, with Italian ones on second place. In Ostia Italian containers are prevailing with 'Oriental' ones only on third place surpassed by Gallic ones. Other products were found in both cities, but while containers for *defrutum* and even dates were mainly found in Ostia, those containing alum were mainly found in Rome. On the other hand, amphorae containing olive oil and fish sauces show similar trends in these two cities. In both of them there is a predominance of North-African vessels for those containing olive oil, while Iberian ones arriving only on second place. This latter origin is prevailing among amphorae containing fish sauces in both cities, while North-African ones are less attested.

Therefore, as for previously analysed periods and although the 'Terme di Elagabalo' unfortunately does not add information to this period, even the Antonine age reveals other significan differences between Rome and Ostia.

# Chapter 8: Chronological periods: the Severan age

Once again, almost all sites are considered for the Severan age: the 'Terme di Elagabalo' (34.98% of the total, declaring its importance during this period), elsewhere in Rome (41.22%), and Ostia (23.80%). The total amount of vessels for this period reaches the figure of 1,924 for all cities and sites.

## 8.1 'Terme di Elagabalo'

From this building, Phases 15 to 24 (Appendix 1, Tables 12-19) will be considered. These phases are related to the creation of a new building, made through the destruction of the Hadrianic one and a large addition of earth in order to level floors and bring the whole building to the same higher level (cf., above, Chapter 1). These activities resulted in a very large amount of fragments from different origins, with a significan diversity of forms and a few of them can also be considered rather rare.

The total amount of fragments coming from these phases is 39,342 while the number of vessels is reduced to 673. Fig. 8.1 shows percentages of the various origins, with a predominance of 'Oriental' and North-African vessels.

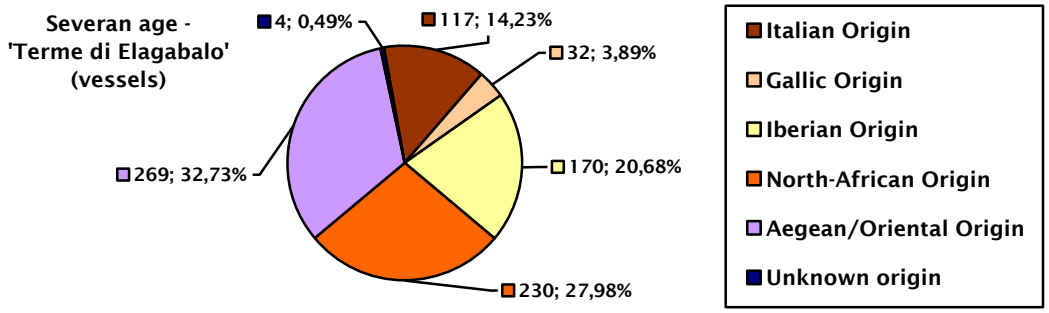


**Fig. 8.1: Amounts and percentages of amphorae from various origins in the 'Terme di Elagabalo', Severan age.**

### 8.1.1 Italian Origin

Italian amphorae reach 117 vessels, representing 14.23% of the total. The 'Terme di Elagabalo' during this period offers a much more varied picture of forms and sub-origins (fig. 8.2) than the previous periods. Eleven vessels are residual ones: a Dressel

1 and a Dressel 1B from Campania; 3 Dressel 1 (2 unidentifiable types and 1 drawn type Table **I**, **4**), 2 MGS II (type Van der Mersh 1994: 66, B = Table **I**, **3**), 1 MGS V (type Costantini & Ghizzani Marcìa 2004, fig. 1,3 = Table **I**, **1**), and 2 unidentifiable MGS from the Tyrrhenian coast; and MGS VI from the Tiber Valley (type Molina Vidal 2008, tav. II, CP.180.562 = Table **I**, **2**) whose adjacent fragments come from two different phases. A single vessel, found only with a fragment of handle, may be a Lamboglia 2 or a Dressel 6A and for this reason it cannot be surely considered a residual vessel, as it may be an in-phase one.

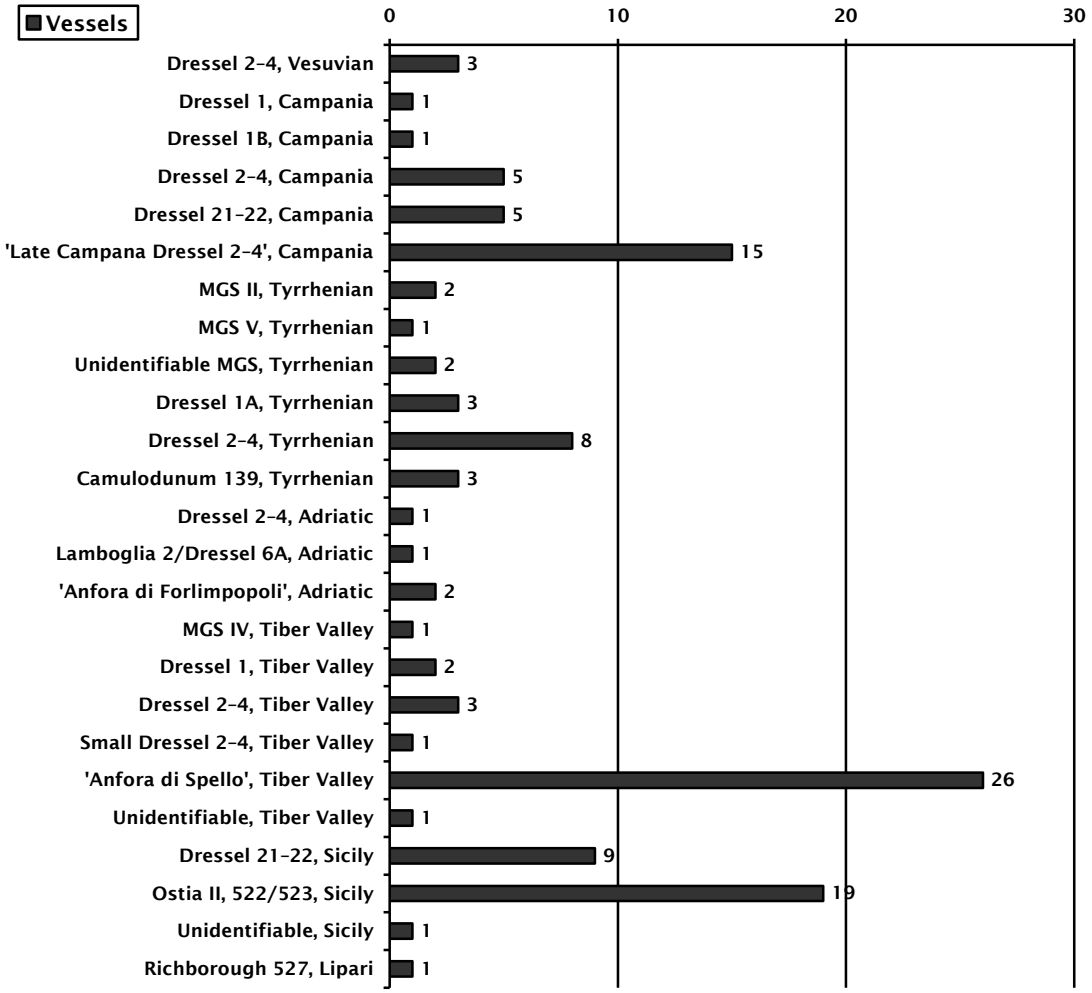


**Fig. 8.2: 'Terme di Elagabalo'. Amounts of Italian amphorae, Severan age.**

Those vessels that can be surely considered in-phase ones belong to many forms and types. The mostly found (29 vessels) is the so-called 'Anfora di Spello' with many types: *Ostia II*, 521 (7 vessels, cf. Table **II**, **19**, **20**, **22**, and **28**); *Ostia III*, 369 (7 vessels, cf. Table **II**, **21**, **24**, **25**, and **27**); *Ostia III*, 370 (4 vessels, cf. Table **II**, **23**); Ferrandes 2008b, fig. 6, 41 (2 vessels); and 6 unidentifiable ones. It is followed by *Ostia II*, 522/523 from Sicily (19 vessels) with several types: Ferrandes 2008b, fig. 7,54 (5 vessels, cf. Table **II**, **17-18**); *Ostia II*: 632, 44 (2 vessels); Peña 1999, fig. 9, 010 (1

vessel = Table **II**, **16**); and 11 unidentifiable ones. 'Late Campana Dressel 2-4' is the third this in this order (15 vessels) with the types: Ferrandes 2008b, fig. 6, 46 (12 vessels = Table **II**, **30-33**; Table **III**, **34**, **36-41**, and **43**), the drawn type Table **III**, **35** and **42** (1 vessel each), and an unidentifiable one. Dressel 21-22 from Sicily reaches 9 vessels, with the types: *Ostia II*, 570 (2 vessels); two unidentifiable vessels; and, with one vessel each, González Muro 2006, fig. 28 (Table **I**, **12**), fig. 32a (Table **I**, **15**), fig. 32b (Table **I**, **14**), and fig. 32d (Table **I**, **13**). Dressel 2-4 from the Tyrrhenian coast reach 8 vessels with the types: Martin-Kilcher 1994, 2097 (2 vessels, cf. Table **I**, **6**), 2108, 2053, 2055, 2088 (Table **I**, **7**), a drawn type (Table **I**, **5**), and an unidentifiable type (all with 1 vessel each). Both the forms Dressel 2-4 and Dressel 21-22 from Campania were discovered with 5 vessels. The first was found with the types Ferrandes 2008b, fig. 3,8 (2 vessels) and 3,4 (1 vessel); Martin-Kilcher 1994, 2099 (Table **I**, **8**) and 2133 (1 vessel each); and an unidentifiable type (1 vessel). The latter was found with unidentifiable types. With 3 vessels each were found: Dressel 2-4 from the Vesuvian area (unidentifiable types); Camulodunum 139 (unidentifiable types); and Dressel 2-4 from the Tiber Valley (2 unidentifiable types and 1 type Molina Vidal 2008, tav. III, CP.218.375 = Table **I**, **9**). Two 'Anfora di Forlimpopli' were found too, but only one was identifiable with the type Panella 2001b, tav. 3, 21. Dressel 2-4 from the Adriatic coast (type Martin-Kilcher 1994, 2055), a Small Dressel 2-4 from the Tiber Valley (drawn type Table **I**, **10**), and a not better identifiable Richborough 527 from the island of Lipari were all found with single vessels. Other unidentifiable vessels were also found: 2 from Sicily, 1 from Campania, and 1 from the Tiber Valley.

### 8.1.2 Gallic Origin

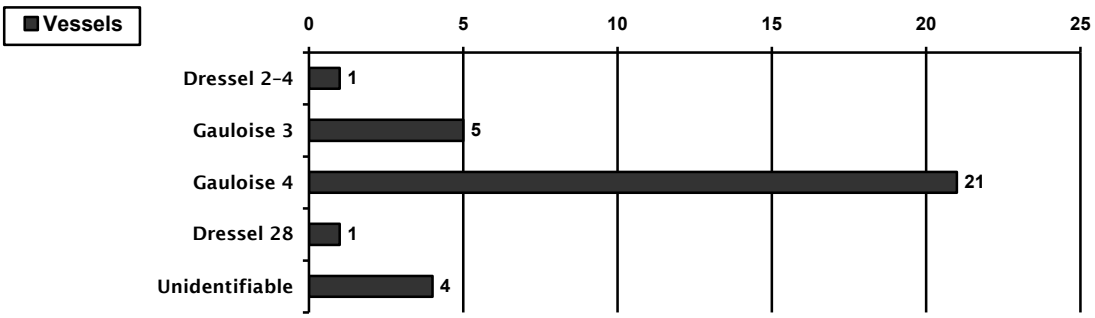


**Fig. 8.3: 'Terme di Elagabalo'. Amounts of Gallic amphorae, Severan age.**

Thirty-two vessels come from Gaul, representing 3.89% of the total. This Gallic situation reflects a usual characteristic: a few forms, not extremely large quantities, and especially wine content (fig. 8.3). The most present is Gauloise 4 with 21 vessels all given by the typology of Martin-Kilcher 1994: 2705 (Table **IV**, **54**), 2797 (Table **IV**, **55**), 2974 (Table **III**, **48**), and 3020 (2 vessels each); 2638 (Table **IV**, **53**), 2640 (Table

**IV**, **57**), 2646, 2649 (Table **III**, **50**), 2667 (Table **III**, **45**), 2668 (Table **III**, **46**), 2710 (Table **IV**, **52**), 2732, 2747 (Table **III**, **49**), 2977 (Table **IV**, **51**), 3064 (Table **IV**, **58**), 3083 (Table **III**, **47**), and 3116 (1 vessel each). It is followed by Gauloise 3 with 5 vessels, all belonging to the possible variety identified in these contexts for the first time (cf., below, Appendix 1, Section 1.2.1) which cannot lead to define them residual vessels, as the general chronology of this form would suggest (drawn types: Table **IV**, **61–63**). Both the local imitation of Dressel 2–4 and Dressel 28 were discovered with one fragment each of unidentifiable types. Unfortunately 4 vessels were not identifiable, being found with handles and bases only.

### 8.1.3 Iberian Origin

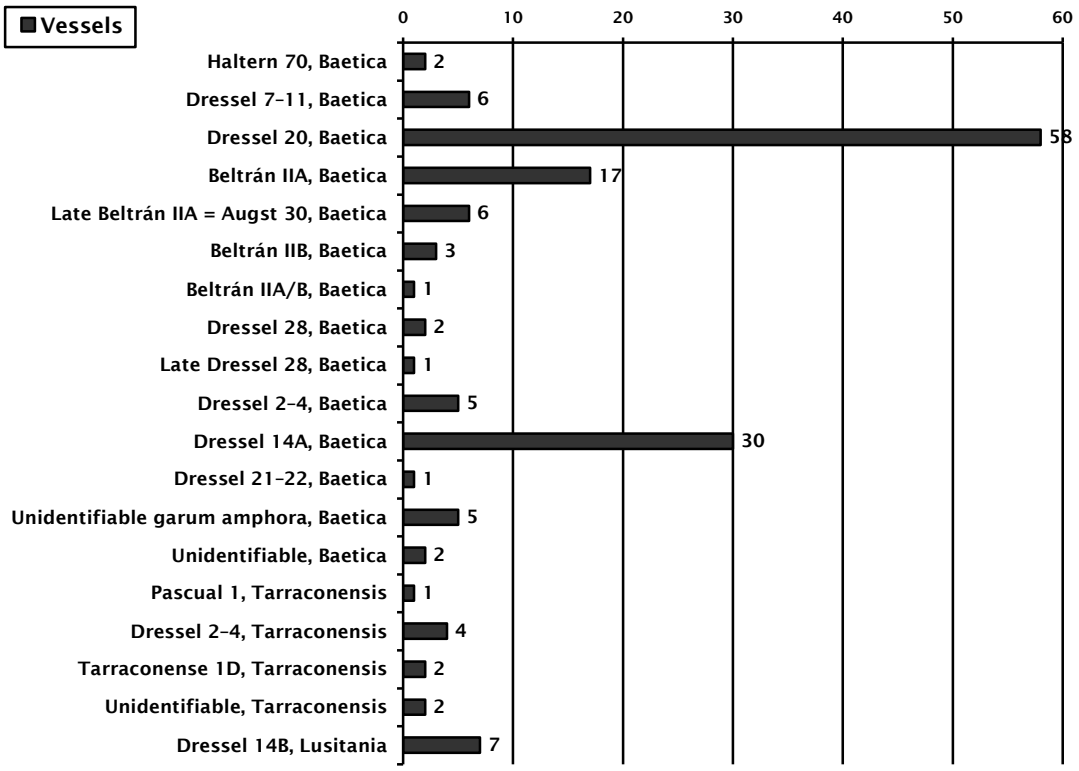


**Fig. 8.4: 'Terme di Elagabalo'. Amounts of Iberian amphorae, Severan age.**

The Iberian Peninsula reaches 170 vessels (fig. 8.4), representing 20.68% of the total, with a larger variety of forms compared with previous periods. Only 9 vessels can be considered residuals ones: 6 vessels of baetican Dressel 7–11 (4 unidentifiable types and 2 of the drawn type Table **VII**, **104)**, 2 vessels of Tarraconense 1D (with the type López Mullor & Martín Menéndez 2008, fig. 2, 11 = Table **IX**, **142–143**) and a single vessel of a not better identifiable Pascual 1.

In-phase amphorae are dominated by a very large amount of Dressel 20 (58 vessels) with a consequent large amount of types, given following the typology of Martin-Kilcher 1987: 604 (cf. Table **V**, **73** and Table **VI**, **96**); 673 (Table **V**, **74**, **76**, **78–79**) with 4 vessels; 561 (Table **V**, **71**, **72**, **75**), 599 (cf. Table **VI**, **83**, **90**), 971 (cf. Table **VI**, **98**), and 978 with 3 vessels; 469 (cf. Table **VI**, **87**), 550, 672 (Table **V**, **70** and Table **VII**, **100**), and 981 (cf. Table **VI, 95**), with 2 vessels; 351 (Table **VII**, **99**), 400 (Table **V**, **66**), 404, 464 (Table **VI**, **97**), 470 (Table **VI**, **72**), 557 (Table **VI**, **92**), 559, 565 (Table **VI**, **81**), 588 (Table **VI**, **86**), 604, 605 (Table **VI**, **84**), 704 (Table **V**, **77**), 716 (Table **VI**, **80**), 841 (Table **VI**, **94**), 866 (Table **VI**, **93**), 869 (Table **VI**, **91**), 962 (Table **V**, **67**), 969 (Table **V**, **68**), and 970 (Table **V**, **69**), all with single vessels. For 11 vessels of this olive oil container (although two can be ascribed to Martin-Kilcher 1994, 1439 and one to 1418) no attribution to types was possible, as found mainly with fragments of handles.

Dressel 14A was found with 30 vessels, arriving in second place in this order of presence. They belong to several types: Ferrandes 2008b, fig. 8, 65 (11 vessels, cf. Table **VIII**, **119–126** and Table **IX**, **132**); *Ostia III*, 507 (7 vessels, cf. Table **VIII**, **127**); Étienne & Mayet 2002, fig. 37, 1 (3 vessels = Table **VIII**, **128–130**); Martin-Kilcher 1994, 5356 and *Ostia III*, 529 (1 vessel each); some drawn types (similar to Table **VIII**, **118**; Table **VIII**, **131**; Table **IX**, **133–134**) all with 1 vessel each; and an unidentifiable type also with 1 vessel.

Beltrán IIA reaches the figure of 17 vessels, with the types: Martin-Kilcher 1994, 4200 (3 vessels); Étienne & Mayet 2002, fig. 34,2 (2 vessels); Ferrandes 2008b, fig. 9, 76 (2 vessels = Table **VII**, **108–109**); Martin-Kilcher 1994, 4134, 4173, 4195 (Table **VII**, **113**), 4218 (Table **VII**, **114**), 4259 (Table **VII**, **112**), 4260, 4272, and 4301 all with 1 vessel each; Rizzo 2003, tav. XXXVII, 191 (Table **VII**, **111**) and XLIII, 241 (Table **VII**, **107**) both with 1 vessel; and a drawn type (Table **VII**, **110**) again with one vessel.

Dressel 14B from *Lusitania* reaches 7 vessels with the types: Ferrandes 2008b, fig. 9, 79 (1 vessel); and the drawn types Table **IX**, **145** and Table **X**, **146–148** all with 1 vessel each. Two vessels cannot be identified as found with fragments of handles.

Late Beltrán IIA = Augst 30 was found with 5 vessels (Martin-Kilcher 1994, 4254: 2 vessels, cf. Table **IX**, **140**; Ferrandes 2008b, fig. 7, 64: 3 vessels; Martin-Kilcher 1994, 4267: 1 vessel = Table **IX**, **139**). Also unidentifiable *garum* amphorae reach 5 vessels as well as Dressel 2–4 from Baetica (Martin-Kilcher 1994, 2341: 2 vessels cf. Table **VIII**, **117**; drawn types Table **VII**, **115–116**: 1 vessel each); and an unidentifiable type (1 vessel). Dressel 2–4 from *Tarraconensis* reaches 4 vessels: Table **IX**, **144**: 3 vessels; and unidentifiable type: 1 vessel. Beltrán IIB was found with 3 vessels, with the types (1 vessel each) Martin-Kilcher 1994: 4134 (Table **IX**, **136**); Etienne & Mayet 2002, fig. 35, 2 (Table **IX**, **135**); and drawn type Table **IX**, **137**.

Two vessels were found for Haltern 70 (Martin-Kilcher 1994, 3896 = Table **VII**, **102**; and a drawn type = cf. Table **VII**, **103** already found during the Hadrianic age) and

the Baetican Dressel 28 (Martin-Kilcher 1994, 2486 and an unidentifiable one), while its later evolution (Late Dressel 28: unidentifiable type) was discovered with a single vessel. A single vessel of the Advanced Beltrán IIB with the type Ferrandes 2008b, fig. 9, 77 was also found (Table **IX**, **141**). One Baetican Dressel 21–22 (drawn type Table **VII**, **106**) and one Beltrán IIA or IIB were also found.

Two vessels from *Baetica* and two from *Tarraconensis* remain unidentifiable because they were found with fragments of handles or walls only.

### 8.1.4 North-African Origin

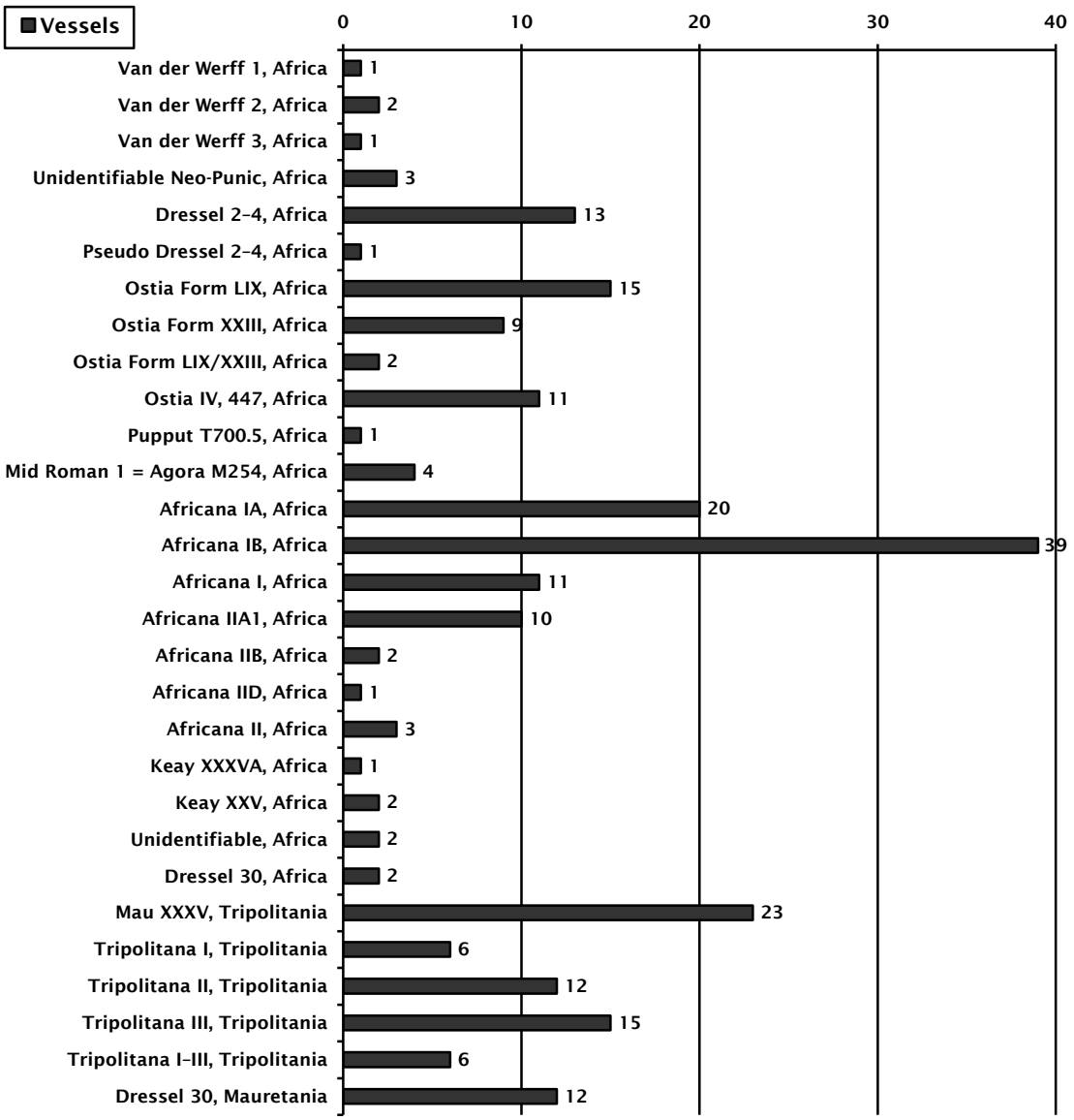


**Fig. 8.5: 'Terme di Elagabalo'. Amounts of North-African amphorae, Severan age.**

The North-African coast reaches 230 vessels, representing 27.98% of the total. Some containers (fig. 8.5) belong to residual forms: Unidentifiable Neo-Punic amphorae

(3 vessels), Van der Werff 1 (Bonifay 2004a, Type 2A, fig. 47,1: 1 vessel), Van der Werff 3 (drawn type Table **X**, **149**: 1 vessel), Van der Werff 2 (2 vessels of an unidentifiable type), and Pupput T.700.5 (Bonifay 2004a, type 17, fig. 53, 1 = Table **XI**, **170**: 1 vessel).

Africana IB is the most recovered form among in-phase vessels. It was found with several types: Ferrandes 2008b, fig. 10, 106 (9 vessels, cf. Table **XII**, **190**, **192–193**, **200–201**); Bonifay 2004a, type 21B, fig. 56, 5 (8 vessels, cf. Table **XI**, **186** and Table **XII**, **187**, **191**); 7 vessels of Bonifay 2004a, type 21B, fig. 56, 4 (cf. Table **XIII**, **202–203**) and other 7 vessels of fig. 56, 6 (cf. Table **XI**, **184–185**; Table **XII**, **188**); Keay 1984, fig. 38, 10 (3 vessels, cf. Table **XII**, **195**, **197**); Keay 1984, fig. 38, 4 (2 vessels, cf. Table **XII**, **196**); Keay 1984, fig. 38, 12 (2 vessels = Table **XII**, **194**, **199**); Keay 1984, fig. 41, 2 (2 vessels); Ferrandes 2008b, fig. 10, 107 (1 vessel = Table **XII**, **198**); drawn type Table **XIII**, **204** (1 vessel); and Keay 1982, fig. 38, 2 (1 vessel = Table **XII**, **189**). Mau XXXV reaches second place with 23 vessels. It was discovered with many different types: Unidentifiable types (4 vessels); Meylan Krause 2002, pl. 48, 643 (3 vessels, cf. Table **XIV**, **237**, **243**); *Ostia III*, 371 (3 vessels); Bonifay 2004a, type 58, fig. 79, 1 (3 vessels, cf. Table **XIV**, **245** and Table **XV**, **250**); Bonifay 2004a, type 58, fig. 79, 2 (2 vessels = Table **XIV**, **239**, **244**); *Ostia IV*, 430 (2 vessels, cf. Table **XIV**, **241**); and several drawn types (Table **XIV**, **238**; Table **XIV**, **240**; Table **XIV**, **242**; and Table **XIV**, **247–249**) all with 1 vessel each. Africana IA reaches third place (20 vessels) with several types: Bonifay 2004a, Type 21A, fig. 56, 1 (9 vessels, cf. Table **XI**, **171**, **175**, **177**, **181–182**); Keay 1984, fig. 37, 2 (5 vessels, cf. Table **XI**, **172–173**, **178**, **180**); Keay 1984, fig. 37, 4 (1 vessel = Table **XI**, **176**); Martin-Kilcher 1994, 5582 (1 vessel = Table **XI**, **179**); Martin-Kilcher 1994, 5587 (1 vessel = Table **XI**, **183**); Keay 1984, fig. 37, 8 (1 vessel); Keay 1984, fig. 38, 2 (1 vessel); and Ferrandes 2008b, fig. 10, 105 (1 vessel = Table **XI**, **174**).

Both Ostia Form LIX and Tripolitana III reach 15 vessels. The first was found with the types: *Ostia III*, 386 (3 vessels, cf. Table **X**, **152**); Panella 1983a, 31 (3 vessels = Table **X**, **156**, **161–162**); Panella 1983a, 32 (2 vessels = Table **X**, **155**, **163**); Panella 1983a, 28 (2 vessels = Table **X**, **153–154**); Panella 1983a, 30 (2 vessels = Table **X**, **157**, **159**); Bonifay 2004a, type 15, fig. 53, 2 (1 vessel); and the drawn types Table **X**, **158** and **160** (1 vessel each). The latter was found with the types: Keay 1984, fig. 51, 3 (4 vessels, cf. Table **XV**, **254–256**); Martin-Kilcher 1994, 5578 (2 vessels, cf. Table **XV**, **257**); Keay 1984, fig. 51, 8 (2 vessels, cf. Table **XV**, **253**); Bonifay 2004a, type 19, fig. 55a, 2 (2 vessels, cf. Table **XV**, **252**); Keay 1984, fig. 51, 4 (1 vessel); Keay 1984, fig. 51, 2 (2 vessels); Keay 1984, fig. 51, 1 (1 vessel = Table **XV**, **251**); and the drawn type Table **XV**, **258** (1 vessel).

Dressel 2–4 was found with 13 vessels and some types: unidentifiable types (10 vessels); Bonifay 2004a, Type 50, fig. 79, 1 (2 vessels); and the drawn type Table **X**, **150** (1 vessel). Tripolitana II was found with 12 vessels and the types: Bonifay 2004a, type 4, fig. 47, 4 (4 vessels, cf. Table **XIV**, **231**); Keay 1984, fig. 47, 5 (2 vessels, cf. Table **XIV**, **234**); Ferrandes 2008b, fig. 11, 119 (2 vessels, cf. Table **XIV**, **232**); *Ostia III*, 263 (2 vessels, cf. Table **XIV**, **230**); Keay 1984, fig. 47, 7 (1 vessel = Table **XIV**, **236**); and Keay 1984, fig. 50, 1 (1 vessel = Table **XIV**, **235**). Dressel 30 from Mauretania was found with 11 vessels and the types: unidentifiable types (4 vessels); Keay 1984, fig. 35, 1 (4 vessels, cf. Table **XV**, **259–260**); Keay 1984, fig. 35, 3 (1 vessel); Keay 1984, fig. 35, 7 (1 vessel = Table **XV**, **262**); and Martin-Kilcher 1994, 3605 (1 vessel = Table **XV**, **261**). Both Africana I and *Ostia IV*, 447 were discovered with 11 vessels. The first was found mainly with unidentifiable types (9 vessels), while 2 vessels (found with bases) are ascribed to Keay 1984, fig. 41, 2. The latter, on the contrary, was found with drawn types only: Table **XIII**, **205–214** (all with single vessels).

Ten vessels were found for Africana IIA1 with the types: Keay 1984, fig. 42, 3 (6 vessels, cf. Table **XIII**, **216**, **218–221**); Keay 1984, fig. 43, 2 (2 vessels, cf. Table **XIII**, **215**); Bonifay 2004a, type 22, fig. 57, 3 (1 vessel); Keay 1984, fig. 43, 1 (1 vessel = Table **XIII**, **217**). Ostia Form XXIII reaches 9 vessels, with the types: Panella 1983a, 33 (5 vessels = Table **X**, **165–166** and Table **XI**, **167–169**); Bonifay 2004a, type 15, fig. 53, 1 (3 vessels, cf. Table **X**, **164**); and Panella 1983a, 34 (1 vessel). Tripolitana I (*Ostia I*, 517: 3 vessels, cf. Table **XIV**, **229**; Bonifay 2004a, type 19, fig. 55a, 1: 1 vessel; Ferrandes 2008b, fig. 11, 118: 1 vessel = Table **XIV**, **228**; and the drawn type Table **XIV**, **227**: 1 vessel) and those containers whose identification was not possible among Tripolitana I to III (all unidentifiable types) reach 6 vessels.

Three of the 4 vessels of Mid Roman 1 = Agora M254 belong to unidentifiable types, while the remaining one belongs to the type Martin-Kilcher 1994, 5655 (Table **X**, **151**). Generic Africana II reaches 3 vessels of unidentifiable types. Two vessels each belong to: unidentifiable Ostia Form (not possible to be discerned if XXIII or LIX); African imitation of Dressel 30 (an unidentifiable type and a vessel of Bonifay 2004a, Type 60, fig. 82, 18 = Table **XIV**, **226**); Africana IIB both with the type Bonifay 2004a, type 23, fig. 59, 1, (cf. Table **XIII**, **222**); and unidentifiable African amphorae. A single vessel was found for the Pseudo Dressel 2–4, although the type was not identifiable.

On the other hand, four vessels are clearly intrusive: Keay XXV (Keay 1984, fig. 38, 2: 2 vessels, cf. Table **XIII**, **224**), Keay XXXVA (Bonifay 2004a, type 40, fig. 72a, 1: 1 vessel = Table **XIV**, **225**), and Africana IID (Bonifay 2004a, type 26, fig. 62a, 6: 1 vessel = Table **XIII**, **223**). They might have entered in these units for subsequent activities (for example pits or tunnels) that reached older deposits.

### 8.1.5 Aegean / Oriental Origin

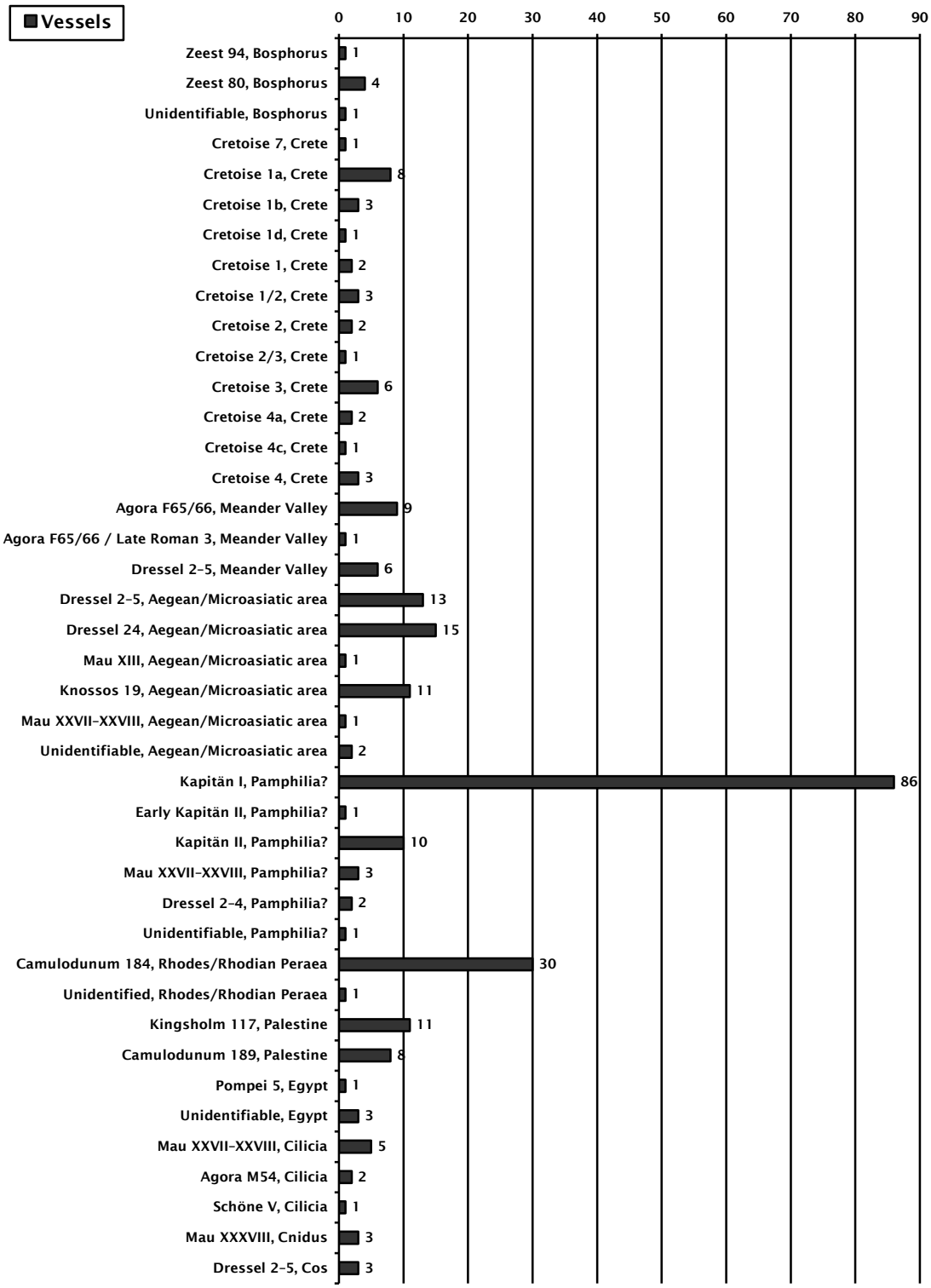


**Fig. 8.6: 'Terme di Elagabalo'. Amounts of 'Oriental' amphorae, Severan age.**

Aegean/Oriental amphorae reach 269 vessels, representing 32.73% of the total, thus being the most found origin in the 'Terme di Elagabalo' (fig. 8.6). This origin is

much more varied than other periods in this same building, offering many forms, types and sub-types as well as many sub-origins. A single vessel can be considered residual: Cretoise 7 with the type Marangou Lerat 1995, fig. 25, A2 (Table **XV**, **263**).

Kapitän I is the most abundant form among those that are in-phase (86 vessels), found in a large range of types: unidentifiable types (16 vessels); *Ostia I*, 551 (14 vessels, cf. Table **XIX**, **347**); Ferrandes 2008b, fig. 12, 136 (14 vessels = Table **XVII**, **300–301**, **303**; Table **XVIII**, **310**, **314**, **320**, **325–326**, **335–336**; Table XIX, **337**, **344**, **350–351**); Ceci 2006, fig. 2, 7 (7 vessels = Table **XVIII**, **312**, **319**, **332–334**; Table **XIX**, **340–341**); Meylan Krause 2002, pl. 28, 419 (6 vessels = Table **XVII**, **306**, **308**; Table **XVIII**, **313**, **316**, **322**; Table **XIX**, **345**); Peña 1999, fig. 15, 033 (6 vessels = Table **XVII**, **299**; Table **XVIII**, **317**, **327–328**; Table **XIX**, **338–339**); *Ostia IV*, 439 (5 vessels = Table **XVII**, **302**, **307**; Table **XVIII**, **323**; Table **XIX**, **343**, **352**); *Ostia III*, 70a (4 vessels = Table **XVIII**, **324**, **330–331**; Table **XIX**, **342**); *Ostia I*, 550 (1 vessel = Table **XIX**, **346**); Meylan Krause 2002, fig. 50, 659 (1 vessel = Table **XIX**, **349**); and the drawn types Table **XVII**, **298** (2 vessels); Table **XVII**, **297**, **304–305**; Table **XVIII**, **309**, **311**, **315**, **318**, **321**, and **329**; Table **XIX**, **348** (all with 1 vessel). Camulodunum 184 reches second place (30 vessels) with the types: unidentifiable types (19 vessels); Martin-Kilcher 1994, 2380 (cf. Table **XX**, **361**) and 2369 (= Table **XX**, **366**, **369**) with 2 vessels each; Martin-Kilcher 1994, 2368 (Table **XX**, **363**), 2412 (Table **XX**, **362**), 2413 (Table **XX**, **371**), 2432 (Table **XX**, **370**), 2433 (Table **XX**, **368**), and 2436 (Table **XX**, **372**); Bezeczky 2004, fig. 25 (Table **XX**, **364**) and the drawn type (Table **XX**, **360**) all with 1 vessel.

Dressel 2–5 from the Aegean/Microasiatic area and the Meander Valley reach together 17 vessels with the types: unidentifiable type (6 vessels, 3 of them from the Meander Valley); Martin-Kilcher 1994, 2305 (3 vessels from the Aegeum/Microasiatic area), 2235 (1 vessel from the Aegeum/Microasiatic area = Table **XVI**, **288**), 2144 (1 vessel from the Meander Valley = Table **XVI**, **287**), 2327 (1 vessel from the Meander Valley = Table **XVI**, **286**), 2237 (1 vessel from the Aegeum/Microasiatic area = Table **XVII**, **289**), 2299 (1 vessel from the Aegeum/Microasiatic area), and 2328 (1 vessel from the Aegeum/Microasiatic area); and the drawn types Table **XVI**, **285** from the Meander Valley and Table **XVII**, **290** from the Aegeum/Microasiatic area (1 vessel each). Dressel 24 reaches 15 vessels with the types: unidentifiable types (6 vessels); Auriemma & Quiri 2004, fig. 10, c (cf. Table **XVII**, **291**) and fig. 10, a (= Table **XVII**, **292–293**) both with 2 vessels each; Ferrandes 2008b, fig. 12, 138 = Blázquez Martinez *et al.* 1994, T.98/SUP/386 (2 vessels, cf. Table **XVII**, **294**); Bruno 2002, 33 (1 vessel = Table **XVII**, **295**); Ferrandes 2008b, fig. 12, 140 (1 vessel); and Ferrandes 2008b, fig. 13, 145 = Blázquez Martinez *et al.* 1994, T.98/C.50-70/D-44 (1 vessel).

Both Knossos 19 and Kingsholm 117 were found with 11 vessels. The first with 9 vessels of unidentifiable types and 2 vessels of the type Hayes 1987, A53. The latter

with 6 vessels of unidentifiable types, 4 vessels of the type Marucci 2006, fig. 11, 52 (cf. Table **XX**, **373**); and a single vessel of the type De Caprariis *et al.* 1988, fig. 2. Kapitän II reaches 10 vessels and was found with: 8 vessels of unidentifiable types; a drawn type Table **XIX**, **354** (1 vessel); one vessel of the type Keay 1984, Type XII, fig. 52, 2 (Table **XIX**, **355**); and another one of the type *Ostia I*, 544 (Table **XIX**, **356**). Another extra vessel may be an early sub-type of this form and belongs to a drawn type (Table **XIX**, **353**). Nine vessels were found for Agora F65/66 with the types: Lemaître 1997, 8, 3 (3 vessels, cf. Table **XVI**, **281**, **283**); unidentifiable type (1 vessel); drawn types Table **XVI**, **280**, and Table **XVI**, **282** (both with 1 vessel); Lemaître 1997, fig. 3, 1 and fig. 5, 4 (1 vessel each); and Ferrandes 2008b, fig. 1, 126 (1 vessel). Another extra vessel may be a transitional type from Agora F65/66 to Late Roman 3 (drawn type Table **XVI**, **284**).

Both Camulodunum 189 from Palestine and Cretoise 1a reach 8 vessels. The first was found with the types: drawn type Table **XX**, **374** (4 vessels), Martin-Kilcher 1994, 5412 (3 vessels, cf. Table **XX**, **376**) and 5411 (1 vessel = Table **XX**, **375**). The latter was found with the types, all from Marangou-Lerat 1995: fig. 30, A26 (cf. Table **XV**, **267**) and fig. 29, A16 (Table **XV**, **268**) both with 2 vessels; fig. 28, A13 (Table **XV**, **265**); fig. 28, A14 (Table **XV**, **264**) with one vessel each. Two other vessels belong to unidentifiable types. Six vessels were found for a not better identifiable Cretoise 3, while 5 vessels were found for the Cilician amphora Mau XXVIII–XXVIII. Three vessels of the latter belong to the same type Rauh 2004, fig. 7 (Table **XX**, **379**), while the other 2 belong to unidentifiable types. Four vessels were discovered for the possibly Bosphoran amphora Zeest 80: 2 of them belong to an unidentifiable type (found with handles only), while the remaining belong to the drawn type Table **XIX**, **358**.

With three vessels each were found several forms such as the not better identifiable Cretoise 2/3 and Cretoise 4, as well as Mau XXXVIII from Cnidus (Ferrandes 2008b, fig. 5, 29 = Table **XX**, **381**; drawn type Table **XX**, **380**; and an unidentifiable type). Also Mau XXVIII–XXVIII from Pamphilia, Cretoise 1b, and Dressel 2–5 from Cos reach the same figure. The first was found with 2 vessels of unidentifiable types and one of the type Rauh 2004, fig. 7 = Table **XIX**, **357**. The second was found with the types Marangou-Lerat 1995, fig. 38, A42 (2 vessels = Table **XV**, **269**, **271**) and fig. 39, A56 (1 vessel = Table **XV**, **270**). The latter was found with 2 vessels of the type Martin-Kilcher 1994, 2253 (cf. Table **XX**, **383**) and one of the drawn type Table **XX**, **382**. A not better identifiable Cretoise 1 (cf. Table **XV**, **274**), Cretoise 2, and Agora M54 from Cilicia, were all found with 2 vessels each. Dressel 2–4 from Pamphilia was found with an unidentifiable type and the drawn type Table **XX**, **359**. Also Cretoise 4a reaches the same figure of vessels, belonging to the types Marangou-Lerat 1995, fig. 70, A127 (Table **XVI**, **276**) and A130 (Table **XVI**, **277**).

Zeest 94 = Shelov D (drawn type Table **XVI**, **279**); Cretoise 1d (type Marangou-Lerat 1995, fig. 45, A60 = Table **XV**, **273**); Cretoise 4c (type Marangou-Lerat 1995, fig. 78, A143 = Table **XVI**, **278**); Mau XXVIII–XXVIII from the Aegean/Microasiatic area (drawn type Table **XVII**, **296**); Schöne V from Cilicia (drawn type Table **XX**, **378**); Pompei 5 from Egypt (with the type Tomber & Williams 2007, fig. 1, 2 = Table **XX**, **377**); not better identifiable Cretoise 2/3; and Mau XIII from the Aegean/Microasiatic area (unidentifiable type) were all found with single vessels.

Other vessels could be ascribed to their origin, but not to specific forms (fig. 163): 3 vessels from Egypt, 2 from the Aegean/Microasiatic area, 1 each for Pamphilia, Bosphorus, and Rhodes or Rhodian *Peraea*.

### 8.1.6 Unknown Origin

The origin of 4 vessels is unidentifiable, representing only 0.49%. Two of them cannot be identified. The other two belong to the New Type 1, Table **XX**, **384**, whose origin may be ascribed to Lebanon (cf., below, Appendix1, Section 1.2.2).

## 8.2 Elsewhere in Rome

Contexts that will be considered here are, for the Capital:

- Trajan's Markets (Appendix 2, Table 22): 12.36%;
- *Forum Transitorium*, Phase III, Sub-phases 3-5 (Appendix 2, Table 24): 10.59%;
- *Domus Tiberiana*, Period VI, Sector 11, Sondage 13, Units 4-7 (Appendix 2, Table 27): 2.77% of the total for Rome;
- Via Blaserna, Riverbank (Appendix 2, Table 32): 74.27%;

The total amount of vessels is 793, while percentages of various origins can be seen in fig. 8.7 with a predominance of North-African amphorae.

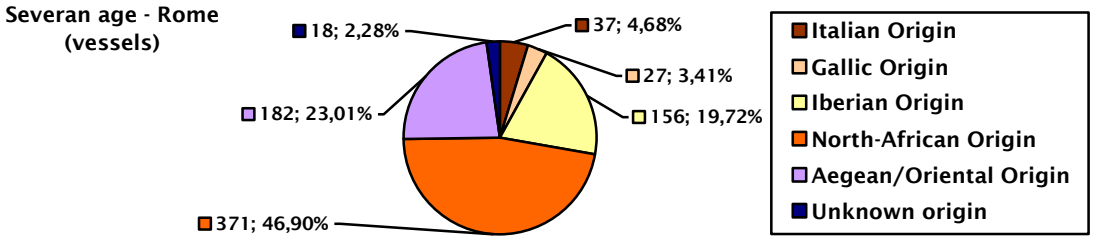


**Fig. 8.7: Amounts and percentages of amphorae from various origins elsewhere in Rome, Severan age.**

### 8.2.1 Italian Origin

Italy reaches 37 vessels, being 4.68% of the total. No residual amphorae were found, but 11 vessels of not better identified amphorae from Italy. The most attested amphora is the so-called 'Anfora di Spello', although none of them go beyond 10 vessels (fig. 8.8).

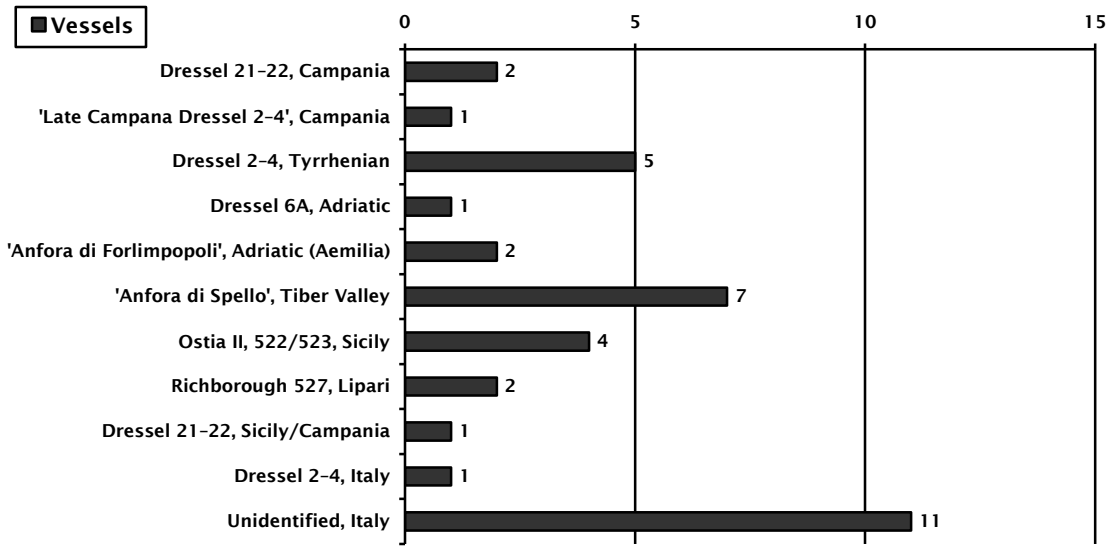


**Fig. 8.8: Elsewhere in Rome. Amounts of Italian amphorae, Severan age.**

### 8.2.2 Gallic Origin

Ancient Gaul reaches 27 vessels, representing 3.41% of the total. Gallic amphorae are much less represented in terms of variety of forms (fig. 8.9). Gauloise 4 is not only the most found form, but also the only identified one.

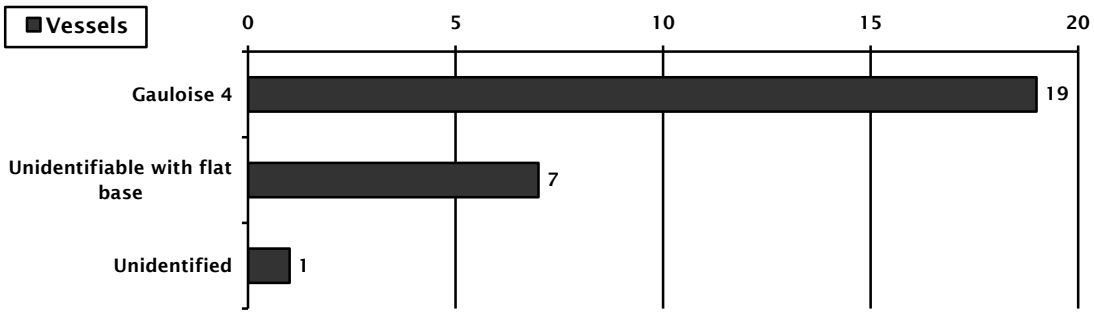


**Fig. 8.9: Elsewhere in Rome. Amounts of Gallic amphorae, Severan age.**

### 8.2.3 Iberian Origin

The Iberian Peninsula reaches 156 vessels, representing 19.72% of the total. A single vessel of Dressel 7 is the only residual one. Ten vessels belong to Almagro 50 from *Lusitania* which can be considered an intrusive form (usually dated from the half of 3rd century AD) and they were discovered in the riverbank in Via Blaserna. This amount (as well as other ones: cf. below) may indicate that a different phase in this deposit was not recognised, as it was not even reported as a 'strange' find in the publication. In-phase containers are headed by Dressel 14A amphorae, with also a rather large amount of unidentified *garum* amphorae. Other forms are less represented, with the exception of Dressel 20. Unfortunately for 2 vessels no specific form among the Baetican ones was identified, while for other 3 vessels no suggestions for specific sub-origins within the Iberian Peninsula were offered (fig. 8.10).

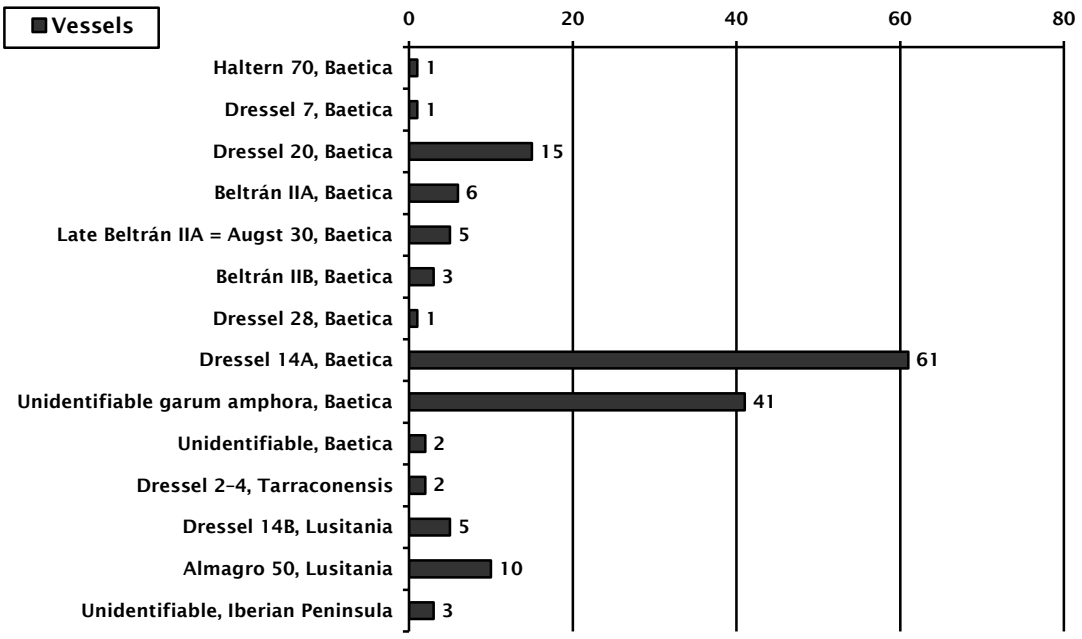


**Fig. 8.10: Elsewhere in Rome. Amounts of Iberian amphorae, Severan age.**

### 8.2.4 North-African Origin

North Africa reaches 371 vessels, representing 46.90% of the total. Unfortunately 24 vessels belong to unidentified African containers (fig. 8.11). Two residual vessels of unidentified Punic amphorae were found, as well as a few intrusive ones: Africana IIIA, Keay XXVP, and Africana IIC (the latter once more found in via Blaserna, confirming the above offered interpretation). The mostly found in-phase form is *Ostia IV*, 447 which, however, should be more likely recognised as a Dressel 2-4 amphora, at least looking

at the drawing published which has a more rounded rim than the usual squared one. Other forms are much less attested.

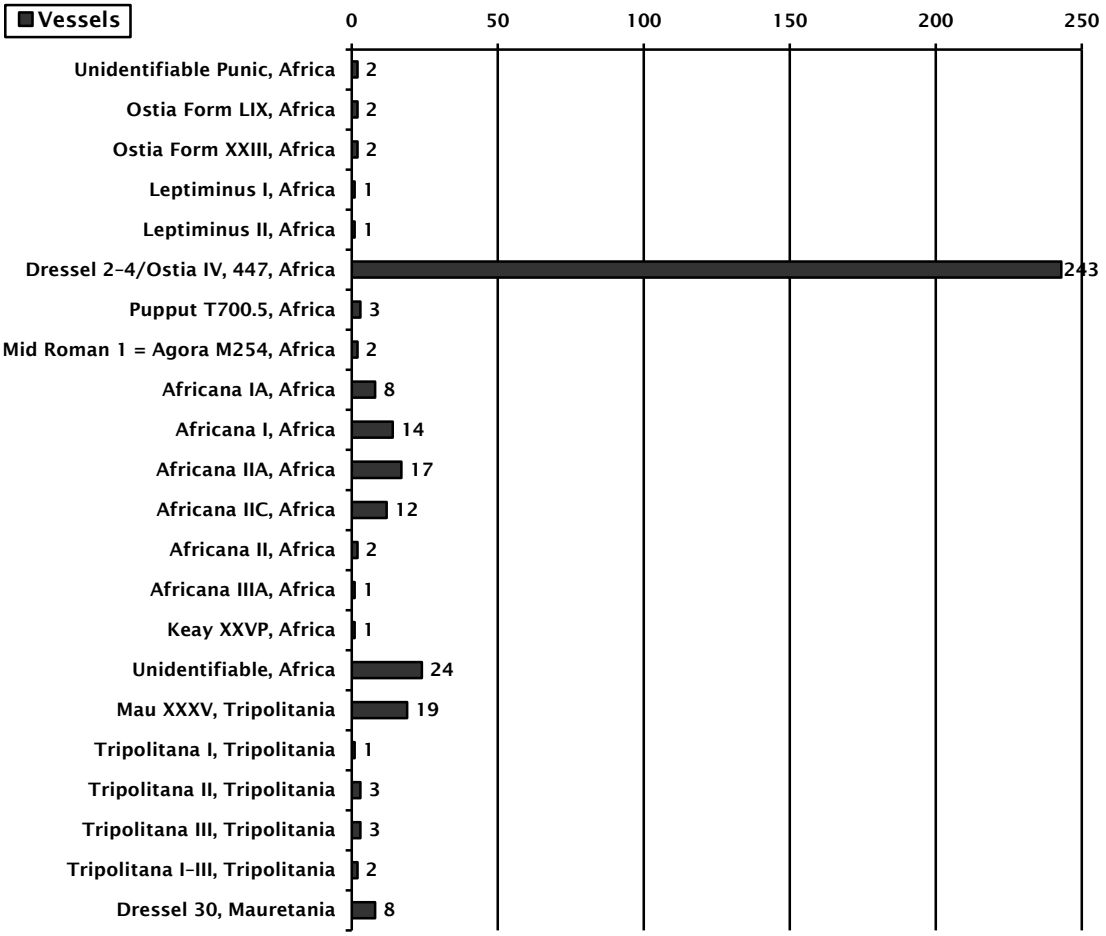


**Fig. 8.11: Elsewhere in Rome. Amounts of North-African amphorae, Severan age.**

### 9.2.5 Aegean / Oriental Origin

The Eastern part of the Mediterranean reaches 182 vessels, representing 23.01% of the total. The most found 'Oriental' in-phase amphora is Knossos 26/27 from Bosphorus, found only during this phase and in Via Blaserna. Therefore it is not assured that this form actually belongs to this period or to a later one (as for other vessels above). At the same time this same site offered the largest number of Zeest 80, a rather rare amphora in the Western part of the Roman empire, followed by Kapitän I, Camulodunum 184, and by other amphorae whose form or specific origin was unfortunately not identified. Apart from Dressel 2-5 from the generic Aegean/Microasiatic Area, other forms are much less represented.

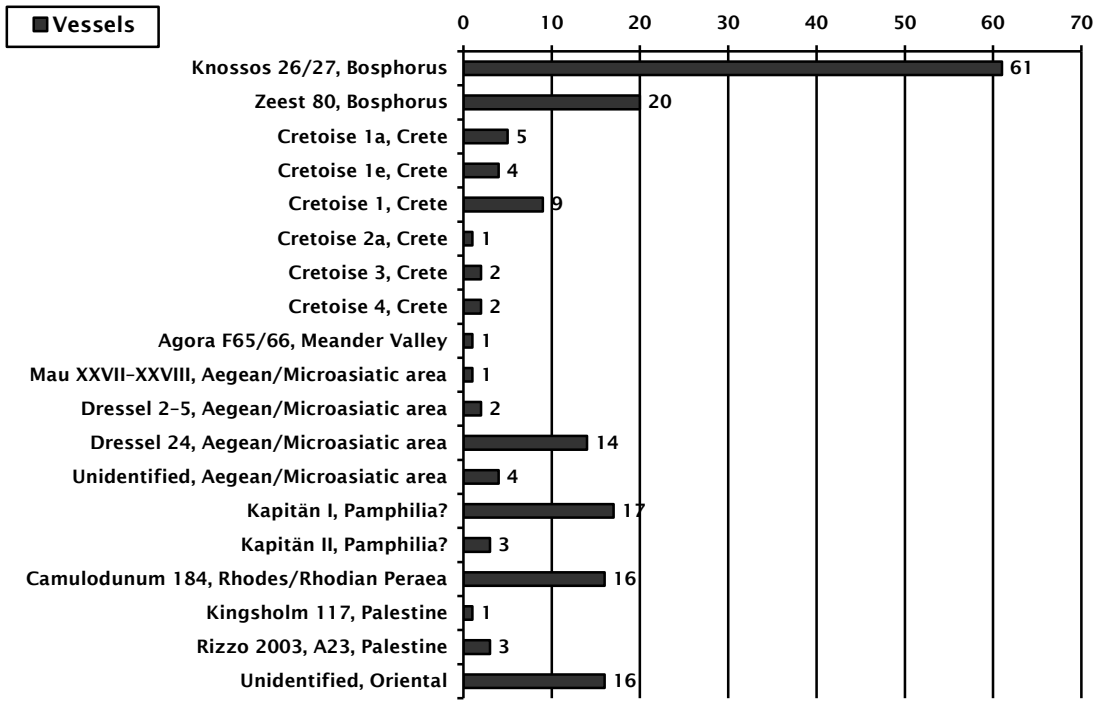


**Fig. 8.12: Elsewhere in Rome. Amounts of 'Oriental' amphorae, Severan age.**

### 8.2.6 Unknown Origin

Unidentified origin reaches 18 vessels. They represent 2.28% of the total. None of them were identified with forms, thus no graphs are offered.

## 8.3 Ostia

The following contexts in Ostia will be considered here:

- Taberna dell'Invidioso, Period 6, Phase IV, Unit I (Appendix 2, Table 44): 4.59%;

- Terme del Nuotatore, Room I, Units II, Sondages $\alpha$, $\beta$ and $\gamma$; Room VI, Units II; Room VII, Units II, sectors A and B, sewers 49 a-b-c-e-f-g and 50; Area SO, Units III, 'cuts' A and B; Area XXV, Units III (Appendix 2, Tables 48, 50, 52, 55, 58): 52.62%;

- Domus dei Pesci, Period 3, Phase III and Phase IV (Appendix 4, Tables 65-66): 42.79% of the total for this city.

In Ostia 458 vessels were found and fig. 8.13 shows percentages among different origins, with a predominance of North-African amphorae, followed by 'Oriental' and Iberian ones. Significant is also the presence of Italian and Gallic containers as they both decreased from the previous period.

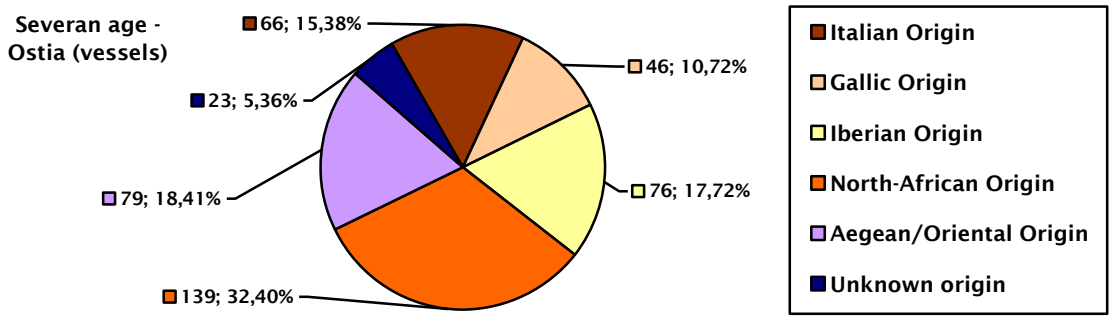


**Fig. 8.13: Amounts and percentages of amphorae from various origins in Ostia, Severan age.**

### 8.3.1 Italian Origin

Italian amphorae reach 207 vessels, representing 23.31% of the total. The variety of forms is much decreased from the Antonine age. Just two vessels, belonging to Dressel 1 from the Vesuvian area, can be identified as residual ones. In-phase amphorae are headed by 'Anfora di Spello' and 'Anfora di Forlimpopoli' (fig. 8.14). The presence of 3 vessels of *Ostia I*, 455 is also significant.

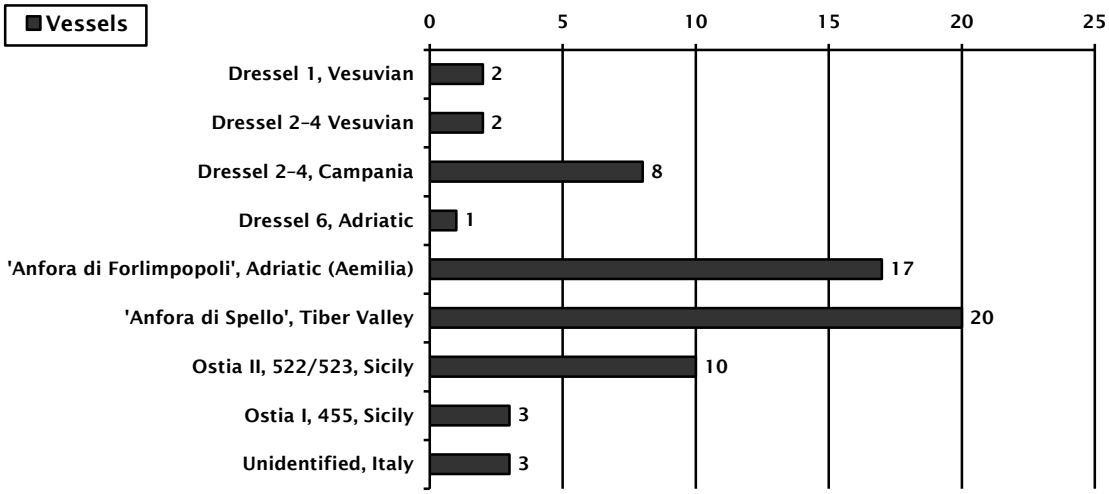


**Fig. 8.14: Ostia. Amounts of Italian amphorae, Severan age.**

### 8.3.2 Gallic Origin

Gaul reaches 46 vessels, representing 10.72% of the total. Apart the usual small variety of forms, no specificity can be seen. Gauloise 4 are still well represented. For a single fragment only no specific form was suggested (fig. 8.15).

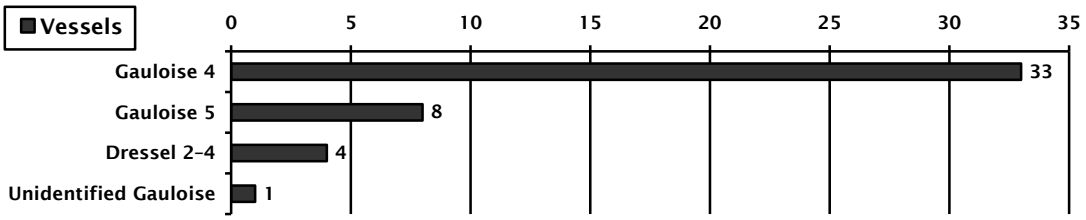


**Fig. 8.15: Ostia. Amounts of Gallic amphorae, Severan age.**

### 8.3.3 Iberian Origin

Iberian amphorae reach 76 sherds, representing 17.72% of the total. The variety of forms decreased from the previous period. Dressel 20 amphorae head this list, and Dressel 14B from *Lusitania* reach second place. Other forms are less attested and even wine-amphorae are not well represented.

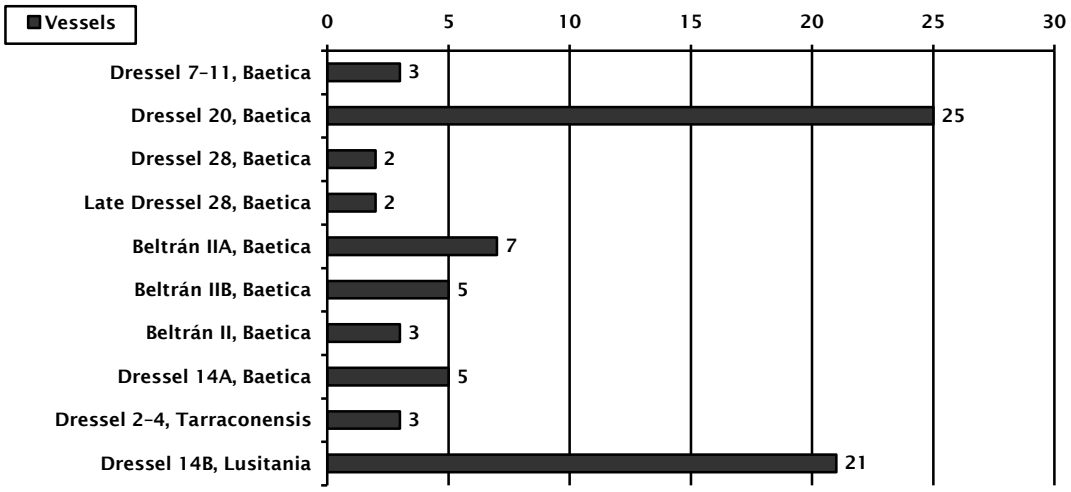


**Fig. 8.16: Ostia. Amounts of Iberian amphorae, Severan age.**

### 8.3.4 North-African Origin

North Africa reaches 139 vessels, representing 32.40% of the total. The variety of forms is again lower than the Antonine age. Some residual vessels were found and they belong to amphorae of Punic traditions (Van der Werff 1, 2, and 3). The smaller version of Dressel 30 is usually found during subsequent periods[726] thus it can possibly be considered an intrusive vessel. In-phase containers are headed by Ostia Form XXIII, followed by Africana I (also including the sub-type Africana IB). Relevant figures are also offered by Mau XXXV amphorae (fig. 8.17).

[726] Personal communication of Prof. Clementina Panella and Dr. M. Casalini.

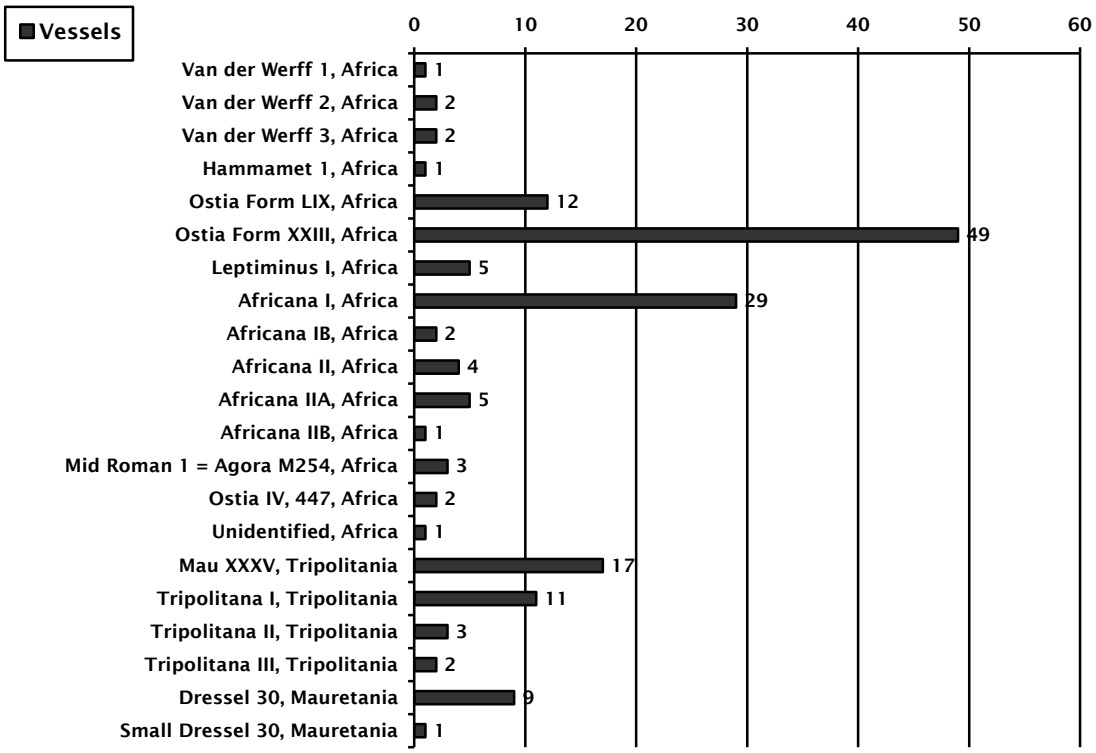


**Fig. 8.17: Ostia. Amounts of North-African amphorae, Severan age.**

### 8.3.5 Aegean / Oriental Origin

The Eastern part of the Mediterranean is represented by 79 vessels, being 18.41% of the total. The variety of forms is once again lower than the Antonine age (fig. 8.18). Finds are headed by Kapitän I amphorae, followed by Cretoise 1, while other forms are much less attested. Significant is also the low presence of Camulodunum 184 amphorae as during other periods this form was found with larger figures.

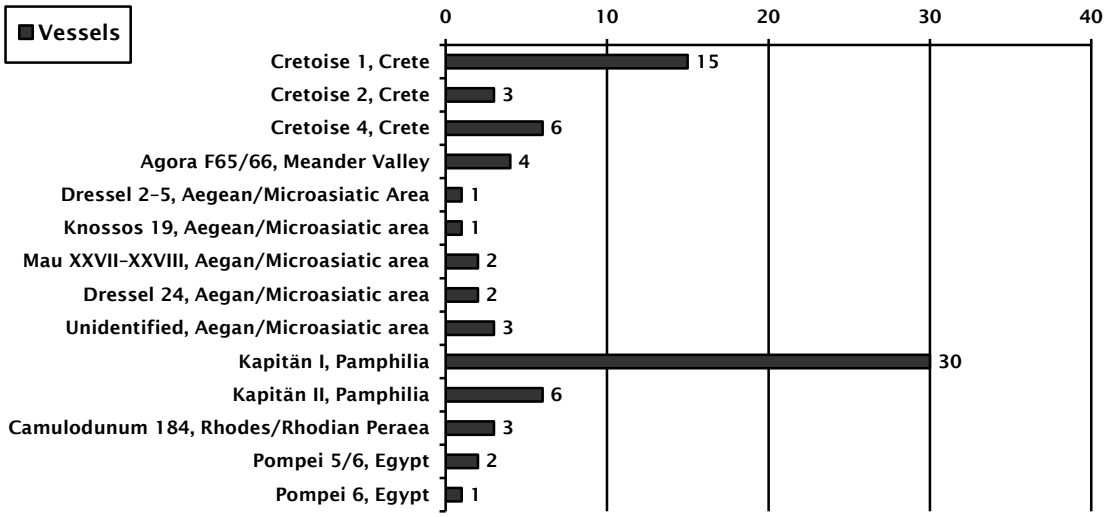


**Fig. 8.18: Ostia. Amounts of 'Oriental' amphorae, Severan age.**

### 8.3.6 Unknown Origin

For 23 vessels no origin was suggested or possible to be identified, representing just 5.36% of the total. The majority of them belong to forms whose origin was not identified and it is itself remarkable that none of these forms was found during previous periods. The remaining 8 vessels were not given to any form (fig. 8.19).

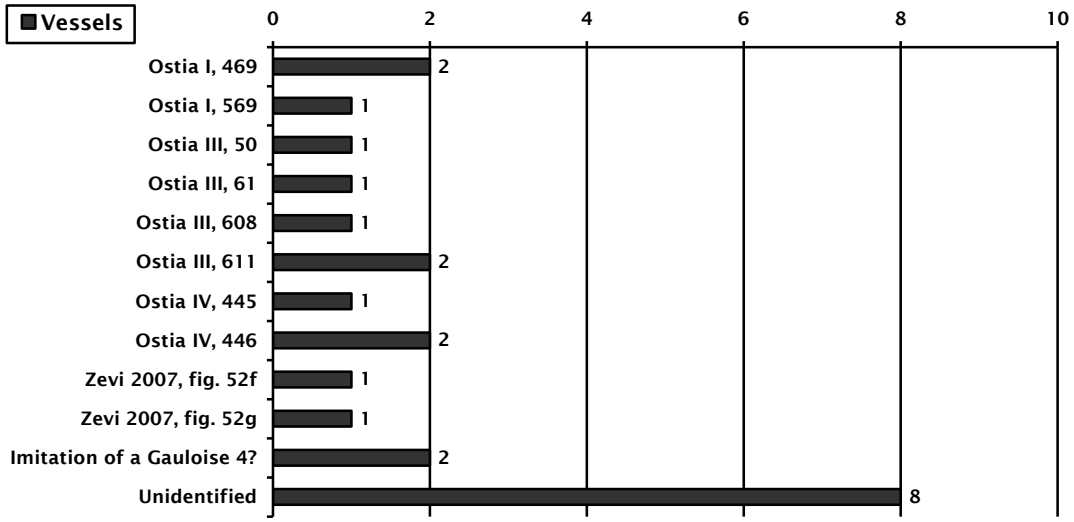


**Fig. 8.19: Ostia. Amounts of amphorae from unknown origins, Severan age.**

## 8.4 Foodstuffs traded and their origin

As for all other Chapters about periods, also this Section will briefly analyse the amounts of foodstuffs, considering vessels offered by the 'Terme di Elagabalo', elsewhere in Rome, and Ostia. Once more, neither residual nor intrusive amphorae will be considered for this specific analysis.

### 8.4.1 Wine

In the 'Terme di Elagabalo' (fig. 8.20) the majority of amphorae containing wine come from the Eastern part of Mediterranean with more than 54% of finds. Italian containers reach a little more than 20%. Other origins, apart from North Africa that goes beyond 15%, are much less represented.

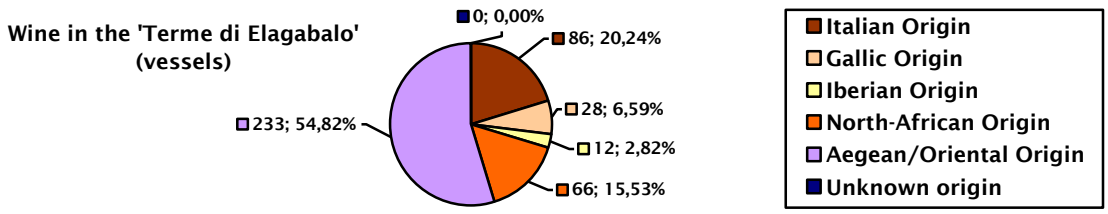


**Fig. 8.20: Amounts and percentages of wine-amphorae from various origins in the 'Terme di Elagabalo', Severan age.**

Elsewhere in Rome (fig. 9.39) the majority of finds come from North Africa with more than 71% (very increased from the Antonine age), for the large figure offered by finds in via Blaserna. All other origins are decreased from the previous period. 'Oriental' amphorae, which were the majority during the Antonine age, reach second place, but just with 16% (thus with a serious decrease).

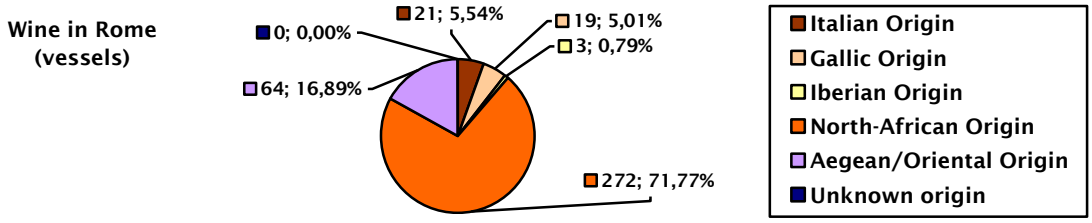


**Fig. 8.21: Amounts and percentages of wine-amphorae from various origins elsewhere in Rome, Severan age.**

In Ostia the situation is different (fig. 8.22). About 34% of finds come from the Eastern Mediterranean with an increase in the percentage from the previous period, while Italian amphorae reach about 27% (decreased from the Antonine age). Gallic containers are still well represented, although with a decreased percentage from the previous period. Amphorae from the Iberian Peninsula are, on the contrary, rather stable, although with a small decrease.

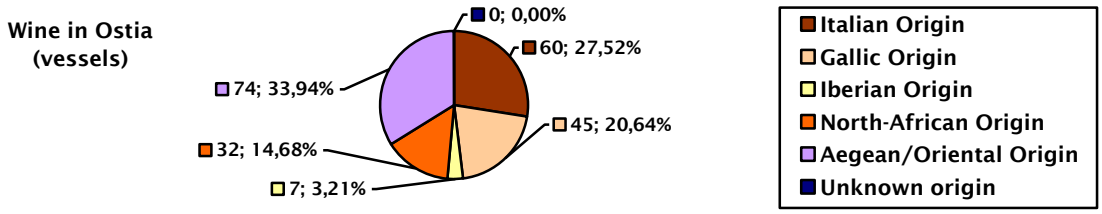


**Fig. 8.22: Amounts and percentages of wine-amphorae from various origins in Ostia, Severan age.**

### 8.4.2 Oil

Amphorae containing olive oil found in the 'Terme di Elagabalo' are dominated by North-African containers with almost 61% of finds. Iberian amphorae are still well

represented (more than 29%). A significant 9% of finds come from the Eastern part of the Mediterranean (fig. 8.23).

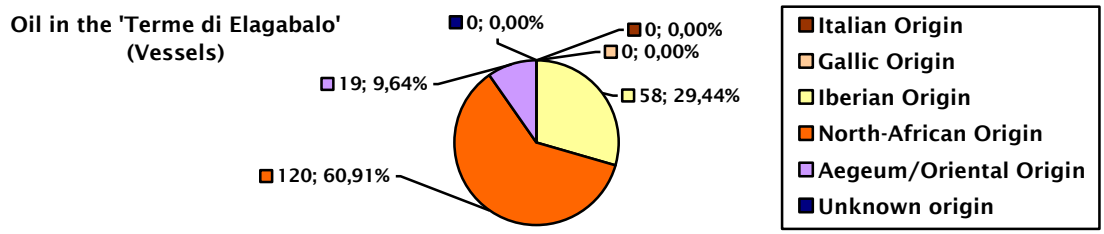


**Fig. 8.23: Amounts and percentages of amphorae containing olive oil from various origins in the 'Terme di Elagabalo', Severan age.**

In Rome (fig. 8.24) the situation is not very different than the 'Terme di Elagabalo', but a little diverse than the Antonine age. North-African containers still dominate (41%, decreased from the previous period), while 'Oriental' ones reach 40% (much increased from the Antonine age). Iberian amphorae arrive to 17%, with a decrease in terms of their percentage from the previous period.

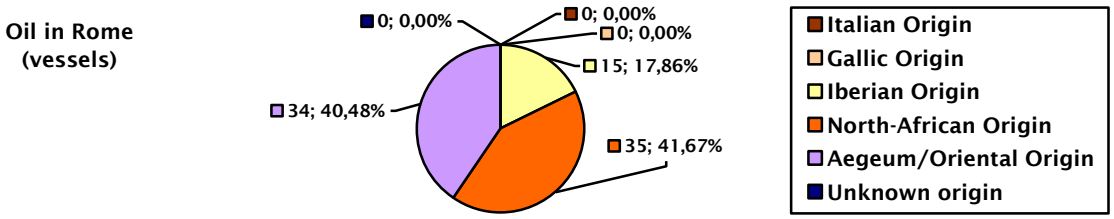


**Fig. 8.24: Amounts and percentages of amphorae containing olive oil from various origins elsewhere in Rome, Severan age.**

In Ostia (fig. 8.25) there is a predominance of North-African containers (79%) with a small increase in their percentage from the Antonine age. Iberian amphorae are still represented with 18% and a small decrease from the previous period. 'Oriental' amphorae are very lowly attested reaching just 1.50%, as well decreased from the Antonine age.

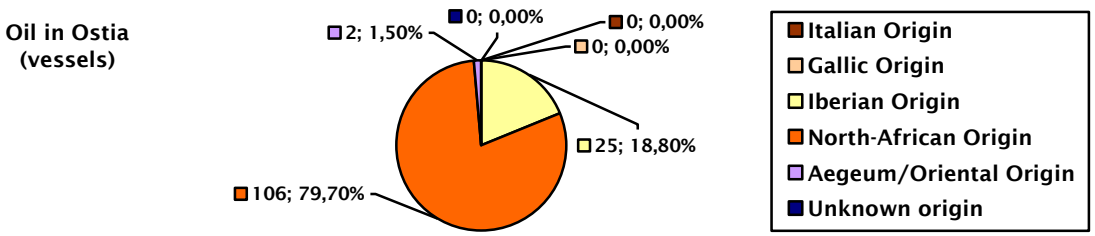


**Fig. 8.25: Amounts and percentages of amphorae containing olive oil from various origins in Ostia, Severan age.**

### 8.4.3 Fish sauces

In the 'Terme di Elagabalo' (fig. 8.26), Iberian amphorae containing fish sauces dominate with more than 60%. North-African containers reach almost 27%. Even some Italian containers were found, with a remarkable 12%.

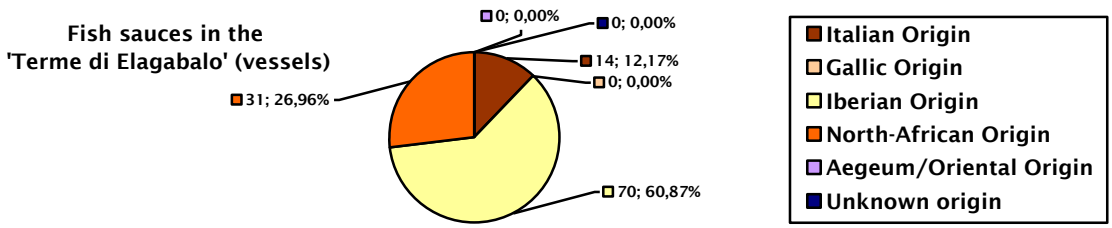


**Fig. 8.26: Amounts and percentages of amphorae containing fish sauces from various origins in the 'Terme di Elagabalo', Severan age.**

Also in sites elsewhere in Rome (fig. 8.27), Iberian amphorae head other finds, reaching 57% (with a serious decrease from the previous phase). The appearance of 17% of Eastern Mediterranean containers (for the presence of Knossos 26/27 found in via Blaserna only, totally absent during the Antonine age) and the small decrease of North-African amphorae compared with the previous phase (to almost 11%) can both be remarked. Italian containers are still present, although they just reach 1% of finds.

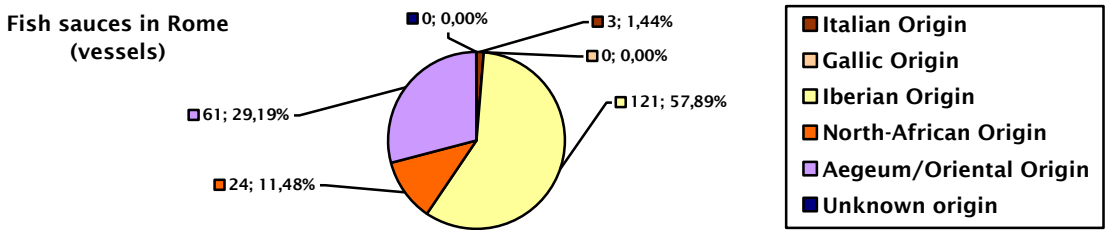


**Fig. 8.27: Amounts and percentages of amphorae containing fish sauces from various origins elsewhere in Rome, Severan age.**

In Ostia the amount of vessels (arriving to just 55) cannot permit the creation of a pie-chart nor comparisons with the previous period. In this city 41 vessels come from *Hispania* and 14 from North-Africa.

### 8.4.3 Other products

Amphorae that contained other products than the above mentioned ones, were found in the 'Terme di Elagabalo' and Rome only (fig. 8.28). Both containers for *defrutum* and dates were mainly found in the 'Terme di Elagabalo'. Amphorae containing alum were found more in Rome than in the 'Terme di Elagabalo'.

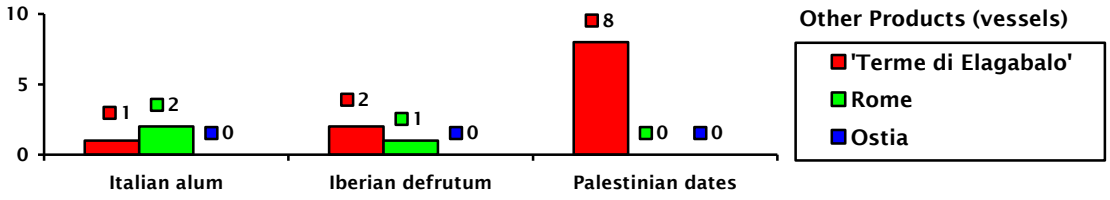


**Fig. 8.28: Amounts of amphorae containing other products found in all sites, Severan age.**

### 8.4.5 Undefined products

In the 'Terme di Elagabalo' (fig. 8.29) a few vessels of all origins correspond to unknown contents. They mainly consist in unidentifiable forms. Two coming from unknown origins belong to the 'Elagabalo new form 1', hypothetically ascribed to Lebanon.

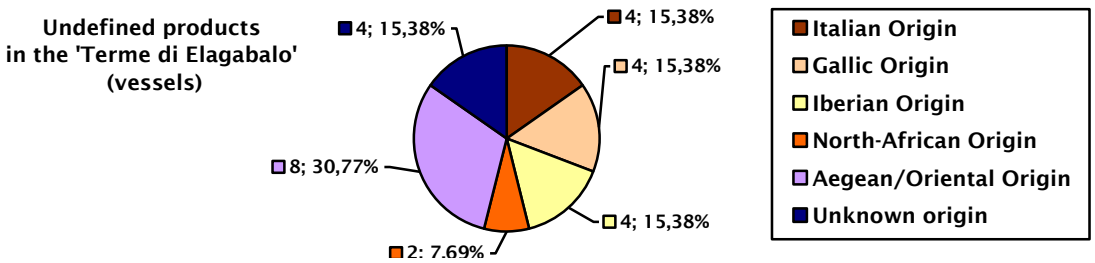


**Fig. 8.29: Amounts and percentages of amphorae with unknown content from various origins in the 'Terme di Elagabalo', Severan age.**

Also in Rome (fig. 8.30) some vessels correspond to unknown contents. Again, they mainly consist in unidentified forms. 'Oriental' and North-African origins resulted in larger number of vessels than other origins.

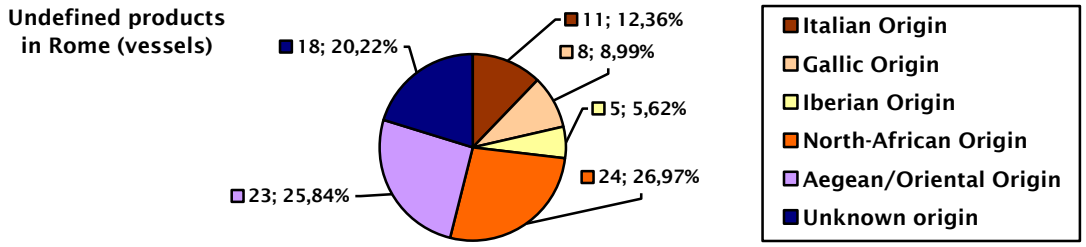


**Fig. 8.30: Amounts and percentages of amphorae with unknown content from various origins in Rome, Severan age.**

In Ostia (fig. 8.31) the majority of amphorae whose content is undefined come from unknown origins. They correspond also to many forms discovered for the first time during this period. Other origins are much less represented.

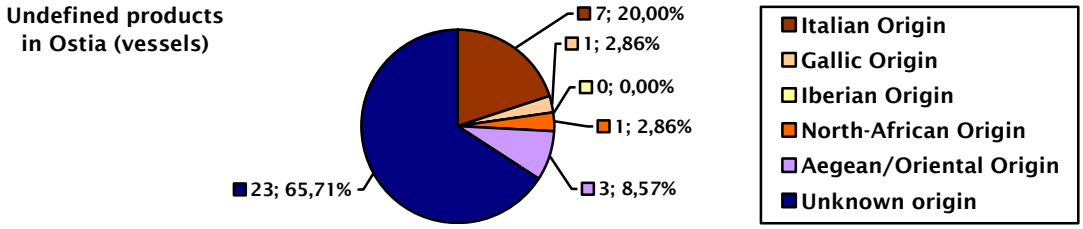


**Fig. 8.31: Amounts and percentages of amphorae with unknown content from various origins in Ostia, Severan age.**

## 8.5 Concluding remarks to the Severan age

During the Severan age, the situation becomes a little less varied than the Antonine age, although the 'Terme di Elagabalo' offered significant amounts. Once again several residual vessels were discovered, as well as a few intrusive ones. They were both not considered in the brief analysis about traded products (Section 8.4).

Also during this period there are contrasting data. While in the 'Terme di Elagablo' and in Ostia the majority of wine-amphorae come from the Eastern Mediterranean and Italian ones reach second place, in sites elsewhere in Rome North Africa leads all discoveries, with 'Oriental' vessels on second place. In all three sites, North-African containers for olive oil dominate other origins, followed by Iberian ones. This latter origin lead amphorae containing fish sauces, followed by 'Oriental' ones in Rome and by North-African ones both in the 'Terme di Elagabalo' and Ostia. Other products were only found in Rome and in the 'Terme di Elagabalo', with the latter being prevailing especially for dates, but also for *defrutum*. At the same time vessels of amphorae whose content is unknown were found in all three sites, mainly consisting in unidentified forms or forms identified for the first time especially in Ostia, but also in the 'Terme di Elagabalo'. As for all the previous periods, the figures offered in this Chapter and this brief analysis show again a large diversity between these cities in terms of number of vessels: Ostia is different from Rome and the 'Terme di Elagabalo' just partially fits in data offered by both cities.

The next Chapter will analyse the fluctuations in litres, different origins, and mentions in ancient sources about the first considered product: wine.

# Chapter 9: Wine

The ancient food triad, reported by many scholars[727], consisted in cereals[728], wine, and olive oil. These foodstuffs had been the basis for Romans' eating habits, but unfortunately grain did not result in any archaeological remains in Rome (as it was usually transported in bags[729]). For this reason, the 'triad' will be converted into another one, based on products resulting in amphorae. This 'new triad' consists of wine, olive oil, and fish-related products.

As already mentioned, the exact content of all amphorae cannot be always assured both because it is still not known and because amphorae could have been reused to transport other foodstuffs rather than the primary ones for which they were manufactured[730]. Another already mentioned problem is the impossibility to always determine the precise volume of these amphorae[731]. Also the actual representativeness of amphorae for the comprehension of consumption is not assured, as in all considered sites they were not in use, but discarded[732]. Without an easily-found solution to these problems, amphorae will be considered for their primary function of being commercial containers. All figures in this Chapter will derive litres from previously offered number of vessels, considering for each form the suggested or geometrically calculated[733] volume in litres (cf., below Appendix 1 for the volumes contained by each form). At the same time another problem arises: unfortunately it is impossible to determine the specific cultivation or production site that resulted in these containers. The fragments found, in fact, rarely bear stamps or clear *tituli picti*[734]. Ancient sources (especially Pliny the Elder[735]) partially help in this task, but they are much more precise (mainly for wine) than the possibility of recognising only generic and large macro-areas by fabrics of amphorae sherds. At the same time these areas often produced both high and low quality wines and their identification is almost impossibile only looking at amphorae because they might have contained both

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[727] For example Garnsey 1999: 13–14; Cianferoni 2009: 65.
[728] Especially barley and wheat: Rickman 1980b: 261–262.
[729] Cf. Panella 1985: 181.
[730] Cf. Peña 2009: 61–118.
[731] Cf., above, Chapter 3, Section 3.2.2: 54–55.
[732] Cf., above, Chapter 3, Section 3.2.4: 64–65.
[733] Cf., above, Chapter 3, Section 3.2.2: 54–55 for the methodology of calculating the amounts of litres for those forms without suggestions in recent publications.
[734] Amphorae may bear, at times, inscriptions (*superinscriptio*, *nota*, *titulus*, *tessera*, *pittacium*, *graffiti* or *tituli picti*), that were put on them at different times during the manufacture and distribution processes (Cf., for example: Rodríguez Almeida 1980: 277–278).They are extremely precious in order to better understand their origins, contents (Manacorda & Panella 1993: 55; Sciallano & Sibella 1991: 20–22; Caravale & Toffoletti 1997: 17–21), for what reason or by whom they were ordered (Bruno 2004: 354–356; Tchernia 2011a: 112–113), and the productive or administrative organization (Benquet 2015: 478–480). Epigraphic data beard by fragments analysed for this research will be provided in the relevant tables of Appendix 2.
[735] Tchernia & Olmer 2004: 117–120.

qualities[736]. For these reasons discussions in this Chapter will treat macro origins, although not leading to precise identifications of specific traded wines.

Despite these problems, this and the following Chapters (10–11) will consider the above mentioned three products of the 'new triad' as they had been the main content of amphorae analysed during the previous Chapters. They will be divided into geographical provenance areas as shown by fragments so as to assess, using graphs, fluctuations in imports to the 'Terme di Elagabalo, the Capital, and Ostia (all considered as single entities[737]) during the various periods belonging to the Mid-Imperial age. On the other hand, the last Chapter (12) will analyse other contents: alum, *defrutum*, and dates.

## 9.1 Wines

Derived from a wild ancestor (*Vitis vinifera* L. subsp. *silvestris*) which was distributed all over the Mediterranean[738], the cultivation of grapevine seems to have appeared during the Neolithic in the Middle East[739], although the first convincing indications of it come from the Chalcolithic[740] and the Early Bronze Age[741]. Wine was the most widespread beverage, drug, and medicine of antiquity and upon it many communities and economies were built[742]. During the Roman times, wine was produced almost everywhere[743] and had a significant role in many occasions (for example: religious, military, familiar, and personal[744]) and was suggested being the only excluded product from the direct intervention of the State[745]. This product was also cited by many authors, thus becoming the most attested one in literature across the above mentioned triad[746]. After several millennia from its introduction into human eating habits, wine is still one of the main products of land, with an increasing interest and consumption[747]. One of the main factors of its success is the social-related issue

[736] Radaelli, forthcoming (A).
[737] Cf., above, Chapter 1, Section 1.3: 20.
[738] Zohary 1996: 24.
[739] McGovern 1996: IX; Dayagi-Mendels 1999: 9; Forni 2000: 290; Brun 2003a: 11, 27, 37–40; Collet 2004: 27, 34; McGovern 2007: 110–111; De' Siena 2012: 22; McGovern 2012: 141–143. Cf. also Valamoti *et al.* 2015 for the Northern Greece.
[740] Cf., for example, Badler 1996; McGovern & Michel 1996; Collet 2004: 36.
[741] Zohary 1996: 27–28. For a discussion of some sites in Mesopotamia cf. Zettler & Miller 1996.
[742] Cappellini *et al.* 2010: 206.
[743] Harris 2011: 165.
[744] For the role of wine during *convivia* in Orace's writings cf. La Penna 1995: 265–270. For other mentions in ancient literature, especially referred to heroes and their ventures cf. Griffin 1995.
[745] Tchernia 1986: 27–28; Harris 2011: 166; Remesal Rodríguez 2011: 202.
[746] For mentions in historical sources cf. Sáez Fernández 1998 and François 2000. For mentions in Columella cf., for example, Calò 2000 and De Stefano 2000. Columella also informed how to conduct a vineyard: cf. Garcia de Luján 2000).
[747] International Organization of Vine and Wine 2012.

that it involved and still involves[748]: it regulates and establishes (or defines) human relations[749], accomplishing the function of being a glue for groups[750] (cf., below, Section 9.2.1).

All different origins of this product as shown by amphorae will be investigated in this Chapter, assessing differences in quantities during the considered periods. It will evaluate amounts of wines that arrived to the analysed cities, neither considering residual nor intrusive vessels. At the same time all figures do not include litres from forms unidentified or not found in their integrity, thus not allowing to make plausible calculation of the amount of litres they originally contained. All graphs in this Chapter will consider the amounts of litres calculated from the number of vessels offered in the previous Chapters.

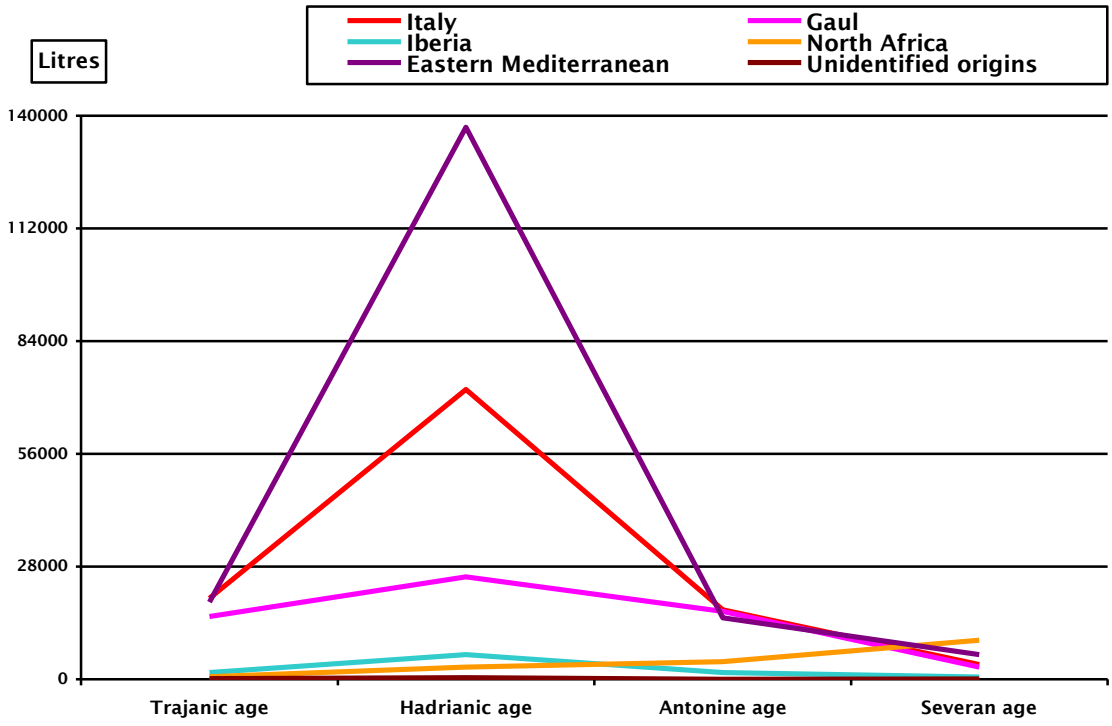



**Fig. 9.1: Amounts of wine from different origins across the considered periods.**

Fig. 9.1 shows the amounts of wines from all considered sites, without disctinction. A relevant amount of litres from the Eastern Mediterranean, Italy, and Gaul during the Hadrianic age can be noticed, while previous and subsequent periods show less dominant origins. A drastic decrease in the presence of wine can be seen during the Severan age for all origins (with the exception of North-African wine), very likely for the nature of analysed contexts. Also a few litres from unidentified origins were found:

[748] Schmitt-Pontel & Tchernia 2004: 51–55.
[749] Cf., for example, Tchernia 1995.
[750] Poux & Dietles 2004: 14, 17; Rustoiu & Egri 2011: 90.

120 litres during the Trajanic age, 390 litres during the Hadrianic age, and 66 litres during the Severan age. They correspond to amphorae whose origin was not identified in publications and they all were found in Ostia. The next Sections will deeply analyse all different origins of this product through an investigation of ancient sources compared with found amphorae.

### 11.1.1 Italian wines

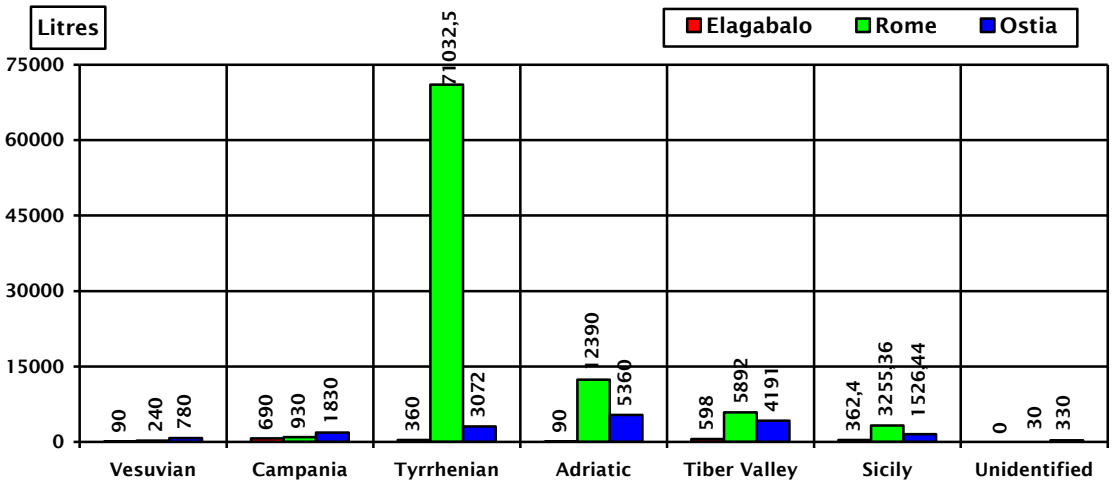



**Fig. 9.2: Amounts of Italian wine from different sub-origins in all sites.**

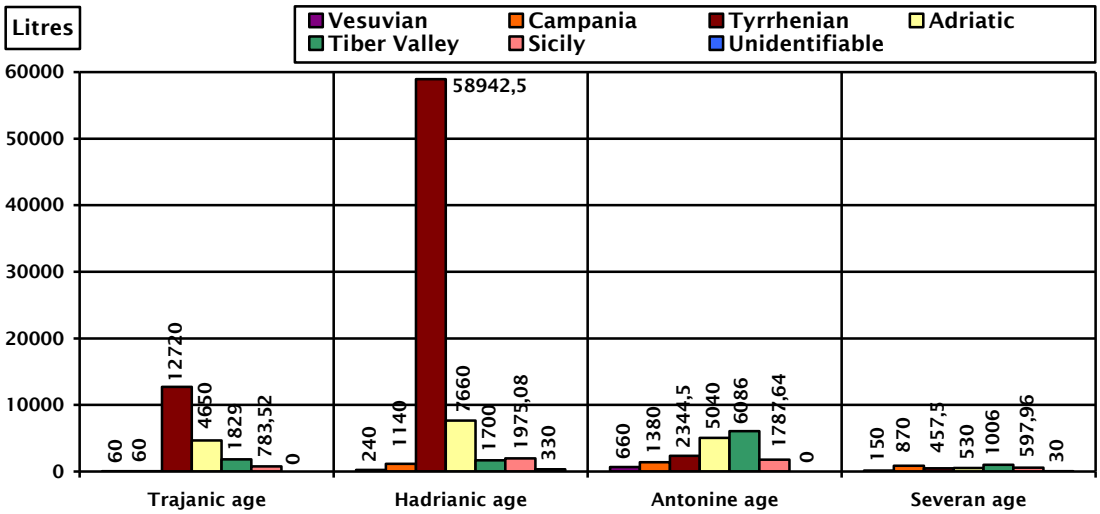
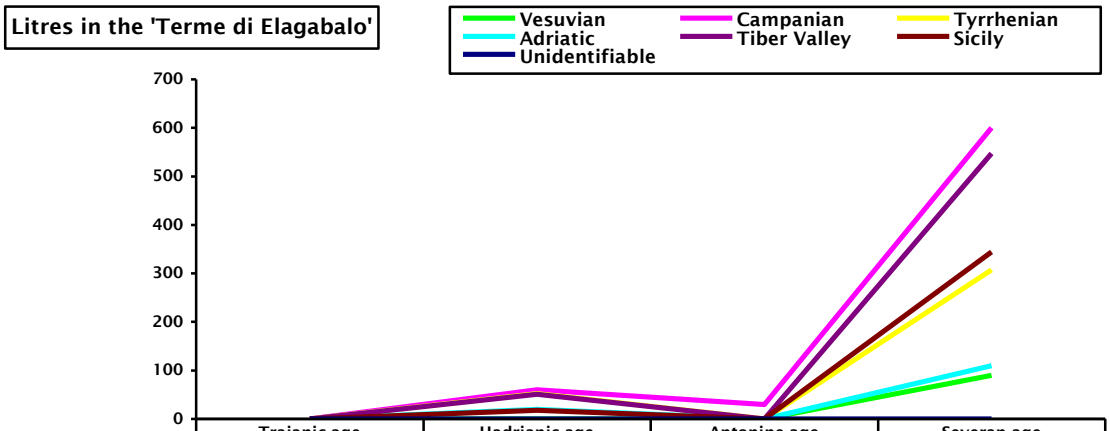



**Fig. 9.3: Amounts of Italian wine from different sub-origins in all periods.**

The above offered figs. 9.2–9.3 represent the presence of wine, in litres, coming from different Italian sub-origins as shown by amphorae found across the chronological periods and sites. Rome (also considering the 'Terme di Elagabalo') shows a real predominance over Ostia.




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Vesuvian | 0 | 0 | 0 | 90 |
| Campanian | 0 | 60 | 30 | 600 |
| Tyrrhenian | 0 | 52,5 | 0 | 307,5 |
| Adriatic | 0 | 20 | 0 | 110 |
| Tiber Valley | 0 | 51 | 0 | 547 |
| Sicily | 0 | 18,12 | 0 | 344,28 |
| Unidentifiable | 0 | 0 | 0 | 0 |

**Fig. 9.4: Amounts of Italian wine from different sub-origins in the 'Terme di Elagabalo'.**

The wines from the Tyrrhenian coast of Italy dominate both the Trajanic and Hadrianic ages in Rome (the latter with a very large quantity of litres, fig. 9.5), while in Ostia (fig. 9.6) it is totally absent during the Hadrianic and Severan ages. In Rome, during subsequent periods, Tyrrhenian wine is much less present, while in Ostia it has a large peak during the Antonine age. Apart from some Ligurian wines[751], also mentioned by Strabo[752] and Martial[753], Etruria and Latium have the majority of mentions among Tyrrhenian wines[754]. Several cities produced wine in their hinterlands, likely following Cato's suggestions of creating vineyards in *fundi suburbani*[755]. This wide spread distribution of vineyards resulted, in fact, in many amphorae whose exact identification is at times impossible, as well as some forms not included into these calculations (because their volume is still unknown), but which were ascribed to Etruria, Latium, and even the surroundings of Rome. Some of these wines acquired importance to become famous and renowned for their quality by authors (as the wine from *Mons Albanus*[756] and the *Caecubum*[757]), while others were vituperated (as the wine coming from Veii[758]).

[751] Plin., *HN*, XVI, 124; XVII, 21; XVII, 25 (Alba Pompeia); XIV, 68 (Genua).
[752] Strabo, *Greogr.*, IV, 6, 2.
[753] Mart., *Epig.*, III, 82, 22.
[754] Tchernia 1986: 322–329. Cf. also Cerchiai Manodori Sagredo 2013: 262–269.
[755] Cato, *Agr.*, 7, 1 and 135, 1.
[756] Tchernia 1986: 57, 108–109, and 324–325 (for the mentions in ancient sources); Salza Prina Ricotti 1987: 77.
[757] Tchernia 1986: 34, 62, 201, 324–325 (for the mentions in ancient sources), and 342; Salza Prina Ricotti 1987: 77; De' Siena 2012: 116.
[758] Tchernia 1986: 111.

The wines from the Adriatic coast are almost unknown, apart from *Hadrianum*[759], although ancient authors mention several areas and cities that produced wine[760] (such as the territory of Faenza and Rimini[761]) and amphorae manufacture sites are also known[762]. In Rome amphorae from this origin have a rather large presence both during the Trajanic and Hadrianic ages to drastically decrease afterwards (fig. 9.5). In Ostia, being as well attested with low figures during the Trajanic and Hadrianic ages, they have a large presence during the Antonine age, becoming the mostly found sub-origin, even if drastically decreasing afterwards (fig. 9.6), likely for the nature of deposits.

Campanian wine always had a very high reputation[763], especially for its main production – *Falernum* – although it is impossible to establish whether or not it is only a matter of a literary *topos*[764]. Mentions are wide and persistent during all the Roman period[765] (and even beyond[766]), but many vineyards produced other wines[767]. These wines seem to have maintained a relevant import across all phases, although from the Antonine age their presence is assured by other containers (the so-called 'Late Campana Dressel 2-4')[768]. In Rome they are attested with a relative constancy during the Hadrianic and Antonine ages, while they are absent during the Trajanic age and decrease during the Severan age (fig. 9.5). In Ostia there is an increase till the Antonine age when there is a peak in presence, to decrease afterwards (fig. 9.6). In the 'Terme di Elagabalo' this origin is the mostly found one during the Severan age (fig. 9.4).

The Vesuvian area can be partly included into Campania, although containers have peculiar fabrics[769]. This area, which included Pompeii[770] and other cities on the slopes of the Vesuvius, seem to have produced moderately large amounts of wines[771]. Some scholars argued that the Vesuvius's eruption stopped entirely the production of this area[772], leading to the birth of other imports, but the constant presence of

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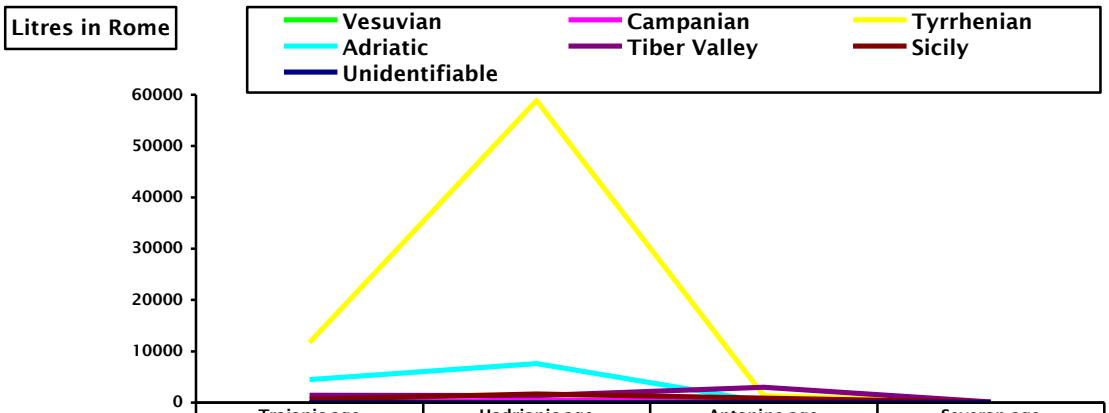
[759] Tchernia 1986: 55, 167-168, 338-339 (for the mentions in ancient authors), and 348-349.
[760] Tchernia 1986: 336-341; Pesavento & Carre 2004.
[761] Bruno 2005: 72; De' Siena 2012: 116-117.
[762] Tchernia 1993b: 287. For a recent discovery of kilns producing Lamboglia 2 and Dressel 1 amphorae in Pesaro cf. Ciuccarelli *et al.* 2011: 52, 53-56, 59; Cerri *et al.* 2012: 52, 54-57.
[763] Bouvier 2000: 127-132; Mele 2000: 40. Cf. also De' Siena 2012: 115-116; Cerchiai Manodori Sagredo 2013: 257-262.
[764] Tchernia 1986: 34.
[765] Tchernia 1986: 57, 62, 159, 201, 277, 330-333, and 342-343 and Cerchiai Manodori Sagredo 2013: 252-257 (for many mentions in ancient sources); Salza Prina Ricotti 1987: 78; Tchernia & Brun 1999: 18-20.
[766] Rizzo 2003: 211, note 38.
[767] Tchernia 1986: 328-335.
[768] Already noted in Tchernia 1986: 280-281.
[769] Panella & Fano 1977; Williams & Peacock 2005: 141-142; Peña & McCallum 2009b: 176-179.
[770] Cf., for example, Carbonneau & Rotunno 2000: 136-137; Fregoni & Amodio 2000; Ciarallo 2010; Fregoni 2010. For a kiln in the city which may or may not have had produced amphorae cf. Peña & McCallum 2009a: 64-72.
[771] For example *Pompeianum* and *Vesuvinum* (Tchernia 1986: 332-335). They might have been bottled along the coast: cf. Peña & McCallum 2009b: 191.
[772] Cf., for example, Tchernia 1986: 227-232; Williams 2004; Williams & Peacock 2005: 142-143.

containers from this origin across all analysed sites (and especially in Ostia during the Antonine age) cannot permit to consider them residual vessels (figs. 9.4–9.6).




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Vesuvian | 0 | 0 | 240 | 0 |
| Campanian | 0 | 480 | 420 | 30 |
| Tyrrhenian | 11700 | 58890 | 1372,5 | 150 |
| Adriatic | 4510 | 7620 | 180 | 80 |
| Tiber Valley | 1404 | 1394 | 2975 | 119 |
| Sicily | 634,2 | 1685,16 | 863,52 | 72,48 |
| Unidentifiable | 0 | 0 | 0 | 30 |

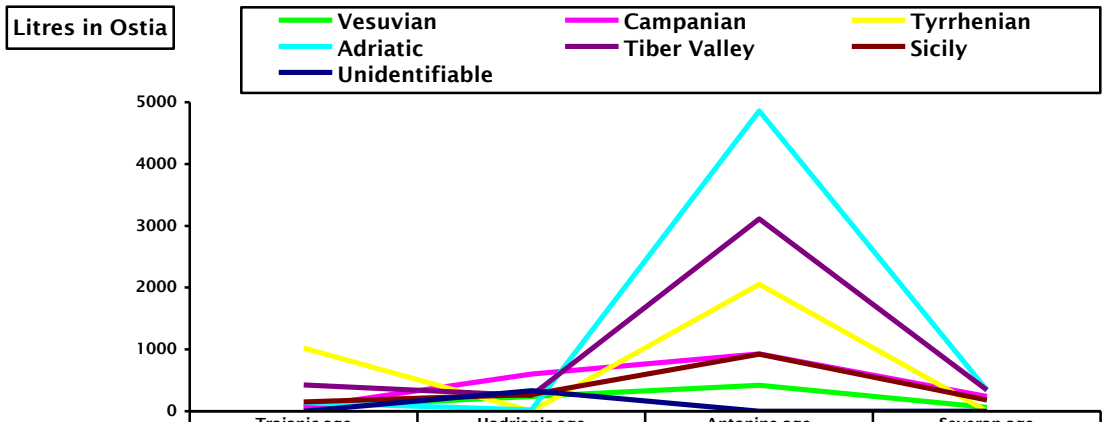
**Fig. 9.5: Amounts of Italian wine from different sub-origins in Rome.**

Although the AD 79 eruption did not create a total interruption of Campanian productions[773], the wines from the Tiber valley have increased exports to Rome from the same period[774]. They probably consisted in *hirtiola* or *irtiola* wines, mentioned by Pliny the Elder[775], Columella[776], and likely considered also by Juvenal[777] and Pliny the Younger[778]. They were possibly not very high in quality[779], but, being produced in large quantities[780], might have been a low-cost product[781]. Their transport along the Tiber to Rome, presumably using rafts[782], is relatively constant (with an increase) during all analysed phases, to decrease during the Severan age. This happens both in Rome (fig. 9.5) and in Ostia (fig. 9.6) and it may be caused by the nature of analysed contexts, not for an actual decrease in imports. Other sites with Severan contexts in Rome which had been excluded from this analysis for the problems they bear have other significant

[773] For example the Northern part of the bay of Naples recovered sooner after that eruption: Martucci *et al.* 2014: 51. A continuation in the ceramic production is also attested, sometimes even till the 6th century AD: Arthur & Solicelli 2015.
[774] Tchernia 1986: 255.
[775] Plin., *HN*, XIV, 37 who mentions the cultivar of *Hirtiola*, a vine that grew in Umbia, in the area of *Mevania* and in *Picenum*, which produced large amounts of wine.
[776] Columella, *Rust.*, III, 2, 28.
[777] Juv., *Sat.*, III, VII, 121 who talks about a *vinum Tiberi devectum* for the big market of Rome.
[778] Plin., *Ep.*, VIII, 2.
[779] As reported by Molina Vidal 1998.
[780] Tchernia 1993b: 289–290; Panella & Tchernia 1994: 158.
[781] Tchernia 1986: 255.
[782] Molina Vidal 1998: 461.

amounts of containers from the Tiber Valley. In the 'Terme di Elagabalo' (fig. 9.4), in fact, the amounts are large enough to reach second place in the order of presence.

Little information is available about Sicilian wines (including the ones from the island of Lipari, represented by a single Dressel 2-4 found in Rome during the Antonine age) or those from *Bruttium*[783]. Sicilian wine, carried in the small containers *Ostia II*, 522/523 (with many subforms[784]) seems to have had quite a constant import to the cities, apart from a small peak during the Hadrianic age in Rome (fig. 9.5) and during the Antonine age in Ostia (fig. 9.6). Noticeable is the presence of Sicialian wine during the Severan age in the 'Terme di Elagabalo' (fig. 9.4) as the amount of litres surpasses both those found in Rome and in Ostia. This wine seems to have been the result of an ancient tradition of quality wine-production and Pliny the Elder mentions wines already cited by Cato (*Murgentinum*, *Euergeneum*)[785], to which he added the *Mamertinum*[786].




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Vesuvian | 60 | 240 | 420 | 60 |
| Campanian | 60 | 600 | 930 | 240 |
| Tyrrhenian | 1020 | 0 | 2052 | 0 |
| Adriatic | 140 | 20 | 4860 | 340 |
| Tiber Valley | 425 | 255 | 3111 | 340 |
| Sicily | 149,32 | 271,8 | 924,12 | 181,2 |
| Unidentifiable | 0 | 330 | 0 | 0 |

**Fig. 9.6: Amounts of Italian wine from different sub-origins in Ostia.**

[783] For the mentions of the latter in ancient sources cf. Zancani Montuoro 1982; Tchernia 1986: 334-337; Sangineto 1994: 564; 2000: 113; Filocamo 2013: 113-118. Cf. also Sangineto 1989: 841-843; 2012: 49-50 (about Paola) and 77 for the mentions of the production of amphorae containing wine in Calabria, especially during the Late Antiquity. For analyses held of local Dressel 2-4 cf. Miriello *et al.* 2015. For the discovery in Marina di Tebisacce (Cosenza) of a container meant for pitch produced in *Bruttium*: cf. Sangineto 1992.
[784] One of these subforms is called S. Alessio *similis* and was produced at least in Naxos: Ollà 2001: 56, n. 12
[785] Cato, *Agr.*, 6, 4.
[786] Plin., *HN*, XIV, 25, 66. *Mamertinum* is also mentioned by Mart., *Epig.*, XIII, 117 and Ath., *Deipnosphistae*, I, 27c. Cf. Salza Prina Ricotti 1987: 78 and also Cerchiai Manodori Sagredo 2013: 270-271.

### 9.1.2 Gallic wines

Ancient Gaul was well known for the consumption of wine, so as to become proverbial[787]. The first implant of wine-production can be ascribed to the Greek colony of Marseille whose wines were, at first, totally dedicated to self-consumption[788]. Subsequently *Massalitanum* wine started being exported in several amphorae and arrived in Rome so as to be cited by ancient authors[789]. A single likely residual fragment of an amphora coming from Marseille was, in fact, found in one of the analysed contexts in Rome. From the Augustan age, also other parts of Gaul (especially, but not limited to, *Narbonensis*[790]) started producing wine. This wine was mentioned by ancient sources (such as *picatum*, *passum*, and *mulsum*[791]) and was partly transported by the typical flat-based amphorae or by barrels[792].

Across all analysed sites and periods, almost only wine from *Narbonensis* is present, even though two types of amphorae (the possible variety of Gauloise 3 found for the first time in the 'Terme di Elagabalo' and a Gauloise 5 found in Ostia whose origin was not identified) might have been produced elsewhere in Gaul. The wine from Gaul seems to have arrived in Rome in large quantities only from the Neronian/Flavian ages[793].

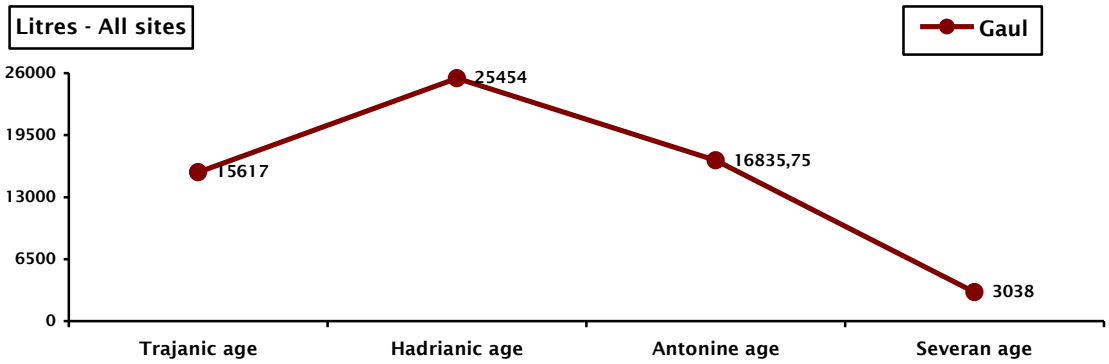



**Fig. 9.7: Amounts of Gallic wine in all chronological periods and from all sites.**

[787] Polyb., *Historiai*, II, 19, 4 and XI, 3, 1; Liv., *Ab Urbe Condita*, V, 33, 3 and 44, 6; Diod. Sic., *Bibl. Hist.*, V, 26, 3; Dion. Hal., *Ant. Rom.,* XIV, 8, 12; *Plut.*, *Vit.*, *Cam.*, XV, 2; App., *Celt.*, VII; Polyaenus, *Strat.,* VIII, 25, 1; Amm. Marc., *Hist.*, XV, 12, 4; Tchernia 1986: 87–90; Brun 2003a: 88; Olmer & Maza 2004: 141.
[788] Brun 2004a: 215–216; Brun 2005: 7.
[789] Ath., *Deipnosphistae*, I, 27c; Plin., *HN*, XIV, 68; Columella, *Rust.*, I, 6, 20. Mart., *Epig.*, X, 36, considered it one of the worst wines, almost poisonous, one to be given only to a large number of hosts while trying to save money (XIII, 123); Also Galenus knew a type of wine from Marseille (cited by Brun 2005: 7). Cf. also Brun 2005: 12–13.
[790] Cf. Tchernia 1986: 146; Brun & Laubenheimer 2004: 216–222; Brun 2005; Laubenheimer & Marlière 2010.
[791] Rizzo 2003: 212; Cerchiai Manodori Sagredo 2013: 273.
[792] Brun 2003a: 104–106.
[793] Tchernia 1986: 246–248; Rizzo 2003: 212.

As shown by fig. 9.7, a large amount of Gallic wine arrived in all sites during the Hadrianic age, although it is also well attested during the Trajanic and the Antonine ages. The total amount of litres drastically falls after the Antonine age, possibly as a matter of excavated sites (all origins decrease during that period) or other causes like the effects of the 'Antonine plague' to production sites[794], or the use of barrels which rarely offer archaeological remains.

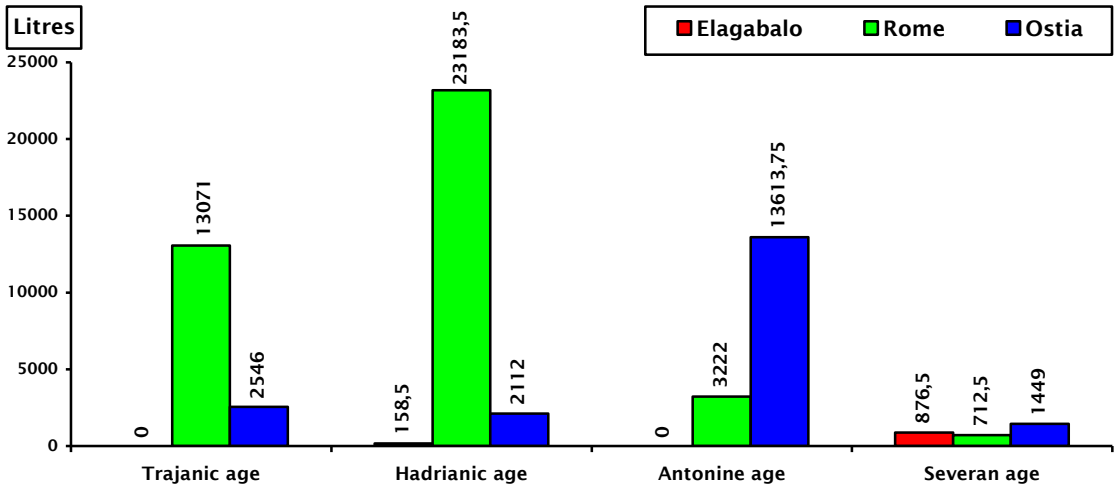



**Fig. 9.8: Amounts of Gallic wine divided into sites and chronological periods.**

Fig. 9.8, on the other hand, shows that the majority of Gallic wines arrived in Rome (considering also the 'Terme di Elagabalo') during the Trajanic and Hadrianic ages, while the Antonine age sees a drastic increase in Ostia. During the Severan age amounts are still prevailing in Ostia, but it can be noticed that quantities in the 'Terme di Elagabalo' surpass those found in Rome.

### 9.1.3 Iberian wines

Along with olive oil (Chapter 10) and fish sauces (Chapter 11), main products of this land that made it famous, the Iberian peninsula resulted also in amounts of wine that were partly traded to Rome by several amphorae. Most of them are imitations of Italian containers (both in *Baetica* and *Tarraconensis*), while from the Augustan age a new form was created to carry the Iberian *defrutum* that will be discussed in Chapter 12. Figs. 9.9 and 9.10 show that low, but not negligible amounts of litres of Iberian wines arrived to all sites (especially to Rome) and across the considered periods.

[794] Brun 2005: 178-179.

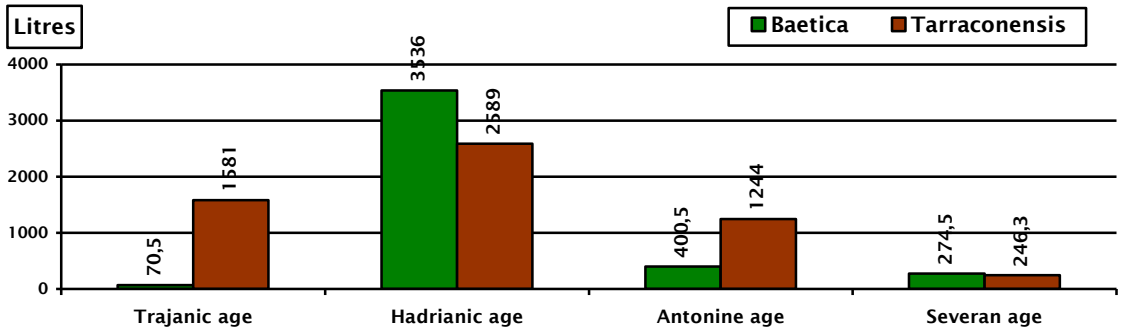



**Fig. 9.9: Amounts of Iberian wine divided into sub-areas and chronological periods.**

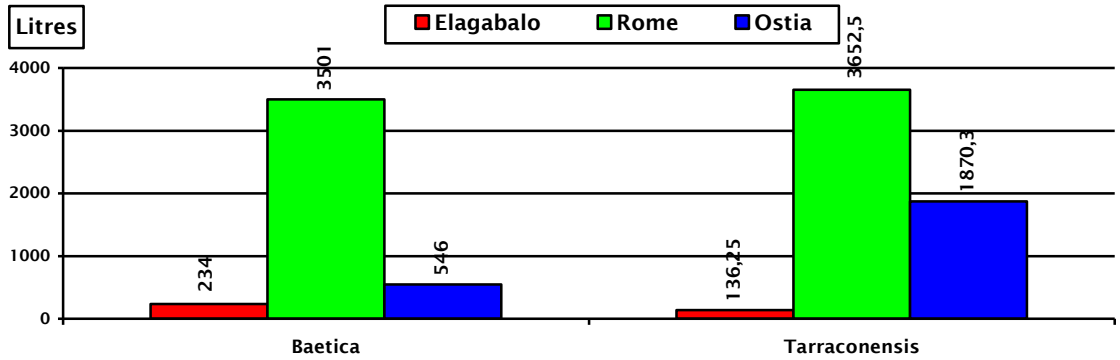



**Fig. 9.10: Amounts of Iberian wine divided into sub-origins and sites.**

Strabo, reporting Posidonius, informs that already in 70 BC *Baetica* exported wine[795] and Varro mentions the production of wine in this province[796]. More information is provided a century later by Columella[797]. Also numismatic evidence[798] and later Arabian sources mention this production[799]. All these sources, however, never cite the quality of these wines. Therefore, the hypothesis carried out by Étienne[800] and accepted by Tchernia[801] who considered it one of the worst wines can describe the not very large quantities of *Baetican* one, especially in the 'Terme di Elagablo' (fig. 9.11) and in Ostia (fig. 9.13). On the other hand, there is a surprising rather large presence of *Baetican* wine in Rome especially during the Hadrianic age (without considering *defrutum*), that decrease only from the Antonine age (fig. 9.12). These data contradict assumptions offered by Rizzo in 2003 of a decrease in imports since the Trajanic age[802], because it is something that can be seen only after the Hadrianic age. Moreover, during the

[795] Strabo, *Greogr.*, III, 2, 6.
[796] *Varro*, *de re rustica*, I, 8, 1.
[797] Columella, *Rust.*, I, pref. 20. Columella's uncle seemed to have raised vineyards (Brun 2004b: 281), producing wine with an addition of salt and sea-water to must, which was then clarified in plaster, reinforced with *defrutum*, and flavoured with fenugreek (Columella, *Rust.*, XII, 21, 3-6), thus becoming the most careful producer of all *Baetica* (Columella, *Rust.*, V, 5, 15).
[798] Étienne & Mayet 2000: 61-66.
[799] Étienne & Mayet 2000: 71-72.
[800] Etienne 1975: 312, n. 60.
[801] Tchernia 1986: 175-176. They took into account a mention in Ovidius who used the word '*Hispano*' (Ov., *Ars Am.*, III, 645-646) that may be ascribed to *Baetica*.
[802] Rizzo 2003: 215.

Severan age the amounts in the 'Terme di Elagabalo' (fig. 9.11) surpass litres both in Rome and in Ostia.

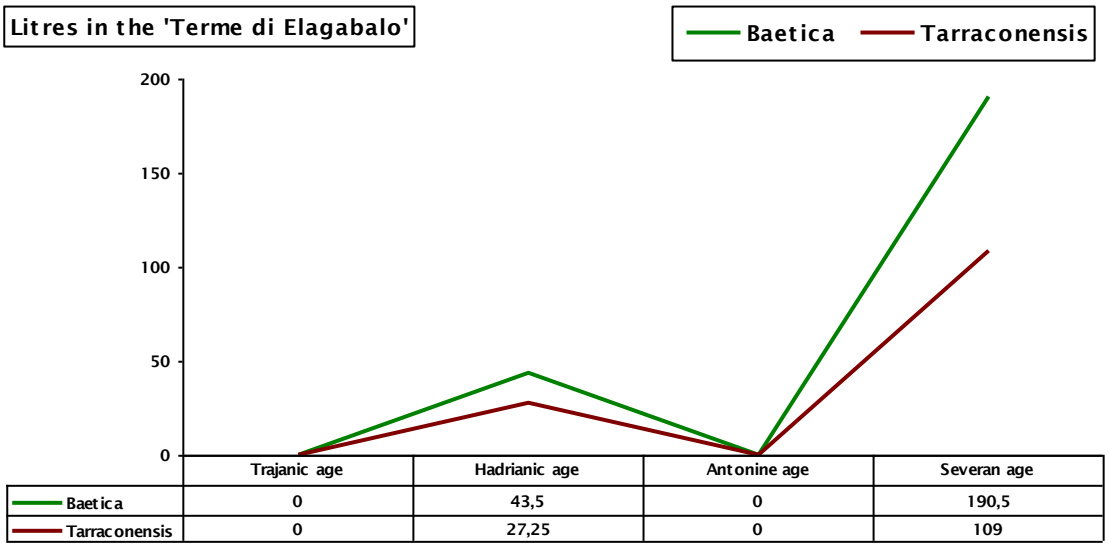



**Fig. 9.11: Amounts of Iberian wine divided into sub-origins in the 'Terme di Elagabalo'.**

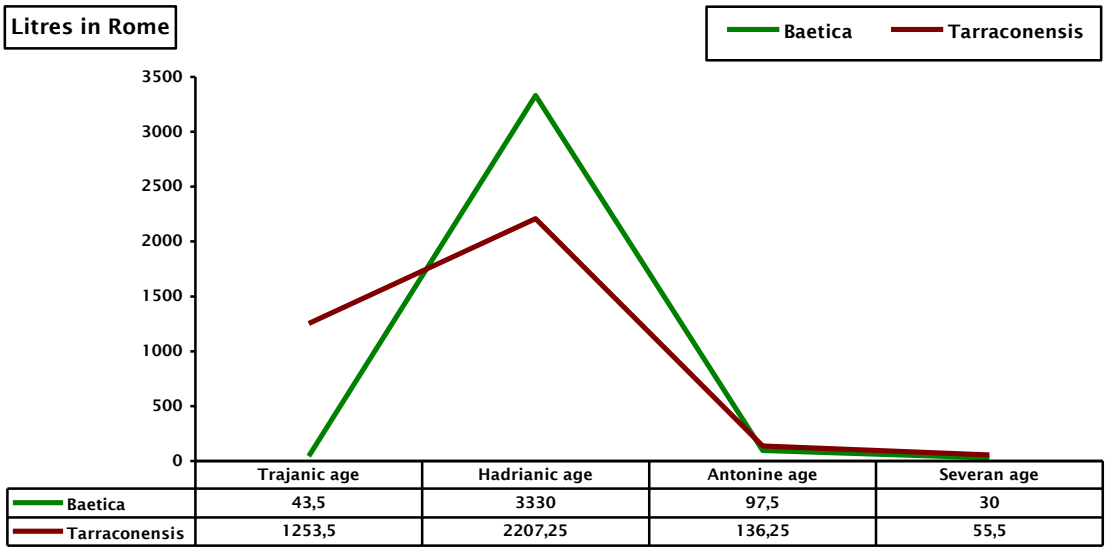
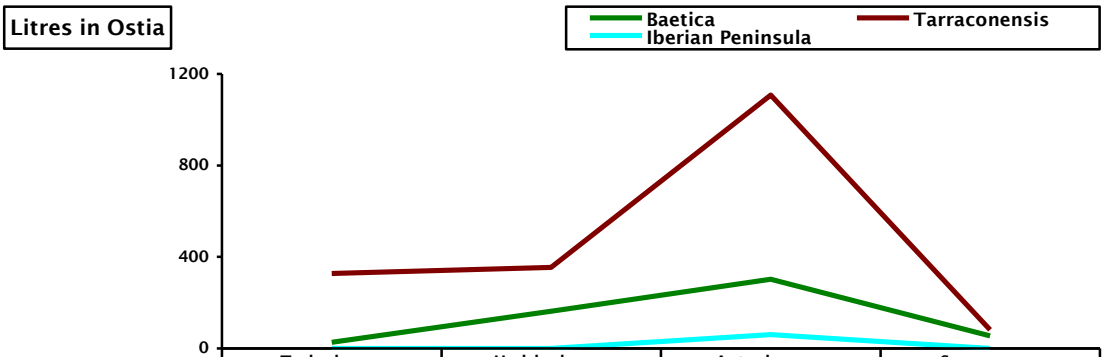



**Fig. 9.12: Amounts of Iberian wine divided into sub-origins in Rome.**

More mentions (both ancient authors and inscriptions[803]) are available for *Tarraconensis*. This province was renowned for having produced two high quality wines for their *elegantia*[804] possibly for customers belonging to not very rich nor too poor ranks[805]: from *Tarraco*[806] and *Lauro*[807]. At the same time it produced two low

[803] Cf., for example, stamps in Berni Millet *et al.* 1998.
[804] Plin., *HN*, XIV, 71. Cf. also Cerchiai Manodori Sagredo 2013: 273.
[805] Dell'Amico & Pallares 2007: 66.
[806] Sil., *Pun.*, III, 369 and XV, 178; Mart., *Epig.*, XIII, 118; Flor., *Vergilius orator an poeta*, II, 8.
[807] *Tituli picti*: *CIL* XV, 4577–4579 and others published in Étienne & Mayet 2000: 105.

quality ones, possibly for lower ranks[808]: from *Saguntum*[809] and *Laetania*[810] (the latter is considered by Martial a very cheap wine[811]). Apart from some producing sites[812], many kilns for the manufacture of Dressel 2-4 amphorae were found in *Laetania*[813], thus most finds in the analysed sites possibly contained second-rate wines, but this did not stop exports (as clearly visible from figures) which were dealt both with amphorae and *dolia*[814]. At the same time 5 vessels found in Ostia were ascribed to a Southern part of this province, thus they possibly contained one of the two best rated wines. Amounts show on one hand that from the Antonine age there is a decrease in Rome (fig. 9.12), while in Ostia this same period shows the largest quantity of litres (fig. 9.13), thus reappraising what scholarship suggested about a decrease in the production and export since the Flavian age[815]. On the other hand they show that the largest part of this product was traded to Rome, with also significant amounts in the 'Terme di Elagabalo' especially during the Severan age (9.11) when it surpasses both Ostia and Rome for the amounts of litres.




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Baetica | 27 | 162 | 303 | 54 |
| Tarraconensis | 327 | 354,25 | 1107,25 | 81,75 |
| Iberian Peninsula | 0 | 0 | 60 | 0 |

**Fig. 9.13: Amounts of Iberian wine divided into sub-origins in Ostia.**

Wines without a specific identification of their origin were found with 60 litres just in Ostia and during the Antonine age. At the same time, a single vessel of an amphora from the island of Ibiza was found in a context which was not considered in

[808] Dell'Amico & Pallarés 2007: 66.
[809] Juv., *Sat.*, V, 29; *Fronto*, *Ep. de eloquentia*, I, 4; *CIL* XV, 2632; *CIL* II, 6254, 6. Pliny the Younger, moreover, cites *Voconius Romanus* as having vineyards in the area (*Ep.*, II, 13) that resulted in some quantities of wine (*Ep.*, IX, 28, 2).
[810] Plin., *HN*, XIV, 71.
[811] Mart., *Epig.*, I, 26, 9-10 and VIII, 53, 6.
[812] Peña Cervantes 2011/2012: 51.
[813] Étienne & Mayet 2000: 197-210; Rizzo 2003: 212; Dell'Amico & Pallares 2007: 119-122. Cf. also Tremoleda i Trilla 2007 for a complete list of sites, not only in *Laetania*.
[814] Dell'Amico & Pallarés 2007: 55-57, 60, 61-63, 65-66. Cf. also Bernal Casasola 2007b. For the policy undertaken in producing and exporting wine from this area cf. also Martín i Oliveira 2015.
[815] Dell'Amico & Pallarés 2007: 122.

this study (Via Marmorata in Rome[816]), but is worthy to be mentioned. Ebusitan wine[817], in fact, had a long tradition since Phoenician expansion (as declared also by ancient sources[818]). It seems to have been another high quality product, as the ones already mentioned from *Tarraconensis*, that could rival Italian wines[819]. Wine was also produced in *Lusitania*. *Polibius* informs that from the 2nd century BC this product was abundant and not very expensive[820], while *Strabo* only mentions 'nice vineyards'[821]. Its quality is not known, possibly being mediocre or ordinary[822], but it was surely produced as confirmed by some producing sites[823] and by the manufacture of amphorae in the area[824] although none of them was found in Rome or in another of the analysed sites. This might be caused by a transport of this product to Rome by *cupae* (barrels)[825] or by *orcas*[826].

### 9.1.4 North-African wines

The wine production in North Africa is rather ancient[827] and widespread[828], although during more ancient periods it might have been transported by skin containers, especially when – during the first century BC – wines from Italy and Tarraconensis were very likely replaced by local ones[829]. Diodorus Siculus[830], Strabo[831], Pliny the Elder[832], Cesar[833], Columella[834], as well as the Punic agronomist Magon[835], in fact, inform about vineyards in various areas along the Mediterranean coast of all the

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[816] Bertoldi 2011b: 150.
[817] This name for the island of Ibiza comes from Pomponius Mela who calls it *Ebusus* (Pompon., *Chorographia*, III, 125).
[818] Cf. Maurimon Ribas 2009: 1–4.
[819] Plin., *HN*, XIV, 71. Cf. also Tchernia 1986: 174; Rizzo 2003: 212; Brun 2004b: 261. Maurimon Ribas 2005: 208; 2009: 5–6, considers this passage referring to Mallorca and Minorca.
[820] Polyb., *Historiai*, XXXIV, 8 = Ath., *Deipnosophistae*, VIII, 330c. Cf. also Étienne & Mayet 2000: 15.
[821] *Strabo*, *Greogr.*, III, 3, 1.
[822] Étienne & Mayet 2000: 21.
[823] Peña Cervantes 2011/2012: 51–52.
[824] Brun 1997: 52–53 and mentioned bibliography; 2004b: 284–294.
[825] For a detailed record of all the representations of barrels in Portugal or Spain cf. Étienne & Mayet 2000: 21, 25–58; Marlière 2002: 154–157.
[826] Peña Cervantes 2010: 88–89; 2011/2012: 52.
[827] Cf. Biondi 1986: 39; Morel 1998a; Brun 2004a: 187–191.
[828] Marlière 2002: 184. This is also confirmed by mosaics depicting vines and grape harvests (cf., for example, Ghedini 2000: 226–230, 235).
[829] Martin-Kilcher 1998: 515; Brun 2004b: 201.
[830] Diod. Sic., *Bibl. Hist.*, XX, 8, 4.
[831] Strabo, *Greogr.*, XVII, 3, 4 and 20.
[832] Plin., *HN*, V, 1, 13; XIV, 24.
[833] Caes., *B. Afr.*, LXVII, 2.
[834] Columella, *Rust.*, III, 12, 5; III, 15, 4–5; V, 5, 4; and *De arboribus*, 4, 1 and 4–5.
[835] Lequément 1980: 186.

three main provinces of this region which resulted in amphorae that were analysed: *Africa Proconsularis*, *Tripolitania*, and *Mauretania Caesariensis*[836].

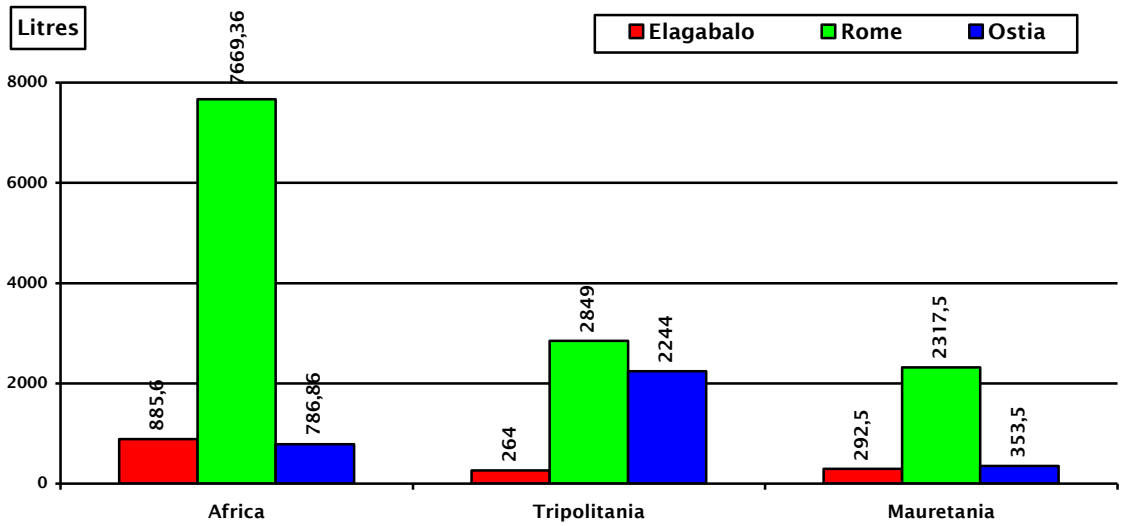



**Fig. 9.14: Amounts of North-African wine divided into sub-origins and sites.**

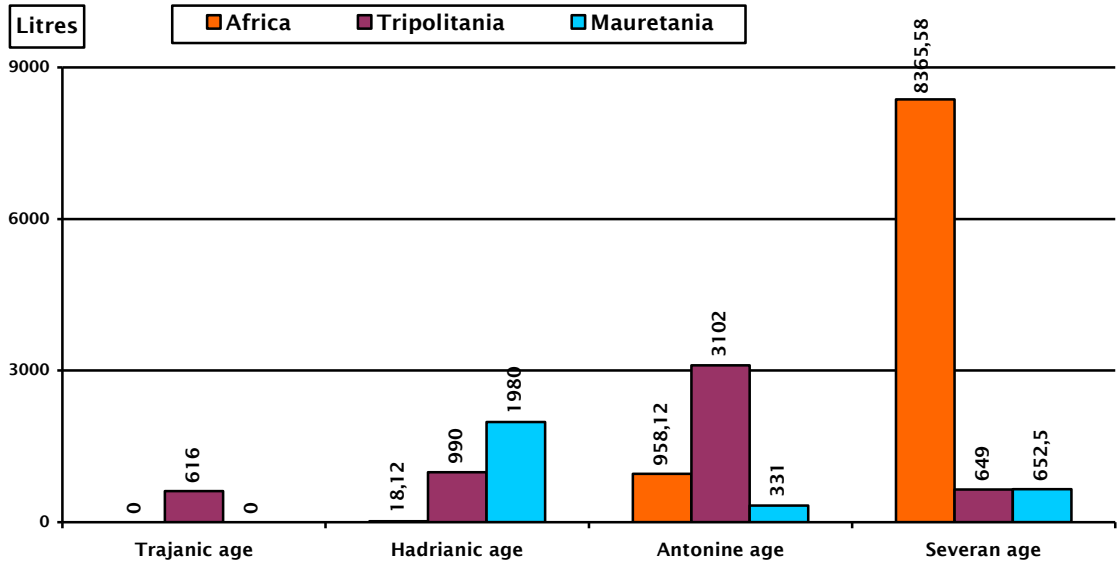



**Fig. 9.15: Amounts of North-African wine divided into sub-origins and periods.**

Looking at the amounts of litres resulting from finds discovered in various sites, as shown by figs. 9.14 and 9.15 which consider amphorae whose wine-content is assured or probable, this information assumes importance, despite the uncertainties about the exact content of several North-African amphorae[837]. Rome has a predominance of finds (also considering the 'Terme di Elagabalo'). During the Severan age a peak in imports from *Africa Proconsularis* can be seen, at least compared with the other two origins. *Tripolitania* seems to increase till the Antonine age when it

[836] For *Mauretania Tingitana* cf., for example, Rebuffat & Gabard 1990, especially for later periods.
[837] Bonifay 2004b.

becomes the prevailing origin to fall during the Severan age. *Mauretania Caesariensis* has a peak during the Hadrianic age when it becomes the mostly attested sub-origin, but falling afterwards with a small increase only during the Severan age.

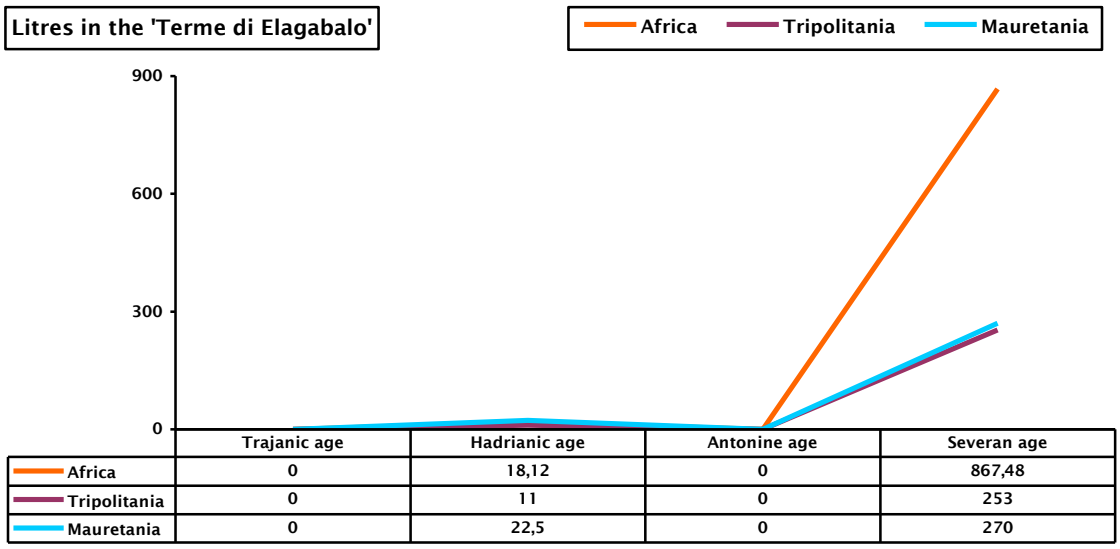
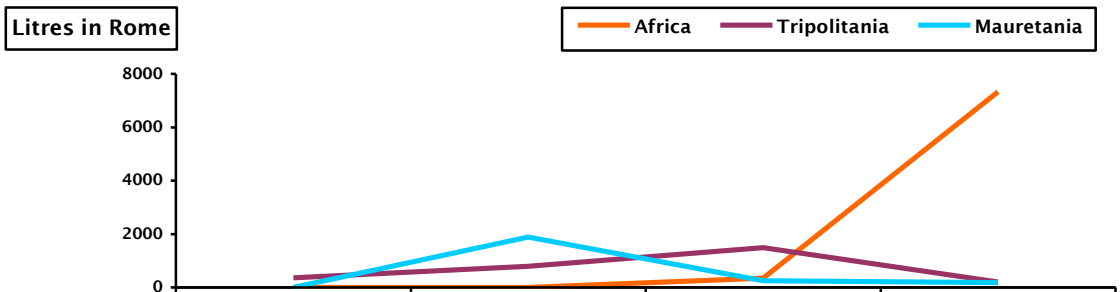



**Fig. 9.16: Amounts of North-African wine divided into sub-origins in the 'Terme di Elagabalo'.**

Pliny the Elder mentions the African *passum*, second in quality only to the one from Crete[838]. Several inscriptions, as well as numismatic evidences[839] and archaeological remains[840], help in determining the extension of African vineyards, that are often mentioned together with olives. An inscription reporting parts of the *Lex Manciana* has a section about new vineyards[841]. Another from Aïn Djemala reports positive answers to cultivate olives and vines[842] and others were found in Lambesis[843], where a veteran had land possessions for cereals, vines, and pasture[844]. Other inscriptions and texts dated 3rd century AD continue to report the importance of this product[845] that might have been of some quality, as reported by Pliny the Elder. Several amphorae were produced to transport wine and many are local imitations of Italian prototypes. This datum suggests that, for marketing purposes, producers in this area wanted to equate their wines to the Italian ones. This origin is absent in Ostia and Rome both during the Trajanic age and the Hadrianic age, but the former shows an increase during the Antonine age to decrease afterwards (fig. 9.18), while the latter increases amounts till the Severan age when the majority of finds were discovered (fig.

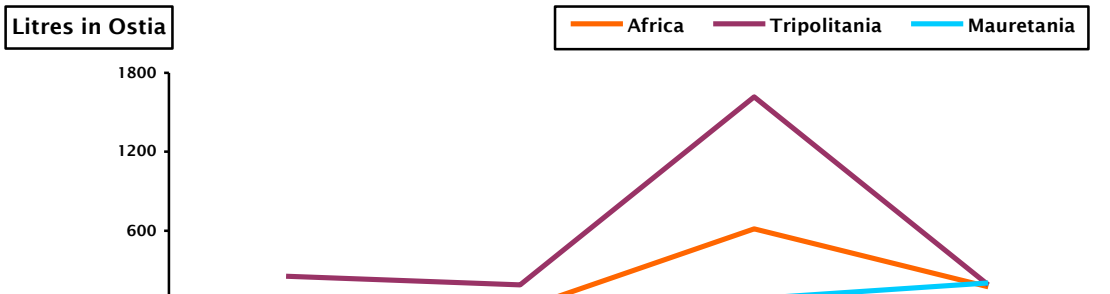
[838] Plin., *HN*, XIV, 11.
[839] Lequément 1980: 186.
[840] Cf. Brun 2003b; 2004b: 202-204.
[841] *CIL* VIII, 25902.
[842] Lequément 1980: 187 and note 3.
[843] Cagnat 1914; D'Escurac-Doisy 1962.
[844] Apul., *Apol.*, LVI, 5.
[845] Lequément 1980: 187-188. Cf. also Brun 2004b: 201.

9.17, especially found in via Blaserna). This datum is confirmed by finds in the 'Terme di Elagabalo (fig. 9.16) with a serious increase in the amounts from *Africa Proconsularis* during the Severan age. At the same time only this site offers very low amounts of litres from this origin during the Hadrianic age.




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Africa | 0 | 0 | 343,12 | 7326,24 |
| Tripolitania | 363 | 792 | 1485 | 209 |
| Mauretania | 0 | 1890 | 247,5 | 180 |

**Fig. 9.17: Amounts of North-African wine divided into sub-origins in Rome.**




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Africa | 0 | 0 | 615 | 171,86 |
| Tripolitania | 253 | 187 | 1617 | 187 |
| Mauretania | 0 | 67,5 | 83,5 | 202,5 |

**Fig. 9.18: Amounts of North-African wine divided into sub-origins in Ostia.**

A single mention by Pliny the Elder considers Tripolitanian wine, that seems to have been of some good quality as well[846]. The lack of other information from ancient sources is partly provided by archaeological remains. In Libya[847] and in the island of Jerba[848] (which also offers remains of productive *villae*[849]) small containers were produced (Mau XXXV) imitating the Italian prototype Dressel 2-4. Despite the small quantity of wine they contained (about 11 litres), their presence is not negligible in the analysed sites. In the 'Terme di Elagabalo' (fig. 9.16), elsewhere in Rome (fig. 9.17), and Ostia (fig. 9.18) Tripolitanian wine is always present, with an increase during the Antonine age and a decrease during the Severan age both in Rome and Ostia.

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[846] Plin., *HN*, XIV, 71.
[847] *Ostia III*, 471.
[848] Fentress 2001: 261-264.
[849] Cf., for example, the 4th century AD *villa* in Brun 2004b: 197.

The wine from *Mauretania Caesariensis* cannot be neglected as well, because it saw an agricultural growth during the centuries[850]. Apart from the *Peryplus* of the Pseudo-Scylax dated 4th century BC[851], only Strabo informs that vineyards were cultivated in this area during the Roman period[852]. Other mentions of this product come from epigraphic evidences. A man, Tiberius Claudius Docimus, is remembered on his funerary inscription in Rome as a retailer of fish sauces and wine from this province[853], thus informing about the existence of a commerce to the Capital. Other significant epigraphic evidences come from amphorae of the form Dressel 30, mentioning the origin for these containers around the city of *Tubusuctu* (nowadays Tiklat, close to El Kseur)[854]. Unfortunately none of these mentions informs about the quality of this wine, but it was possibly as good as other North-African ones, accepting the hypothesis offered by Lequément who suggests that part of the famous African *passum* also came from *Mauretania*[855]. This information is confirmed by finds, as clearly visible on the above offered figures which show a total absence in all sites during the Trajanic age, with a significant increase during the Hadrianic age in Rome (fig. 9.17) and, partly, in Ostia (fig. 9.18). The Antonine age sees a decrease in the presence of this wine in all sites that raises again only during the Severan age, visible in the 'Terme di Elagabalo' (fig. 9.16) and in Ostia, while in Rome it decreases.

### 9.1.5 Eastern Mediterranean wines

As shown by figures 9.19 and 9.20, the amount of 'Oriental' wines is much more varied than the previous origins, as it groups together several different areas. Litres are dominated by the very large quantity of Cretan wine in Rome, especially during the Hadrianic age (and from Nuovo Mercato Testaccio). That is why this specific origin has a separate figure (fig. 9.21).

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[850] Leveau 2005: 86.
[851] Rebuffat & Gabard 1990: 219 and 232. This article is, however, focussed more on *Mauretania Tingitana* that produced wine as well.
[852] Strabo, *Greogr.*, XVII, 3, 4.
[853] *CIL* VI, 9676 (cf. page 3895) = *ILS* 7486 = *AE* 2010, 225: *negotians salsamentarius et vinariarius Maurarius*.
[854] Brun 2004b: 232–233. Some vessels bear stamps like ex prov(incia) Ma(u)r(etania) Caes(ariensis) Tubus(uctu): *CIL* XV, 2635 a–e and *CIL* VIII, 10477 f–l, although other forms of this stamp are known: for example ex provinc(ia) Mauretan(ia) Caes(ariensis) Tub(usuctu) in Callender 1965: nos 769 and 1744 and Lequément 1980: 189; ex prov(incia) Ma(u)r(etania) [Caes(ariensis)] Tubu(suctu) borne by an unpublished vessel from excavations held along Via Prampolini in Rome (VII Municipio, analysed by the same author of this research).
[855] Lequément 1980: 190–191. Chafia 2004: 982, even considering both Numidia and *Mauretania Caesariensis*, only referred to wine from the first region.

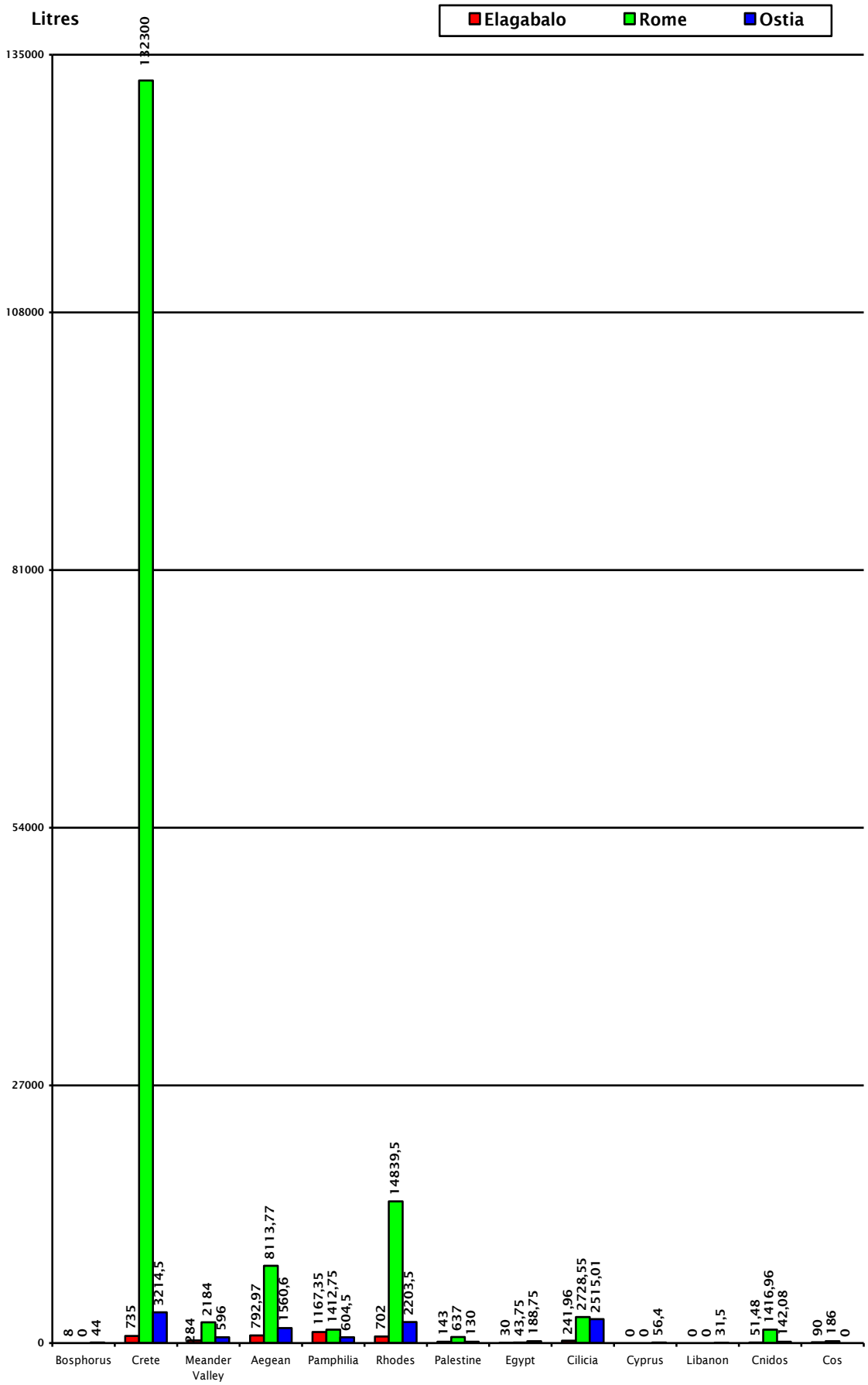


**Fig. 9.19: Amounts of 'Oriental' wines divided into sub-origins and sites.**

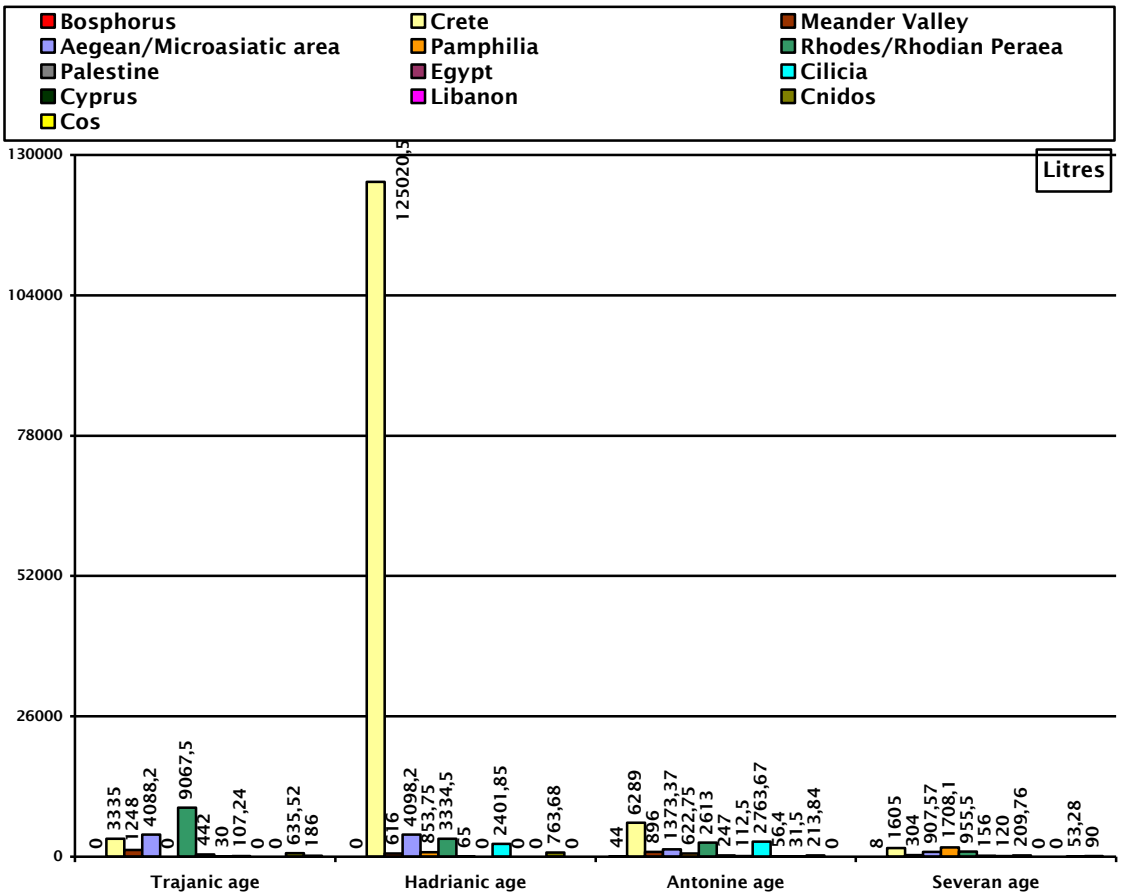


**Fig. 9.20: Amounts of 'Oriental' wines divided into sub-origins and periods.**

As already mentioned, the Cretan wine is the most found oriental import in Rome during all periods (except for the Trajanic age, fig. 9.21, compared with 9.23) and in Ostia during the Trajanic and Severan ages (fig. 9.21, compared with 9.24). It is also well found in the 'Terme di Elagabalo' during the Severan age (fig. 9.21, compared with 9.22). The wine production in the island of Crete is very ancient (about since the second half of the 3rd millennium BC[856]), although it is securely attested only in the Palatial period[857] and one of the first mentions in literary sources appears during the 5th century BC when a regulation existed which implied a State-administration related to taxation[858]. This wine was produced to be locally consumed till the end of 3rd/early 2nd centuries BC and from the Julio/Claudian age it was involved in the Roman system of imports[859]. Polybius in the mid-2nd century BC already knew a sweet wine called '*Kretikos*'[860] and Martial is one of the first Latin sources mentioning it, suggesting that it was cheap so as to be consumed by the people[861]. However, this wine had been

[856] Marangou-Lerat 1995: 155.
[857] Hamilakis 1996: 21. Cf. also Palmer 1996 about texts in Linear A and B.
[858] Guarducci 1950: no. 77; Marangou-Lerat 1995: 7–8, T4. For the local policy cf. Hadjisavvas & Chaniotis 2012: 164–167 with further bibliography.
[859] From Augustus for Marangou-Lerat 1995: 156; from Claudius for Brun 2004b: 85.
[860] Polyb., *Historiai*, VI, 11a, 4.
[861] Mart., *Epigr.*, XIII, 106.

always called *passum*[862] or *Creticum vinum*[863], and seemed a relatively average-quality wine[864], dense[865], rich in alcohol[866], not mixed with sea-water (ἀθάλασσος[867] which infers the relation to the one from Chios that was a noble wine[868]), resistant to seaborne commerce, and cheap[869]. Other wines were also produced in the island, but they were possibly not exported[870].

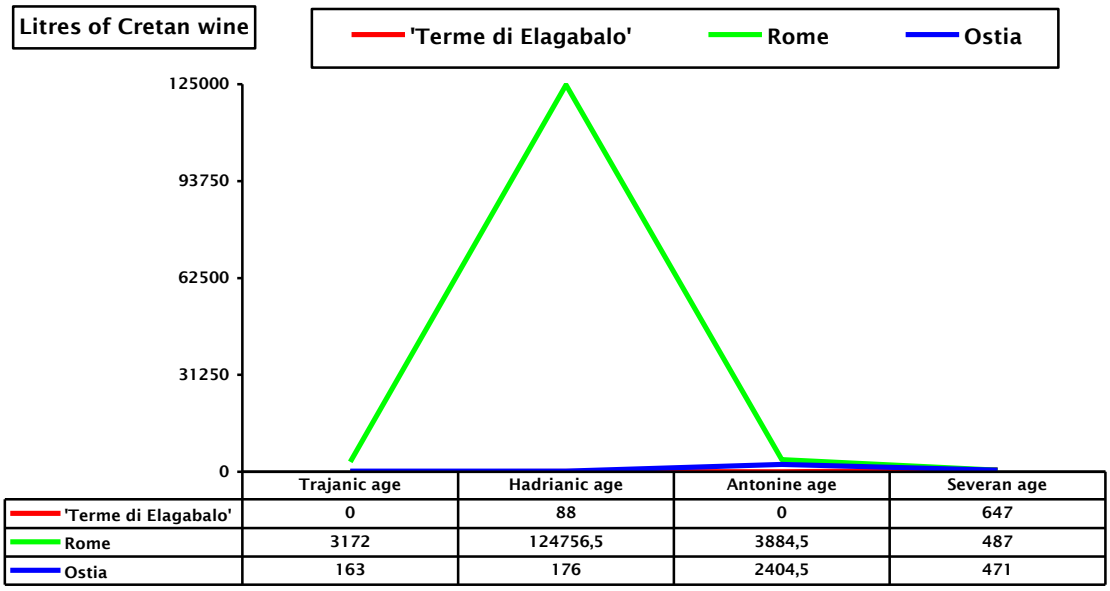


**Fig. 9.21: Amounts of Cretan wine divided into periods in all sites.**

Wines from Rhodes and the Rhodian *Peraea* are also largely found in the 'Terme di Elagabalo' so as to reach third place during the Severan age (fig. 9.22). In Rome they are predominant during the Trajanic age, with a constant decrease during all the subsequent periods (fig. 9.23). In Ostia, on the contrary, there is an increase in the amounts till the Antonine age with a fall afterwards (fig. 9.24). Surely differences between the wines from Rhodes and its *Peraea* existed, caused by climate and vineyards[871], but unfortunately this distinction cannot be seen from amphorae. Despite

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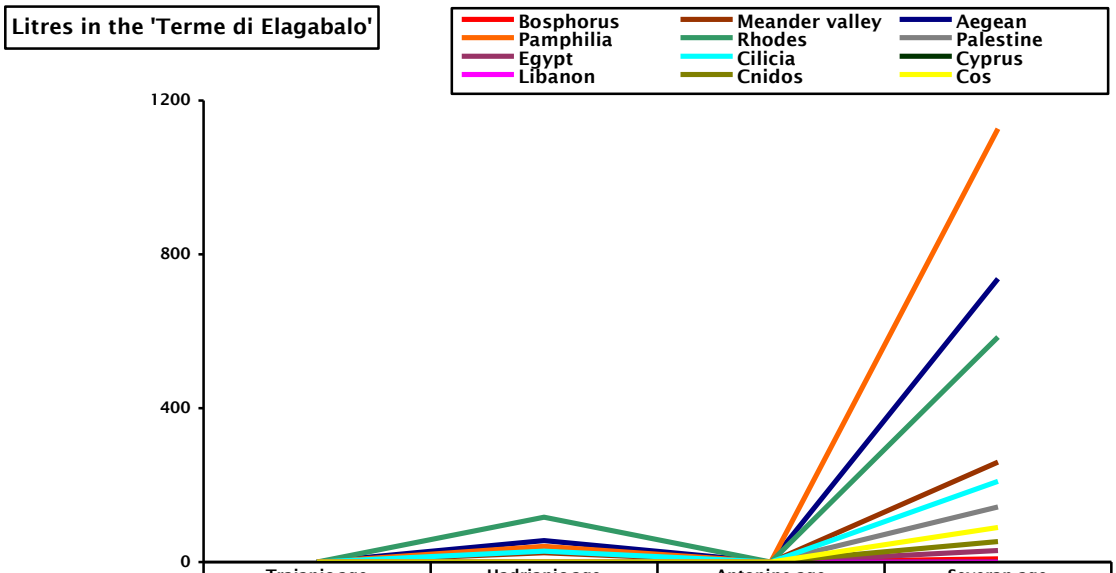
[862] Plin., *HN*, XIV, 81 and XX, 208; Polyb., *Historiai*, VI, 11 a, 4 = Ath., *Deipnosphistae*, X, 440e-f; Tchernia 1986: 358 (point 5 of 'Mer Egée' with references to *CIL* IV mentioning a probable wine from Crete); Salza Prina Ricotti 1987: 79; Brun 2003a: 72.
[863] *CIL* IV, 5526a (referred as *excellens*); Marangou-Lerat 1995: 158.
[864] Clem. Al., *Paedagogus*, II, 30, 2; Ael., *VH*, XII, 31; Quint. Smyrn., *Posthomerica*, V, 348-351. Exceptions are Martial (above mentioned) and Fronto, *Ep.*, I, 1. Cf. also André 1961: 165.
[865] Juv., *Sat.*, XIV, 270.
[866] Pedanius Dioscorides, *De Materia Medica*, V, 6, 6-16.
[867] Marangou-Lerat 1995: 150, P106.
[868] Salza Prina Ricotti 1988a: 78; Rizzo 2003: 217. For a recent analysis of this wine cf. Marangou-Lerat 2000.
[869] Tchernia 2011c: 346.
[870] Chaniotis 1988: 72-73. Cf. also Galen quoted and commented in Marangou-Lerat 1995: 18, T26. For the recent discovery in Leutra (the kiln is linked to a room with a press for olives) it is suggested that some Cretan amphorae were also meant for containing olive oil: Tsatsaki & Nodarou 2014: 310-311.
[871] Cankardas Şenol *et al.* 2004: 353.

the large amount of stamped finds[872], studies held on their volumes during the Hellenistic age[873], and the popularity of its edible grapes[874], few ancient sources mention the wine from Rhodes and even Pliny the Elder only cites it[875]. Rhodian wine belonged to τεθαλασσώμενοι ones[876] (wines to which sea-water was added, typical of Greek regions[877]), called also *vina salsa*[878] and it might have been of some quality[879], *firmum et iucundum*, although not excellent[880]. For this reason it might have been consumed neither by common people[881] nor by very high ranks[882].




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Bosphorus | 0 | 0 | 0 | 8 |
| Meander valley | 0 | 24 | 0 | 260 |
| Aegean | 0 | 56 | 0 | 736,97 |
| Pamphilia | 0 | 40,75 | 0 | 1126,6 |
| Rhodes | 0 | 117 | 0 | 585 |
| Palestine | 0 | 0 | 0 | 143 |
| Egypt | 0 | 0 | 0 | 30 |
| Cilicia | 0 | 28,2 | 0 | 209,76 |
| Cyprus | 0 | 0 | 0 | 0 |
| Libanon | 0 | 0 | 0 | 0 |
| Cnidos | 0 | 0 | 0 | 53,28 |
| Cos | 0 | 0 | 0 | 90 |

**Fig. 9.22: Amounts of other 'Oriental' wines divided into sub-origins in the 'Terme di Elagabalo'.**

[872] Cf. the comparison between Rhodes and Alexandria held by Lund 1999 or the first lexicon in Cankadaş-Şenol 2015.
[873] Cf., for example, Wallace Matheson & Matheson 1982. These studies also allowed to identify a decline in exports and trade-policies during the 2nd and 1st centuries BC to be redirected elsewhere (Rauh 1999).
[874] Labrousse 1971: 43 and note 1.
[875] Plin., *HN*, XIV, 42 (about edible grape) and 79 (about wine).
[876] Ath., *Deipnosphistae*, I, 32c.
[877] André 1961: 167; Grace 1961: 24; Brun 2003a: 74–75.
[878] Pedanius Dioscorides, *De Materia Medica*, V, 19, 1.
[879] Gell., *NA*, XIII, 5, 5.
[880] Grace 1961: 14.
[881] Tchernia 1986: 106.
[882] Grace 1961: 14 who suggests a consumption by troops.

Ancient sources are rather scarce also for the wine of Cos. Horace cites this wine only for its medical capacities[883]. Pliny the Elder mentions it only for being added with sea water and for having been imitated in Italy[884], but also suggests that is similar to the one from Rhodes[885]. The same information is provided by Athenaeus[886]. Cato and Columella both recall methods for imitating this wine[887]. During the 2nd century BC it seems to have been valued half or two/fourths of the wine from Cnidus[888]. Despite that, wine from Cos is relatively well present in Rome during the Trajanic age (fig. 9.23) and in the 'Terme di Elaganalo' during the Severan age with low amounts (fig. 9.22). It seems totally absent in Ostia (fig. 9.24).

The ancient province of Pamphilia is still not known enough to understand exactly where wine was produced and ancient sources never mention this origin. At the same time, discovered amphorae are only hypothetically ascribed to this province. Despite these problems, the amount of wine coming from this suggested area is quite relevant, possibly because it was influenced by Cilicia with which it shared a boundary that, as suggested by some scholars, was not so rigid during the ancient times[889]. Pamphilian wine starts being imported in all sites since the Hadrianic age. In Rome it decreases since the Antonine age (fig. 9.23). It reaches the largest amounts during the Severan age in the 'Terme di Elagabalo' (fig. 9.22). In Ostia, on the contrary, there is a constant increase from the Hadrianic age onwards (fig. 9.24). Unfortunately nothing is known about the grade of this wine. Looking at amounts, it possibly had some quality, but was not too expensive.

Not much is known also about the Cilician wine[890], although its production increased during the Roman times for it favourable climate conditions[891]. Pliny the Elder praises Cilician *passum*, stating that it was second (possibly in quality) only to the Cretan one[892], especially when it was flavoured with *hyssop*[893]. In the Expositio totius mundi Cilicia is mentioned for producing large amounts of wine[894] and medical sources

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[883] Hor., *Sat.*, II, 4, 29.
[884] Plin., *HN*, XIV, 73–76 and 79.
[885] Tchernia 1986: 105.
[886] Ath., *Deipnosphistae*, I, 32e.
[887] Cato, *Agr.,* 24, 105, and 112; Columella, *Rust.*, XII, 25; Cf. also Salza Prina Ricotti 1987: 80; Baratta 2002: 302.
[888] Tchernia 1986: 105 and note 184.
[889] Rauh *et al.* 2006: 64 and note 48.
[890] For sources and finds dated before the Roman times, especially for Rough Cilicia, cf. Rauh *et al.* 2006: 51–55.
[891] Şenol 2014: 110–111.
[892] Plin., *HN,* XIV, 81–82.
[893] Plin., *HN*, XIV, 109.
[894] *Expositio Totius Mundi*, 176.

suggest to use the Cilician Ἀβάτης (elsewhere cited as *albate*, *sybate*, *abate*, *anabate*[895]) for its laxative capacities[896]. This product seems to have been used as a medicament (both for humans and animals) as well as for cooking, in agriculture[897], and for specific ceremonies[898]. Recent fieldworks discovered large amounts of mills[899], although simplest techniques might have been used for wine production, such as flat stones on the ground level and cylindrical rolls made of stone[900] or rock-cut presses[901]. Some local imitations of wine-amphorae originally produced elsewhere are known[902], but only during the Late Atiquity the manufacture seems to increase. Much information is now offered by the recent excavations held in *Elaiussa Sebaste* where several kilns were found producing Late Roman 1 amphorae[903], a container whose typology[904] and content are still not clarified, but it might have contained wine[905]. Despite the lack of knowledge of this product, it arrived in Rome with large amounts of litres during the Hadrianic age (fig. 9.23) and in Ostia during the Antonine age (fig. 9.24), while during other periods in Rome it is less represented (in Ostia other periods did not result in

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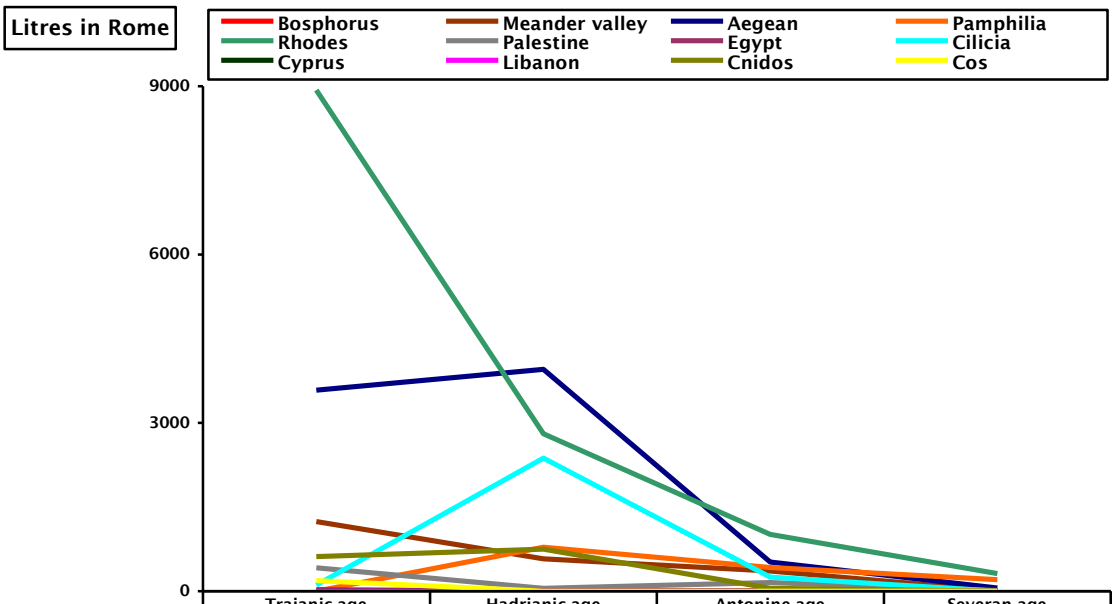
[895] http://remacle.org/bloodwolf/erudits/athenee/livre1.htm#_ftn130.
[896] Ath., *Deipnosphistae*, I, 33b; *Gal.*, *De Victu Attenuante*, 99; *In Hippocratis de Auctorum Morborum Victu,* III, 8. About the export of Cilician wine cf. also Pedanius Dioscorides, *De Materia Medica*, V, 40, 1; *Expositio Totius Mundi*, 39; *Gal.*, *De Sanitate Tuenda*, V, 5, 15.
[897] Rauh *et al.* 2006: 59.
[898] Cf., for example, the Jewish Passover, especially in Palestine, suggested in Rauh *et al.* 2006: 59.
[899] Rauh *et al.* 2006: 63–76 although rarely they had been identified with certainty to a specific product between wine and olive oil. For other sites cf. also Brun 2004b: 95.
[900] Two of them were found in Antiochia with a probable space for the installation of a press: Rauh *et al.* 2006: 68.
[901] Aydınoğlu & Alkaç 2008.
[902] Coan-style (Rauh *et al.* 2006:54); Gaulish amphorae (Ferrazzoli & Ricci 2007a: 304); North-African containers (Şenol 2014: 114 and note 30).
[903] Ferrazzoli & Ricci 2007a: 306; 2007b: 673; 2009; Borgia & Iacomi 2010 and personal communication of the director of the excavations Prof. Eugenia Equini Schneider. About the petrographic analyses held on these objects cf. Burragato *et al.* 2007. Empereur and Picon already identified several production centres during their fieldworks (Emepereur & Picon 1989: 236–243 and figs. 18–19). Cf. also Abadie-Reynal 1992: 364; Pacetti 1995: 273. For another kiln site in Pompeiopolis cf. Autret *et al.* 2010. Not only Cilicia produced this amphora, but also Rhodes, Pamphilia, Lycia and Caria (cf. Reynolds 1995: 71; Vroom 2005: 53; Williams 2005: 160–161; Winther Jacobsen 2005; Pieri 2007), the island of Cos (Didioumi 2014; Diamanti *et al.* 2014: 183), and even the island of Lipsi in the Dodecanese (Papavassiliou *et al.* 2014: 160–161).
[904] This Form had been studied on different occasions, but a clear typological organization is still not reached. Egloff, basing his study on the ceramics found in the Kellia monastery realised a first typological division (Egloff 1977). Keay, instead, identified four varieties for this amphora that is called Type LIII (Keay 1984: 268–278). M. Bonifay and D. Pieri divided the form into three varieties, using finds from Marseille (Bonifay & Pieri 1995: 108–109). Remolá Vallverdú add a third variety to the common two, calling it 'Late LRA 1'(Remolá Vallverdú 2000: 217). Also D. Williams questioned about this problem (Williams 2005) and Pieri offered another division (Pieri 2005: 70–77). Opaiţ 2010a also argues about precursors of this form. Demesticha 2013 and 2014 offer other typological subdivisions into generations. Cf. also Leidwanger 2014 for the petrographic analyses held on the amphorae of this form found in the Yassiada shipwreck and Waksman *et al.* 2014 for those discovered in the Cape of Plaka one.
[905] Some vessels had pitch over the inner surface so as to suggest a wine content. Some *tituli picti* borne by some other vessels, however, mention oil and olives. This second hypothesis is corroborated by analyses held on an amphora from Sabratha that had traces of oil: Williams 2005: 161. About the problem of the content of these amphorae cf. also Opaiţ 2004: 297–298 and Elton 2005.

any litres). In the 'Terme di Elagabalo' not very large quantities were found both during the Hadrianic and Severan ages (fig. 9.22).




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Bosphorus | 0 | 0 | 0 | 0 |
| Meander valley | 1240 | 576 | 360 | 8 |
| Aegean | 3582,2 | 3954 | 519,37 | 58,2 |
| Pamphilia | 0 | 784,5 | 421,75 | 206,5 |
| Rhodes | 8931 | 2808 | 1014 | 312 |
| Palestine | 416 | 52 | 156 | 13 |
| Egypt | 30 | 0 | 13,75 | 0 |
| Cilicia | 107,24 | 2373,65 | 248,66 | 0 |
| Cyprus | 0 | 0 | 0 | 0 |
| Libanon | 0 | 0 | 0 | 0 |
| Cnidos | 617,76 | 745,92 | 53,28 | 0 |
| Cos | 186 | 0 | 0 | 0 |

**Fig. 9.23: Amounts of other 'Oriental' wines divided into sub-origins in Rome.**

From Cnidus came a very renowned raisin wine, the *protropum Cnidium* cited by Pliny the Elder[906]. Atheneaus considers this wine good for refilling bodies with blood and relaxing bowels[907]. It might have been rather expensive, but this assumption cannot be taken for granted because, contrarily to what was stated by Rizzo in 2003 who affirmed that it was scarcely diffused[908], fig. 9.23, which considers amounts of litres in Rome, shows large quantities both during the Trajanic and Hadrianic ages, with a drastic decrease during the Antonine age and the disappearance during the Severan age. Considering also litres from the 'Terme di Elagabalo' during the Severan age (which is the only period resulting in litres from this origin: fig. 9.22) amounts of wine from Cnidus are not exactly scarce. On the contrary, in Ostia small quantities are

[906] Plin., *HN*, XIV, 75.
[907] Ath., *Deipnosphistae*, I, 32f.
[908] Rizzo 2003: 217. This assumption was already partly reappraised in Rizzo 2014a: 324.

present both during the Trajanic and Hadrianic ages and an increase is visible during the Antonine age, to as well disappear during the Severan age (fig. 9.24).

In Cyprus the wine plantation started around the mid-5th millennium BC[909] and at least during the Calcolithic it was transformed into wine[910] aimed at the élite[911]. Some sites for the production of wine are known (although not always assured as they are very similar to those for olive oil) in various parts of the island, although their chronology is not certain as they mainly consist in rock-cut installations[912]. A vase and a model depict activities related to wine processing[913], thus indirectly informing about this production. A quotation from the Thalmud informs that Jews from this island were obliged to send wine to Jerusalem[914]. A few ancient sources refer to this production[915]: Euripides recalls the prosperity of the island and its wine[916], while Strabo[917] considers the Cypriotic wine good and Pliny the Elder[918] praised it stating that it had a high quality. During the Roman times[919] it was surely produced as shown by a mosaic dating 3rd century AD found in the island[920]. It was transported in at least a form of amphora also manufactured elsewhere[921] and directed not only to the Eastern part of the Mediterranean[922], but also to the Western part of it as attested by finds discovered only in Ostia during the Antonine age, although with a very low amount of litres (fig. 9.24).

Not much can be said about the quality of the wine from the Meander Valley. The small size of the amphorae containing it may reflect a not very large production or a possible high quality or price for this wine, so as to be traded in small quantities. Pliny recalls the wine from Ephesos which was cut with sea-water and *defrutum* and the sweet wine from the area of mount Tmolo that was used to cut other wines so as to give them an artificial ageing taste[923]. It may also be identified with an aromatic wine

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[909] Karageorghis 1993b: 31; Hadjisavvas & Chaniotis 2012: 157.
[910] Belgiorno 2004: 22–23, 78–80; Belgiorno & Lentini 2010: 177; 2012; Errico 2013: 29.
[911] Hadjisavvas & Chaniotis 2012: 164.
[912] Brun 2004b: 97–98; Hadjisavvas & Chaniotis 2012: 161.
[913] Karageorghis 1993b: 32; Hadjisavvas & Chaniotis 2012: 157–158.
[914] Hill 1940: 241, no. 4; Karageorghis 1993b: 40.
[915] Vandyke Price 1993: 73 also adds Homer, Stasinos, and Seneca, but no traces of such references were found in their works. It became much more famous during later periods: Karageorghis 1993b: 40–45; Vandyke Price 1993: 74–88; Psaras 1993: 91–102.
[916] Eur., *Bacch.*, 402–423.
[917] Strabo, *Geogr.*, XIV, 6, 5.
[918] Plin., *HN*, XIV, 74.
[919] Some containers are known, for example, from the Geometric period till the 4th century BC (Trakatelli 2013: 81), or from the end of 4th BC till the 2nd centuries AD (Bobosz 2013).
[920] Karageorghis 1993b: 40, notes 10 and 11, and fig. 11.
[921] Cf. Demesticha 2003 and bibliography. Three cypriotic amphorae were also found in the Punta Mazza Relic, Sicily (cf. Ollà 1997: 68).
[922] Brun 2004b: 96. For the Cypriotic commerce during the Late Bronze Age cf., for example, Karageorghis 1993a. For contacts with the Levantine coast during the Hellenistic age cf. Lund 2013.
[923] Plin., *HN*, XIV, 74.

cited by Strabo[924]. Being manufactured also in Ephesos[925], amphorae containing this wine may be identified with the *ephesia* cited on an *ostrakon* found in Berenike in Egypt[926]. Apamea of Phrigia was also renowned for its wine, similar to *mulsum*[927]. Finds in the 'Terme di Elagabalo' (fig. 9.22), Rome (fig. 9.23), and Ostia (fig. 9.24) partly contradict this view of small quantities as the amount of litres is quite large, especially during the Severan age in the 'Terme di Elagabalo', the Antonine age in Ostia, and the Trajanic age in Rome. However in Rome during other periods it shows a constant decrease (fig. 9.23) and in Ostia other periods resulted in very low amounts (fig. 9.24).

Looking at rabbinic sources and archaeological remains, wine has a very ancient history in Palestine, especially regarding its growing and types[928]. Grapevines were, in fact, intensively cultivated[929] in many areas[930] and the consumption was regulated[931]. It was surely cultivated in Gennesareth[932], Sepphoris, Tiberias, Samaria[933], and possibly in the Upper Golan[934]. More certainly, it was also cultivated in Galilee[935], whose wine was praised by Flavius Josephus to be the best one from that region[936]. The role of this crop started during the Phoenician times[937] and had been heavily based on exports[938], especially after the destruction of the first Temple[939]. Many sources, however, come from the Late Antiquity, when exports of wine flourished especially from Gaza with its containers[940]. Praises to wines from Israel can be found, in fact, in Sidonius Apollinaris (5th century AD)[941], Cassidorus (6th century AD)[942], and Corippus (6th century AD)[943], as well as in other sources[944]. A special Carmeli wine is also cited by rabbinic sources and

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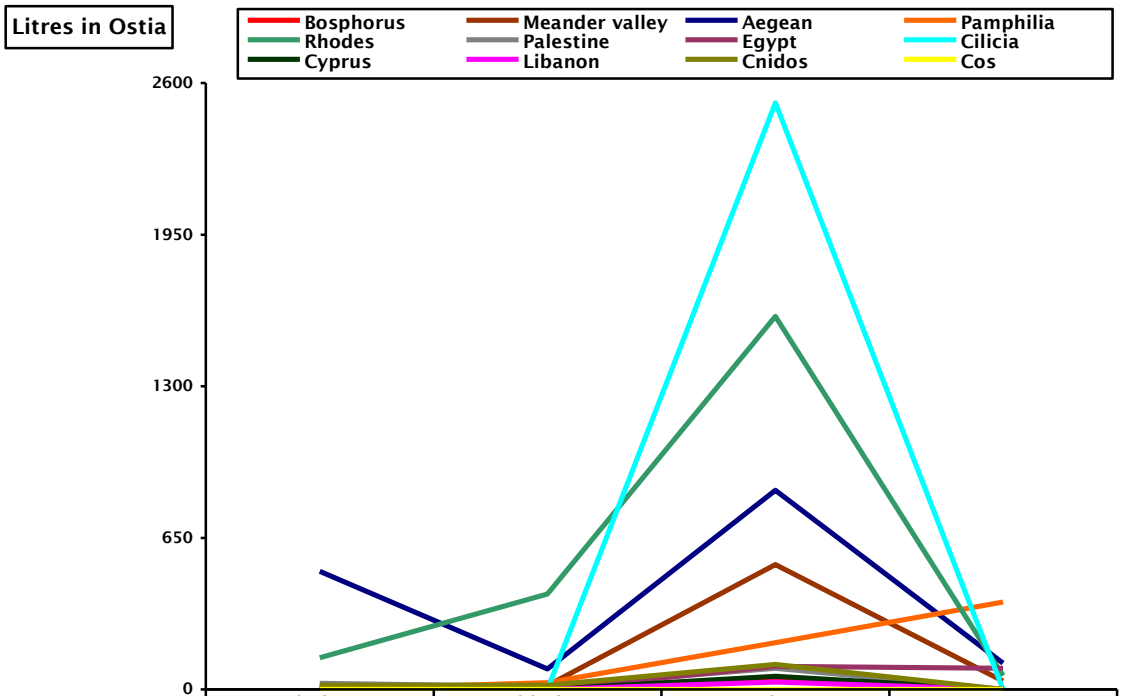
[924] Strabo, *Geogr.*, XIV, 1, 47.
[925] Outschar 1993: 46–48; Hayes 2005: 22; Bezeczky 2013: 66. From the Augustan age the port of Ephesos saw an increase in its commercial activity: cf. Sartre 1995: 301.
[926] Brun 2004b: 92.
[927] Plin., *HN*, XIV, 75.
[928] Dayagi-Mendels 1999: 15–16, 21–22, 24–29, 33, 35–36; Spanò Giamellaro 2000: 48–53; Hafsaas-Tsakos 2009: 62–65.
[929] Safrai 1994: 133.
[930] Matthew, VII, 16–20; XX: 1f; XXI, 28f; Mark II, 22; Luke V, 37f. Cf. also Frankel 1999 and his catalogue of presses.
[931] Safrai 1994: 126–131; 135.
[932] Joseph, *BJ*, III, 10, 8, 519.
[933] Safrai 1994: 132–133; Brun 2004b: 124.
[934] Cf. also Brun 2004a: 136–140.
[935] Safrai 1994: 132.
[936] Joseph, *BJ*, III, 3, 3, 45.
[937] Cf. also all sources cited by Spanò Giamellaro 2000: 53–68.
[938] Safrai 1994: 132.
[939] Safrai 1994: 135–136.
[940] Cf. also Sperber 1976: 141–142; Kinsgley 2001.
[941] Sid. Apoll., *Carm.*, XVII, 15–16.
[942] Cassiod., *Var.*, XII, 12.
[943] Corippus, *In Laudem Iustini*, III, 87–88.
[944] For example: Gregory of Tours, *Hist.*, VII, 29; Venantius Fortunatus, *Vita Sancti Martini*, II, 20, 80-83; Isid., *Etym.*, XX, 3, 7.

during the Middle ages[945]. A source dated 7th century AD mentions Palestinian wine's expensiveness[946] and this might be the reason for a not very large presence of this wine in the 'Terme di Elagabalo' during the Severan age (fig. 9.22). Palestinian wine in Rome, after a not negligible figure during the Trajanic age, drastically decreases during the Hadrianic age, raises with smaller amounts during the Antonine period, and falls again afterwards (fig. 9.23). In Ostia this origin reaches very small amounts during the Trajanic age, with a decrease during the Hadrianic age and a small increase during the Antonine period to disappear afterwards (fig. 9.24). Its price might have caused the small quantities of litres contained by amphorae from this origin during the Mid-Imperial age as well as this not large presence across all considered sites and cities (although also skin containers could have been used for its trade[947]).




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Bosphorus | 0 | 0 | 44 | 0 |
| Meander valley | 8 | 16 | 536 | 36 |
| Aegean | 506 | 88,2 | 854 | 112,4 |
| Pamphilia | 0 | 28,5 | 201 | 375 |
| Rhodes | 136,5 | 409,5 | 1599 | 58,5 |
| Palestine | 26 | 13 | 91 | 0 |
| Egypt | 0 | 0 | 98,75 | 90 |
| Cilicia | 0 | 0 | 2515,01 | 0 |
| Cyprus | 0 | 0 | 56,4 | 0 |
| Libanon | 0 | 0 | 31,5 | 0 |
| Cnidos | 17,76 | 17,76 | 106,56 | 0 |
| Cos | 0 | 0 | 0 | 0 |

**Fig. 9.24: Amounts of all 'Oriental' wines divided into sub-origins in Ostia.**

[945] Safrai 1994: 133.
[946] Safrai 1994: 394.
[947] Dayagi-Mendels 1999: 43.

Egyptians were very fond of wine and liked drinking[948]. During the Roman period, Egyptian wine became a regular commodity[949] and the cultivation of the grapevines is rather well known by many papyri[950]. The copious Nile's waters lead to a rather widespread cultivation of vines[951], whose products seemed to be very different from one another. Wines from the Delta regions (Alexandria and Lake Mariout) gained an increasingly large success in Italy[952] and Athenaeus, moreover, gives a detailed description of these different wines: Mareotan was an excellent white wine and at times diuretic[953]; Taenotic one was pale, with an oily aromatic quality and mildly astringent[954]; wine from Antylla seemed to surpass any others (likely for its quality[955]); and Thebaid one (especially from the city of Coptos) was thin and easily digested, also good for patients with fever[956]. Distinguishing these different sub-origins is impossible, but the low presence in all sites needs reflection, although some sites not considered for this analysis resulted in other low amounts. As already noted by Rizzo, Egyptian wine never reached large amounts in these two cities[957], but new data help in widening the knowledge for the blank period of his assumptions. In spite of the relatively scarce amounts of litres during all phases, Rome (fig. 9.23) and Ostia (fig. 9.24) have contrasting data. During the Trajanic age Rome sees a discrete amount, while in Ostia it is totally lacking. The Hadrianic age did not result in any finds in both cities. The Antonine age sees largest amounts in Ostia and a very small quantity in Rome. The Severan age sees a small decrease in Ostia and low quantities in the 'Terme di Elagabalo' (fig. 9.22). These new data fill the chronological gap attested in Rizzo's article. These constant low quantities, however, can be a sign of the quality of this wine or its being expensive and they may also be seen as aimed at specific customers in a highly densely filled wine-commerce[958].

Unfortunately the wine production of Bosphorus is still not well known, despite the knowledge of the manufacture of amphorae, especially the ones from Sinope[959]

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[948] Ath., *Deipnosphistae*, I, 34. They also produced beer: Sperber 1976: 116–117; Sigaut 1997: 85.
[949] Brun 2004b: 143. Cf. also Sperber 1976: 126–127.
[950] Cf. Brun 2004a: 153–156; 2004b: 143–150; Dixneuf 2011: 198–201.
[951] Cf., for example, Brun 2004b: 153–167 and Dixneuf 2011: 203–206.
[952] Verg., *G.*, II, 91; Hor., *Carm.*, 37, 14; Strabo, *Geogr.*, XVII, 11, 14 and 42; Ath., *Deipnosphistae* I, 33d-f.
[953] Ath., *Deipnosphistae*, I, 33d–e.
[954] Ath., *Deipnosphistae*, I, 33e.
[955] Ath., *Deipnosphistae*, I, 33f.
[956] Ath., *Deipnosphistae*, I, 33f.
[957] Rizzo 2007: 657, 663–665.
[958] Rizzo 2007: 663–665.
[959] Cf., for example, Dereli & Garlan 1997; Kassab Tezgör 1996; 1999; 2002; 2009; 2010; Kassab Texgör & Ivantchik 2011; Kassab Tezgör & Tatlıcan 1998; Kassab Tezgör *et al.* 2003; 2007; Inaishvili & Khalvashi 2010: 494–502; Vnukov 2004; Garlan 2007; Vnukov 2010; 2011; Kassab Tezgör 2011; Remesal Rodríguez *et al.* 2013: 324.

which were also found in Ostia during the Antonine age (fig. 9.24). Several cities and their hinterlands were characterised by this expensive and difficult crop[960] and the large number of sites that resulted in the manufacture of amphorae indirectly show this in different areas[961]. Heraclea Pontica was one of these and from this city came a small quantity of wine, discovered only in the 'Terme di Elagabalo' during the Severan age (fig. 9.22) and in Ostia during the Antonine age[962] (fig. 9.24). It was a Greek colony of 560 BC[963] and Roman colony from 47 BC[964]. This city is present in the *Tabula Peutingeriana* (Part IX) and is mentioned in ancient sources such as the 6th century BC Pseudo-Skylax[965], Xenophon[966], Pseudo-Scimnus[967], Memnon of Heraclea[968], few times by the Pseudo-Artistoteles for its political situation (or the one of *Apollonia*)[969], Strabo[970], Menippus[971], Pomponius Mela[972], Pliny the Elder[973], Tolomeus[974], and in the 1st century AD *Periplus* by Arrianus[975]. All these ancient sources, unfortunately, lack in mentioning its wine production[976]. A few *tituli picti* found in Tanais inform that they were degustation-wines[977] and two authors publishing discoveries from Ukraine assumed that they might have had some quality with a reasonable price[978].

The Syrian/Lebanese area resulted in some relevant amounts of producing sites[979], although none of these come from Beirut and its hinterland[980]. Atheaneus

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[960] Brun 2004b: 69–71, 91–92. For the Northern coast of the Black sea cf. also Savonnidi 1993.
[961] Koehler 1996: 328; Rizzo 2014a: 346 and note 1495.
[962] Panella 1986a: 628 and fig. 27; Rizzo 2012: 93 and fig. 4.1, n. 5; 2014a: 347–348 and Tav. 64, 515–516.
[963] Counillon 2004: 65. For the stamps borne by more ancient amphorae cf. Pavličenko 1999. For an analysis of the diffusion of the Greek colonies in the Black sea area cf. Wasowicz 1966.
[964] Rizzo 2014a: 347.
[965] Counillon 2004: 22–23 (par. 91).
[966] Xen., *An.*, V, 6, 10.
[967] Müller 1841–1873, 972 = Diller 1952, 1016 = Marcotte 2002, fr. 31.
[968] Jacoby 1923–1958: 434, F 1, 17. This fragment recalls that, in 246 BC, Tolomeus III sent to this ciy about 15 tons of grain and realised the Temple of Heracles on the city's acropolis.
[969] Arist., [*Oec.*], II, 2, 8 [1347b]; II, 2, 24 [1350b]; Polyb., *Historiai*, V, 6, 8 [1305b]; V, 6, 15 [1306a].
[970] Strabo, *Geogr.*, XII, 3, 1–7.
[971] Menippus Pergamenus, *Periplus*, 5714; Marcian of Heraclea, *Menippi periplus maris interni (epitome Marciani),* 8.
[972] Pompon., *Chorographia*, I, 103.
[973] Plin., *HN*, VI, 4.
[974] Ptol., *Geog.*, V, 1, 7.
[975] Belfiore 2009: 130, 145 (par. 13, 3). About the text cf. also various contributions in Boussac *et al.* 2012.
[976] Wine is assumed one of the traded products in Kassab Tezgör *et al.* 2003 (already since the 4th–3rd centuries BC) and Counillon 2004: 48. Rogers 2007: 274–275 adds the possible cultivation of specific nuts whose name mentioned by Theophrastos originated from this same area.
[977] Iliyashenko 1998: 117–119. Other *tituli picti* mention petroleum and this content was confirmed by analyses held on some of them (Böttger & Šelov 1998: 91–93).
[978] Matevici & Redina 2011: 58.
[979] Brun 2004b: 102–104 about Syria. Cf. also the rock-cut installations in the area close to Baalbeek published in Fisher-Genz 2008.
[980] Aubert 2007: 8.

praises the wine from Byblos[981] and Pliny the Elder eulogise the wine and grapes from *Berytus* and Tyre for their sweetness[982]. A small number of kilns are known in Beirut[983], and this manufacture possibly grew after the creation of the Roman colony in 15 BC[984] for being the city a significant commercial intermediary for Rome[985]. A few amphorae bear stamps mentioning their origin[986], possibly because the municipality started controlling the production of amphorae and their contents[987]. Unfortunately nothing is known about the quality of the wine contained in them. Very few litres were only found in Ostia during the Antonine age (fig. 9.24) and the 'Terme di Elagabalo' also resulted in a form which can be ascribed to the same area, although it is not enough preserved to assess its volume (cf. below, Appendix 1, Section 1.2.2).

Some amphorae discovered across many sites can be given to an Aegean/Microasiatic area in generic terms only. This vagueness is also reflected in ancient authors who, sometimes, offer just generic information about wines from the 'Greek world' (*vinum graecum*[988]). Despite this lack of precision, amounts of litres are far from being undetermined. In Rome they reach first place during the Hadrianic age and second place during the Trajanic and Antonine ages to fall during the Severan age (fig. 9.23). In Ostia, despite lower amounts, generic Aegean wines reach first place during the Trajanic age, second place both during the Hadrianic and Severan ages and third place during the Antonine age (fig. 9.24). In the 'Terme di Elagabalo' amounts were found both during the Hadrianic and Severan ages, with the latter seeing a larger quantity of litres than the former so as to reach second place among all sub-origins (fig. 9.22).

## 9.2 Trends in wine

This Section intends to offer a synthesis about wines starting from data in the 'Terme di Elagabalo' (that is the basis of this research) and comparing it with the ones coming from Rome and Ostia as resulted by all previous investigations.

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[981] Ath., *Deipnosphistae*, I, 29b.
[982] Cf. Pliny, *HN*, XIV, IX, 74–75; XV, XVII, 66 for the wine from Berythus and its sweetness.
[983] Cf., for example, Hayes 1997: 32 or the list offered by Frangié-Joly 2014: 92 both about Beirut and Jiyeh (with bibliography). For Jiyeh cf. also Frangié-Joly & Wicenciak 2012; Wicenciak 2014. For the analyses held on the fragments of amphorae found in Jiveh cf. Roumié *et al.* 2010.
[984] Lemaître 2007: 274; Frangié-Joly 2014: 98.
[985] Frangié-Joly 2014: 99.
[986] Reynolds 2000: 387, fig. 2, nos. 12–14; Hayes 2003: 470 and fig. 9, 115.
[987] 'Ala' Eddine 2005: 120.
[988] Cf., for example, the list published in Tchernia 1986: 100–101.

| ELAGABALO | Italy | | Gaul | | Iberia | | North Africa | | 'Orient' | | Unident. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | - | - | - | - | - | - | - | - | - | - | - | - |
| Hadrianic age | 201.62 | 25% | 158.5 | 19% | 70.75 | 9% | 51.62 | 6% | 353.95 | 41% | 0 | 0% |
| Antonine age | 30 | 100% | | - | | - | | - | | - | 0 | 0% |
| Severan age | 1998.78 | 24% | 876 | 10% | 299.5 | 4% | 1390.48 | 16% | 3889.61 | 46% | 0 | 0% |

**Fig. 9.25: Litres and percentages of wines divided into macro-areas in the 'Terme di Elagabalo'.**

As already mentioned[989], the 'Terme di Elagabalo' did not result in phases that can be dated Trajanic age, thus the amount of litres for that period remains empty. At the same time the Antonine age reflects a period in which a very few phases were found, as removed by subsequent activities, thus only a very small quantity of Italian wine was found (fig. 9.25). For these two reasons only the Hadrianic and Severan ages can offer data that can be more deeply analysed. Although the amount of litres during the Hadrianic age is not very large, a predominance of Eastern Mediterranean wines can be seen (41%), with moderate amounts of Italian (25%) and Gallic (19%) wines, and other origins are less represented (Iberia reaches 9%, North Africa 6%). The Severan age sees a peak in amounts for all origins, again with a large predominance of Oriental wines (46%), followed once more by Italian ones (24%). Two other data seem noticeable: North-African wines see a relevant increase (16%) to the detriment of Gallic ones (10%), while Iberian ones can be still found at the bottom of the list (4%).

Despite the importance of its location, the 'Terme di Elagabalo' is a single site. Therefore it may not reflect a true representation of all amounts arrived in Rome (especially for the Trajanic and Antonine ages for which this site is not much helpful). That is why a comparison with amounts calculated from finds discovered across all the considered sites in the Capital becomes necessary so as to understand whether or not this site reflects trends of the entire city.

| ROME | Italy | | Gaul | | Iberia | | North Africa | | 'Orient' | | Unident. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 18248.2 | 36% | 13071 | 25% | 1297 | 2% | 363 | 1% | 18282.2 | 36% | 0 | 0% |
| Hadrianic age | 70069.16 | 30% | 23183.5 | 10% | 5537.25 | 2% | 2682 | 1% | 136050.57 | 57% | 0 | 0% |
| Antonine age | 6051.02 | 33% | 3222 | 18% | 233.75 | 1% | 2075.62 | 11% | 6671.31 | 37% | 0 | 0% |
| Severan age | 481.48 | 5% | 712.5 | 7% | 85.5 | 1% | 7785.24 | 77% | 1084.7 | 10% | 0 | 0% |

**Fig. 9.26: Litres and percentages of wines divided into macro-areas in Rome.**

[989] Cf., above, Chapter 1, Section 1.2: 11; Chapter 3, Section 3.2.3: 59; and Chapter 5: 95; cf. also, below, Chapter 10, Section 10.2: 223; Chapter 11, Section 11.2: 251.

Fig. 9.26 about Rome immediately catches the eye for the very different figures during all periods, partly influenced by the amounts discovered in 'Nuovo Mercato Testaccio' and via Blaserna. During the Trajanic age, Italy and the Eastern Meditarranean are both the predominant origins with equal percentages (26%) and similar amounts of litres. Gaul is also well present (25%), while Iberia and North Africa resulted in a low amounts (2% for the former; 1% for the latter). The Hadrianic age sees a peak in quantities and it reflects, although with very different figures, a situation similar to the 'Terme di Elagabalo': Oriental wines prevail (57%), Italian ones reach second place (30%) and Gallic ones are also well present (10%). Even though with a severe increase in litres, Iberian and North-African wines are still less represented in terms of percentages which are the same than the previous period, but the presence of Iberian containers permit to state that they did not disappear after the Trajanic age (as stated by Rizzo 2003: 215 and Tchernia 2011d: 371[990]). The Antonine age sees a first drastic decrease in the amount of litres, offering a situation quite similar to the Trajanic age, with Oriental wines heading other origins (37%), followed by Italian ones (33%). However there is a significant difference from that period: North-African wines increase their percentage (11%) and Iberian ones are even less attested (1%). The Severan age sees another drastic decrease in quantities, very likely due to the nature of publications. It also shows a significant switch in leading imports, giving different data than the 'Terme di Elagabalo'. North-African wines become the most present in terms of total amounts, reaching a quantity never attested before (77%), possibly reflecting a situation that will become more clear in the following years when North Africa gained a predominance in the markets of the entire Mediterranean for the obligations caused by urban and military supplies[991]. Oriental wines, in spite of a serious decrease from the previous periods, still reach second place (10%). Italian wines are much less attested, arriving just to 5%, surpassed by Gallic wines (7%) which show that they were still produced and exported to Rome, despite many vineyards in the southern Gaul disappeared at the end of 2nd/early 3rd centuries AD[992]. Iberian wines are still present, although still with a very low quantity (1%), but this does not surprise as it never became predominant across all periods.

[990] Rizzo 2014b: 403 already modified this interpretation.
[991] Panella 2001b: 179–180; Bruno 2004a: 388. For the problems of this interpretation and subsequent assumptions cf. Vera 2010.
[992] Brun 2005: 25, 71–74.

| OSTIA | Italy | | Gaul | | Iberia | | North Africa | | 'Orient' | | Unident. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 1854.32 | 31% | 2546 | 43% | 354 | 6% | 253 | 4% | 857.26 | 14% | 120 | 2% |
| Hadrianic age | 1716.8 | 30% | 2112 | 37% | 516.25 | 9% | 254.5 | 4% | 748.96 | 13% | 390 | 7% |
| Antonine age | 12297.12 | 32% | 13613.75 | 36% | 1470.25 | 4% | 2315.5 | 6% | 8537.72 | 22% | 0 | 0% |
| Severan age | 1161.2 | 26% | 1449 | 32% | 135.75 | 3% | 561.36 | 12% | 1142.9 | 25% | 66 | 2% |

**Fig. 9.27: Litres and percentages of wines divided into macro-areas in Ostia.**

In Ostia (fig. 9.27) the situation is different, with not very large amounts of litres during almost all periods with the exception of the Antonine age for the discoveries in the Area NE of the 'Terme del Nuotatore'. At the same time this is the only place of discovery for some wines whose origin is unidentifiable which are not very large, although reaching 7% during the Hadrianic age and 2% during both the Trajanic and Severan ages. Gallic wines prevail during all periods, although with a constant decrease of percentages that never go below 32%. Italian wines reach second place during all periods and with percentages that are almost always the same, with the exception of a decrease during the Severan age (26%) for the increase of 'Oriental' ones. These wines are less present in Ostia than in Rome, although maintaining their third place during all periods. Iberian wines are not represented much and, as already seen in Rome, they are already surpassed by North-African ones during the Antonine age, while during the Severan age they are still not attested much.

These data declare the large dissimilarity of the two cities[993], with different amounts from diverse origins. They might have been possibly caused by different supply routes and wine reception from the Empire or even diverse tastes or choices in their inhabitants. The 'Terme di Elagabalo', however, cannot be seen as isolated from the remaining part of the City, being part of it and surely linked to its commerce due tothe large amount of amphorae discovered. For this reason fig. 9.28 unites data from the basis-site and Rome.

| ROME | Italy | | Gaul | | Iberia | | North Africa | | 'Orient' | | Unident. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 18248.2 | 36% | 13071 | 25% | 1297 | 2% | 363 | 1% | 18282.2 | 36% | 0 | 0% |
| Hadrianic age | 70069.16 | 30% | 23183.5 | 10% | 5537.25 | 2% | 2682 | 1% | 136050.57 | 57% | 0 | 0% |
| Antonine age | 6051.02 | 33% | 3222 | 18% | 233.75 | 1% | 2075.62 | 11% | 6671.31 | 37% | 0 | 0% |
| Severan age | 481.48 | 5% | 712.5 | 7% | 85.5 | 1% | 7785.24 | 77% | 1084.7 | 10% | 0 | 0% |

**Fig. 9.28: Litres and percentages of wines divided into macro-areas in Rome and in the 'Terme di Elagabalo'.**

[993] As already noticed by Tchernia 2006: 148-149.

Looking at this new figure, nothing has changed during the first three periods, because the 'Terme di Elagabalo' unfortunately does not add much to the Roman situation, being its Hadrianic and Antonine periods not really representative. During the Severan age there is a real change in percentages. North-African wines still head other origins, but its predominance is much downsized arriving to 47%. 'Oriental' wines still reach second place with a serious increase from the previous 10% to the new 26%, because in the 'Terme di Elagabalo' this origin lead all others during this period. Another difference is visible for Italian wines which reach now third place with an increase of about 8 points. Gallic wines are also increased, but they still are on the fouth place with a 12% and Iberian wines are still less attested (2%). This union permits to state the importance of the 'Terme di Elagabalo' in adding new data to Rome and, at the same time, offers causes for reflections.

The significant import of Italian wines, still well attested during the Severan age in Rome and in Ostia, permits to slightly change assumptions made by scholars. Since statements by Rostovtzeff in 1926[994] (who however did not define a clear chronology[995]) and for many years, especially during the 1970s and 1980s starting from discoveries in Ostia and then in Settefinestre which seemed to confirm this view, a very large number of scholars accepted and maintained a fixed idea. It has been called in literature the 'Italian 2nd century AD crisis'[996] (although the Russian author never used the word 'crisis'). Stating that "the golden age of Antonines was, for Italy, the moment of disaster"[997], it involved the assumption that, during and especially at the end of the 2nd century AD, Italian wines drastically decreased so ceasing to be an object of commerce, as amphorae containing them were not as widely found as during previous periods[998]. This phenomenon has always been strictly connected to the decline of villas and their model of production based on slaves[999], as clearly stated by Giardina when saying that "the wine production's descending parabola of Italian slave-villas happened between the Augustan and the Antonine ages"[1000]. Recently this connection has been reappraised and nuanced by many scholars[1001]: the reasons could be more than just

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[994] Rostovtzeff 1968. He identified four causes: Italian Sigillata was replaced by Gaulish Sigillata; Campanian villas were not rebuilt after the Vesuvius's eruption in AD 79; Ostia replaced Puteoli as the main trade-port; and the Domitioan's edict about the overproduction of wine (Tchernia 2011d: 354 and notes 6–9).
[995] Tchernia 2011d: 352.
[996] Carandini 1981b: 252; Carandini & Panella 1981: 489; Carandini 1989a: 517.
[997] Carandini 1989b: 117.
[998] Panella 1981: 78; 1986c: 432–437; 1989a: 164–166; Kehoe 2007: 555–556.
[999] Carandini 1989a: 518, 520; Sangineto 1994: 584–585; 2000: 114; 2001: 218–219; Nicolai *et al.* 2002: 14; Marzano 2007b: 199–201; Sangineto 2014b: 481. Cf. also various contributions in Giardina & Schiavone 1981.
[1000] Giardina 1997: 244.
[1001] Cf., for example, Lo Cascio 1991b; Vera 1995; Giardina 1997.

one; it was surely a gradual phenomenon; dating systems are fragile as there are chronological gaps between them[1002]; and not all areas reacted in the same way[1003] (for example, around Rome many *villae* survived and even flourished during the 3rd century AD and later[1004]). For many scholars this 'crisis' would have been caused by an economic decision of favouring provincial productions, with the resulting shift in productive centres to the provinces[1005]. However this 'competition', cannot be interpreted as rivalry, but as a change in trade-flows filling gaps left empty by the ceasing of other productions[1006]. As shown by the above offered percentages, amounts found during the Severan age in Rome with 13% (including also the 'Terme di Elagabalo': fig. 9.28) and in Ostia with 26% (fig. 9.27) assess that Italian wines from the centre of the Empire did not stop entirely during the 2nd century AD[1007], but – on the contrary – continued being produced at least to be traded to the Capital[1008] and its port. A definite decrease can be seen when compared with other periods, with an already visible increase of North-African containers which would dominate later[1009], but the Severan age sees totally not negligible amounts of Italian wine (in containers which cannot be considered residual). As already noticed in literature, there is an increase in low-quality (or better to say largely produced) crops from the Tiber valley, contained in the so-called 'Anfora di Spello', as the commercial importance of second-rate wines was always greater than luxury ones during Roman times[1010]. In spite of this, with a somewhat reminiscence of older times[1011], some high quality wines (not only the *Falernum*, but also those from *Minturane*, Cales, Sorrento, and the bay of Naples[1012]) were still produced and possibly aimed at the élite. They were probably contained in the 'Late Campana Dressel 2-4' amphorae[1013] which are well attested both during the Antonine and Severan ages.

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[1002] Tchernia 2011d: 368-370, 373-375.
[1003] Patternson 1987. For example both *Bruttium* (cf. Sangineto 1991: 753-756; 2000: 114-115; 2001: 224, 231; 2013: 63) and the area of *Centumcellae* (Nardi Combescure 2002: 135) seemed to recovery earlier than other areas.
[1004] De Franceschini 2005: 339-340. Cf. also the epigraphic data of several owners in Chioffi 2005, mainly dating 2nd and 3rd centuries AD.
[1005] Tchernia 1986: 260-264; Panella 1989a: 166; 1991: 287; 1993: 619; Panella & Tchernia 1994: 158-160; Panella 2001b: 179, 188, 193; Bruno 2004a: 364; Kehoe 2007: 555-556; Ferrandes 2008b: 268.
[1006] Tchernia 2006: 156.
[1007] This was partly assumed also by Tchernia 1980: 310; Carandini & Panella 1981: 490 (for later periods); Purcell 1985: 19.
[1008] Paolucci 2010: 167.
[1009] Panella 1986c: 431-432; Bruno 2004a: 364.
[1010] Carandini 1989a: 506.
[1011] Carandini 1989a: 520.
[1012] Tchernia 2011d: 369.
[1013] Tchernia 2006: 152-153.

Rome had been always a major destination for commerce of wine. During the Mid-Imperial age the immediate hinterland of the City[1014] was full of *horti* and *villae suburbanae*[1015]. Different plants grew in that area, providing perishable products such as fruit and vegetables[1016] and even small quantities of wine[1017] and olive oil[1018] which were partly sold in the *Urbs*[1019] on special days (*nundinae*[1020]), although they were very likely not transported by amphorae[1021]. Their final customer might have been not only the poor[1022], but also the rich[1023] and were all important in the Romans' diet providing vitamins, minerals, calories[1024], and increasing the amount of wines in the Capital. The above offered data partly confirm the studies about this period, with a contraction of wines produced along the Tyrrhenian coast and a slow change in commerce which preferred local and regional markets with a substitution of origins (the Tiber valley, but possibly also the immediate surroundings of Rome). They also show on one hand that the situation usually called 'crisis' could be more correctly called change and this discontinuity may be moved to the early 3rd rather than during the 2nd centuries AD[1025]. On the other hand it showed that it is much more nuanced and gradual than assumed, (because not everything happened everywhere and at the same time) and that there was not such a catastrophe and a disaster as commonly assumed[1026].

Considering data from both Rome and the 'Terme di Elegabalo', reported in fig. 9.27, the whole period reaches 326,164.31 litres. Dividing it for 100 years which is more or less the considered period, it becomes 3,261.6431 litres per year arrived in these Roman sites. It is a very low quantity, considering assumptions summarised in Appendix 4, Section 4.2. Obviously it is not representative of all amounts of wine arrived in Rome because many published reports were not included in this research (as explained in Chapter 3, Section 3.2.3: 63–64) and because there is a lack of publications of other sites in the Capital that resulted in amphorae finds (as shown in

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[1014] The main work for the definition, history and comparisons of Rome's *suburbium* is Morley 1996.
[1015] Carandini 1985b: 66–73; Liberati Silverio *et al.* 1991: 87; Holleran 2012: 187. Cf. also the large list published in De Franceschini 2005.
[1016] Frayn 1993: 61–64.
[1017] Carandini 1989a: 519; De Sena 2005; Santangeli Valenziani & Volpe 2007; Santangeli Valenziani & Volpe 2012; Marzano 2013a.
[1018] For a list of sites with presses cf. Fabiani *et al.* 2013: 10–11.
[1019] Lo Cascio 2009b: 51.
[1020] Frayn 1993: 18 referring to Festus, but reverting translation and interpretation of merchants coming to Rome. About more or less periodic markets cf. also De Ligt 1993.
[1021] Tchernia 2011d: 371.
[1022] Such as salads or cabbages as well as other vegetables (Carandini 1985b: 73), especially legumes and turnip (Robert 1985: 135).
[1023] For example asparagi or artichokes as well as grafts to create new fruits (Carandini 1985b: 73–74).
[1024] Carandini 1985b: 71–72.
[1025] Radaelli, forthcoming (B).
[1026] As stated by Pergola 2003: 171. This assumption does not deny the one offered by Lo Cascio 2009a: 16, but it just tries to refine its chronology.

Chapter 2, Section 2.3: 40–41). This low quantity is also influenced by the not negligible quantity of unidentified forms discovered in these sites, whose volume or content was not considered for the calculation of total litres, as still not known. Lastly it does not consider first of all *defrutum* (analysed in Chapter 12, Section 12.1), *mulsum* (created with must and honey[1027]), and all those perishable containers (barrels or made of skin) whose relevance in commerce cannot be stated with certainty (as already mentioned in Chapter 3) which could have arrived from producers in the surroundings of the Capital who sold their wine directly in it[1028], or from other more or less distant origins[1029], or passing through port-sites like Ostia and *Portus*. Data offered in this chapter also show that, although they might have already been used elsewhere or for other recipients or in lower amounts even before[1030], these perishable containers could have been introduced in large quantities for the wine trade to Rome at least into the second decade of the 3rd century AD, partly according to what was assumed by some scholars[1031] (on the contrary Carandini 1989a: 519 assumed this introduction from the half of the 3rd century AD).

### 9.2.1 Wine: Enjoying the meal or drinking to be drunk?

This Chapter showed important information. Rome, being the Capital of the Empire, surely had a different role than any other city in commerce. This is clearly expressed in the diversity of origins and qualities of imported wines, which do not find parallels in Ostia (with the exception of the Antonine age). The research undertaken from ancient sources demonstrated that the Italian wines are massively mentioned with an almost constant recognition of quality (although it might have become a *topos* and not always referring to reality). Also other origins were cited and Greek or Microasiatic ones were probably considered having the best quality[1032]. Other wines seems to have been of a lower quality, for example Iberian ones.

This Chapter also demonstrated that the 'Terme di Elagabalo' and its data (with the comparisons with Rome and Ostia) partly fit in the available literature, although

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[1027] Salza Prina Ricotti 1991: 104–105; Cerchiai Manodori Sagredo 2013: 160–165.
[1028] For the multiple methods of selling wine during Roman times cf., for example, Tchernia 2000b: 201–207.
[1029] For example, part of North-African wine was very likely traded by perishable containers cf. Marlière & Torres Costa 2007.
[1030] For example along the Adriatic coast: Tchernia 2011d: 370. For an assumption about *Bedriacum* cf. Ravasi 2006: 323.
[1031] Tchernia 1986: 285–289; Panella & Tchernia 1994: 159–160; Panella 2001b: 196; Tchernia 2006: 153.
[1032] Salza Prina Ricotti 1991: 95; De' Siena 2012: 114–115. Cf. also García Soler 1998 and Cerchiai Manodori Sagredo 2013: 274–284 (both for many mentions of Greek wines in ancient sources).

slightly changing it. The large presence of Eastern Mediterranean amphorae (whose wines seems to have been relatively good, but sometimes also rather expensive) already during the Hadrianic age and especially during the Severan age was rarely noticed before. It also showed and confirmed an increasing presence of North-African containers to the detriment of Gallic and Iberian ones in Rome (but not in Ostia where Gallic wines always have high percentages, contrarily to North-African ones which have a low presence during all periods), whose wines in ancient sources rarely reflected an high quality, possibly with the only exception of *defrutum* (cf. Chapter 12). The data considered also permitted a reappraisal of the common view about the 2nd century AD which was often seen a period of 'crisis', with a large decrease of Italian productions, although with a recognised differentiation in productive areas. The analysis showed that if a 'crisis' ever happened, can be possibly be moved into the early 3rd century AD as data from the Severan age (which can also be named, for this case, the very early 3rd century AD) show not negligible quantities of Italian wines, even coming from those areas which had always been considered passing through that 'crisis' (the Tyrrhenian coast and Campania).

Unfortunately it is not possible to clearly and surely define who consumed what, because many times the same form of amphora coming from an area could have been used to transport different wines which could have diverse qualities[1033]. In spite of this, looking at ancient sources and scholarship, a few assumptions can be made. All these wines coming from different origins and having different levels of quality (even those related to amphorae found in the 'Terme di Elagabalo') were imported to Rome because they were requested by the people belonging to all social ranks, partly influencing their commerce to the Capital[1034]. The majority of amphorae (or rather the foodstuffs contained) were transported by ships, because in spite of all the uncertainties and difficulties of travelling by sea, it was the easiest and cheapest way to commerce by long distances[1035]. Using the price edict of Diocletian[1036] (an ancient source dated 4th century AD which is randomly used by many scholars for whatsoever period), Duncan Jones in 1974 suggested a ratio of 1:4.9:28-56 for the relative costs of transporting by sea, waterways such as rivers and road transports[1037]. In any case,

[1033] Radaelli, forthcoming (A).
[1034] Panella 2011c: 76.
[1035] Rickman 1980b: 262; Peacock & Williams 1986: 64; Morel 2007: 509.
[1036] Cf. Graser (transl.) 1940 and Lewis & Reinhold 1966: 464-472.
[1037] Duncan Jones 1974: 366-369; Campbell 2012: 215-216. Even in modern times seaborne commerce is much less expensive than the one by trucks: Tantillo 2000: 104. Cf. also Tchernia 2011a: 124-130 about the uncertainties of these differences related to transactions. Harris 2011: 160 offers different ratios: 55:6:1 (respectively land, river, and maritime transports). Cf. also Arnaud 2007.

these ships[1038] were private, whose owners often created contracts with the State for the supply of food[1039]. For all these reasons all wines had to have a market, someone consuming them, otherwise undertaking a risky travel would have been not profitable enough. At the same time, both the large quantity of references to wine from ancient sources and the large amount of analysed wine-amphorae (without considering what might have arrived from the immediate hinterland of Rome and by barrels or skin containers) bring to questioning about its consumption among Rome's inhabitants.

Surely alcohol brought a calorific income, but its consumption was not only tied to biological needs. Rather it served also (and even more) to satisfy cultural needs[1040] and define boundaries among ranks[1041], possibly also influencing trade-flows. All Romans (principally the élite, despite the usual *decorum* it tried to demonstrate to others[1042]) usually drank a lot of wine[1043], especially during the Imperial period[1044]. Alcohol was – and still is – a social binding agent[1045], something that could bring enjoyment to *convivia*[1046] (when it was largely consumed[1047]), serving to strengthen

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[1038] Amphorae were loaded with care on boats in order to let the transport be easier, to carry as many of them at the same time, and to not let them get broken (Sciallano & Sibella 1991: 16). They were put in the lower parts of ships with their spikes stuck into sand or grit. Other layers of amphorae were then created, putting their spikes among three or four other amphorae's mouths. Free spaces were filled with straw, rushes, or small tree-branches (Caravale & Toffoletti 1997: 40; Stecher 2009: 32–35). Other objects and vessels were carried with the amphorae (usually fine wares) which were not the primary cargo of the boat and for this reason they are usually called 'secondary goods' or 'accompaniment goods' (Tchernia 2011a: 111. Cf. also Morel 1985; Pavolini 1985; Ikäheimo 2005).
[1039] Cracco Ruggini 1985: 231; Peacock & Williams 1986: 59–60; Lo Cascio 2007: 640.
[1040] Brun 2003a: 9; Barnett 2014: 15.
[1041] As suggested by Tchernia & Brun 1999: 31–37 and Poux & Dietles 2004: 14, 17. Cf. also Lupton 1996: 1 (looking at food consumption).
[1042] D'Arms 1995: 304.
[1043] Cf., below, Appendix 4, Section 4.2 for the scholarship about the amount of litres *per annum* imported to the city or consumed by people. Cf. Baratta 2002 for frauds in producing wines.
[1044] Purcell 1985: 14; Bouvier 2001/2002: 246–248.
[1045] Barnett 2014: 15; Martín i Oliveira 2015: 24. Cf., for example, Catoni 2010: 84–87 and Zaccaria Ruggiu 2003 for the social and political implications of Roman banquets.
[1046] *Convivia* is the Latin translation (even though with some differences: cf., for example, Dunbabin 1993: 127–129; Brun 2003a: 118) of the Greek συμπόσια that Romans copied (Dunbabin 1993: 116; Coarelli 1995: 207–208; Nadeau 2010: 399–440), taking it through the Etruscan transposition (cf., for example, Camporeale 1986: 281–286; Rathje 1995; Greco Pontrandolfo 1995; Brun 2003a: 117; Brun 2004a: 117; Cianferoni 2009: 67; Moscato 2012; Etruscan also influences Venetic areas: cf. Perego 2009). Wine was, in fact, heavily consumed even during Greek times (cf., for example, Salza Prina Ricotti 1985: 43; Lombardo 1991; Dayagi-Mendels 1999: 96; García Soler 2000; De' Siena 2012: 57–73) and among Etruscans (cf., for example, Colonna 1985: 14–15; Cristofani 1991; Menichetti 1998; Agostiniani 2000; Torelli 2000; Menichetti 2002 – for an iconographic compendium of the use of wine; Bartoloni 2007; Delpino 2007; Locatelli 2008; Bartoloni *et al.* 2012; Delpino 2012; De' Siena 2012: 74–90). Cf. also Musti 2001 for an history of *symposia* and Schuitema 2008 for its origins.
[1047] Salza Prina Ricotti 1988: 95; 1991: 100–101; Varone 2010: 226; Carlan 2012: 89–91. About Roman *convivium* (as well as objects and rooms related to it) cf. also De' Siena 2012: 91–109. Cf. also the significant example of remains of public feasting in the forum of *Castellas* in France (Barberan *et al.* 2012) with a prevalence of objects related to the consumption of wine.

group identities as well as something that could elevate souls to gods[1048] who were well present during eating practices[1049]. However, at times Romans abused wine, surpassing the limit of using it to enjoy the meal[1050], to drink just to be drunk[1051] or only to collapse[1052], although they might not be totally aware of what is nowadays called alcoholism[1053]. That was possibly caused by the same social role of wine, because alcohol not only can generate euphoria and joy that were much appreciated during *convivia*[1054], but also dependence.

Since preferences are experienced as strictly connected to individuals and not fixed in time[1055], changes in trade-flows for this product – usually seen from the point of view of economic changes only – may demonstrate that Romans were aware of differences and qualities of wines related to their origins (especially the élite as clearly shown by ancient sources[1056]) and they influenced their commerce and import to the Capital. Therefore some wines could be possibly directed to the Roman élite, such as some Campanian wines contained in 'Late Campana Dressel 2-4' amphorae, or the wines from Cnidos, Cyprus and probably also from Palestine and Lebanon which are praised by ancient sources. Lower ranks possibly tried to emulate higher ones so as to obtain an elusive social standing[1057] (as stressed by Simmel[1058]), but they had fewer possibilities to buy high-priced wines. This might explain the presence in Rome of

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[1048] Menichetti 2002: 75; Rustoiu & Egri 2011: 88-90; 98-99. For religious connections of wine during centuries cf., for example, De' Siena 2102: 139-166. Cf. also the tomb published in Barberan *et al.* 2013 for the use in funerary activities.
[1049] Robert 1985: 126-130.
[1050] Dunbabin 1993: 129 refers that drinking little wine during meals was possibly a Greek habit.
[1051] André 1961: 170-173; Robert 1983: 124; Salles 1983: 184; Salza Prina Ricotti 1987: 75-77; 1988b: 95; 1991: 100-101; Jongman 2007b: 603. Cf. also Cerchiai Manodori Sagredo 2013: 199-219, 319-323 and Bedigan 2008 for a Greek example.
[1052] D'Arms 1995: 312-314. Cf. also the fresco published in Salles 1983: 6th table after page 216, in which a servant helps his master to stand, possible because he is too drunk. This attitude towards alcohol is radically increasing nowadays in different countries: cf. Adnkronos 2014.
[1053] D'Arms 1995: 316-317. Cf. also Weeber 2007: 31-32, 64 and bibliography.
[1054] Robert 1985: 154; Salza Prina Ricotti 1988: 94-96; Cerchiai Manodori Sagredo 2013: 317-318.
[1055] Gronow 1993: 293; Nadeau 2010: 24; Menghini 2012: 120-121. Cf. also Castellani 2012 about the evolution of taste in wine during modern and contemporary times.
[1056] Tchernia 1986: 29-37; Brun 2003a: 121; Tchernia & Brun 1999: 37-45. Cf. also the inscription on an amphora found in Pompeii published in Varone 2010: 220-221 and fig. 6.
[1057] Slater 1997: 153, 156. Cf. also the inscriptions *CIL* VI, 15258, cf. pages 3517, 3913 = *CIL* VI, 1649 cf. page 253 = *CIL* III, 129 = *CIL* XII, 33 = *ILS*: 8157 = *AE* 2010: 238 = Bücheler 1930: n. 1499 and CIL XIV, 914 = AE 2010: 238 = Bücheler 1930: n. 1318 = Camodeca *et al.* 2000: 567 = Cugusi 2007: 173.
[1058] In a small essay titled 'Zur Philosophie der Mode' dating 1895 (Simmel 1996) he identified this phenomenon as based on its capacity of satisfying two inner opposed pulsions that characterise individuals' psychology: imitation with its reassuring force and differentiation for the need of individuality. Moreover he stress that through consuming prestige goods, individuals try to be assimilated to higher classes that, on the contrary, attempt avoiding those commodities that spread to lower classes and for this reason became banal (Courtney 1997: 95; Daccò 2005: 148). This phenomenon was called during the 1950s by Fallers the 'trickle down effect': the continuous cycle of imitation-differentiation-imitation among higher and lower social classes which generates consumption (Fallers 1954; cf. also Van der Veen 2003: 409-410).

many amphorae containing low quality (and possibly lower priced) wines[1059], such as the ones from the Tiber Valley, Baetican, and a few Oriental wines that were very likely consumed by the lower ranks of the Roman society rather than the élite. The introduction of *hirtiola* wines from the Tiber valley, in fact, cannot be surely considered just linked to a substitution of products for the lack of Campanian crops caused by the Vesuvius's eruption or merely ruled by the élite, although it has been recently also correlated to an increase in the amount of villas in Umbria[1060]. On the contrary, it was possibly directed to Rome's lower ranks who wanted to drink affordable wine with their low income coming from more or less temporary jobs, whose wages are usually calculated in low figures[1061]. The same reason may be offered for such large imports of Cretan wine which seems to have been cheap wines[1062]. Some other ranks which were not totally poor, but not even rich might have possibly consumed Rhodian, Cilician, North-African, and Bosphoran wines or even those only hypothetically coming from Pamphlilia, which at times were praised by ancient authors, but seems to have been not very expensive.

[1059] Carandini 1989: 506 suggested that the majority of wines were not aimed at the élite.
[1060] Tchernia 2011d: 374–375.
[1061] Cf., for example, Jongman 2007b: 601; Temin 2013: 241–261.
[1062] Tchernia 2001c: 345–346.

# Chapter 10: Olive oil

Being a tree preferring dry and stony (or well drained clayey) soils[1063] and bearing neither excessive cold weather nor persistent humidity[1064], the olive tree became one of the symbols of the entire Mediterranean basin[1065]. It is known with two species: the wild one (*Olea Europea L.* var. *Oleaster*) with small leaves and fruits and low oil-content[1066] and the cultivated one (*Olea Europea L.* var. *Sativa* or *Communis*) with taller plants, bigger oblong leaves, and fruits whose size depends on varieties[1067]. The wild species had been present since the last glaciation both in the Eastern (between Late-Pleistocene[1068] and Mid-Palaeolithic[1069]) and Western Mediterranean (Mesolithic, Epipalaeolithic, and Neolithic[1070]) basins. The cultivation of olive trees seems to have started during the Neolithic[1071], but increased at the beginning of the Bronze Age in the Middle East[1072] and then spread also into the Western portion of the Mediterranean[1073].

In ancient times several 'greasy' products existed and were used[1074], such as oils derived from castor[1075], sesame, hazelnut, almond, and walnut (the latter was the content of an intrusive vessel of Gauloise 13 found in Ostia in one of the analysed contexts dating the Trajanic age) as well as animal fat[1076]. Olive oil was, however, the preferred one for several purposes[1077]: especially medicine[1078], body care and perfumery[1079], but also lighting[1080], religious ceremonies[1081], eating[1082], and for several handcrafts[1083]. The exact use of all the amounts of olive oil imported to Rome cannot be assessed with certainty, but surely not all was traded to be consumed by people for

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[1063] Plin., *HN*, XVII, 31, typical of *Baetica* and *Venafrum* (recognised also by Columella, *Rust.*, V, 8, 6).
[1064] Brun 2003a: 125.
[1065] Mattingly 1988b: 153; Étienne & Mayet 2004: 19.
[1066] Liphschitz *et al.* 1991: 442.
[1067] Brun 2003a: 124–125, also for the mentions in ancient sources about known varieties.
[1068] Santorini: Brun 2003a: 126.
[1069] Palestine: Liphschitz *et al.* 1991: 448.
[1070] Brun 2004a: 43–44. Cf. also (for Iberia) Bruxó 1997: 279–280.
[1071] Galili *et al.* 1997.
[1072] Liphschitz *et al.* 1991: 450–451; Rhizopoulou 2007: 382–383; Efe *et al.* 2011: 56.
[1073] Étienne & Mayet 2004: 18–19. It possibly was an authonomous introduction: Terral *et al.* 2009; Terral *et al.* 2012b. In latin two words are known defining presses: *trapetum* and *mola olearia* (for analyses of these terms cf. Frankel 1993 and Peña Cervantes 2011/2012: 38–41).
[1074] Cf. Cerchiai Manodori Sagredo 2009: 132–136.
[1075] Hdt., *Hist.*, II, 94 describes in detail the production process among the Egyptians.
[1076] Brun 2003a: 123.
[1077] Salza Prina Ricotti 1987: 81; Jongman 2007: 603.
[1078] Cf. Brun 2003a: 176–177; Cerchiai Manodori Sagredo 2009: 118–124. Cf. also Hashmi *et al.* 2015 for modern uses.
[1079] Cf. Rossi Osmida 1989: 109–110; Brun 2003a: 170–176; Cerchiai Manodori Sagredo 2009: 84–101, 107–118. Cf. also Belgiorno 2007 for perfumery production in Cyprus.
[1080] Cf. Brun 2003a: 177–179; Cerchiai Manodori Sagredo 2009: 101–106.
[1081] Cf. Brun 2003a: 180–181.
[1082] Cf. Brun 2003a: 179–180; Cerchiai Manodori Sagredo 2009: 152–172.
[1083] Cf. Brun 2003a: 181–182.

their dietary needs. As for the previous Chapter, also this one will analyse all the discovered main origins of olive oil, using litres calculated from the numbers of vessels provided in previous Chapters so as to evaluate differences in quantities during all periods.

## 10.1 Olive oils

Fig. 10.1 considers all amounts of olive oil coming from different origins that were imported to the analysed sites, considering neither residual nor intrusive vessels. It shows a relevant amount of litres from Iberia and North Africa during all periods, although the first sees an almost constant decrease, while the latter sees an increase till the Antonine age to fall during the Severan age. At the same time, Eastern Mediterranean oils are far from being negligible, with a peak during the Hadrianic age. The presence of some Italian containers is not assured.

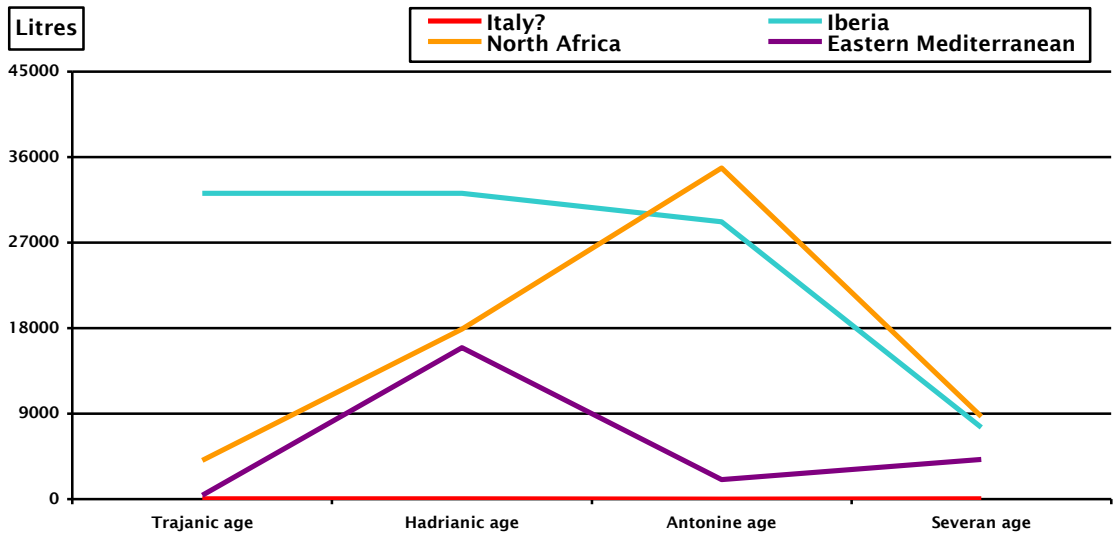


**Fig. 10.1: Amounts of olive oil divided into macro-areas and periods.**

### 10.1.1 Italian oils

The Italian production seems to be not represented in the analysed contexts, but a total of three vessels identified as Dressel 6 were all found in Ostia during the Trajanic, Hadrianic and Severan ages. For their generality they can possibly represent Dressel 6B produced in Istria. At least another vessel of this amphora was found in another Trajanic context in Rome (Trajanic Baths) not considered in this

investigation[1084]. Among several productions[1085], Istrian oil was rather distributed especially in Northern Italy and Central Europe[1086]. Pliny the Elder and Cassiodorus[1087] are the only two ancient authors directly mentioning it[1088]. On the hother hand, Martial[1089] and Pausanias[1090] only cite it indirectly[1091]. Apart from the well known stamps of the Laecanius's workshops[1092], two *tituli picti* can be added to sources mentioning this product, one from Magdalensberg and the other from Milan: *Olei Histr(ici) flos p(ondo) V +++ Q. [T]usidi Dextri* and *His(tricum?)*[1093], thus giving an exact origin for the content. A large number of sites are known with presses or *villae* with oil processing parts[1094], especially in Brioni islands and in Fažana[1095], in the surrounding territory of *Colonia Iulia Pola*[1096], in Cervar Porat not far from Porce[1097], and in Barbariga (15 km to the North-West of Vodnjan)[1098].

### 10.1.2 Iberian oils

For this product, only *Hispania Baetica* is represented among Iberian provinces[1099] with its container Dressel 20. Since the end of the 20th century many studies had been held in the Guadalquivir valley[1100], but most of them were more interested in the very large number of sites that produced amphorae which contained olive oil and their epigraphic set, rather than the product itself[1101], although many presses were found[1102]. Strabo informs that olive oil was one of the main products of Iberian coasts[1103], and

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[1084] Bertoldi 2008: 450, fig. 5; Bertoldi 2010: 308, fig. 2.
[1085] Cf., for example, Busana *et al.* 2009: 37–43, 46–52 or Maselli Scotti 2009 for other areas along the Adriatic coast dedicated to the production of olive oil. Cf. also the *negotiator olearius* mentioned in the inscription found in Cupra Marittima (*CIL* IX, 5307) analysed by Cristofori 2002b. Cf. also the lists of presses in Fabiani *et al.* 2013: 12–14, 17–18, 22–24, 25–28.
[1086] Degrassi 1956: 106–107.
[1087] Cassiod., *Var.*, XII, 22, 1.
[1088] Plin., *HN*, XV, 8.
[1089] Mart., *Epigr.*, XII, 63.
[1090] Paus., *Hellados Periegesis*, X, 32, 19.
[1091] Cf. also Buonopane 2009: 27–30 (with also other sources).
[1092] Bezeczky 1995; Bezeczky 1998; Martin-Kilcher 2000.
[1093] Degrassi 1956: 108.
[1094] Cf. Begović & Schrunk 1999/2000. For sites dating Late Antiquity cf. Kopáčková 2014.
[1095] Matijašić 1993: 249–251. Cf. also Bulić & Koncani Uhač 2011.
[1096] Matijašić 1982; Matijašić 1993: 248–249.
[1097] Matijašić 1993: 251–252.
[1098] Matijašić 1993: 251.
[1099] Even *Lusitania* showed traces of production of olive oil: cf. Fabião 2004.
[1100] For a brief list of bibliography cf. Remesal Rodríguez 2011: 212–213 and notes 44–47. Cf. also Mattingly 1988a: 38–44; Remesal Rodríguez 1998: 187, fig.1; Étienne & Mayet 2004: 117–147.
[1101] Cf. the project presented by Remesal Rodríguez 2000: 383–386, 387–389.
[1102] Hitchner 1993: 502.
[1103] Strabo, *Geogr.*, III, 4, 16.

considers excellent the one from Turdetania[1104]. Martial describes the *Baetis* river (Guadalquivir) surrounded by an olive-crown[1105], surpassing the one from *Venafrum* (in Italy) for its abundance[1106]. Pliny the Elder puts Baetican oil in second place of quality (together with the one from Istria)[1107] and considers the olive the biggest tree of *Baetica*[1108]. Columella notes Baetican oil[1109] and Statius compares its reputation with the one from Attica in Greece[1110]. The only list of sites that resulted in producing olive oil are due to M. Ponsich and his four volumes dating 1974, 1979, 1984, and 1991. He identified at least 94 assured sites in the Guadalquivir valley between Sevilla and Corduba[1111] strictly related to rivers for the transport of this product. Some sites of that list (as noticeable from the map published by Étienne & Mayet 2004: fig. 17) are niether close to kiln sites nor to rivers, thus informing that this product might have been distributed not only by waterways, but also by land. Figures 10.2 and 10.3 represent the presence of olive oil, in litres, as shown by the amphorae found across all chronological periods and sites. Both the Trajanic and Hadrianic ages show the same quantity and the Severan age sees a drastic decrease. Rome (also including the 'Terme di Elagabalo') shows a real predominance.

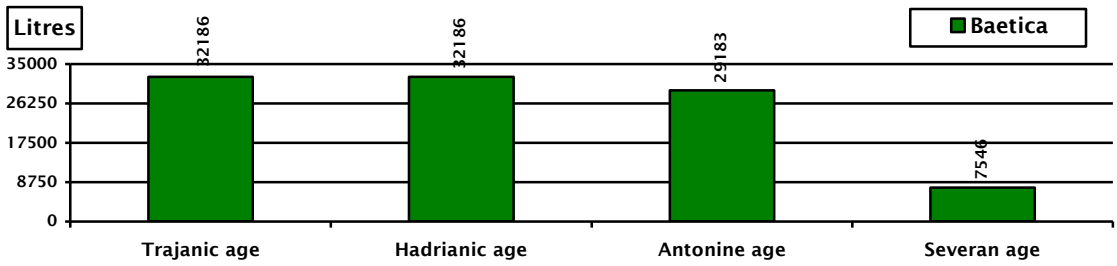


**Fig. 10.2: Amounts of olive oil from *Baetica* divided into periods from all sites.**

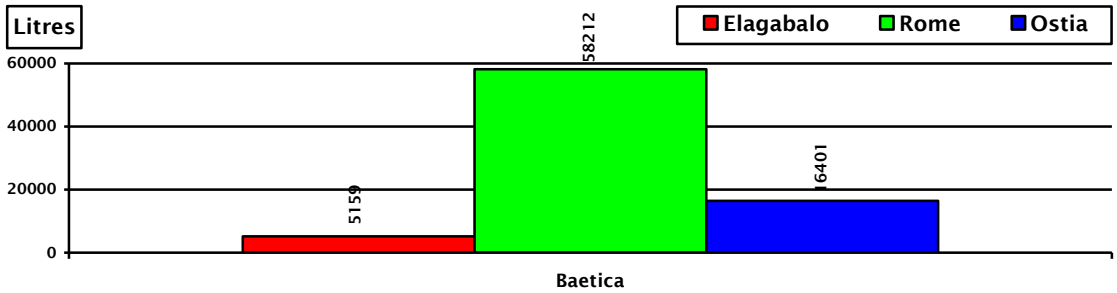


**Fig. 10.3: Amounts of olive oil from *Baetica* divided by sites.**

[1104] Strabo, *Geogr.*, III, 2, 6.
[1105] Mart., *Epigr.*, XII, 96.
[1106] Mart., *Epigr.*, XII, 63, 1.
[1107] Plin., *HN*, XV, 8.
[1108] Plin., *HN*, XIX, 93.
[1109] Columella, *Rust.*, V, 8, 5.
[1110] Stat., *Silv.*, I, 7, 28.
[1111] Cf. the emendations done by Étienne & Mayet 2004: 42–46 who eliminated some unsure identifications. Cf. also Peña Cervantes 2011/2012: 41–42 and 43–44 for two other brief list of presses in Southern Spain).

In the 'Terme di Elagabalo' (fig. 10.4) only the Hadrianic and Severan ages show amounts of olive oil from Baetica, resulting in the impossibility of creating valuable evaluations. Confrontations with Rome become essential in this case.

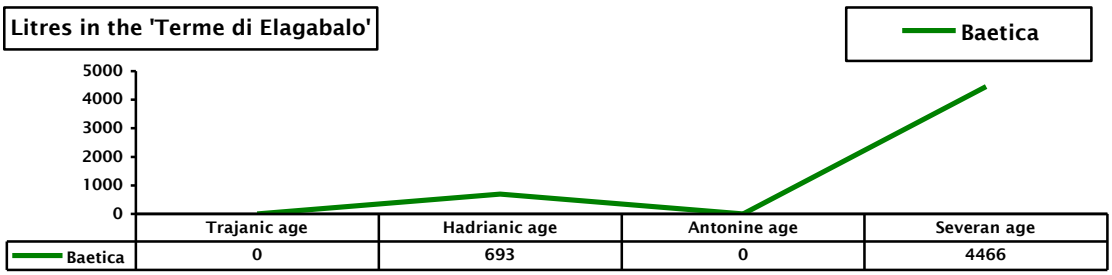


**Fig. 10.4: Amounts of olive oil from *Baetica* in the 'Terme di Elagabalo'.**

In Rome (fig. 10.5), after an increase during the Hadrianic age, there is a constant decrease in amounts. Litres during the Severan age are extremely low and they are possibly caused by the nature of the contexts considered. These amounts, however, contemplate only a small part of the Baetican olive oil in Rome, as they do not consider Monte Testaccio, where many amphorae were discarded[1112].

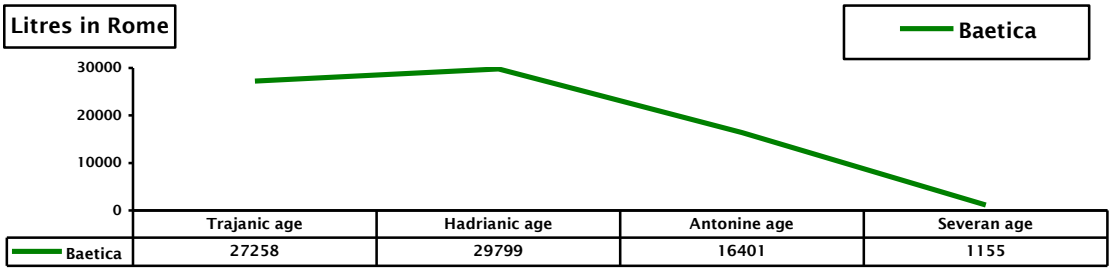


**Fig. 10.5: Amounts of olive oil from *Baetica* in Rome.**

In Ostia (fig. 10.6), contrarily to Rome, there is a decrease during the Hadrianic age, a drastic increase during the Antonine age, and another decrease during the Severan age.

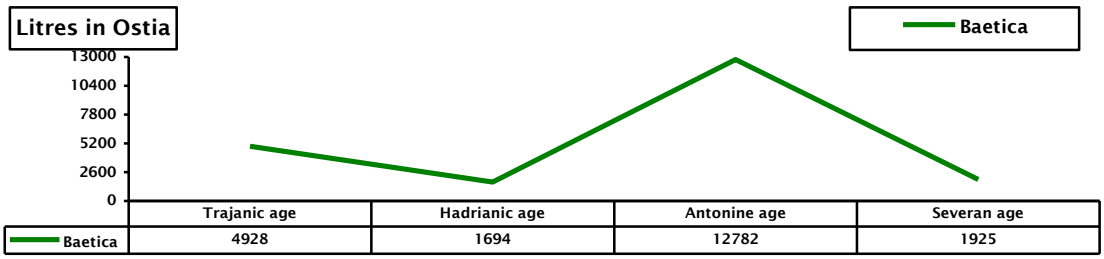


**Fig. 10.6: Amounts of olive oil from *Baetica* in Ostia.**

[1112] Cf., below, Section 10.2.1.

### 10.1.3 North-African oils

Figures 10.7 and 10.8 represent the presence of North-African olive oil, expressed in litres, across chronological periods and sites. Ostia shows a real predominance over the other two analysed sites for *Africa Proconsularis*, while Rome (also considering the 'Terme di Elagabalo') heads for *Tripolitania*. The Hadrianic age sees the largest amounts of litres of Tripolitanian olive oil and the Antonine age shows the majority of litres from Africa. These two big macro-areas produced very large amounts of olive oil[1113]. Cyrenaica is, on the other hand,less attested and only in Ostia.

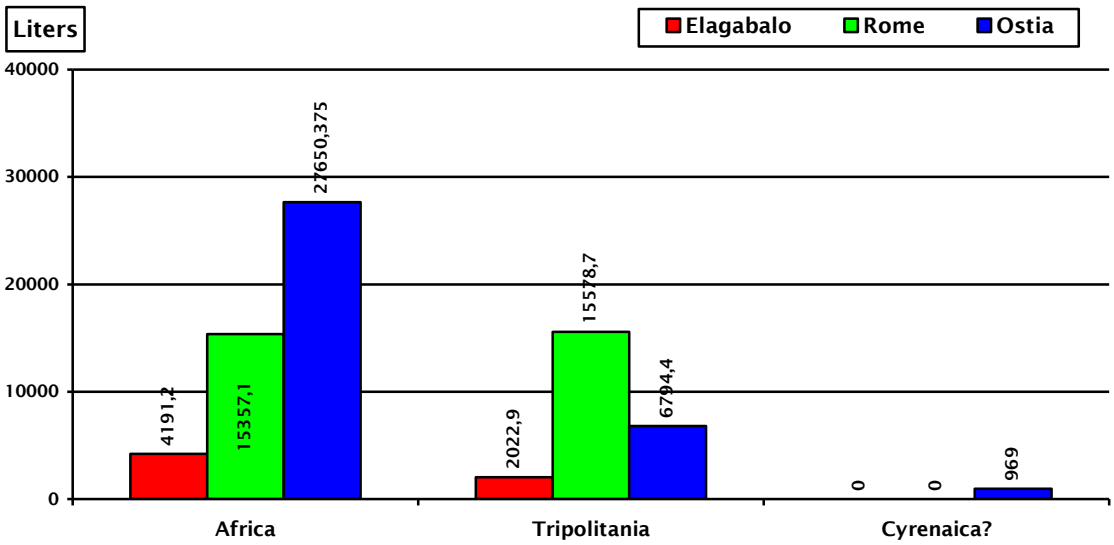


**Fig. 10.7: Amounts of olive oil from North Africa divided into sub-origins and sites.**

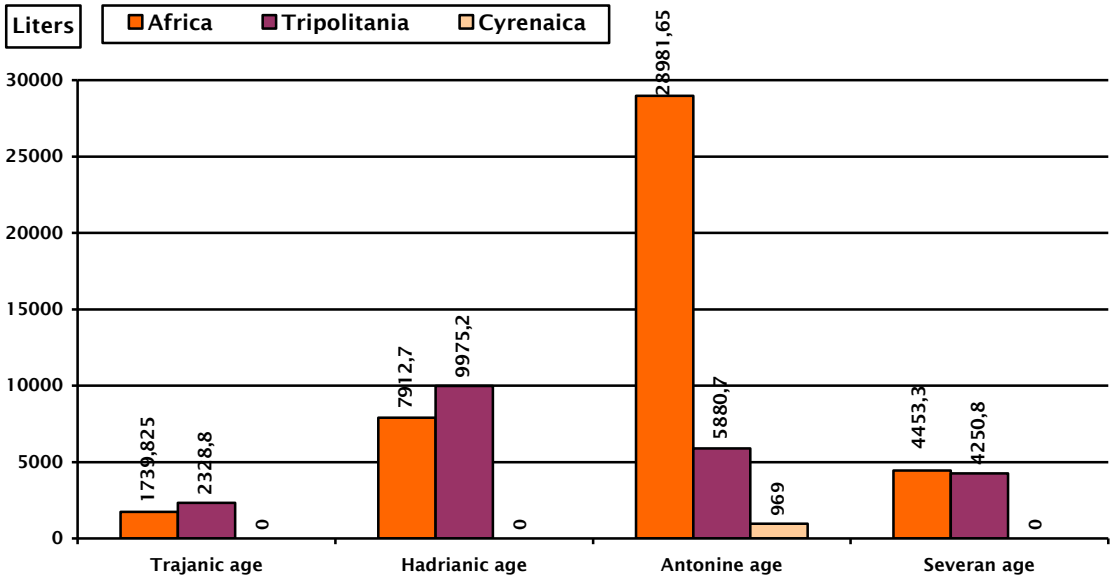


**Fig. 10.8: Amounts of olive oil from North Africa divided into sub-origins and periods from all sites.**

[1113] Mattingly 1994: 104.

*Tripolitania* did not have exactly favourable climatic conditions for agriculture[1114], but partly did for olive growing[1115] especially along the coasts (above all Gebel Tarhuna and Gebel Msellata[1116]), but also across more inner parts since the Flavian age[1117]. This is shown by the large distribution of amphorae produced in this area. A massive production of this crop led Tripolitanian families to become wealthy enough to reach high-prestige ranks[1118]. Tripolitanian oil was already mentioned during the civil war between Caesar and Pompey[1119], when Lepcis was obliged to pay taxes with three million pounds of oil[1120] (about 10,700 hl, a measure that was soon removed by Augustus[1121]). During the Severan age, Lepcis, after having gained the *Ius Italicum*, thanked the Empire by sending oil to the emperor for feeding Rome[1122] with free distributions[1123]. The importance of this region is also shown by an inscription found in Rome which recalls the equestrian office of a *proc(urator) ad olea comparand(a) p[er re]gionem Tripolit(anam)*[1124]. Other sources (especially later ones) consider Tripolitanian oil[1125], but all of them never mention its quality.

Tripolitanian oil leads discoveries of North-African oils both during the Trajanic and Hadrianic ages (fig. 10.8). In the 'Terme di Elabagalo' it has a low presence during the Hadrianic age and largest amounts during the Severan age (fig. 10.9). In Rome it heads amounts both during the Trajanic and Hadrianic ages, when it reaches the largest quantities, but it decrease afterwards with a low presence during the Severan age (fig. 10.10, but these data may be caused by the nature of the contexts considered: cf. below). In Ostia, on the otherhand, after a very low presence both during the Trajanic and Hadrianic ages (with also a decrease during the latter), there is a progressive increase during the following periods so as to reach, during the Severan age, the largest amounts (fig. 10.11).

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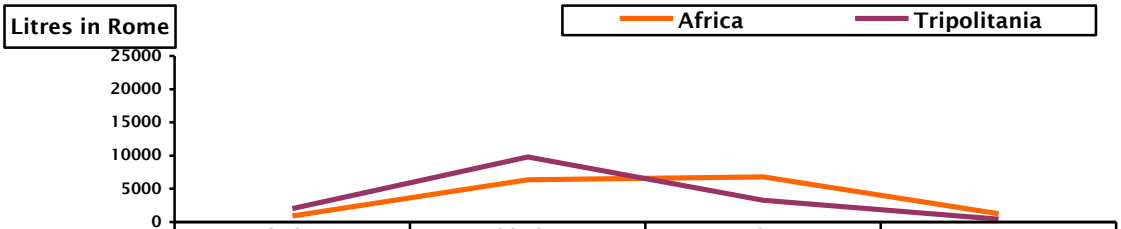
[1114] Mattingly 1988c: 23.
[1115] Brun 2004b: 186.
[1116] Mattingly 1988c: 23–24, 25–27; Brun 2004b: 187–188 and 189–195.
[1117] Brun 2004b: 188 and 195–196. Cf. also Mattingly 1988a: 35–37.
[1118] Mattingly 1988c: 22–23 and 27–31 about their villas and agricultural properties. Some of the names dating early 3rd century are also known from a few stamps borne by Tripolitana III amphorae (Mattingly 1988c: 32–36).
[1119] Cerchiai Manodori Sagredo 2009: 24, 129.
[1120] Caes., *B Afr.*, XCVII, 3; Plut., *Vit.*, *Caes.*, 55, 1. Cf. also Lomas & Saez 1981: 70; Mattingly 1988c: 37.
[1121] Brun 2004b: 186.
[1122] Brun 2004b: 188.
[1123] Cf., below, Appendix 4, Section 4.3: 435, 439.
[1124] For the analysis of this inscription cf. Manacorda 1976-1977: 543–555.
[1125] For the list of other sources and their analysis cf. Manacorda 1976-1977: 555–562.

| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Africa | 0 | 80 | 0 | 4111,2 |
| Tripolitania | 0 | 64,2 | 0 | 1958,7 |

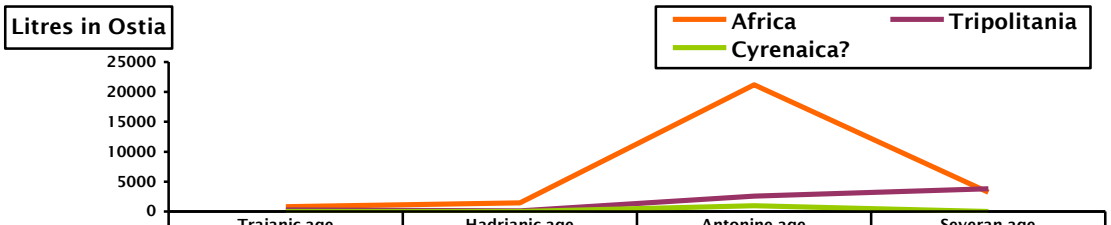
**Fig.10.9: Amounts of olive oil from North Africa divided by sub-origins in the 'Terme di Elagabalo'.**




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Africa | 921,65 | 6358 | 6820,55 | 1256,9 |
| Tripolitania | 2048,8 | 9800,8 | 3297,2 | 431,9 |

**Fig. 10.10: Amounts of olive oil from North Africa divided by sub-origins in Rome.**

The olive oil production in Cyrenaica is not much known, with the exception of a very few sites with different chronologies[1126]. Both Herodotus[1127] and Theophrastus[1128] mention cultivations in this area which seemed suitable for producing both wine and olive oil[1129]. The Digest moreover refers to a commerce between Cyrenaica and Aquileia based on grain and olive oil[1130]. This Province was linked to Crete and was not a rich one, but possibly had some prosperity during the Antonine age[1131]. It is therefore not surprising that a few vessels were found only in Ostia during this period (fig. 10.11).




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Africa | 818,175 | 1474,7 | 21192,1 | 3196,4 |
| Tripolitania | 280 | 112 | 2583,5 | 3818,9 |
| Cyrenaica? | 0 | 0 | 969 | 0 |

**Fig. 10.11: Amounts of olive oil from North Africa divided by sub-origins in Ostia.**

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[1126] Brun 2004b: 86-89.
[1127] Hdt., *Hist.*, IV, 198-199.
[1128] Theophr. *Hist. pl.*, VIII, 6, 6.
[1129] Göransson 2007: 217, note 159.
[1130] Cipriano *et al.* 1997: 100-101.
[1131] Ferrantini 1993: 157.

*Africa Proconsularis* was well known for its extremely large amount of oil, devoting large parts of the territory to this cultivation, also helped by aristocracies, imperial decisions, and laws[1132] (such as *Lex Manciana* and *Lex Hadriana*[1133]). This Province resulted in many ancient sources mentioning this production, but Juvenal only mentions its quality, denigrating it[1134]. It was also mentioned during the civil war between Caesar and Pompey in Uzita[1135] and Aggar[1136]. Pliny the Elder recalls the large size of the trees[1137], the use of grafting species[1138], the cultivation of *praedulces* olives[1139], and describes the fertility of the area around Tecape-Gabes[1140]. Some *ostraca* found in Carthage mention the areas producing olive oil[1141], as well as other inscriptions and Late Antique sources[1142]. Thank to archaeological investigations and field-survey activities many sites devoted to this production were discovered, both in Bizacena and Zeugitana[1143], as well as traces of irrigating systems[1144].

This product is generally more attested than Tripolitanian one. Rome sees a constanst increase till the Antonine age with a decrease during the Severan age (fig. 10.10). This datum is very likely caused by the amounts of discovered amphorae in the analysed contexts as Tripolitanian olive oil decrease during this period as well (and even total amounts of wine: cf. Chapter 9). In Ostia during the Trajanic and Hadrianic age there is a small increase, while during the Antonine age there is a real peak in quantities. This is again caused by the nature of contexts as this period sees large amounts found in the Area NE of the 'Terme del Nuotatore' and during the Severan age amounts drastically fall so as to be less found than Tripolitanian oils (fig. 10.11). As for the other sub-origin, the 'Terme di Elagabalo' sees small quantities during the Hadrianic age and larger amounts during the Severan age (fig. 10.9).

### 10.1.4 Eastern Mediterranean oils

The Eastern Mediterranean olive oil represents just a small part of this product, also because the amphorae that contained it are still not well known or not always

[1132] Brun 2004b: 204–206.
[1133] Cf., below, Chapter 4, Section 4.3:437–438.
[1134] Iuv., *Sat.*, V, 86–91.
[1135] Caes., *B Afr.*, L, 1.
[1136] Caes., *B Afr.*, LXVII, 2.
[1137] Plin., *HN*, XVII, 93.
[1138] Plin., *HN*, XVII, 129.
[1139] Plin., *HN*, XV, 17.
[1140] Plin., *HN*, XVIII, 188.
[1141] Brun 2004b: 208.
[1142] For these ones: cf. Brun 2004b: 208–209.
[1143] Mattingly 1988a: 44–48; Brun 2004b: 210–224 (Zeugitana) and 224–229 (Bizacena). Cf. also the analysis of olive presses in Mattingly & Hitchner 1993 and the recent synstesis in Palmieri 2014: 2–3.
[1144] Kehoe 2007: 552–553, 556, 560.

recognised by scholars who studied ceramic assemblages. Figures 10.13 and 10.14 show amounts found in all sites and considered periods. Rome shows again a predominance in litres, especially coming from the generic Aegean/Microasiatic area and the Hadrianic age sees the majority of litres.

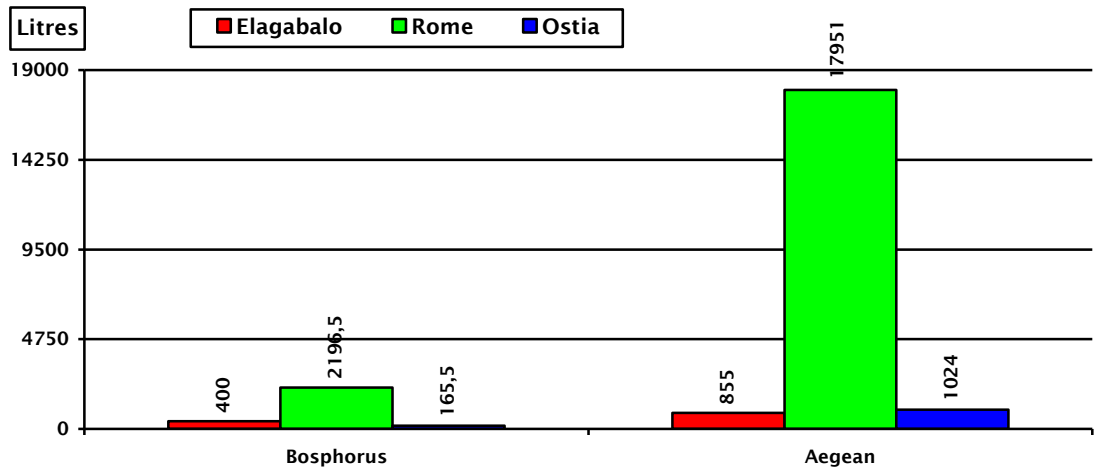


**Fig. 10.12: Amounts of 'Oriental' olive oil divided into sub-origins and sites.**

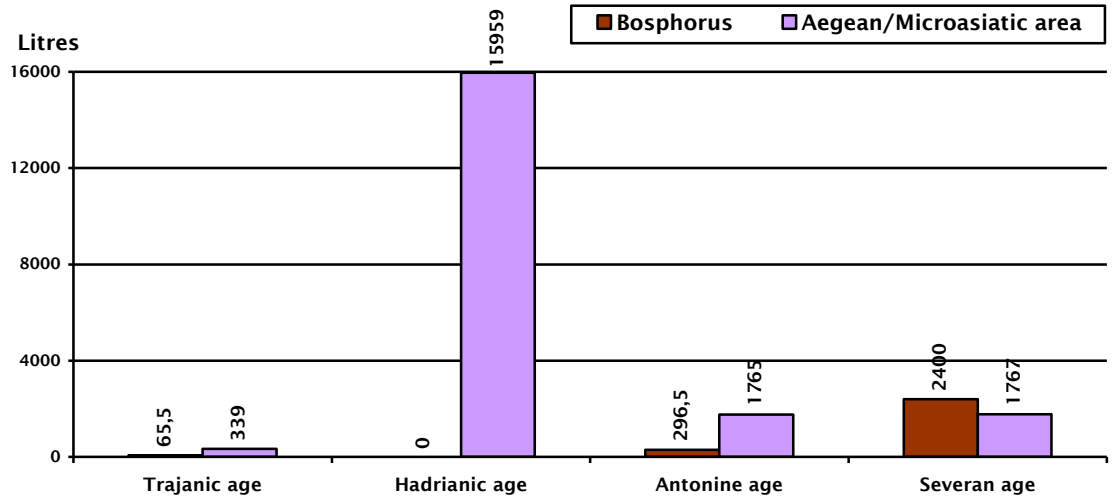


**Fig. 10.13: Amounts of 'Oriental' olive oil divided into sub-origins and periods from all sites.**

Amphorae, in fact, are still not completely known and their origin, lacking specific petrographic analyses of soils and sherds, can be attributed to a very generic macro-area (Aegean/Oriental) or to another one (Bosphorus) which is partly hypothetical. Many different areas can be included in this generic origin and a complete discussion of all of them may be useless lacking specific information about origins of their containers. Continental Greece[1145], Aegean Islands[1146], Syria[1147], as well as

[1145] Cf., for example, Brun 2004b: 73-79.
[1146] Cf., for example, Brun 2004b: 80-81
[1147] Especially during the Late Antiquity: cf. Decker 2001.

Turkey[1148] resulted in many installations that represent the large production of olive oil so as to be known for this commodity even nowadays.

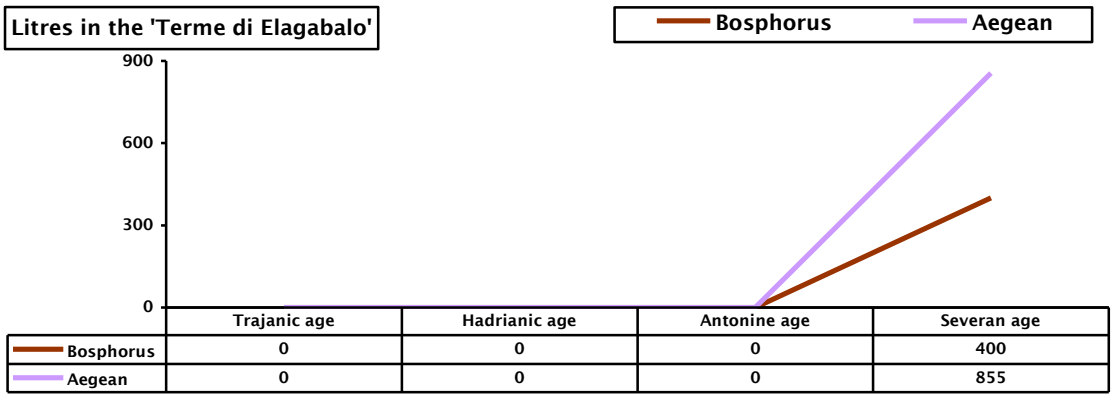


**Fig. 10.14: Amounts of 'Oriental' olive oil divided by sub-origins in the 'Terme di Elagabalo'.**

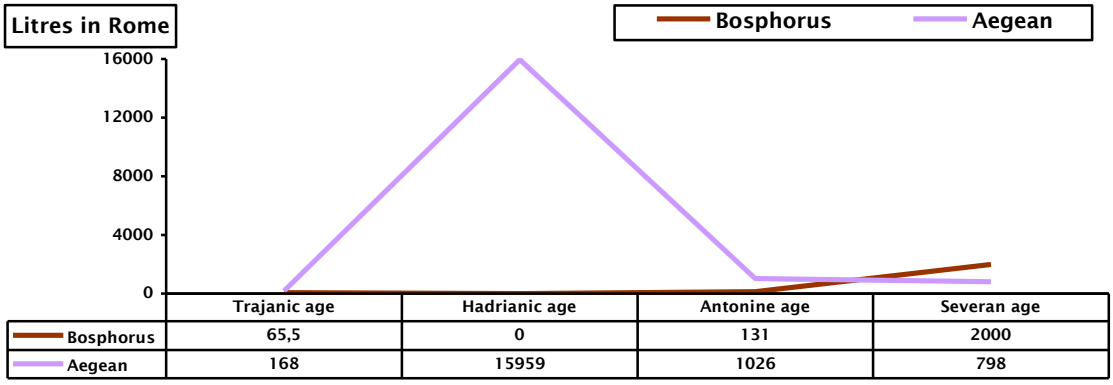


**Fig. 10.15: Amounts of 'Oriental' olive oil divided by sub-origins in Rome.**

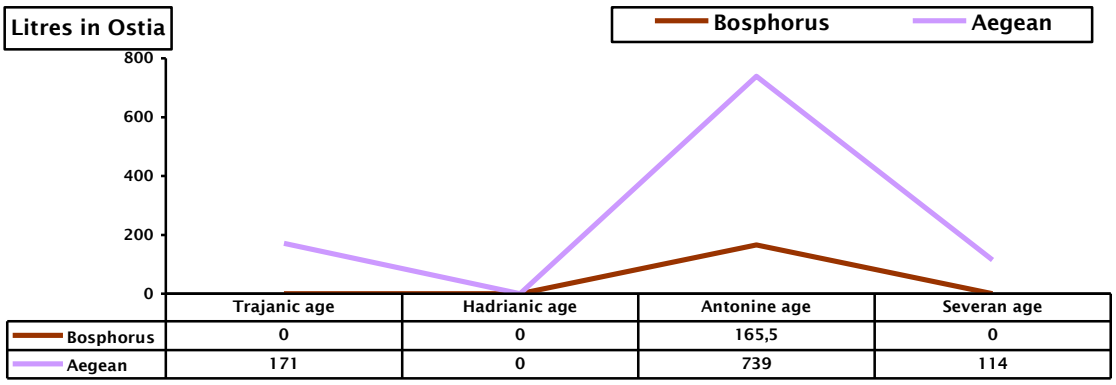


**Fig. 10.16: Amounts of 'Oriental' olive oil divided by sub-origins in Ostia.**

The Terme di Elagabalo resulted in some interesting amounts, but only during the Severan age (fig. 10.14). Rome shows again a predominance in litres (fig. 10.15). The Trajanic age sees low amounts for both origins, while the Hadrianic age sees the disappearance of Bosphoran oils and a real peak in amounts for the generic

[1148] Cf., for example, Brun 2004b: 91–99; Rauh *et al.* 2006; various contributions in Aydınoğlu & Şenol 2010; Efe *et al.* 2011: 60–64.

Aegean/Microasiatic area (caused by finds in Nuovo Mercato Testaccio). Amounts of this origin decrease afterwards, while Bosphoran oils increase so as to reach a peak during the Severan age, also surpassing the other origin (caused by finds in via Blaserna). In Ostia amounts are always less than Rome (fig. 10.16). Bosphoran oils are attested only during the Antonine age. The Aegean/Microasiatic ones, after small amounts during the Trajanic age and a disappearance during the Hadrianic age, see a peak during the Antonine age to drecrease during the last period.

## 10.2 Trends in olive oil

As for wine, this Section will provide a brief synthesis concerning olive oil starting from data in the 'Terme di Elagabalo' and then from Rome and Ostia.

| ELAGABALO | Italy | | Iberia | | North Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|
| Trajanic age | - | - | - | - | - | - | - | - |
| Hadrianic age | 0 | 0% | 693 | 83% | 144.2 | 17% | 0 | 0% |
| Antonine age | - | - | - | - | - | - | - | - |
| Severan age | 0 | 0% | 4466 | 38% | 6069.9 | 51% | 1255 | 11% |

**Fig. 10.17: Litres and percentages of olive oils divided into macro-areas in the 'Terme di Elagabalo'.**

As already mentioned[1149], the 'Terme di Elagabalo' does not have a Trajanic period. Also the Antonine age did not resulted in vessels of amphorae containing olive oil. For these reasons amounts of litres for these periods are empty (fig. 10.17). During the Hadrianic age, amounts of litres are low, with a predominance of Iberian oils (83%) for the discovery of some Dressel 20 amphorae and lower quantities of North-African oils (17%). During the Severan age the predominance passes to North-African oils (51%) and Iberian ones reach only second place with 38%. This period also shows not negligible quantities of Eastern Mediterranean oils that reach a considerable percentage (11%). As already happened with wine (Chapter 9) a comparison with amounts calculated from finds discovered in Rome becomes necessary in order to understand whether or not this site (and its low amounts) reflects trends of the entire Capital, despite the already mentioned decision to not consider data from Monte Testaccio[1150].

[1149] Cf., above, Chapter 1, Section 1.2: 11; Chapter 3, Section 3.2.3: 59; Chapter 5: 95; Chapter 9, Section 9.2: 202; cf. also, below, Chapter 11, Section 11.2: 251.
[1150] Cf., above, Chapter 3, Section 3.2.3: 64.

| ROME | Italy | | Iberia | | North Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|
| Trajanic age | 0 | 0% | 27258 | 89% | 2970.45 | 10% | 236.5 | 1% |
| Hadrianic age | 0 | 0% | 29799 | 48% | 16158.8 | 26% | 15959 | 26% |
| Antonine age | 0 | 0% | 16401 | 59% | 10117.75 | 37% | 1157 | 4% |
| Severan age | 0 | 0% | 1155 | 20% | 1688.8 | 30% | 2798 | 50% |

**Fig. 10.18: Litres and percentages of olive oils divided into macro-areas in Rome.**

In Rome (fig. 10.18) the situation is more varied. During the Trajanic age Iberian oil is predominant over all other origins (89%). In second place, but with a large distance, North-African oils can be found (10%) declaring the relevant import of it after the *Lex Manciana* which gave a first incentive to the production in this area (cf., below, Appendix 4, Section 4.3). Very small amounts can be seen for Eastern Mediterranean oils (1%). The Hadrianic age sees a serious decrease of Iberian oils that, although still being in first place with a 48%, reduce their distance both with North-African and Eastern Mediterranean oils which are found with the same percentage (26%). This increase in North-African oil may be the consequence of *Lex Hadriana* which sustained landowners in this production (cf., below, Appendix 4, Section 4.3). The Antonine age sees a significant reprise of Baetican oil (59%), while the North-African one increase again its amounts so as to reach 37% of litres. 'Oriental' oils are drastically decreased from the previous period, arriving to just 4%. The Severan age, as already seen for wine, sees a decrease in almost all quantities, with the significant exception of Eastern Mediterranean oils which increase their amounts and becomes now the most attested origin with 50% of litres. North-African oils reach again second place, although with a decrease in their percentage (30%). Compared with other periods it is surprising to find Iberian oils at the bottom of the list with very low amounts and percentage (20%). This may be caused by the nature of publications or by an already occurred substitution in the origin of this product from *Baetica* to North Africa that in the current scholarship is commonly ascribed to the mid-3rd century AD[1151].

| OSTIA | Italy? | | Iberia | | North Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|
| Trajanic age | 40 | 1% | 4928 | 78% | 1098.175 | 18% | 171 | 3% |
| Hadrianic age | 40 | 1% | 1694 | 51% | 1586.7 | 48% | 0 | 0% |
| Antonine age | 0 | 0% | 12782 | 33% | 24744.6 | 65% | 904.5 | 2% |
| Severan age | 40 | 1% | 1925 | 21% | 7015.3 | 77% | 114 | 1% |

**Fig. 10.19: Litres and percentages of olive oils divided into macro-areas in Ostia.**

[1151] Panella 1986c: 438–439; Mattingly 1998a: 56; Panella 2001b: 208.

In Ostia (fig. 10.19) the situation is different, with also very small amounts of supposed Italian oil from Istria never surpassing 1% of finds during the three periods in which it was discovered (although the identification is not assured: cf. above). While during the Trajanic age percentages are almost the same than Rome, a difference is noticeable already during the Hadrianic age. Although Baetican oil is still prevailing with 51%, North-African oils reduce their distance, reaching a significant 48% and 'Oriental' oils disappear. During the Antonine age, North-African oils surpass Iberian ones, reaching 65% of litres, while *Baetica* arrives to just 33%. This period shows also the only litres of oil coming from the not enough known Cyrenaica. Eastern Mediterranean oils are again attested, with a negligible presence (2%). During the Severan age the supremacy of North-African oils is confirmed, increasing their presence (77%) to the detriment of *Baetica*. 'Oriental' oils are still found, but with a very low presence (1%).

As for wine analysed in the previous Chapter, also data about olive oil declare a large diversity between these two cities, possibly caused by different redistribution processes. Fig. 10.20 represents data both from Rome and the 'Terme di Elagabalo', so as to better understand the commerce to the Capital.

| ROME + ELAGABALO | Italy | | Iberia | | North Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|
| **Trajanic age** | 0 | 0% | 27258 | 89% | 2970.45 | 10% | 236.5 | 1% |
| **Hadrianic age** | 0 | 0% | 30492 | 49% | 16303 | 25% | 15959 | 26% |
| **Antonine age** | 0 | 0% | 16401 | 59% | 10117.75 | 37% | 1157 | 4% |
| **Severan age** | 0 | 0% | 5621 | 32% | 7758.7 | 45% | 4053 | 23% |

**Fig. 10.20: Litres and percentages of olive oils divided into macro-areas in Rome and in the 'Terme di Elagabalo'.**

Looking at this new figure, nothing has changed during the Trajanic and Antonine ages, as the 'Terme di Elagabalo' does not add information to these periods. The Hadrianic age sees just a slight difference in percentages of Iberian oils which pass from 48% to 49% and of North-African ones which pass from 26% to 25%, while 'Oriental' ones are constant. A more significant difference can be seen during the Severan age when Eastern Mediterranean oils do not predominate anymore reaching just 23% of litres. Amounts are now headed by North-African oils with 45% of litres, while Baetican ones reach second place with 32%. This situation is now similar to the one seen in Ostia, although in fig. 10.20 'Oriental' oils reach a significant presence during this period (23%) compared to the 1% of Ostia (fig. 10.19).

As already mentioned, olive oil was just one of many 'greasy' products used in ancient times[1152], although it was the preferable one for different purposes, not just for dietary needs (adding caloric intakes to people[1153]) or lighting which were two of its main uses. This Section showed that Baetican containers and – with an increasing presence – North-African ones lead these amounts, with also moderate quantities from the Eastern Mediterranean. On the other hand Italian amphorae containing olive oil are not surely found (or found with very small quantities). This surprising absence can suggest the use of other perishable containers such as made of skin for the commerce of this product during the Middle Imperial age, because Italy surely did not entirely stop producing olive oil as a production in Sabina is known till the end of 3rd/4th centuries AD[1154]. Moreover G. Rizzo very recently underlined the strong difference between Rome and Ostia in the supply of olive oil[1155] and, together with other scholars, also suggested that the latter appears to have received larger amounts of North-African oil containers than Rome, especially during the Antonine age[1156]. Data offered in this analysis partly confirm this scholarship. Rome surely received more Baetican oil than Ostia, but only till the Antonine age (although with a significant increase in the olive oil coming from North-Africa) as North-African litres becomes prevailing during the Severan age. At the same time Rome received larger quantities of 'Oriental' olive oil than its port during almost all periods considered in this investigation, whose amounts are never considered in literature.

This increase in North-African products can be also referred to the policy undertaken by Trajan who started founding colonies[1157], thus starting a process of diversification of productions in the area[1158]: not only grain[1159], but also olive oil. Christol suggested that prices in this area were the half of Italian ones[1160], and García argued (from a passage of Plinian *Panegiricus*) that it created a strong commercial regularity[1161]. Hadrian promulgated the *Lex Hadriana*[1162] which surely increased the production of this area as shown by the discovered amounts. Septimius Severus

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[1152] Cf., above, Chapter 10: 213.
[1153] Hitchner 1993: 500.
[1154] Panella & Tchernia 1994: 147.
[1155] Rizzo 2012: 98–100 and Rizzo 2014b: 405. Cf. also Keay 2012b: 4. It was already suggested in Panella & Tchernia 1994: 149; Rizzo 2003: 2.
[1156] Panella 1991: 291–292, 295; Rizzo 2012: fig. 4.7. Bonifay & Tchernia 2012: 328, on the contrary, kept a cautious position.
[1157] For Emperors during the Middle Imperial age who founded colonies in North Africa cf. Ortiz de Urbina 2004.
[1158] García 2000: 85.
[1159] Cébeillac-Gervasoni 1994: 56–57.
[1160] Christol 1994: 297.
[1161] García 2000: 87–88.
[1162] For this law cf., below, Appendix 4, Section 4.3: 437–438.

promoted *Lepcis* to the *ius italicum*, as well as Carthage[1163], but it is unsure whether or not he favoured people from his birthplace to gain political offices[1164] even releated to commerce. Aguilera Martín & Revilla Calvo 2004: 1470 suggested that he promoted North-African products, already spread all over the Mediterranean since the Flavian age, and which will dominate during the following centuries. Although Septimius Severus is mentioned for having stabilised the import of olive oil to Rome both from Baetica and North-Africa, archaeological data do not show any increase of this product and rather (as seen in figs 10.19 and 10.20) the Severan age actually sees a decrease in total amounts of litres, confirming what stated by Broekaert 2011 in various parts of his article.

At the same time, the discovery of Baetican, North-African and Eastern Mediterranean containers in more or less distant sites from the *Emporium*, which was the preferred place for unloading boats arriving along the Tiber (although not the only port-site within Rome)[1165] bring to question how they entered in those contexts. The easiest explanation for their presence far from the Testaccio area may be that these fragments were contained in the earth used to raise levels or fill unused rooms, but this may be just a small part of what actually happened. Taking into account the assumptions made by Peña, these fragments could have been recovered from that dumping site for some reuse[1166], but also this explanation seems reductive, as only few fragments of oil-containers in the 'Terme di Elagabalo' shows traces of lime for being reused during the building activities for the construction of the Severan complex. People who wanted to buy olive oil either for themselves or their families, or to resell it in inner parts of the city or in areas located far from the *Emporium* where it arrived, or those who received goods directly given by producers to clients or friends (something that still exists nowadays in Italy) went there to purchase/collect it. Looking at size and amount of product contained, the weight not only of Baetican Dressel 20, but also of other forms must have been considerable. Roads in Rome, although well-made and solid, might have had instabilities that could lead these round containers to unbalance and make them fall from the carts by which they might have been transported within the city[1167]. Therefore the reasons why they decided to carry by road whole containers

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[1163] Letta 1991: 669; Le Glay *et al.* 1996: 388; Broekaert 2011: 596.
[1164] Some 50 years ago, A. Birley (Birley 1971) in his biography of Septimius Severus, summarizing previous bibliography, remarked on one side the common use of this Emperor's birthplace (*Lepcis Magna*) as a matter of explaining his policy towards Africa and creating the basis for the following Empire's collapse, on the other side underlining the refusal of this view (Birley 1971: 2–4; this view is refused also by Letta 1991: 651).
[1165] For descriptions of all remains and bibliographic references cf. Aguilera Martín 2002: 51–123; Keay 2012a: 36–39.
[1166] Peña 2009: 317–318.
[1167] For rules about traffic and their effects on roads movements of carts cf., for example, Kaiser 2011: 184–192. For the noise created and reflected in ancient sources cf., for example, Rodríguez Noila 2011: 45–46; Holleran 2012: 250 and note 33.

(as fragments of them were found almost everywhere) not opting for pouring their content into smaller ones or made of skin (which could have been used anyway) is unknown.

Considering data from both Rome and the 'Terme di Elegabalo', offered in fig. 10.20, the whole period reaches the figure of 138,327.4 litres. Dividing it, as for wine, for 100 years, it becomes 1,383.274 litres per year arrived in the considered sites. This figure can be surely considered elusive, as other finds were surely found in Rome: not only in Monte Testaccio (which could represent something like 150,000 hectolitres per annum as suggested by Spanish scholars[1168]), but also in sites not considered for this investigation and even in other ones which are not published yet[1169]. It is also extremely low considering assumptions offered by scholars and summarised in Appendix 4, Section 4.2: 433. Rome's inhabitants surely consumed large quantities of olive oil for many uses and they also might have identified a better oil from a specific origin than from another when it was meant for eating practices, although variations surely happened in production depending on climate and other factors[1170] and albeit ancient sources do not inform about this consumer's taste. Moreover both the above offered figure and brief reflection about why these vessels were found in sites not always close to the *Emporium* raise questions about how olive oil arrived in Rome. That is why a general understanding of distribution processes of this product becomes necessary.

### 10.2.1 Olive oil: The polyvalence of a booming[1171] 'greasy' product

This Chapter showed that a large number of containers for olive oil were found in the considered sites, also in the 'Terme di Elagabalo'. They confirm scholarship about the large volume of imports in olive oil to the Capital[1172]. It can be surely referred to a strong demand for olive oil during the Imperial period in the city of Rome[1173], especially linked to the large amount of people it had (cf. Appendix 4, Section 4.1). The amount of litres can be surely referred to the above mentioned diverse uses of olive oil[1174], but it may also suggest different types of commerce, which implies a differentiation of trade (partly falling into the supply system usually called '*annona*').

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[1168] Rodríguez Almeida 1984: 116–119.
[1169] Personal working experience of the author of this research.
[1170] Remesal Rodríguez 1977-1978: 87.
[1171] The term 'boom' for olive oil production comes from Hitchner 1993: 501.
[1172] Cf., below, Appendix 4, Section 4.2: 433.
[1173] Hitchner 1993: 500.
[1174] Cf., above, Chapter 10: 213.

Thanks to the researches of Spanish scholars, it is now clear and widely accepted that large parts of olive oil arrived to Rome as a matter of taxes[1175]. Not only *Baetica* was obliged to pay its tributes with oil, but also North Africa since the first statements created by Caesar[1176] that helped him in giving free distributions[1177]. Olive oil was, in fact, one of those "products subjected to be necessary for the State in large quantities and continuously [...] so that the constant demand by the State favoured – or created – stable trade flows"[1178]. Therefore it is not surprising a mention of Strabo who informs about the large presence of boats containing olive oil which were arriving to ports related to Rome from *Baetica*[1179]. Once arrived in the *Urbs*, amphorae containing it, especially Baetican ones[1180], but also from North-Africa[1181], were discarded and broken (because they were not reusable for commerce) creating a very large dump, according to a predetermined plan[1182], that after many centuries became a hill with the name of Monte Testaccio. This was the last of a series of activities, from bottling to trading (identified as independent activities[1183] in which a very large number of men incurred, such as *negotiatores*, *mercatores*, *navicularii*, and *diffusores*[1184]) that falls into a supply system that is usually called by scholars '*annona*'. Although Monte Testaccio is not included for already mentioned reasons[1185], it was very likely created mainly by those containers being part of that system[1186] for the large presence of *tituli picti* recognised by scholars as fiscal control marks or names of traders, both essential elements in determining containers intended for that specific supply system for the Capital based on fiscal impositions[1187].

Almost all the analysed fragments from all considered sites (not only those found in the 'Terme di Elagabalo'), in spite of bearing at times stamps on their handles (cf. tables in Appendix 2), do not have *tituli picti*. The same considerations can be

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[1175] Cf. Almeida 2008: 300; Pons Pujol *et al.* 2008: 1226–1229, 1233–1235, 1239–1243.
[1176] Cf., above, Chapter 10, Section 10.1.3: 219 and 221.
[1177] Cas. Dio., *Historia Romana*, XLIII, 21, 3.
[1178] As stated by Remesal Rodríguez 1990: 356.
[1179] Strabo, *Geogr.*, III, 2, 6.
[1180] Remesal Rodríguez 1990: 356; Aguilera Martín & Revilla Calvo 2004: 1445.
[1181] Rodríguez Almeida 2000: 125–126; Remesal Rodríguez 2004; Aguilera Martín & Revilla Calvo 2004: 1445, 1453–1459.
[1182] Blázquez Martínez 1992: 180; Aguilera Martín 2002: 208–211.
[1183] Remesal Rodríguez 2002a: 302.
[1184] Carandini & Panella 1981: 492–494. Cf., for example, inscriptions analysed in Blázquez Martínez 1992: 177; Mattingly & Aldrete 2000: 153; Pons Pujol *et al.* 2008: 1225–1226; Remesal Rodríguez 2008a; Berni Millet & Gorostidi Pi 2013. Cf. also the *corpus oleariorum splendidissimus* recently identified from an inscription: Keay 2012b: 9 and Remesal Rodríguez 2012: 270.
[1185] Cf., above, Chapter 3, Section 3.2.3: 64.
[1186] Aguilera Martín & Revilla Calvo 2004: 1445; García Vargas 2012: 261 (with further bibliography).
[1187] Rodríguez Almeida 1984: 26–30; Blázquez Martínez 1992: 185; Rodríguez Almeida 1994: 36–37; Remesal Rodríguez 1998: 191–193; Remesal Rodríguez 2000: 387; Panella 2001b: 186–187; Aguilera Martín 2007: 267; Remesal Rodríguez 2012: 273.

addressed for North-African containers that, especially after *Lex Manciana* and above all *Lex Hadriana*[1188], concurred with Baetican ones for the supply of Rome[1189] so as to be well found also in Monte Testaccio[1190]. They usually have a lower use of *tituli picti*[1191], although this can be also assigned to the characteristics of both containers and ink that dissolved more easily[1192]. No information is available nowadays about Eastern Mediterranean oils being part of this same Roman system, thus they were possibly excluded. The amount of litres contained in the amphorae found in all considered contexts can be plausibly seen a part of this important product which was not included into that supply system derived from taxation[1193]. Upper-class landowners might have possibly forced this import to Rome from their own estates for personal needs and to increase their wealth[1194]. Thus, although the scholarship seldom clearly assumed this, part of this product might have been designed for an independent commerce, in modern words even called 'free market' (as called also by Lo Cascio 2009c and Bonifay & Tchernia 2012: 327), that would mean not subjected to the State and its taxations for the supply of the Capital. It was possibly aimed to create a direct profit both for producers and traders[1195], otherwise heavily linked to Imperial depositions about the fiscal supply, whose amounts might have been sold anyway[1196]. An important assumption was recently attempted, which partly confirm the one just offered here: Baetican oil belonged to privates and for two centuries, till the Severan age, was all sold, thus it cannot be totally considered a fiscal product[1197].

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[1188] For these laws cf., below, Appendix 4, Section 4.3: 437–438.
[1189] Pons Pujol *et al.* 2008: 1230–1233.
[1190] Cf., for example, Remesal Rodríguez 1998: 196 and Revilla Calvo 2007.
[1191] A few *tituli picti* beard by North-African amphorae containing olive oil were also found: cf. Aguilera Martín & Revilla Calvo 2004: 1462–1468; Aguilera Martín 2007.
[1192] Aguilera Martín 2007: 257–268.
[1193] Étienne & Mayet 2004: 34.
[1194] Kehoe 2007: 546. Cf. also the example of Britannia in Garrafoni & Furnari 2012.
[1195] Hitchner 1993: 500; Stone 2009: 145; Garrafoni & Furnari 2012: 287–288.
[1196] Vera 2010: 6.
[1197] Lo Cascio 2009c: 295; Vera 2010: 6.

# Chapter 11: Fish sauces

Several scholars argued if fish sauces came from Punic or Greek traditions[1198]. At first Étienne suggested a Phocean origin[1199], although years later, after a neutral publication[1200], suggested a Punic origin[1201]. Curtis cautiously theorized they might have been originated by both and then taught in places where they created colonies[1202]. In 2011 Remesal Rodríguez confirmed a Punic origin[1203]. Looking at production sites, the oldest ones seem to be Punic[1204], although the absence of traces for Greek ones cannot lead to an *argumentum ex silentio*, as Botte suggested[1205]. Despite this, a 17th century BC Babylonian tablet mentions something which has been identified as a fish sauce[1206]. Despite their chronological or geographical origin and in spite of being called by Pliny the liquid of putrefying[1207] and vituperated also by Seneca[1208], fish sauces achieved a very large success during the Roman times with a large productive volume[1209]. Many fish-salting factories were found in different areas, especially concentrated where large fish-migrations existed[1210] for the possibility of large-scale captures and exports[1211]. Many species of fish were used for the production of these sauces, especially tuna and mackerel, but also grey mullets, sardines, and anchovies. In some fish-salting workshops even sharks[1212], marine[1213] or terrestrial mammals[1214] were treated so as to keep the system operational all year round[1215]. These products originated from the great importance of preserving fish using salt which, as well as drying and smoking[1216],

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[1198] Cf. also Sáez & Bernal 2007 about the Punic/Gaditan origins of vats.
[1199] Étienne 1970.
[1200] Étienne & Mayet 2002: 103.
[1201] Étienne 2006: 511, *retractactio*.
[1202] Curtis 1991: 46–48.
[1203] Remesal Rodríguez 2011: 206.
[1204] For Spain cf. Lagóstena Barrios 2001: 203–205.
[1205] Botte 2009: 24.
[1206] Bottéro 1995: 253.
[1207] Plin., *HN*, XXXI, 93.
[1208] Sen., *Ep.*, XV, CXV, 25.
[1209] Marzano 2013b: 96.
[1210] Salza Prina Ricotti 2001: 156; Marzano 2013b: 95.
[1211] Wilson 2009: 234–235.
[1212] García Vargas 2008: 91 referring to Belén Deamos y Fernández Miranda 1978.
[1213] Galen, *De alimentorum facultatibus*, III, 30, 728 and 36, 738. Whale bones were found in Spain at *Baelo Claudia* (Ponsich 1988: 39, 43; Bernal Casasola 2009a: 265–266; Bernal Casasola & Monclova Bohórquez 2011a: 101–103, 114; Bernal Casasola & Monclova Bohórquez 2011c), Algeciras (Bernal Casasola & Monclova Bohórquez 2011b) and in Morocco at Ceuta (Bernal Casasola & Monclova Bohórquez 2011d; 2011e) and Thamuda (Bernal Casasola & Monclova Bohórquez 2011f). A dolphin bone was also found in Ceuta (Marlasca Martín *et al.* 2011).
[1214] Cf. Bernal *et al.* 2004: 88–90.
[1215] Marzano 2013b: 121 with further bibliography. The amphorae analysed in this research, in fact, might have also contained sated fish or even salted meat.
[1216] For these two techniques cf. Botte 2009: 14–15; Van Neer *et al.* 2004: 102. They rarely leave archaeological traces: Marzano 2013b: 89. For the hypothesis of the use of both techniques cf. Marzano 2013b: 120.

allowed water to be extracted. At the same time, this process allowed fish to be consumed in places located far from the capture or outside the fishing season[1217]. After having captured fish[1218], it had to be rapidly treated, before the autolysis process began. In ancient times this salting procedure was carried with brine into basins[1219], thus these factories very likely were located where salt was available[1220]. After the process, several products were resulting, named in different ways by ancient authors[1221]. Apart from using these sauces instead of salt for seasoning food[1222] which was the preferred final use of them (even nowadays in some parts of the world[1223]), fish sauces were also well known for their use in medicine[1224]. Four fish sauces are known in the Roman world[1225], albeit their quality level is not always assured by ancient sources that often describe the quality of fish in different areas rather than the quality of fish-related products, thus offering a partial knowledge of them. At the same time they had different prices from being low-priced[1226] to be expensive like perfumes[1227].

The first, controversial, but also most known nowadays, is *garum*[1228], which is cited by several ancient authors[1229] who describe different manufacturing techniques: Marcus Manilius (early 1st century AD)[1230], Pliny the Elder (mid-1st century AD)[1231], Gargilius Martialis (3rd century AD)[1232], Pseudo-Rufus Festus (possibly 4th century AD)[1233], and *Geoponica* (12th century, but based on an original text dating 6th century AD original)[1234]. *Garum* was used for cooking, sometimes in addition to other ingredients such as vinegar[1235], wine[1236], water[1237], and oil[1238].

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[1217] Marzano 2013b: 89.
[1218] For the role of fish in ancient diet from literary sources cf. Wilkins 2005. For fishing activities cf. Bekker-Nielsen 2005; Marzano 2013b: 51–88.
[1219] Botte 2009: 16. Cf. also Columella, *Rust.*, XII, 55, 4.
[1220] Marzano 2013: 123b. For the production of salt cf. Marzano 2013b: 123–141.
[1221] For Greek words (and even Latin translations) cf. Botte 2009: 16–18.
[1222] Lejavitzer 2000: 124 (suggesting that it was also drunk by itself); Noain Maura 2001: 27.
[1223] Cf. the list of modern products in Curtis 2005: 39, but also Grainger 2014: 40.
[1224] Cf., for example, Galen, *De alimentorum faculatibus*, I, 1, 42–43; Curtis 1991: 27–37 (with also references to other ancient sources); Lejavitzer 2000: 126–127.
[1225] For the complexity of these products cf. Bernal Casasola 2009b: 11–15. For an attempt of recreating one of them cf. García Vargas *et al.* 2014: 66–71.
[1226] Curtis 2005: 43 with references to ancient sources.
[1227] Remesal Rodríguez 2011: 207.
[1228] Cf. Étienne & Mayet 2002: 43–47. For Desse-Berset & Desse 2000: 74 and Grainger 2014: 38 it was created by blood and viscera. For an analysis of the use of this word in ancient authors during the 1st century AD cf. Lagóstena Barrios 2007: 275–277.
[1229] For example Sen., *Ep.*, 95, 25 who calls it an "expensive liquid of bad fishes".
[1230] Manilius, *Astronomica*, V, 656–681.
[1231] Plin., *HN*, XXXI, 93–95.
[1232] Gargilius Martialis, 92 (cf. Curtis 1991: 11–12 and his Appendix I-5).
[1233] Curtis 1991: 12, note 24 and his Appendix I-4.
[1234] *Geoponica*, XX, 46, 1–6. Cf. also Étienne & Mayet 2002: 44–46; Étienne & Mayet 2007: 5.
[1235] *Oxygarum*: cf. Botte 2009: 20, note 93.
[1236] *Oenogarum*: cf. Botte 2009: 20, note 94.
[1237] *Hydrogarum*: cf. Botte 2009: 20, note 95.
[1238] *Oleogarum*: cf. Botte 2009: 20, note 96.

The second is *muria*, cited by *urcei* found in Pompeii[1239]. Curtis is not sure how to define this product[1240], followed also by Étienne & Mayet[1241], while Botte considers it the liquid derived from the production of *garum*, basing this hypothesis on some ancient sources[1242]. If this assumption can be accepted, it may be partly similar to the modern British Worcestershire sauce (which has also other ingredients that makes it similar to ancient *oxiporum*[1243]) and to Cetara's (Naples) 'colatura di alici' (made with anchovies and salt only)[1244].

The third is *liquamen*, which is less known and of undefined quality[1245]. It is separated from *garum* at least from the 1st century AD as in Pompeii these two words are used simultaneously for products of Umbricius Scaurus[1246]. Columella mentions it for the first time, using this word to identify several liquids[1247], not only fish sauces which are however mentioned[1248]. While the Zanaï tariff uses the word *garum*[1249], the Latin version of Diocletian's prices edict[1250], Caelius Aurelianus[1251], and Marcellus Empiricus[1252] all report the word *liquamen*. It is therefore possible that, from the 3rd century AD, *liquamen* substituted *garum* to define generic fish sauces in Latin-speaking world[1253].

Also *allec* (or *hallex*) existed, mentioned by Pliny the Elder as a residue of *garum* preparation[1254]. It might have been different, similar to the modern 'pasta d'acciughe' (anchovy paste), manufactured with mullet's livers[1255], or it might be a precedent stage before the total decomposition of fish[1256], or a sauce made with small species[1257]. The first reference of it can be found in Plautus[1258] and it is also mentioned on some containers found in Pompeii[1259]. Its reputation, however, was not very high, possibly

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[1239] For example: *CIL* IV, 9430–9434; 5723.
[1240] Curtis 1991: 7.
[1241] Étienne & Mayet 2002: 47–48.
[1242] Botte 2009: 21.
[1243] Salza Prina Ricotti 1987: 110.
[1244] For Desse-Berset & Desse 2000: 74–75 it is only a salted solution to preserve foodstuffs.
[1245] Curtis 1991: 7. For Grainger 2014: 38 *liquamen* could have been created from entire fish.
[1246] Botte 2009: 20 and note 99.
[1247] Columella, *Rust.*, VII, 4, 7; IX, 8, 9; but also VI, 2, 7 and IX, 14, 17.
[1248] Columella, *Rust.*, IX, 14, 3.
[1249] *CIL* VIII, 4508.
[1250] *Edictum Diocletiani*, III, 6, 7. The Greek version of the price edict, however, still uses *garum*: cf. Grainger 2006: 206.
[1251] Caelius Aurelianus, *De morbis acutis et chronicis*, II, 1, 40.
[1252] Marcellus Empiricus, *De medicamentis*, XXVI, 93.
[1253] Étienne & Mayet 2002: 50–51.
[1254] Plin., *HN*, XXXI, 95.
[1255] Plin., *HN*, IX, 66.
[1256] Étienne & Mayet 2002: 51.
[1257] Marzano 2013b: 91.
[1258] Plaut., *Poen.*, 1310; Plaut., *Persa*, 105; Plaut., *Aulularia*, fr. 5.
[1259] *Hallex optimum*: *CIL* IV, 5717–5719; 9407; 9411.

being a low-priced product[1260]: it was, in fact cited in negative terms by Cato (who used it to feed slaves when he was running out of olives[1261]), Martial (who put it together with low-valued products[1262]), and the same Plautus (who used this word to create insults[1263]). Nevertheless, merchants of this sauce are mentioned in dedicatory inscriptions found in Colijnsplaat (*Germania Inferior*) possibly informing about a commerce to *Britannia*[1264].

## 11.1 Fish Sauces

Unidentified *garum* forms will not be considered here because vessels were found in more or less fragmented situations so as not to lead to plausible calculations of litres they originally contained. As for other products, in fact, also this Chapter will use litres calculated from the number of vessels offered in previous Chapters. Although determining the exact fish sauce that found amphorae originally contained is an almost impossible task (lacking other information such as *tituli picti*[1265]), fig. 11.1 offers amounts expressed in litres from all origins found in considered contexts. It shows a real predominance of Iberian products, especially during the Antonine age, with also significant amounts from North Africa.

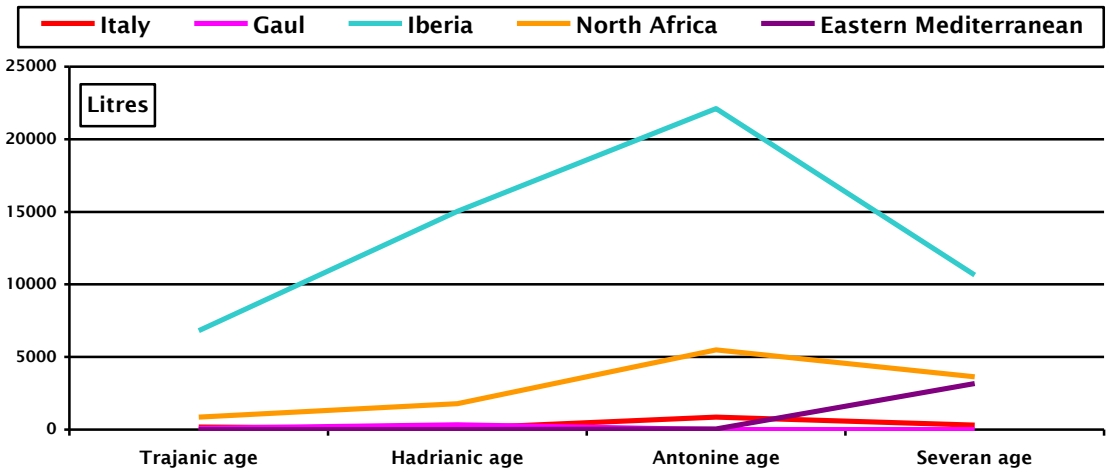


**Fig. 11.1: Amounts of fish sauces divided into macro-areas and periods.**

[1260] Curtis 1991: 7; Rizzo 2003: 228; Botte 2009: 23; Desse-Berset & Desse 2000: 74; Grainger 2014: 37.
[1261] Cato, *Agr.*, 58. Cf. also Hor., *Sat.*, II, 8, 9.
[1262] Mart., *Epigr.*, III, 77, 5.
[1263] Plaut., *Poen.*, 1310.
[1264] Curtis 2005: 43.
[1265] Unfortunately even *tituli picti* sometimes do not help. In this terms cf., for example, Dressel 7-13 amphorae found in the *fossa aggeris* at Rome which bear very different *tituli picti* (*garum*, *garum scombri flos*, *liquamen*, *muria*, *halec*, *laccatum*, *limphatum*, and *Gaditanum*): Rizzo 2003: 226.

### 11.1.1 Italian fish sauces

From the 5th BC to the 6th centuries AD many authors mention fishing activities in Italy, giving detailed information about species and some of them inform about subsequent salting procedures[1266]. Only two allow to discern fish sauces produced in a few areas. During the 1st century BC/AD, Strabo cites the production of fish sauces in *Cumae*[1267] and Velia[1268]. Some years later, Pliny the Elder mentions salted fish from Benevento that had to be re-salted[1269] and *garum* from Pompeii together with *muria* from *Thurii* along the Ionian coast[1270].

Only three origins were discovered (Campania, Sicily, and *Bruttium*) being the only three attested and known origins for amphorae that contained it, although traces of the production of fish sauces were also found in Istia and along the Adriatic coast[1271], probably in Populonia[1272], Cosa[1273], Isola del Giglio, and Isola di Giannutri[1274], and possibly even in the Pontine region or at the mouth of the Tiber were salt pans existed[1275]. Figures 11.2 and 11.3 show that the majority of litres were found during the Antonine age and in Ostia, with the exception of Campanian fish sauces which are mainly found in Rome.

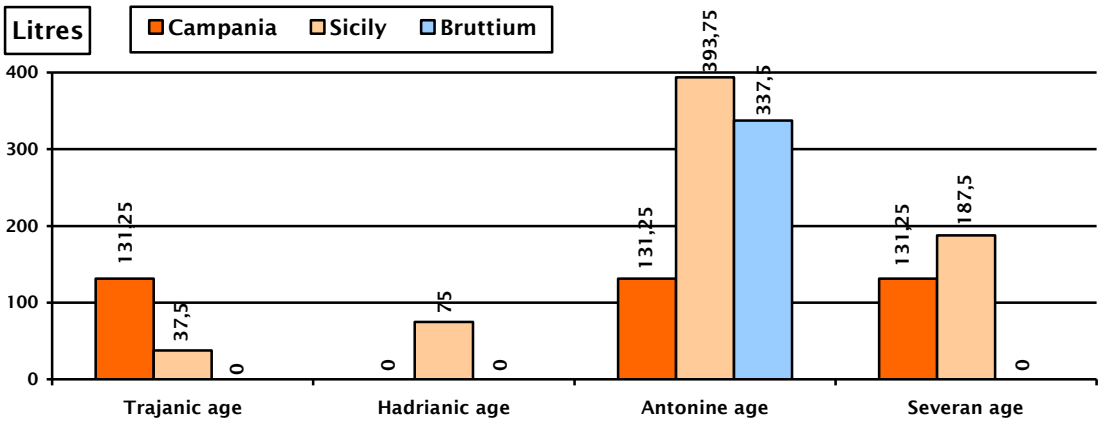


**Fig. 11.2: Amounts of Italian fish sauces divided into sub-origins and periods from all sites.**

[1266] Cf. the list offered by Botte 2009: 46–48 and Curtis 2005: 36.
[1267] Strabo, *Geogr.*, V, 4, 4. Cf. also Marzano 2013: 110 and note 97 who refers also to a fragment from Senocrates.
[1268] Strabo, *Geogr.*, VI, 1, 1. Cf. also La Greca 2008: 70, 71, 73.
[1269] Plin., *HN*, XXXII, 19.
[1270] Plin., *HN*, XXXI, 94.
[1271] Cf. Busana *et al.* 2009: 53–68; Carre & Auriemma 2009; Tassaux 2009; Profumo 2009; Kovačić 2009; Marzano 2013: 106–107 and 230–232. About the possible containers for these products cf. Carre *et al.* 2009; Cipriano & Ferrarini 2009.
[1272] De Grossi Mazzorin 2006. It seems to have been related to tuna fishing activities (Shepherd 2003; Shepherd & Dallai 2003).
[1273] Strabo, *Geogr.*, V, 2, 8.
[1274] Rendini 2003; Marzano 2013b: 110.
[1275] Boetto 2010: 253; Marzano 2013: 97–98, 130–133.

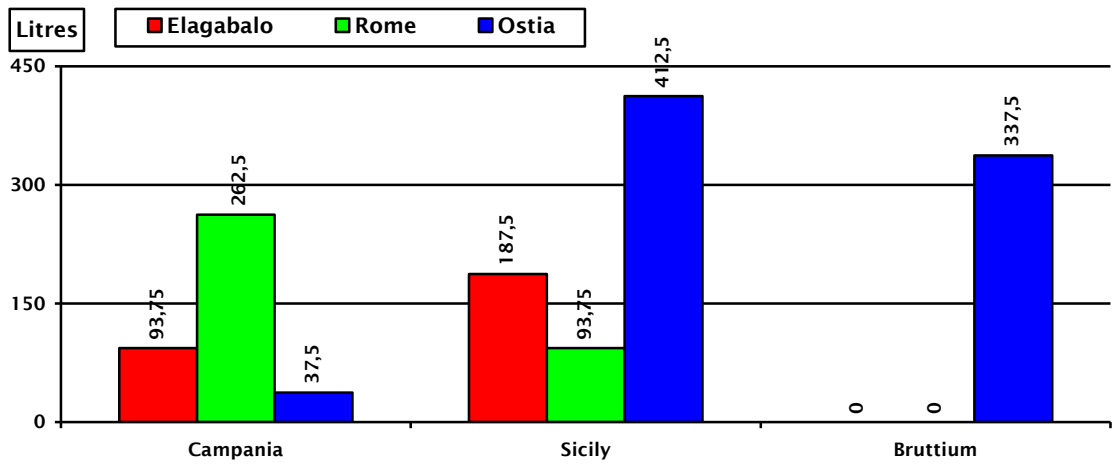


**Fig. 11.3: Amounts of Italian fish sauces divided into sub-origins and sites.**

Campania, in the current stage of knowledge, did not result in many assured production sites[1276]. In Pompeii two supposed production sites were found: *Regio* VI, *Insula* 1, house 14–18 and 20–21[1277] and *Regio* I, *Insula* 12, house 8[1278]. Unfortunately not both of them can be clearly identified as such and/or very likely they were dedicated to local consumption[1279]. *Tituli picti* borne by some *urcei*[1280] mention Aulus Ubricius Scaurus who was a seller or dealer of fish sauces in Pompeii, whose house was identified in *Regio* VII, *Insula Occidentialis* 12–16 for the presence of a mosaic depicting an *urceus*, the container that borne these inscriptions[1281]. Very recently few probable sites for the production of fish-related products were discovered in Pompeii for the presence of small vats[1282]. Also Puteoli resulted in a possible site for the production of fish sauces, recently discovered during underwater explorations in the submerged area of the *Portus Iulius*[1283]. In the 'Terme di Elagabalo' this origin is present only during the Severan age (fig. 11.4) with low amounts, while in Rome (fig. 11.5) the largest quantities were found during the Trajanic age, although litres were also found during the Antonine and Severan ages. In Ostia this sub-origin is almost totally absent with the exception of a few litres during the Antonine age (fig. 11.6).

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[1276] Possibly even *Stabiae* could have been a manufacturing site for fish-related products (Federico 2007: 264–265, 268).
[1277] Jones & Robinson 2005: 271; Botte 2009: 99.
[1278] Botte 2009: 95–99. From this complex, called "*Garum* shop", samples of earth contained by *dolia* in its *peristilium* (Smiriga *et al.* 2010; cf. also García Vargas *et al.* 2014: 72–78) and amphorae from the so called 'pile of amphorae' (Bernal *et al.* 2012; Bernal *et al.* 2014) were examined, identifying all them as containers for fish sauces. For this complex cf. Curtis 1979. Cf. also Carannante 2011 for other analyses.
[1279] Botte 2009: 99; Cappelletti *et al.* 2013: 272, 275–276.
[1280] For their morphology, distribution, and economic implications cf. Cappelletti *et al.* 2013.
[1281] Curtis 2005: 41–42; Cooley 2012: 91–94.
[1282] Ellis 2011.
[1283] Scognamiglio 2009: 147; Gianfrotta 2012: 140–141; Benini & Giacobelli 2014: especially 146–148 for the decription of remains (they also associate these remains with a *titulus pictus*: *CIL* XV, 4687–4688).

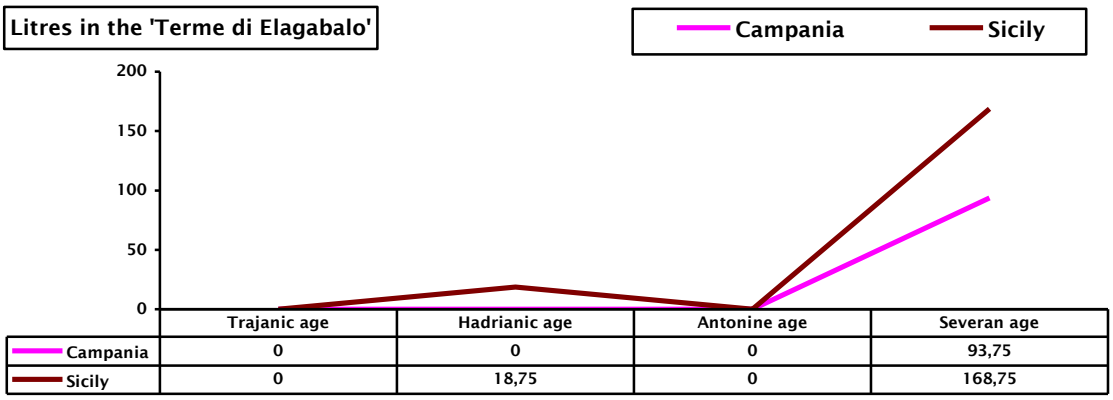
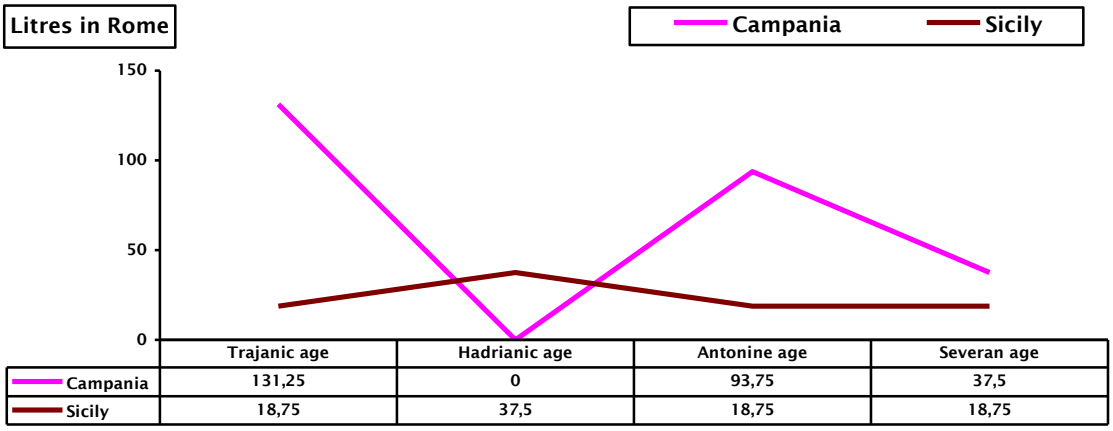



**Fig. 11.4: Amounts of Italian fish sauces divided by sub-origins in the 'Terme di Elagabalo'.**

Pliny recalls the *garum* from *Thurii* which was one of the best renowned ones[1284] and ancient *Bruttium* resulted in a few traces of installations for the production of fish sauces and at least one site was found for the manufacture of amphorae containing it[1285]. While in Reggio di Calabria the discovery is totally unsure and even dating to the Late Antiquity[1286], in Marina di Pulsano traces seem to be more assured, although their dating was not possible[1287]. Other sites were found in Santa Irene (Briatico, not far from Vibo Valentia)[1288] and Maratea (both in Capo La Secca[1289] and the island of Santo Janni[1290]). This origin is attested only in Ostia and during the Antonine age, although with a large amount of litres (fig. 11.6).




[1284] Plin., *HN*, XXXI, 94.
[1285] Cf., for example, Sangineto 2001: 213. Other amphorae were produced in the area, although their kilns were not discovered: Sangineto 2006: 323 (although he identifies Richborough 527 as *garum* containers, not alum containers: cf., below, Chapter 12, Section 12.1).
[1286] Spadea 1987; Spadea 1991; Sangineto 2001: 238.
[1287] Marzano 2007a: 304-305.
[1288] Iannelli *et al.* 1992: 27-37; Iannelli & Cuteri 2007; Botte 2009: 90; Sangineto 2014a: 155-156. It was also linked to a fishery dated end of 1st-end of 2nd centuries AD (Anzidei *et al.* 2004: 117-118).
[1289] Bottini & Freschi 1993: 105-110; La Torre 1999: 154.
[1290] Bottini 1992; Bottini & Freschi 1993: 97-104; La Torre 1999: 152-153.

**Fig. 11.5: Amounts of Italian fish sauces divided by sub-origins in Rome.**

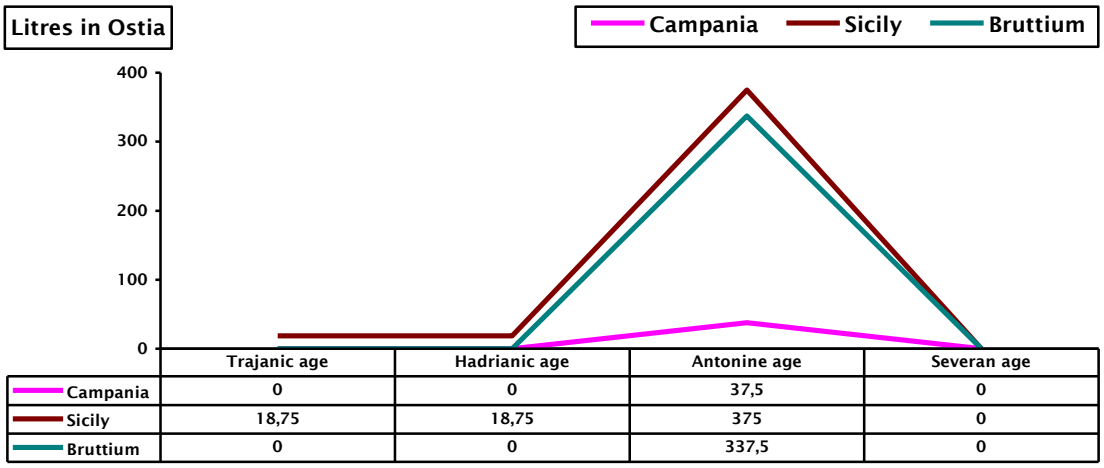



**Fig. 11.6: Amounts of Italian fish sauces divided by sub-origins in Ostia.**

Sicily resulted in many production sites distributed almost everywhere[1291] (Northern[1292], Western[1293] and Oriental[1294] coasts), including also Egadi Islands[1295] and Lampedusa[1296]. In spite of this, with the exception of Portopalo[1297], they had been rarely excavated[1298]. A very important manufacturing site for their container Dressel 21-22 was very recently discovered in Alcamo Marina (province of Trapani, along the Western coast[1299]). In the 'Terme di Elagabalo' some litres were found during the Hadrianic and Severan ages, with the latter showing the largest amounts (fig. 11.4). Rome, has a constant low quantity of Sicilian fish sauces, with a small peak only during the Hadrianic age (fig. 11.5). In Ostia they have a very low presence during the first two periods, but reach large quantities during the Antonine age (fig. 11.6).

### 11.1.2 Gallic fish sauces

Despite the limited knowledge for this product in France[1300], several amphorae contained it (although many of them were imitations of *Baetican* forms[1301]). For what

[1291] Purpura 1982; Purpura 1985; Purpura 1989; Felici 2012.
[1292] Monte Cofano, San Vito lo Capo, Punta Molinazzo, Isola delle Femmine, Milazzo (Botte 2009: 75-83), and *Valentia* (Briatico Scrugli-S. Irene and Vibo Marina), and possibly others that may be medieval or fish-breeding remains (Iannelli & Cuteri 2007: especially 285-290).
[1293] Salza Prina Ricotti 2001: 162.
[1294] Capo Ognina, Vendicari, Portopalo: Botte 2009: 83-88.
[1295] Levanzo and Favignana: Botte 2009: 73-74.
[1296] Botte 2009: 88-89.
[1297] Bacci 1981-1983; Bacci 1984-1985: 716-721; Basile 1992: 73-80.
[1298] Marzano 2013b: 109.
[1299] González Muro 2006; González Muro 2009; González Muro 2011.
[1300] Wilson 2006: 536.
[1301] Botte 2009: 42.

concerns here, only *Narbonensis* province will be considered, as resulting in amphorae only found in Rome. Martial[1302] and Pliny the Elder[1303] are the only two ancient sources mentioning fish sauces across this part of Gaul: Antibes (Antipolis) for *muria* and Fréjus (*Forum Iulii*) for *allec*. Several production sites were discovered, with more or less certainty for their interpretation[1304]. Litres are low during the Trajanic age, significantly higher during the Hadrianic age to completely disappear during the subsequent periods (fig. 11.7) for the chronology of their containers (cf. Appendix 1). As they were containers from the Fréjus area, they might have contained *allec*.

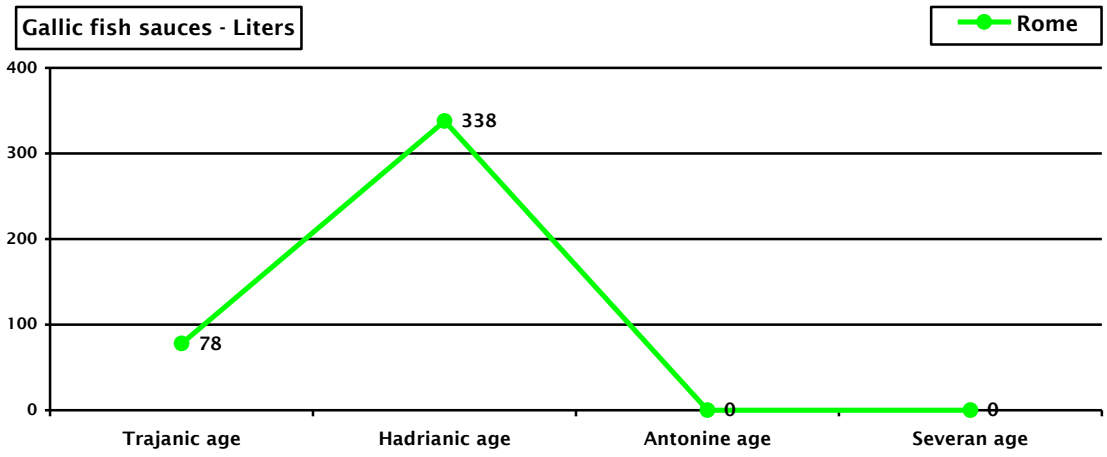



**Fig. 11.7: Amounts of Gallic fish sauces in Rome.**

### 11.1.3 Iberian fish sauces

Many ancient sources mention fish and fish sauces from the Iberian Peninsula. The literature as well reflects this interest and knowledge, recently connecting this production with the exploitation of mineral resources[1305]. Fish-related products in ancient *Iberia* (especially Cádiz) are cited since the 5th century BC by Greek comedians[1306] and during the Empire several authors mention them (for example Horace[1307]) and sites where they were produced, such as *Baelo*, Malaca, and *Carthago Nova*[1308]. Afterwards sources decrease till the 4th century AD: the *Expositius Totius Mundi* cites a generic *liquamen*[1309] and Ausonius mentions Barcelona's *muria*[1310]. Only

[1302] Mart., *Epigr.*, IV, 88 and XIII, 103.
[1303] Plin., *HN*, XXXI, 94-95.
[1304] For the list of sites cf. Curtis 1991: 72-79 (even if his assumptions cannot be taken for granted); Botte 2009: 40-42. The one reported by Grenier 1932 can be also added to these ones.
[1305] García Vargas 2008.
[1306] Curtis 1991: 46, note 21.
[1307] Hor., *Sat.*, II, 8, 46c.
[1308] Strabo, *Geogr.*, III, 1, 8; III, 4, 2; III, 4, 6; Plin., *HN*, IX, 66; XXXI, 93-94; Mart., *Epigr.*, XIII, 102.
[1309] *Expositius Totius Mundi*, 59.
[1310] Auson., *Ep.*, 25; Lejavitzer 2000: 123; Grainger 2006: 208.

two origins were found in all analysed sites: *Baetica* and *Lusitania*[1311]. The former is mainly found in Rome (fig. 11.9) and resulted in very large amounts of litres with a peak during the Antonine age (fig. 11.8). The latter, mainly found in Osia (fig. 11.9), gave less amounts, although totally not neglibible, especially during the Antonine age when it reaches the largest quantities (fig. 11.8).

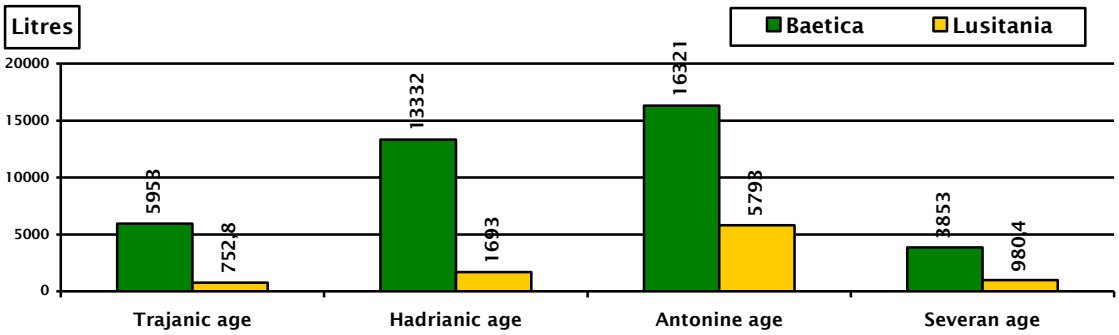



**Fig. 11.8: Amounts of Iberian fish sauces divided into sub-origins and periods from all sites.**

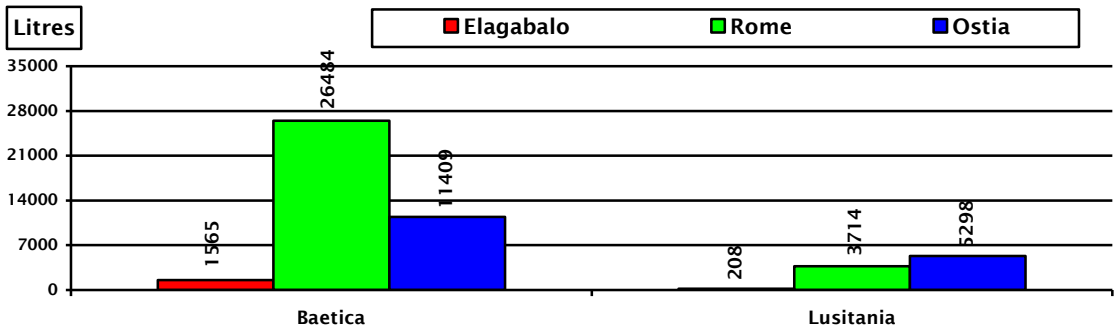



**Fig. 11.9: Amounts of Iberian fish sauces divided by sub-origins and sites.**

*Baetica* resulted in a very large amount of kilns that produced several forms of amphorae as well as sites for the production of salt[1312] and fish sauces installed along the coasts[1313]. Unfortunately, detecting differences in products is almost impossible for the lack of mentions in ancient sources, with a single exception only. The whole bay of Cádiz (ancient *Gades*) is, in fact, an extremely important manufacturing area[1314], whose

[1311] Even *Tarraconensis* resulted in production sites: cf. Lagóstena Barrios 2001: 116–198. Among all cities, Carthago Nova can be mentioned (for sites cf. Étienne & Mayet 1994: 36 and Lagóstena Barrios 2001: 169–179 with further bibliography). It was famous for the *garum sociorum* which had been considered by some ancient sources a good-quality and expensive product (Plin., *HN*, XXXI, 93–94; Mart., *Epigr.*, XIII, 102–103; Strabo, *Geogr.*, III, 4, 6; Sen., *Ep.*, 95, 25; cf. also Delussu & Wilkens 2000: 61–62; Marzano 2013b: 114–115). Also Balearian island resulted in some production sites: cf. Hernández *et al.* 1992; Lagóstena Barrios 2001: 198–201.
[1312] For a list of salt pans in *Baetica* cf. Lagóstena Barrios 2007: 277–281 who also tried to establish which ones served for giving salt to some fish-salting factories discovered.
[1313] Few *mercatores* in fish sauces are also known from this area: cf. Étienne & Mayet 1998.
[1314] For the political reasons and implications of it, cf. Remesal Rodriguez 2011: 208–209. Cf. also Pascual 2007 for a study of the tophononymy of the area and Bernal Casasola 2012 for a recent study about its port and the importance of fish-related products of the area.

archaeological excavations resulted in an extremely large number of sites that were ascribed both to the pre-Roman (end of 6th–3rd centuries BC[1315]) and Roman times (divided into four macro-areas: the city of Cádiz[1316], Extramuros[1317], Casco Antiguo[1318], and the surroundings of Cádiz[1319]) reflecting the popularity of its fish sauces among ancient sources[1320]. Many other sites are known for archaeological remains of production sites related to fish sauces or mentions in ancient sources, being on favourable positions for the passage of tuna[1321]. They are (in alphabetical order): *Abdera*[1322], Algeciras (*Iulia Traducta*)[1323], Almunécar (province of Granada)[1324], *Asido*[1325], *Baelo Claudia*[1326], Barbate (*Baesippo*)[1327], *Barbesula*[1328], *Carteia*[1329], *Caviclum* (Faro de Torrox)[1330], Ensenada de Getares (*Cetaria*)[1331], Malaca[1332], *Maenoba* (at the mouth of río Vélez)[1333], Marbella (*Cilniana*)[1334], *Murgi* and her surroundings[1335], *Onuba* (city and

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[1315] In the city of Cádiz, Puerto de Santa María, Las Redes, and La Manuela: Lagóstena Barrios 2001: 99–100; Marzano 2013b: 96–97 (with further bibliography).
[1316] Sanlúcar de Barrameda, Chipiona, Puerto de Santa María, San Fernando, Chiclana, as well as other less known sites in the centre of the city: Lagóstena Barrios 2001: 106.
[1317] San Severiano, calle Ramón Jiménez, calles Ferrocarril and Brunete, calle Campos Elíseos, calle García Quijano, Avenida Fernández Ladreda, Avenida de Andalucía and calle Ciudad de Santander, and Plaza de Asdrúbal: Lagóstena Barrios 2001: 106–110.
[1318] In front of Baluarte San Felipe and of Baluarte de los Mártires, calle Felipe Abrazuza, Hotel Atlántico, calle Gregorio Marañón, yacht club of playa de La Caleta, plaza de San Antonio, and the large site under Teatro Andalucía: Lagóstena Barrios 2001: 110–114.
[1319] La Algaida de Sanlúcar de Barrameda, Chipiona, possibly Puerto de Santa María (*Portus Gaditanus*), and several other smaller sites: Lagóstena Barrios 2001: 114–119. Cf. also the revision about the entire city of Cádiz held by Expósito 2007 and Niveau de Villedary 2007 (for the pre-Roman age).
[1320] For ancient sources mentioning fish sauces from this city cf. Lagóstena Barrios 2001: 98, notes 488 and 489.
[1321] Marzano 2013b: 111.
[1322] Lagóstena Barrios 2001: 158–160.
[1323] Close to playa El Chorruelo, Paseo de la Conferencia, and calle San Nicolás: Lagóstena Barrios 2001: 128–130; Bernal Casasola 2007a; Bernal Casasola 2009b: 5–10.
[1324] Étienne & Mayet 2002: 97–100.
[1325] Cabo de Trafalgar: Lagóstena Barrios 2001: 120.
[1326] Lagóstena Barrios 2001: 122–125; Étienne & Mayet 2002: 85–94; Trakadas 2005: 53–57; Arévalo & Bernal 2007; Remesal Rodriguez 2011: 207–208. For some locally produced amphorae imitating Italian prototypes cf. Bernal *et al.* 2003.
[1327] Lagóstena Barrios 2001: 121 and note 586; Bueno & Blanco 2007.
[1328] Producing sites were found outside the city: Lagóstena Barrios 2001: 135–136.
[1329] Cf. Lagóstena Barrios 2001: 132–134; Expósito Álvarez & Garcia Pantoja 2011.
[1330] Lagóstena Barrios 2001: 152–153.
[1331] The chronology of this city is still not known, but the toponymy suggests the importance of this production, as shown by the only known site, found close to the mouth of río Picaro: Lagóstena Barrios 2001: 130–131.
[1332] Apart from literary sources, sites for the production of fish sauces were found in Puerta del Cristo de la Alcazaba, calle Alcanzabilla, ancient custom house, calle Cerrojo, calle Cañón, and Rincón de la Victoria (close to Malaca); during the Late Antiquity other ones were established in calle Especerías, calle Alfigidos, gardens of the Iglesia del Sagrario de la Catedral, and in the middle of the theatre (Lagóstena Barrios 2001: 147–150). Other ones are in Torreblanca del Sol/Fuengirola (Teichner 2007: 122–123) and in Benalmádena-Costa (Pineda & Puerto 2007). Cf. also the inscription about salted-fish traders from Malaca: *CIL* VI, 9677.
[1333] Cerro del Mar: Lagóstena Barrios 2001: 151–152.
[1334] Complex of Las Bóvedas, possibly the one at the mouth of río Verde, and (in Marbella itself) Plaza de los Naranjos: Lagóstena Barrios 2001: 139–140.
[1335] Lagóstena Barrios 2001: 160–164.

surroundings)[1336], Peñón de Salobreña (*Selambina*)[1337], *Salduba* (possibly the modern Estepona)[1338], Sevilla[1339], *Sexi Firmum Iulium* (close to Almuñécar)[1340], Suel[1341], and Villavieja (*Mellaria*)[1342].

In the 'Terme di Elagabalo' Baetican fish sauces were found during both the Hadrianic age with low amounts of litres and the Severan age with larger amounts (fig. 11.10). In Rome (fig. 11.11) quantities of Baetican fish sauces increase from the Trajanic to Hadrianic ages (when they reach the largest quantity), to contiuously decrease during the following periods. In Ostia (fig. 11.12) there is a constant increase till the Antonine age when this origin reaches the largest amounts and a serious decrease during the Severan age.

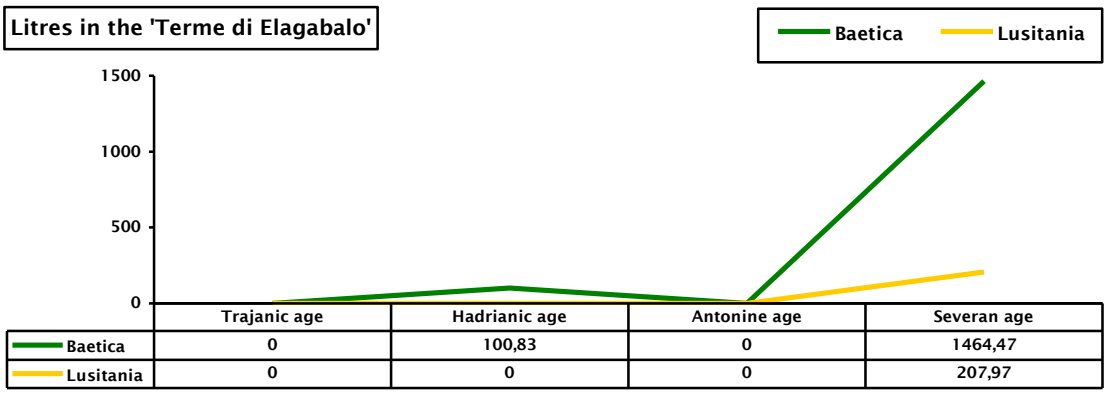


**Fig. 11.10: Amounts of Iberian fish sauces divided by sub-origins in the 'Terme di Elagabalo'.**

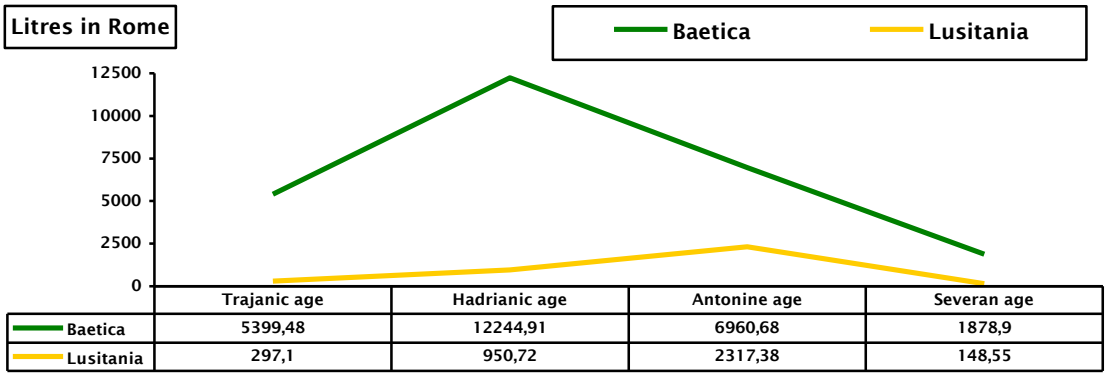


**Fig. 11.11: Amounts of Iberian fish sauces divided by sub-origins in Rome.**

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[1336] Cited by Strabo, *Geogr.*, III, 5, 5 and Plin., *HN*, III, 7. It resulted in sites in Calle Millán Astray, possibly calle Palos, El Eucaliptal, and Cerro del Trigo: Lagóstena Barrios 2001: 94–97.
[1337] Molvízar as well as amphorae kilns: Lagóstena Barrios 2001: 155–158.
[1338] Castillo de la Duquesa, Manilva, Torre de la Sal, 'Villa Sibinilla' (even if it is a Late Antique site), and possibly El Torreón: Lagóstena Barrios 2001: 137–138.
[1339] Amores *et al.* 2007.
[1340] Lagóstena Barrios 2001: 153–154.
[1341] Villa Mauritana, El Secretario, Torreblanca del Sol, Benalmádena (Torre de Benalmádena and a coastal *villa*), Torremolinos, close to the mouth of Guadalhorce river and on its bay: Lagóstena Barrios 2001:140–146.
[1342] The city is mentioned by ancient authors (Strabo, *Geogr.*, III, 1, 8; Plin., *HN*, III, 3 and III, 7; *Pompon.*, *Chorographia*, II, 96), but sites for this production are still not found.

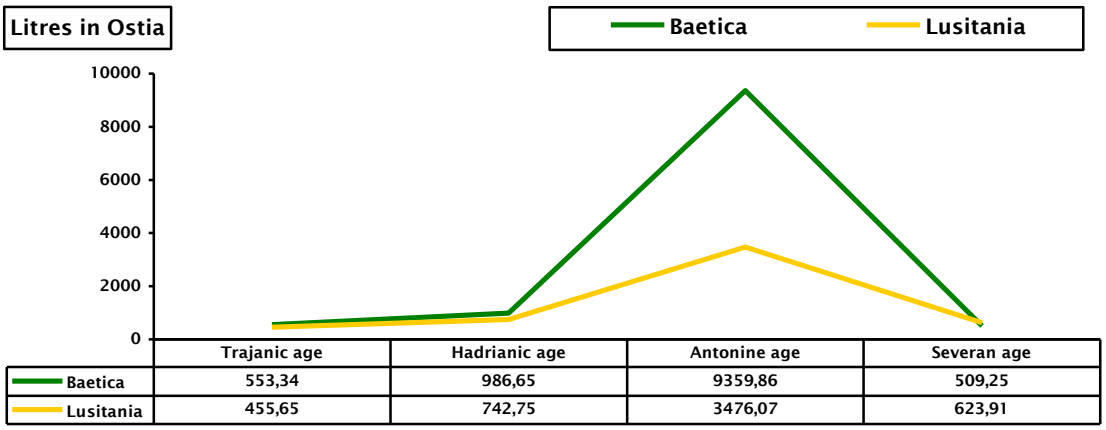


**Fig. 11.12: Amounts of Iberian fish sauces divided by sub-origins in Ostia.**

Lusitanian fish sauces, looking at finds, were only transported during this period to the sites considered by Dressel 14B amphorae[1343]. Sites for the production of fish sauces or the manufacture of these amphorae are known in the Northern[1344] and Western[1345] areas of Portugal and in Algarve[1346] which is an area also mentioned by Strabo who recalls fish-processing activities along this coast[1347]. However Tago[1348] and Sado valleys (the latter especially at Tróia[1349]) can be considered main areas for this production[1350], because the majority of amphorae were manufactured in these two areas[1351]. Ancient sources never mention this product or its quality, thus the only available information comes from *tituli picti*. They inform that amphorae contained both *muria*[1352] and *liquamen*[1353]. In one case they bear *liq(uaminis) fl(os) excellens*[1354] and in another *liq(uamen) exc(ellens) Sabini et Aviti*[1355], thus informing that this product was of some quality.

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[1343] Even ovoid amphorae (imitating Baetican forms) were produced in this area for transporting fish sauces during earlier periods: cf. Filipe 2008: 318–321; De Almeida & Filipe 2013: 739.
[1344] Cf. Lagóstena Barrios 2001: 33–41.
[1345] Cf. Lagóstena Barrios 2001: 41–71.
[1346] Especially for later containers. Cf. Lagóstena Barrios 2001: 71–91; Étienne *et al.* 2000: 99–105 (Quinta do Marim).
[1347] Strabo, *Geogr.*, III, 2, 6. Cf. Medeiros 2014 for a recent list of sites.
[1348] Amaro 1990: 79–80. Cf. also Raposo *et al.* 2009 about a kiln found in Quinta do Rouxinol.
[1349] Étienne *et al.* 2000: 109–115 (but also 105–109 for Setúbal); Trakadas 2005: 60–63; Mayet & Tavares da Silva 2010; Marzano 2013b: 105–106; Vaz Pinto *et al.* 2014; De Almeida *et al.* 2014a; De Almeida *et al.* 2014b.
[1350] Étienne 1990: 18 who looked at toponymy. Cf. Also Étienne & Mayet 2002: 67–70; Étienne & Mayet 2007: 9; Teichner & Pons Pujol 2008: 304.
[1351] Étienne & Mayet 2002: 135; Étienne & Mayet 2007: 12; Fabião 2008: 733; Trakadas 2005: 57–60. For description of sub-forms cf. Mayet & Tavares da Silva 2002: 100–108. For their distribution in the Mediterranean basin cf., for example, Edmondson 1987: 279–285.
[1352] *CIL* XV, 4729.
[1353] *CIL* XV, 4714, 4716, 4719.
[1354] Pascual 1960: 206; Pascual 1968: 143.
[1355] Liou & Marichal 1978: 141, n. 12 and fig. 16.

In the 'Terme di Elagabalo' (fig. 11.10) Lusitanian fish sauces were found with low figures only during the Severan age. In Rome (fig. 11.11) they resulted in larger amounts (but lower than Baetican ones): they constantly increase till the Antonine age to drastically decrease during the Severan age. In Ostia (fig. 11.12) the situation is similar, although with different figures for litres and a lower decrease during the Severan age.

### 11.1.4 North-African fish sauces

Ancient sources rarely mention fish sauces from North Africa and most of them consider *Africa Proconsularis* only, apart from Pseudo-Aristotle who refers to *Tingitana*[1356]. Pseudo-Scylax's *Periplus* mentions the production of fish sauces close to the island of Meninx (Jerba) during the 4th century BC[1357]. Strabo cites Zuchis (Henchir el Madeina) where fish sauces where produced[1358], while Pliny the Elder in the mid-1st century AD recalls the production of Leptis[1359] that may be referred to Leptis Minor[1360]. An inscription dating AD 202 (the so-called price-list of Zaraï[1361]) offers the tax applicable to *garum* that might eventually have been of local origin[1362]. The importance of fish in North-Africa, so as to increase wealth of some landowners, is also underlined by the large number of mosaics depicting marine themes[1363].

Also North Africa resulted in two sub-origins: *Africa Proconsularis* and *Tripolitania*[1364]. The latter is the most found sub-origin during the first three periods (fig. 11.13). The former already appears during the Trajanic and Hadrianic ages (although with a few litres) and becomes prevalent only during the Severan age (fig. 11.13). Both of them are predominantly found in Rome, also considering the 'Terme di Elagabalo' (fig. 11.14), which resulted in lower – but totally not negligible – quantities (fig. 11.15). Ostia shows significant amounts as well, although not surpassing those found in Rome.

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[1356] Botte 2009: 34. For *tituli picti* beard by some amphorae mentioning cities in *Mauretania Tingitana* cf. Cerri 2009.
[1357] Pseudo-Scylax, *Periplus*, 110.
[1358] Strabo, *Geogr.*, XVII, 3, 18.
[1359] Plin., *HN*, XXXI, 94.
[1360] Curtis 1991: 65.
[1361] *CIL* VIII, 4508.
[1362] Cf. Trousset 2003 for a recent study based on this inscription and subsequent implied commercial activities.
[1363] For these mosaics and related bibliography cf., for example, Marzano 2013b: 23, 26.
[1364] Other areas are known for producing fish sauces, such as possibly Cyrenaica (Hesein 2014) or *Mauretania Caesariensis* (Amraoui 2014) and *Mauretania Tinginatana* (cf. Marzano 2013: 102–105 with further bibliography).

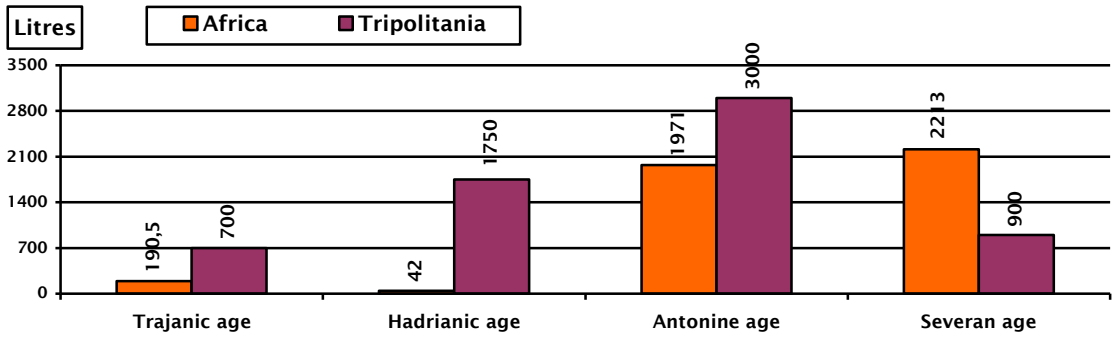


**Fig. 11.13: Amounts of North-African fish sauces divided into sub-origins and periods from all sites.**

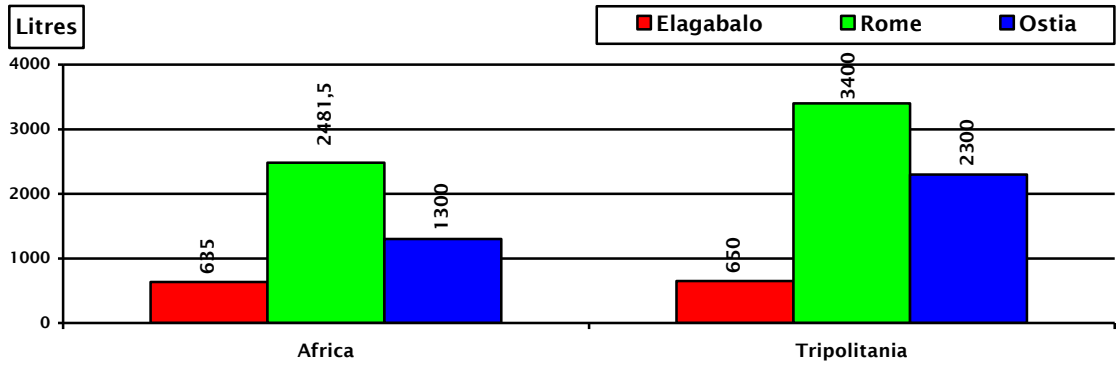


**Fig. 11.14: Amounts of North-African fish sauces divided by sub-origins and sites.**

*Africa Proconsularis*, thanks to field surveys and a few excavations, resulted in some production sites, at times with all the uncertainties of the discoveries, although the picture is still not complete especially for sites that can be dated before the 1st century BC[1365]. Several sites were found both in *Zeugitana* (Northern Tunisia[1366], for example: Nabeul-*Neapolis*[1367], Sidi Daoud, Mralssa, Tunis, along the coasts of Bizerte lake, others along the coast between Kobra and Kelibia, and close to Sidi Kalifa[1368]) and *Byzacena* including also the Gulf of Gabes (Southern Tunisia, for example: Sullechtum[1369], Yonga-Iunici, Thyna-*Theaneae*, Borj el Hsar-*Cercina*, Sidi Mansour, Ras Kaboudia-*Caput Vada*, cap of *Hammon Baaliathe*, and possibly even close to Khadija tower[1370]). In the 'Terme di Elagablo' this sub-origin appears only during the Severan age (fig. 11.15), while it is attested in Rome already during the Trajanic age (although it disappears during the Hadrianic age) and much increases during the Antonine age to decrease afterwards (fig. 11.16). A similar situation (but with different figures) is visible in Ostia, although fish sauces from *Africa Proconsularis* are also lowly attested during the Hadrianic age (fig. 11.17).

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[1365] Curtis 1991: 69. For a brief analysis of these discoveries cf. also Wilson 2006: 525–528.
[1366] These sites confirm the importance of this manufacture (Bonifay & Tchernia 2012: 317).
[1367] Slim *et al.* 1999; Slim *et al.* 2007; Sternberg 2000; Curtis 2005: 37; Botte 2009: 36–37.
[1368] Ben Lazreg *et al.* 1995: 111–113.
[1369] Curtis 1991: 66.
[1370] Ben Lazreg *et al.* 1995: 110–111. Cf. also Drine & Jerray 2014.

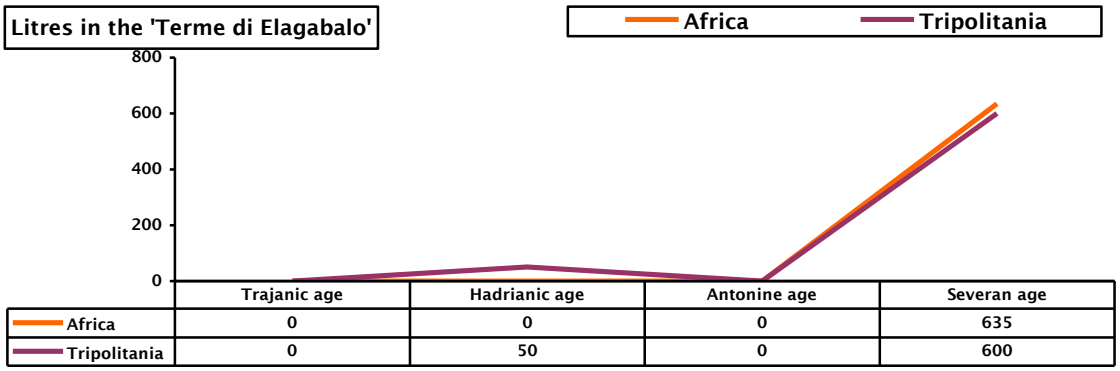


**Fig. 11.15: Amounts of North-African fish sauces divided into sub-origins in the 'Terme di Elagabalo'.**

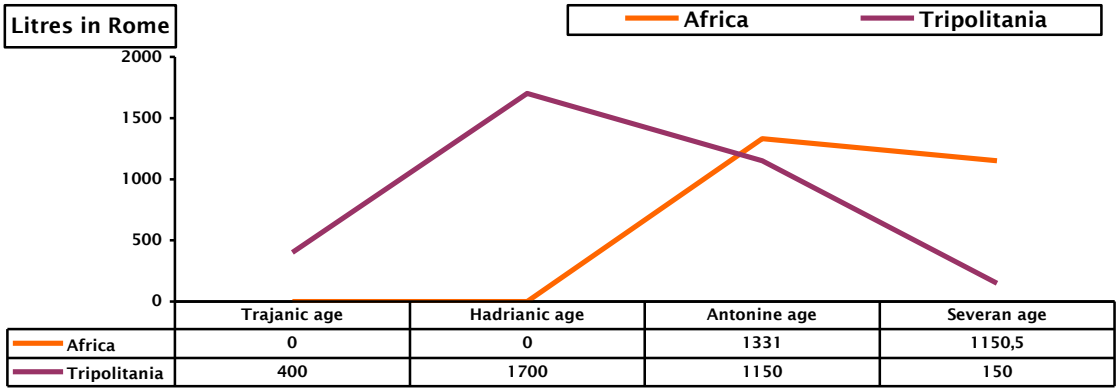


**Fig. 11.16: Amounts of North-African fish sauces divided into sub-origins in Rome.**

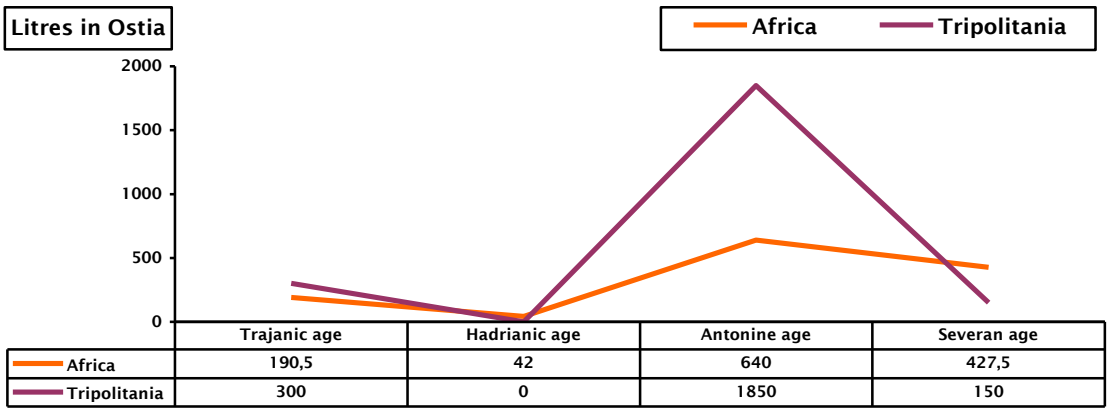


**Fig. 11.17: Amounts of North-African fish sauces divided into sub-origins in Ostia.**

On the other hand, *Tripolitania* is much less known. Field surveys had been held in the Western part of this Province, resulting in some production sites for fish sauces (for example around the Bahiber el-Biban lagoon in Henchir el Mdeina, around the sea of Bon Graga, Jerba, Naoura, and Zarzis)[1371]. The eastern part of this Province is

[1371] Ben Lazreg *et al.* 1995: 109–110; Slim *et al.* 2007: 22.

unfortunately not enough known, apart for Sabratha which resulted in several vats connected to the production of fish sauces[1372].

In the 'Terme di Elagablo' (fig. 11.15) only a few litres are present during the Hadrianic age and an increase is visible during the Severan age. In Rome (fig. 11.16) amounts raise from the Trajanic to the Hadrianic ages to drastically decrease afterwards. In Ostia (fig. 11.17) Tripolitanian fish sauces have more fluctuating data with low quantities during the Trajanic age, a disappearance during the Harianic age, a peak during the Antonine age, and a decrease during the last considered period.

### 11.1.5 Oriental fish sauces

Despite the general lack of knowledge about sites[1373], ancient sources mention a large production of fish-related products in the Eastern Mediterranean[1374]. This is also confirmed by coins[1375] and even by a large variety of ichthyofauna[1376]. Together with wine[1377], olive oil[1378], Pontic Sigillata and marble[1379], the Bosphoran area also produced fish sauces and during the 5th century BC they were already sold to the Mediterranean basin, especially to Athens[1380]. A century later Archestratus from Gela assures the popularity of Byzantium's tuna[1381] and mentions fish sauces from Bosphorus[1382] which were also manufactured from different species of fish[1383]. The mention that philosopher Bion of Borysthenes's father (native of Olbia) was a ταριχέμπορον (trader of salted fish) can be referred to the same period[1384]. During the 2nd century BC Polybius confirms the importance of fish-related products in *Pontus*, being one of its major products which supplied Greece and Rome[1385]. During the first century BC, Horace recalls Byzanthium's

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[1372] Wilson 2007. Cf. also Wilson 2000.
[1373] Wilson 2006: 533. This lack is also partly caused by publications that are written in Russian, thus excluding large parts of the audience to which they could be directed.
[1374] Cf. Curtis 2005: 40, but even Theodopopoulou 2014.
[1375] Cf. Stolba 2005.
[1376] Opaiţ 2007: 106; Marzano 2013b: 96. Cf. also Dumont 1976-1977.
[1377] Cf., above, Chapter 9, Section 9.1.5.
[1378] Cf., above, Chapter 10, Section 10.1.4.
[1379] Cf. Rizzo 2014c: 557–559 (Pontic Sigillata), 566–569 (marble).
[1380] Botte 2009: 24, note 141.
[1381] Archestratus quoted by Ath., *Deipnosophistae*, III, 117a.
[1382] Ath., *Deipnosophistae*, III, 116b; Archestratus quoted by Ath., *Deipnosophistae*, VII, 284e; Strabo, *Geogr*., VII, 4, 6.
[1383] Mackerel: Ath., *Deipnosophistae*, III, 116c; sturgeon: Hdt., *Hist*., IV, 53; mullet (especially from Sinope): Dorion quoted by Ath., *Deipnosophistae*, III, 118c; coracin: Dorion quoted by Ath., *Deipnosophistae*, III, 118b.
[1384] Diog. Laert., *Vitae philosophorum*, IV, 7, 1.46. Also Pompon., *De chorographia*, II, 1, 6 cites the importance of fish from this area.
[1385] Polyb., *Historiai*, IV, 38, 4; XXXI, 25, 5. For the Black Sea Region cf. also Lund & Gabrielsen 2005: 165–166.

*muria*[1386] and Strabo suggests a list of places where fishing tuna was recommended so as to be salted[1387]. An inscription dated 5th century AD that was found in the Crimean Bosphorus still attests this production in the area[1388]. Some sites with installations for the production of fish sauces were found in the Crimean Bosphorus such as: Tyritake, Myrmekion, Chersonesos, Zolotoe, and Salatčik[1389].

Amphorae likely containing fish sauces seem to come from the area of Chersonesos[1390], which was a colony of Heraclea Pontica, founded during the second half of the 5th century BC[1391]. They were only found in Ostia during the Antonine age with low quantities and in Rome during the Severan age (fig. 11.18). In Rome the discrete amount of litres bring this origin to reach third place during that period.

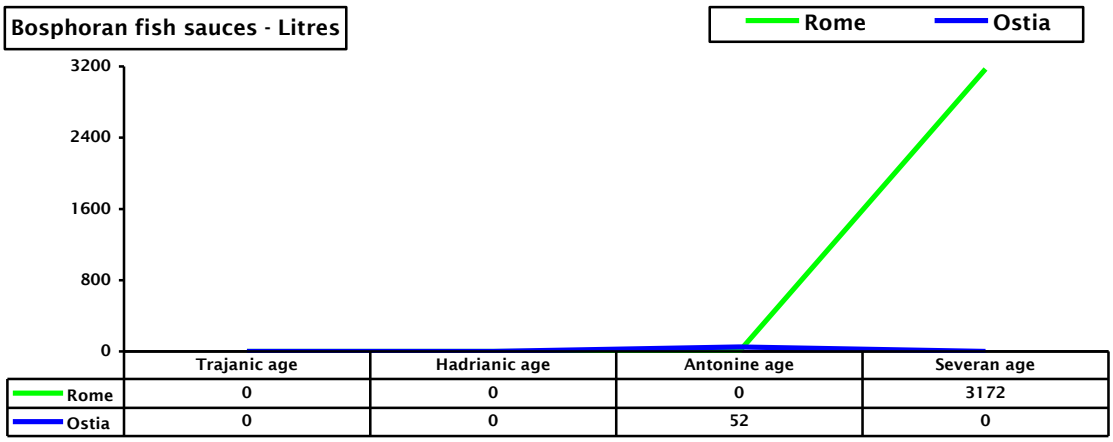


**Fig. 11.18: Amounts of Bosphoran fish sauces in Rome and Ostia.**

[1386] Hor., *Sat.*, II, 4, 63–66.
[1387] Strabo, *Geogr.*, VII, 6, 2; XII, 3, 11; XII, 3, 19 (citing Trabzon, *Pharnacia*, Sinope, and Byzantium).
[1388] For this inscription cf. Lytle 2012: 34.
[1389] Højte 2005: 142–156. On the other hand, Elizavetovka seems dedicated to smoking activities (Højte 2005: 141–142). Cf. also Curtis 2005: 38; Botte 2009: 25–27; Čechová 2014: 230–231 (about Chersonesos, with further bibliography).
[1390] Amphorae Knossos 26/27=B Snp III were produced in the Pontus region (Auriemma & Quiri 2004: 54) in Sinope (Kassab Tezgör 2009: 125–127) and possibly in the Chersonesos area, in the surroundings of *Panticapaeum* (Auriemma & Quiri 2006: 242). Its distribution is not totally known. It had been assimilated by some scholars to the form Zeest 84 and this form was found in many areas such as in the Pontus for example at Olbia Pontica (Krapivina 2010: 70) or at Gonio-*Apsaros* in Georgia (Khalvashi & Kakhidze 2012: 124–125), in the Danube regions (Benea 2000: 436) for example at *Nicopolis ad Istrum* (Falkner 1999: 257, nos. 1093–1096, 1099, 1109, and 1113 but these fragments were not identified as belonging to this form: cf. also Warner Slane 2001: 376; for the description of the site cf. Poulter 1999), in Pannonia, in the Aegeum, North Africa (Benea 2000: 436–437; Dyczek 2001: 252), Dacia and Lower Moesia (Dyczek 2001: 252)- It was found also in Beirut in contexts dated late 2nd (Reynolds 1999: 54, fig. 202, and note 13 on page 53; Sartre 2001: 835; Sartre 2005: 265–266) and early 3rd centuries AD (Reynolds 2010: 90), in Knossos (Hayes 1983: 151), Brindisi, Oderzo (Auriemma & Quiri 2004: 53 and fig. 13; Auriemma *et al.* 2012: 278–279), and Milan (Bruno 2003: 88 and fig. 2, 10). For an analysis of fish-related products and their trade from this areas even in later periods cf. Čechová 2014. Cf. also Kassab Tezgör 2011 for the production of this area.
[1391] Čechová 2014: 229. For this city cf. also Klenina 2008 and Biernacki & Klenina 2010.

## 11.2 Trends in fish sauces

Once again, as for previous Chapters about products, this Section will offer a brief synthesis about fish sauces starting from data in the 'Terme di Elagabalo', then from Rome and Ostia.

| ELAGABALO | Italy | | Gaul | | Iberia | | North-Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | - | - | - | - | - | - | - | - | - | - |
| Hadrianic age | 18.75 | 11% | 0 | 0% | 100.83 | 60% | 50 | 29% | 0 | 0% |
| Antonine age | - | - | - | - | - | - | - | - | - | - |
| Severan age | 262.5 | 8% | 0 | 0% | 1672.44 | 53% | 1235 | 39% | 0 | 0% |

**Fig. 11.19: Amounts and percentages of fish sauces divided into macro areas in the 'Terme di Elagabalo'.**

The 'Terme di Elagabalo' lacks in data from the Trajanic (no phases dated this period[1392]) and Antonine ages (no identifiable fragments of amphorae). During the two other periods (fig. 11.19), Iberian fish sauces dominate other origins with their 60% (Hadrianic age) and 53% (Severan age). Italian fish sauces are less represented with a decrease of percentages (from 11% during the Hadrianic age to just 8% during the Severan age). North-African ones, on the contrary, raise their amounts from a 29% (Hadrianic age) to 39% (Severan age). As already happened with other products (Chapters 9–10), the low amounts in the 'Terme di Elagabalo' are insufficient to understand whether or not this site reflects trends of the entire Capital, thus a comparison with Rome is necessary.

| ROME | Italy | | Gaul | | Iberia | | North-Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 150.5 | 2% | 78 | 1% | 5696.58 | 91% | 400 | 6% | 0 | 0% |
| Hadrianic age | 56.25 | 1% | 338 | 2% | 13195.63 | 86% | 1700 | 11% | 0 | 0% |
| Antonine age | 112.5 | 1% | 0 | 0% | 9278.06 | 78% | 2481 | 21% | 0 | 0% |
| Severan age | 56.25 | 1% | 0 | 0% | 2027.45 | 31% | 1300.5 | 20% | 3172 | 48% |

**Fig. 11.20: Amounts and percentages of fish sauces divided into macro-areas in Rome.**

[1392] Cf., above, Chapter 1, Section 1.2: 11; Chapter 3, Section 3.2.3: 59; Chapter 5: 95; Chapter 9, Section 9.2: 202; Chapter 10, Section 10.2: 224.

Fig. 11.20 about Rome immediately catches the eye for the predominance of Iberian fish sauces during almost all periods. The Trajanic age is therefore dominated by Iberian fish-related products reaching 91%, followed by 6% of North-African ones. Italian fish sauces reach 2% and there is also a very low presence of Gallic ones (1%). During the Hadrianic age Iberian fish sauces still head other origins with an increase in amounts, but a small decrese in the percentage (86%). North-African ones are increased from the previous period reaching 11% of total litres and even Gallic ones see an increase (although small in terms of percentage, reaching just 2%). Italian ones are still less attested. The Antonine age shows again a preponderance of Iberia, although with a decrease in quantities and in the percentage, reaching 78% of total litres. This is likely caused by an increase of North-African fish-related products (21%). Gallic fish sauces are not found anymore, for the ceasing in the production of their containers and Italian ones are still less attested. The Severan age, is not dominated anymore by Iberian products, which see a decrease both in general quantities and in the percentage (reaching 31%). North-African ones are as well slightly decreased, reaching 20%. These two decreases are explained by the large presence of Bosphoran fish sauces, never attested in any other period, but reaching now a significant 48% leading them to reach first place. Italian products are still less present.

| OSTIA | Italy | | Gaul | | Iberia | | North-Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 18.75 | 1% | 0 | 0% | 998.99 | 66% | 490.5 | 33% | 0 | 0% |
| Hadrianic age | 18.75 | 1% | 0 | 0% | 1729.4 | 97% | 42 | 2% | 0 | 0% |
| Antonine age | 750 | 5% | 0 | 0% | 12835.93 | 79% | 2490 | 15% | 52 | 1% |
| Severan age | 0 | 0% | 0 | 0% | 1133.16 | 66% | 577.5 | 34% | 0 | 0% |

**Fig. 11.21: Amounts and percentages of fish sauces divided into macro-areas in Ostia.**

Looking at fig. 11.21 about Ostia, the situation seems more or less the same, although with significant differences. Italian fish sauces are almost always less attested (and during the Severan age they are not even found) as already seen both in Rome and in the 'Terme di Elagabalo'. However, during the Antonine age they surprisingly reach a significant 5%, a percentage never attested in any other site. Iberian products are always well present (as for the other two sites). The Antonine age sees also very low litres of Bosphoran fish sauces (1%). North-African fish-related products had been also found with larger quantities than Rome during the Trajanic and the Severan ages, while during the Antonine age they reach 15% and during of the Hadrianic age when they suprisignly reach just 2%, possibly caused by the nature of contexts.

The analysed data confirm the diversity between Rome and Ostia, possibly for being object of diverse supply routes and commerce, although with a general trend that depicts in both cities an increase of North-African fish sauces to the detriment of Iberian ones that always maintain, during the analysed periods, an almost constant leadership. In order to better understand the trade in fish sauces to the Capital, fig. 11.22 represents data in litres and percentages both from Rome and the 'Terme di Elagabalo'.

| ROME + ELAGABALO | Italy | | Gaul | | Iberia | | North-Africa | | 'Orient' | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trajanic age | 150 | 3% | 78 | 1% | 5696.58 | 90% | 400 | 6% | 0 | 0% |
| Hadrianic age | 75 | 1% | 338 | 2% | 13296.46 | 86% | 1750 | 11% | 0 | 0% |
| Antonine age | 112.5 | 1% | 0 | 0% | 9278.06 | 78% | 2481 | 21% | 0 | 0% |
| Severan age | 319.25 | 3% | 0 | 0% | 3699.89 | 38% | 2535.5 | 26% | 3172 | 33% |

**Fig. 11.22: Litres and percentages of fish sauces divided into macro-areas in Rome and in the 'Terme di Elagabalo'.**

Looking at this new figure, not much has changed during the Trajanic and Antonine ages, as the 'Terme di Elagabalo' does not add much information to them. A difference can be seen both during the other two periods. During the Hadrianic age the is a slight increase of Italian fish-sauces to the detriment of Iberian ones. During the Severan age a real change is visible. Iberian fish sauces reach again first place and Bosphoran ones reach second place, with an increase in the percentage to 38% for the former and a dreacrease to 33% for the latter. North-African products as well increase their amounts reaching now 26% of total litres for the period and even Italian ones, although always less attested, slightly increase their percentage to 3%.

Fish sauces were surely important during Roman times, above all considering the number of production sites (some of them even rather large) located in very different areas not only of the Mediterranean and also looking at the quantities of traded litres considered in this research. This amount of production and imports creates a doubt in trade, which cannot be totally explained only by the existence of *consortia* and societies dealing with this product[1393]. Sanz Palomera 2010: 32 suggested that fish sauces were dealt through the supply system commonly called '*annona*' and even transported with the same boats which were loaded with olive oil and grain. His

[1393] About these *consortia* cf., for example, Curtis 1983: 238; Trakadas 2005: 75; Marzano 2013b: 114-117.

attractive assumption is not much sustained by ship-wrecks which rarely show (in the current state of knowledge) coexistences of amphorae containing both products (or other goods[1394], not taking into account grain which usually do not leave archaeological traces) and ancient sources do not tell anything about this co-existence in boats. Fish sauces are, in fact, called "mercancías libres" (free commodities) by García Vargas 2012: 261, although immediately after he suggested that they might have been traded with olive oil or grain for benefits that *consortia* could receive from these transports[1395]. Although some fish-salting establishments could have been, at times, part of the imperial *fiscus*[1396], fish sauces might have been more likely part of a different line of commerce, meant to create profits for all involved parts and directed to areas where a strong demand existed[1397].

The whole period considered reaches the figure of 43,382.24 litres. Dividing it, as for other products, for 100 years, it becomes 433.8224 litres per year arrived in the considered sites. On one hand this amount can be an overestimation because some amphorae both from *Baetica* and North Africa were 'polyvalent', meaning that they might have contained (in the case their content is identified) not only fish sauces, but also other products. On the other hand (although it can be seen a contradiction in terms) it can also be an underestimation, not the total quantity of fish sauces arrived in Rome during this long period of time. In fact, many amphorae were not considered, being found in fragments which did not permit to a secure identification of the original form (thus called 'unidentified *garum* amphorae'), or because they were found in contexts not included for this analysis for their intrinsic problems[1398], or in others that are still not published. At the same time, part of fish sauces might have been carried by barrels, similarly for wine, as recently suggested[1399].

### 11.2.1 Fish sauces: Rotten or savoury, is always a matter of points of view

The discovered amounts examined in this Chapter (not only in the 'Terme di Elagabalo', but also elsewhere in Rome and in Ostia) show that the majority of amphorae containing these products came from the Iberian peninsula (especially from *Hispania Baetica*, but also from *Lusitania*) with also amounts from North-Africa. Even Italy and Eastern Mediterranean produced moderate quantities of fish sauces as a few

[1394] Cf. Broekaert 2011: 598 and note 19 for 7 ship-wrecks and their bibliographic references.
[1395] García Vargas 2012: 262. Cf. also García Vargas & Martínez Maganto 2009.
[1396] Cf. the *titulus pictus* beard by an amphora Dressel 7–11 analysed in Marzano 2013b: 116 with futher references.
[1397] Stone 2009: 145.
[1398] Cf., above, Chapter 3: Section 3.2.3: 63–64.
[1399] Baratta 1997: 110; Baratta 2001: 152; Wilson 2009: 234, 237.

containers from these origins were discovered in the analysed sites. On the other hand, Gaul resulted in almost negligible quantities in Rome only. All these origins declare the importance in commerce of this product, but when someone explains what *garum*, *muria*, *liquamen* or *allec* were during Roman times, people usually have a strong reaction of disgust[1400]. This may be very likely caused by looking at this product with cultural preconceptions[1401], thus with modern eyes which are not used to strong flavours (and smells) and to something that was originated by 'putrefaction' of fish[1402], forgetting the existence of goods that are still produced in the same way even nowadays[1403]. Fish sauces were also vituperated by some ancient authors[1404], whose belonging to higher social ranks possibly influenced their opinions, as very often happened. They do not inform much also about the possible existence of differences in quality among diverse origins[1405], thus not allowing a serious consideration about assortment of products undertaken by consumers as might have happened for wine (cf., above, Chapter 9, Section 9.2.1), although Grainger suggested that "perception of quality depended on many factors"[1406].

Curtis, followed by Étienne & Mayet in 1998 who expressed the same idea[1407], suggested that *tituli picti* could have been also used as marketing instruments, depicting specific products, origins, species of fish from which sauces were derived, or recipes for making sauces better than others, so as to appeal to potential customers[1408]. In spite of this, it is possible to assume, looking at amounts in the 'Terme di Elagabalo' and in all considered sites, that Iberian fish-related products were possibly well appreciated by inhabitants both of Rome and Ostia or that the producers created strong agreements in order to impose their products in these cities. At the same time, although never assumed by scholarship as it is very difficultly intelligible, considering that a choice never existed in this product would be a dangerous underestimation of Roman's purchasing habits, because they might have identified qualities of fish sauces from specific origins, as shown by *tituli picti*.

Curtis and Remesal Rodríguez both argued that fish-related products were not all very high priced[1409], but different prices existed and some of them were rather

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[1400] Personal working experience of the author of this research.
[1401] Lejavitzer 2000: 127.
[1402] Curtis 1983: 232; La Greca 2008: 70.
[1403] Cf. Cool 2006: 58–59.
[1404] Plin., *HN*, XXXI, 93; Sen., *Ep.*, XV, CXV, 25.
[1405] With the exception of *haimation*, the best *garum* for its quality (Curtis, 1991: 13) recently recognised for the first time (Van Neer & Parker 2008: 1824–1825) in Aqaba, the ancient Nabatean city called Aila (Van Neer & Parker 2008: 1822–1823; Thomas-Parker 2014: 210, 214).
[1406] Grainger 2014: 45.
[1407] Étienne & Mayet 1998: 150–151.
[1408] Curtis 1983: 238; Curtis 1991: 159–167.
[1409] For the very scarce mentions of prices cf. Marzano 2013b: 115, 289–290.

expensive[1410], although they very likely were less expensive than fresh fish[1411]. Lagóstena Barrios considers *garum* the most expensive among all fish sauces[1412], possibly (although not clearly stated) referring to the *garum sociorum* from Carthago Nova in *Tarraconensis* that seemed to be a rather expensive product[1413] (even if this nomenclature during Roman times might have become commonly given to the entire Iberian peninsula[1414]). Grainger, moreover, tried to define consumers for different types of fish sauces, stating that *garum* had a smaller market than *liquamen*, although all of them could have had different roles for Romans[1415], because that depended on consumer's taste and purchasing capacities as well as the role in meals and type of meal[1416]. Whether they were cheap products or not, surely in Rome (but also in Ostia) a strong demand existed so as to presume that Romans liked them[1417]. They presumably considered fish sauces a savoury product rather than a rotten one, thus with a total different point of view than the one used by people nowadays, although ancient Roman and contemporary Italian and Asian products have been recently compared[1418].

Who exactly consumed fish sauces in Rome is regrettably unknown. Marzano suggested that *muria* was especially consumed by the lowest ranks[1419], although Grainger stated the contrary: *muria* was preferred by the élite[1420] and by those who were not exactly poor[1421]. It is only possible to suggest that part of fish sauces was purchased and consumed by the lower ranks of Roman society[1422], above all *allec*[1423], because some ancient authors partially vituperated this product, although they might have used it with a moral meaning rather than reflecting a real disgust[1424]. At the same time this assumption come from the impossibility for a large portion of the population to afford meat or fresh fish, thus it very likely relied on these sauces so as to consume some protein[1425]. This interpretation however is not as straightforward as it seems, because the evidence from Pompeii states that even higher social ranks purchased fish

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[1410] Curtis 1983: 234–236; Curtis 1991: 43, 170 (both with references to ancient sources); Remesal Rodríguez 2011: 207; Van Neer & Ervynck 2004: 209; Marzano 2013b: 94; Grainger 2014: 37.
[1411] Marzano 2013b: 94.
[1412] Lagóstena Barrios 2007: 277.
[1413] Marzano 2013b: 115, with references to ancient sources.
[1414] Carusi 2008: 243.
[1415] Grainger 2014: 44.
[1416] Grainger 2014: 45.
[1417] Curtis 1983: 239–240; Robert 1985: 133–134; Curtis 1991: 175.
[1418] Smriga *et al.* 2010: 445 (for their quantity of glutamate and for being originated by fish).
[1419] Marzano 2013b: 282.
[1420] Grainger 2014: 39.
[1421] Grainger 2014: 43.
[1422] As possibly happened during Greek times, looking at ancient sources: Grainger 2014: 39.
[1423] Van Neer & Ervynck 2002: 208; Grainger 2014: 37.
[1424] Lejavitzer 2000: 118–120.
[1425] Marzano 2013b: 92.

sauces for the discovery of containers also in wealthy houses[1426], thus some of these products were also consumed by higher ranks.

Fish sauces had a lower volume of commerce compared with the one for wine or olive oil, also because their use was meant to be in lower quantities than the other two products as they were used for seasoning food. In spite of this, this research which looked at finds and ancient sources showed that they did not have a negligible importance. Instead they played a rather large part in ancient Roman economy[1427] as well as diet[1428] also looking at amounts not only from site elsewhere in Rome and in Ostia, but also from the 'Terme di Elagablo' which seemed to fit in the current scholarship about finds and commerce, with a few adjustments.

[1426] Curtis 1991: 174.
[1427] Noain Maura 2001: 26; Lund Iacobsen 2005: 103.
[1428] Auriemma 2000: 46.

# Chapter 12: Other products carried by amphorae

Not only the previously mentioned products belonging to the 'triad' were traded to Rome during the Mid-Imperial age. Three other commodities were imported to the Capital as shown by the found amphorae: alum, *defrutum*, and dates. This chapter will analyse these other products, at the same time considering their origins and differences in their amounts across different periods. As for all previous products, also this Chapter will use litres calculated from the numbers of vessels offered in previous Chapters. Fig. 12.1 shows the amounts in litres of these other products found in all the analysed contexts, with a large predominance of *defrutum*.

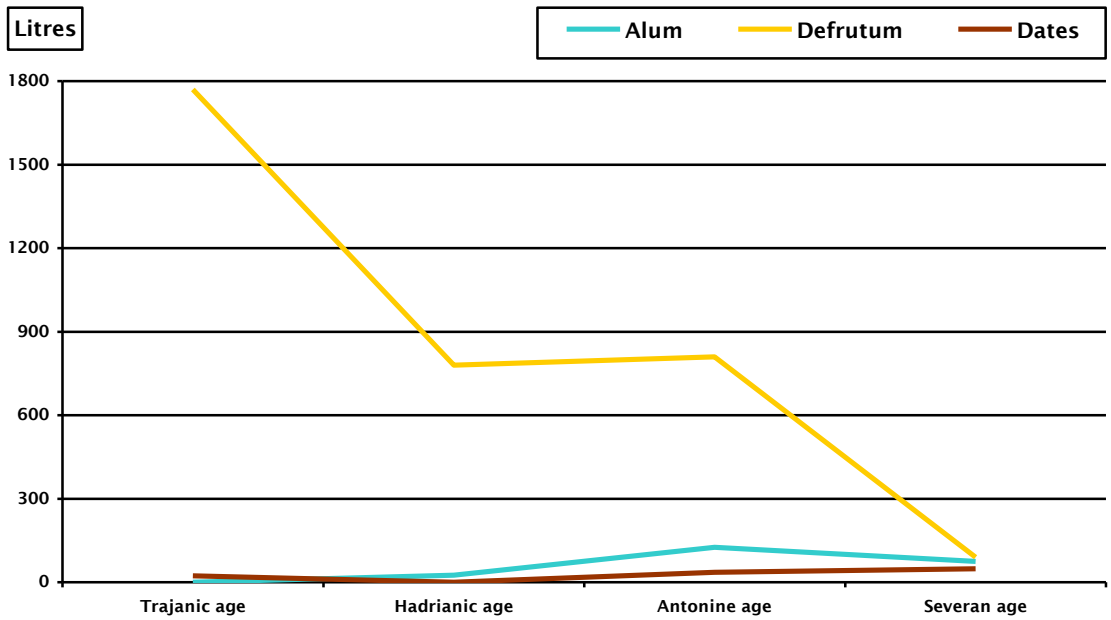


**Fig. 12.1: Amounts of other products divided into chronological periods.**

## 12.1 Alum from Lipari (Richborough 527)

Alum is a salt, sulphate of aluminium and other metals[1429], which had been used for several millennia[1430]. Many ancient sources mention it. Diogenes Laertius[1431] cites a work by Theophraste titled 'Salt, Nitre, and Alum' that did not survive but might have been the source for Pliny the Elder's book XXXI about salt and nitre and for book XXXV

[1429] For various types of alum and different manufacture processes cf. Picon 2005.
[1430] Picon 2005: 19.
[1431] Diog. Laert., *Vitae philosophorum*, V, 2, 42.

about alum, as he is cited among its sources[1432]. This salt was used in Egypt for glass production[1433] and C. Opsomer collected all the published Latin medical recipes considering it[1434], thus showing the importance of this metal for pharmacy and medical treatments as alum reaches 373 mentions[1435]. Apart from being used in alchemist procedures[1436], alum was also employed for the manufacture of metals[1437]. Strabo, for example, recalls that in Spain a sort of styptic earth (with alum and vitriol) was used to purify gold[1438]. It was also important for dyeing textiles[1439], leather manufacture[1440], and processing precious stones[1441]. Many places all over the Mediterranean resulted in having deposits of this salt and sites for its processing activities, sometimes also during Roman times[1442]. In the analysed sites only Richborough 527 amphorae from Lipari containing alum from the Aeolian islands[1443] were found. The salt from these islands[1444], that might have been a native alum, mined in more or less big crystals[1445], is mentioned by some ancient authors as Diodorus Siculus[1446] (possibly copying a passage from Timoteus[1447]), Dioscorides[1448], Pliny the Elder[1449], Strabo[1450], and also by medieval sources (for example Cassius Felix[1451]). Despite its importance, the amounts discovered are not very large (reaching just a total of 275 litres). They are mainly concentrated in Rome with a peak during the Antonine age. Lower quantities were found in the 'Terme di Elagablo' during the Severan age and in Ostia during the Antonine age (fig. 12.2).

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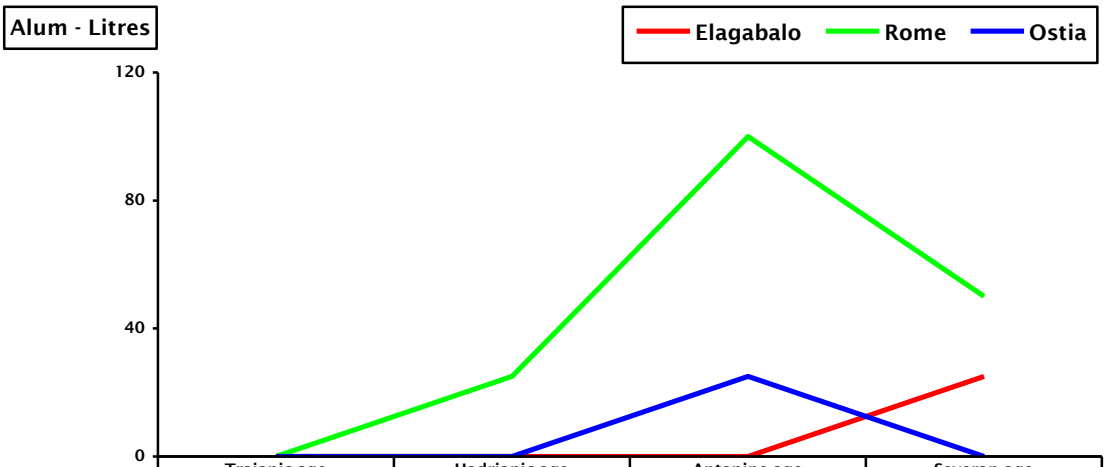
[1432] Plin., *HN*, I, 31; I, 35.
[1433] Cf. Gartuze & Picon 2005.
[1434] Opsomer 1989.
[1435] Cf. also the list published in Halleux 2005: 10.
[1436] Halleux 2005: 10–11.
[1437] This use is mentioned by a couple of papyri and some other sources: cf. Halleux 2005: 11.
[1438] Starbo, *Geogr.*, III, 2, 8.
[1439] Halleux 2005: 11. Cf. also, the experiment held by Delamare & Monasse 2005. In spite of this, in the large *fullonica* found in Casal Bertone in Roma (partly published in Musco *et al.* 2008) not a single fragment of amphorae containing alum was found (personal communication of A. Caspio).
[1440] Chahine 2005 who suggests that it might have been used also during ancient times.
[1441] Halleux 2005: 11–12.
[1442] For example Aegean Islands: Hall & Photos-Jones 2005 and Raptopulos 2005 (Melos), Archontidou 2005 and Archontidou *et al.* 2005 (Lesbos); Cyprus: Marquié *et al.* 2005; Egypt: Picon *et al.* 2005; Macedonia: Karadima-Matsa *et al.* 2005; Turkey: Çolak *et al.* 2005. For other sites cited by ancient authors cf. Borgard 1994: 200; 2005: 161-162. For the problem of Phocaea never mentioned in ancient sources, but known and exploited during medieval times cf. Picon 2000: 527–528.
[1443] Picon 2005: 34; Malfitana *et al.* 2009: 134.
[1444] A possible source of alum in the island of Stromboli is theorized by Mosconi 2002, analysing surviving fragments of the book *Aetna*.
[1445] Borgard 2005: 161.
[1446] Diod. Sic., *Bibl. hist.*, V, 10, 2.
[1447] Jacoby 1923–1958: 566F 164, 10.
[1448] Dioscorides, *De materia medica*, V, 106.
[1449] Plin., *HN*, XXXV, 52, 184 (*Lipara* and *Strongyle*).
[1450] Strabo, *Geogr.*, VI, 2, 10.
[1451] Cassius Felix, *De medicina*, IV, X, XXXII, XLVIII, LXXVI.




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Elagabalo | 0 | 0 | 0 | 25 |
| Rome | 0 | 25 | 100 | 50 |
| Ostia | 0 | 0 | 25 | 0 |

**Fig. 12.2: Amounts of alum from Lipari in all sites and periods.**

## 12.2 Iberian *defrutum* (Haltern 70)

Despite the general lack of knowledge, the word *defrutum* might have defined a special wine-product, created by reduction of must[1452], with a high presence of sugar[1453], and whose alcoholic percentage is unknown[1454]. Pliny the Elder offers a recipe for it[1455] which is the same mentioned by Columella[1456], but Palladius gave different ratios[1457]. Although it can be assimilated to wine for its derivation[1458] and the Diocletian's prices edict categorises it among mulled wines[1459], *defrutum* is separated from wine in this research because it was used not only by itself, but also – and above all – to preserve olives[1460] and other fruits[1461] as well as in medicine, pharmacy, cooking activities and for feeding animals[1462]. The discovered quantities are rather large with a total of 3,450 litres. In the 'Terme di Elagabalo' low amounts were found both during the Hadrianic and the Severan ages (with equal amounts of litres). In Rome a constant decrease in quantities is visible. In Ostia after some litres during the Trajanic age and

[1452] Étienne & Mayet 2000: 93; Carreras Monfort & Aguilera 2004: 121–122.
[1453] Amouretti 1993: 467; Brun 2003a: 92.
[1454] Amouretti 1993: 468–469.
[1455] Plin., *HN*, XIV, 80.
[1456] Columella, *Rust.*, XII, 19, 1 and 12.
[1457] Palladius, *Opus Agriculturae*, XI, XVIII.
[1458] Étienne & Mayet 2000: 95 with further bibliography favoring this hypothesis.
[1459] Giacchero 1974: 2, 16.
[1460] Étienne & Mayet 2000: 96 with a list of *tituli picti* mentioning them; Brun 2003a: 92 and note 120. Carreras Monfort 2000: 421 and Carreras Monfort & Aguilera 2004: 130 consider olives the main content of Haltern 70 amphorae.
[1461] Étienne & Mayet 2000: 97 and Carreras Monfort & Aguilera 2004: 129 with the list of uses derived from ancient sources.
[1462] Carreras Monfort & Aguilera 2004: 130–131.

an absence during the Hadrianic one, there is a peak during the Antonine age, and another absence during the last period (fig. 12.3).

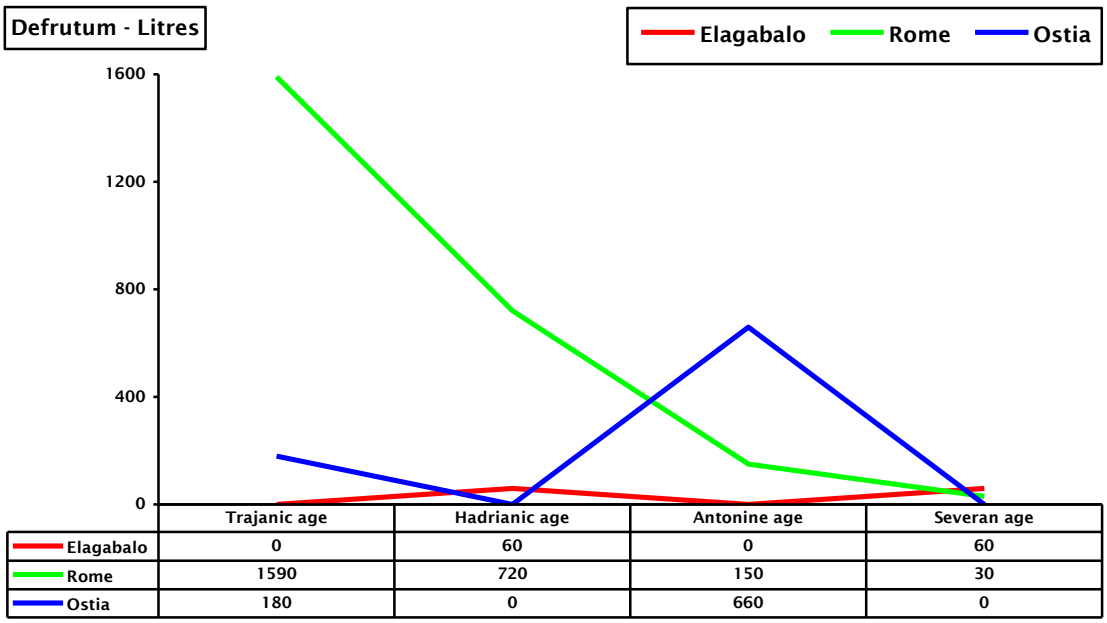



**Fig. 12.3: Amounts of Iberian *defrutum* in all sites and periods.**

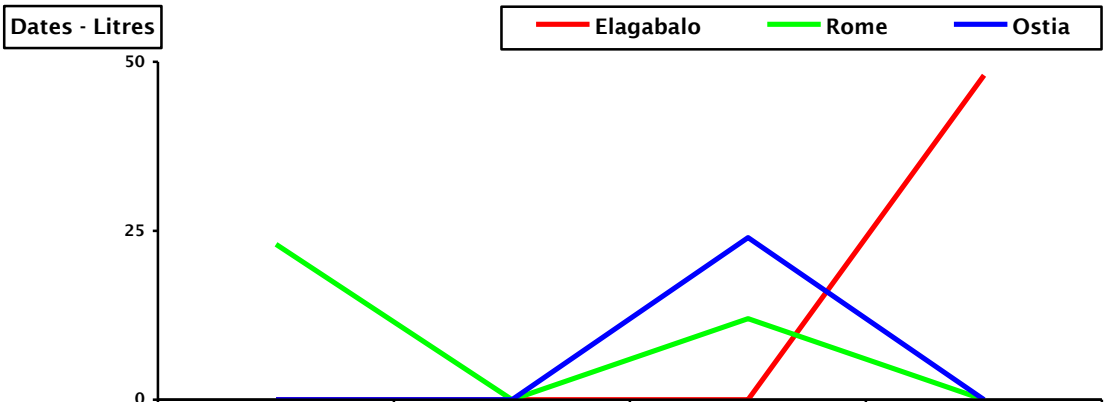
## 12.3 Oriental Dates (Camulodunum 189 & Colchester 105)

No wild date palms were ever found and the progenitor of the one cultivated nowadays (*Phoenix dactylifera*, L.) might have possibly been *Phoenix reclinata* Jacq. from tropical Africa, or *Phoenix sylvestris* (L.) Roxb. from India (or even an hybrid between them)[1463]. Remains of dates were found in some Neolithic sites[1464]. These trees might have stated being cultivated during the 3rd millennium BC, especially in Southern Mesopotamia[1465], as they are mentioned in the Gilgamesh Epic[1466] and were used to build the moon-god temple near Ur in Mesopotamia[1467]. Date palms were used for covering houses, eating, and medical purposes[1468], but they required heat and water[1469], thus could be planted and cultivated in areas subjected to tropical climate[1470]. They were rather omnipresent in several oases for their being polyvalent plants[1471]. Dates were mostly consumed where they were produced, at times (especially in monastic

[1463] Zaid & De Wat 2002; Terral *et al.* 2012a: 930–931; Gros-Balthazard *et al.* 2013: 4–7.
[1464] Terral *et al.* 2010: 128; 2012a: 930; Gros-Balthazard *et al.* 2013: 3, 5.
[1465] Tengberg 2003; Broshi 2007: 56; Terral *et al.* 2012a: 930.
[1466] Lunde 1978: 20; Tenberg *et al.* 2013: 2–3.
[1467] Zaid & De Wat 2002.
[1468] Zaid & De Wat 2002.
[1469] Broshi 2007: 56.
[1470] Safrai 1994: 138; Zaid & DeWat 2002.
[1471] Terral *et al.* 2010: 127; 2012a: 930; Tenberg *et al.* 2013: 3.

cases) even in substitution of bread[1472], but a trade is also known. During the Roman times, date palms grew especially in Northern Egypt[1473], Babylonia, Southern Arabia[1474], and Palestine[1475].

Palestine, apart from the already mentioned production of wine[1476], was well renowned for its palms and the quality of their dates so as to be mentioned in many rabbinic sources as well as in few inscriptions[1477]. Jericho region, Ein Gedi, the Beth Shean Valley, and partly Tiberias region[1478] were main areas for this production. Strabo informs about the quality of Palestinian dates: harder but more agreeable to the taste[1479]. This quality or the facility to be sold in markets were possibly two causes for being rather expensive, much more than Babylonian ones and more than figs as testified by Talmudic tradition and other ancient sources which also mention a trade to Rome and their quality[1480]. Dates were also used to create honey, beer[1481], and possibly also a special wine[1482]. Fig. 12.4 shows that dates were found in small quantities, reaching a total of 107 litres. Rome has low amounts only during the Trajanic and Antonine ages. The 'Terme di Elagabalo', despite showing finds only during the Severan age, sees a real peak in quantities. Ostia resulted in moderate quantities only during the Antonine age.




| | Trajanic age | Hadrianic age | Antonine age | Severan age |
|---|---|---|---|---|
| Elagabalo | 0 | 0 | 0 | 48 |
| Rome | 23 | 0 | 12 | 0 |
| Ostia | 0 | 0 | 24 | 0 |

**Fig. 12.4: Amounts of Palestinian dates in all sites and periods.**

[1472] Safrai 1994: 138.
[1473] This is possibly the meaning of "Aphros" in Apicius, *De re coquinaria*, VII, 11, 2. This recipe follows another one (VII, XI, 1) which uses dates. Surely Alexandria is mentioned in Strabo, *Geogr.*, XVII, 1, 51, as well as Babylonia. Cf. also Menu 2014.
[1474] Cf. Schiettecatte 2013.
[1475] Safrai 1994: 138 adds also Arabian Desert, like modern times (cf. Lund 1978).
[1476] Cf., above, Chapter 9, Section 9.1.5: 197–198.
[1477] For a brief list and analysis, cf. Safrai 1994: 138–139.
[1478] Safrai 1994: 138.
[1479] Strabo, *Geogr.*, XVII, 1, 51.
[1480] Safrai 1994: 140–141.
[1481] Cf. Broshi 2007: 56–59 for recipes and archaeological remains of this production.
[1482] Safrai 1994: 141; Broshi 2007: 59 with also references to ancient sources.

## 12.4 Trends in other products

As for previous Chapters, this Section will present a brief synthesis about these other products. However, contrarily to previous Chapters, data from the 'Terme di Elagabalo' and Rome will be immediately summed. Ostia will remain separate, although also in this site amounts are not very large and they are also lacking during both the Hadrianic and the Severan ages.

| ROME + ELAGABALO | Alum | | *Defrutum* | | Dates | |
|---|---|---|---|---|---|---|
| **Trajanic age** | 0 | 0% | 1590 | 99% | 23 | 1% |
| **Hadrianic age** | 25 | 3% | 780 | 97% | 0 | 0% |
| **Antonine age** | 100 | 38% | 150 | 57% | 12 | 5% |
| **Severan age** | 75 | 35% | 90 | 42% | 48 | 23% |

**Fig. 12.5: Amounts and percentages of other products in Rome and in the 'Terme di Elagabalo'.**

In Rome and in the 'Terme di Elagabalo' (fig. 12.5), *defrutum* is always the most attested other product, although with a generalised decrease which can be explained by the chronology of its container Haltern 70 which ceased being produced at the end of the 2nd century AD (cf., below, Appendix 1). The Trajanic age sees largest amounts of *defrutum* reaching 99% with lower amounts of dates (1%). In Ostia this period sees only the presence of *defrutum* (fig. 12.6). The Hadrianic age shows a first drastic decrease in quantities in Rome, being litres of *defrutum* less than the half of those attested during the previous period, although still reacing 97% of finds. Alum was also found, although with just 3%. The Antonine age sees another decrease in general amounts of *defrutum* in Rome that reaches 57%. Alum is much more attested than in any other period, reaching 38% of total litres and dates were found with 5%. In Ostia (fig. 12.6) this period sees the first and only diversification in other products: the majority still belongs to *defrutum* (93%), but small quantities of alum (4%) and dates (3%) were also found. The Severan age sees a serious increase in dates (23%, only found in the 'Terme di Elagablo') to the detriment both of Iberian *defrutum* that drecreases arriving to just 90 litres (being 42% of the total of litres) and a slight decrease also in alum (35%).

| OSTIA | Alum | | *Defrutum* | | Dates | |
|---|---|---|---|---|---|---|
| **Trajanic age** | 0 | 0% | 180 | 100% | 0 | 0% |
| **Hadrianic age** | - | - | - | - | - | - |
| **Antonine age** | 25 | 4% | 660 | 93% | 24 | 3% |
| **Severan age** | - | - | - | - | - | - |

**Fig. 12.6: Amounts and percentages of other products in Ostia.**

Generally these other products are much less present than wine, olive oil, and fish sauces, but they declare a trade in products that are rarely considered in the scholarship about the Roman commerce: alum was meant for manufacture purposes and dates, for their expensiveness, could be only aimed at the élite. At the same time, amounts of *defrutum* increase quantities of wine arriving in Rome, although figures are not significantly larger than the ones offered in Chapter 9, Section 9.2. Considering also data derived from *defrutum*, wine now reaches the figure of 328,774.31 litres. Dividing it once again for 100 years, it becomes 3,287.7431 litres per year arrived in the analysed contexts, which is still a lower figure than those offered in Appendix 4, Section 4.2: 433.

The next Chapter (Conclusions) will briefly summarise all data offered in this research. It will also try to analyse consuming patterns in the Capital of the Empire, with an evaluation of theories coming from social sciences to assess potential appliances to the behaviour of Romans in consuming foodstuffs. At the same time it will offer a reflection about the contemporary Italian Archaeology and some brief suggestions for implementing future publications and studies about pottery and amphorae from excavated sites in Rome.

# Chapter 13: Conclusions

This Chapter summarises information expressed in previous ones, as it will offer the Conclusions of this research. Brief analyses about the contexts in the 'Terme di Elagabalo' and differences and similarities across periods and cities about the considered products will be provided. At the same time a deep reflection about the situation of Archaeology in Italy will be undertaken with also suggestions for future studies so as to increase the number of publications about finds in Rome, "the [ancient] world's most important market"[1483].

## 13.1 The 'Terme di Elagabalo'

Chapter 3, Section 3.2.1: 51-53 showed a comparison between amounts of in-phase, residual, and intrusive vessels into the analysed contexts belonging to the Mid-Imperial age so as to better understand deposition criteria. Intrusive vessels can be assigned to new building and spoliation activities that were held in the area, especially to the interventions undertaken during the 4th/5th centuries AD which altered the analysed contexts. On the other hand, residual vessels can possibly be attributed to previous periods and especially to the Late Republican *domus* with fronting *tabernae* which existed till the AD 64 fire that destroyed it. The presence of these residual vessels in the contexts considered can be explained by an use of the earth coming from the foundation trenches held for both complexes so as to create the large amount of levelling layers. The low presence of residual vessels of amphorae indicated also that the majority of amphorae discovered were used when they were dumped, also in the case they were at the end of their life ('false residuals').

On the other hand, Chapter 1, Section 1.3 analysed information coming from finds for an understanding of the use of these buildings. In-phase vessels, in fact, permitted to state that the generic interpretation as an *horreum* for the Hadrianic complex, based on its morphology, can be confirmed at least till the Late-Antonine/very early Severan ages when interventions that razed it to the ground were held for the construction of the Severan building. The large presence of Eastern Mediterranean wine-containers in the Severan phases, reaching 48% of finds in this site, may suggest that this probable *horreum* at the very end of its life was primarily dedicated to the storage and/or commerce of these wines in one of its rooms[1484]. It

[1483] Tchernia 2006: 147.
[1484] For other places and methodologies of buying wine cf., for example, Tchernia 2000b: 207-209.

possibly stored especially those wines contained in Kapitän I or II whose origin was only hypothetically ascribed to Pamphilia and that are massively found in this site, along with other wines whose containers were found as well. Other rooms might have been dedicated to the storage or selling of other products: mainly olive oil and fish sauces, but also other products. One of the rooms was identified as a *popina*, which also had a latrine and other two latrines were found in other rooms, but it is impossible to determine a precise identification for the use of all the found rooms of the Hadrianic *horreum*, lacking any sort of information both from architecture and remains. The interpretation of the function of the Severan complex, unfortunately, is impossible because no phases of use were found, completely removed (along with almost all floors of this building) during subsequent periods, although hypotheses were suggested: the smaller rooms were identified as *tabernae* and the larger ones were possibly dedicated to other activities (cf. Chapter 1, Section 1.1: 8).

Despite the uncertainties about the actual functions of these two buildings, the 'Terme di Elagabalo' can be seen a significant building. This consideration was possible even with the low amounts of amphorae found during the Hadrianic age and the very low quantities found during the Antonine age. These assemblages of amphorae had been a very useful source of information for confirming or refining scholarship about the commerce of Rome, at least concerning the 'new triad' defined at the beginning of Chapter 9 (wine, olive oil, and fish sauces) to which also other products had been added, although they resulted in smaller amounts.

## 13.2 General considerations about all products

Fig. 13.1 considers total amount of litres of all products represented by the found amphorae in the 'Terme di Elagabalo'. Despite the importance of this site, there is an almost total absence of fragments of amphorae during the Antonine age, thus offering only a partial knowledge of traded products. During the Hadrianic age (although this phase is not well representative of the period) wine is the most found product (44%), followed by olive oil (43%). The Severan age shows a large increase in all general quantities compared with the Hadrianic age. Wine reduces its presence (36%) being surpassed by olive oil (49%). Fish sauces show an increase, reaching 14%. Other products are always represented by lower quantities and percentages.

| ELAGABALO | Wine | | Olive oil | | Fish sauces | | Other products | |
|---|---|---|---|---|---|---|---|---|
| **Trajanic age** | - | - | - | - | - | - | - | - |
| **Hadrianic age** | 842.44 | 44% | 837.2 | 43% | 188.33 | 10% | 60 | 3% |
| **Antonine age** | 30 | 100% | 0 | 0% | 0 | 0% | 0 | 0% |
| **Severan age** | 8454.37 | 36% | 11790.9 | 49% | 3229.14 | 14% | 133 | 1% |

**Fig. 13.1: Amounts in litres and percentages of products in the 'Terme di Elagabalo'.**

Elsewhere in Rome the situation is different. Apart from having amounts both for the Trajanic and Antonine ages and totally different figures for the other two periods, fig.13.2 shows that during the first two periods wine is the most attested product (especially during the Hadrianic age, as in the 'Terme di Elagabalo'), while it is surpassed by olive oil already during the Antonine age. It also shows that general amounts decrease during the last two periods (the Antonine and Severan ages). Fish sauces, on the other hand, are represented by a general increase, reaching first place during the Severan age with 44%. Other products are once again less represented.

| ROME | Wine | | Olive oil | | Fish sauces | | Other products | |
|---|---|---|---|---|---|---|---|---|
| **Trajanic age** | 51261.4 | 57% | 30464.95 | 34% | 6351.58 | 7% | 1613 | 2% |
| **Hadrianic age** | 237522.48 | 75% | 61916.8 | 19% | 15271.13 | 5% | 745 | 1% |
| **Antonine age** | 17173.7 | 30% | 27675.75 | 48% | 11962.06 | 21% | 262 | 1% |
| **Severan age** | 10149.42 | 36% | 5641.8 | 19% | 12575.38 | 44% | 80 | 1% |

**Fig. 13.2: Amounts in litres and percentages of products elsewhere in Rome.**

Fig. 13.3 combines data both from the 'Terme di Elagabalo' and Rome and does not show changes for the first three periods. During the Severan age data are different than considering only Rome. Wine regains the first place with 36%, olive oil reaches again second place with 33%, and fish sauces decrease their percentage to 30%. Other products are still less attested.

| ROME + ELAGABALO | Wine | | Olive oil | | Fish sauces | | Other products | |
|---|---|---|---|---|---|---|---|---|
| **Trajanic age** | 51261.4 | 57% | 30464.95 | 34% | 6351.58 | 7% | 1613 | 2% |
| **Hadrianic age** | 238364.92 | 75% | 62754 | 19% | 15459.46 | 5% | 805 | 1% |
| **Antonine age** | 17203.7 | 30% | 27675.75 | 48% | 11962.06 | 21% | 262 | 1% |
| **Severan age** | 18603.79 | 36% | 17432.7 | 33% | 15804.52 | 30% | 213 | 1% |

**Fig. 13.3: Amounts in litres and percentages of products elsewhere in Rome and in the 'Terme di Elagabalo'.**

In Ostia (fig. 13.4) the situation is totally different both from Rome and the 'Terme di Elagabalo'. First of all wine is predominant only during the Hadrianic age,

while during all other periods olive oil head all products. Fish sauces are much less attested in terms of percentages both during the Antonine and Severan ages, while in the first two periods they are more attested than Rome. Other products are always less present, or even absent both during the Hadrianic and Severan ages.

| OSTIA | Wine | | Olive oil | | Fish sauces | | Other products | |
|---|---|---|---|---|---|---|---|---|
| **Trajanic age** | 5984.58 | 43% | 6237.175 | 45% | 1570.54 | 11% | 180 | 1% |
| **Hadrianic age** | 6128.51 | 54% | 3320.7 | 30% | 1790.15 | 16% | 0 | 0% |
| **Antonine age** | 38234.34 | 46% | 38431.1 | 47% | 4980.64 | 6% | 709 | 1% |
| **Severan age** | 4516.21 | 29% | 9094.3 | 58% | 1967.16 | 13% | 0 | 0% |

**Fig. 13.4: Amounts in litres and percentages of products in Ostia.**

These comparisons between different sites on one side permit to evaluate that, despite their differences, a few similarities can be seen, with large quantities of imported products. It has been assumed that the general political stability, urban expansions, reduction of piracy, and possibly even taxation[1485] played significant roles in the growth of the economy of the Roman Empire, increasing capital investments in production facilities of larger scale[1486] and enhancing market transactions, although parts of the Empire show "little or no economic development"[1487]. The social mechanism of Roman times, composed of a very large variety between "wretched poverty and the fabulous wealth"[1488], influenced the amount of goods that could be purchased, as wealth was one of the many indicators of rank[1489]. Wine, arriving from a very wide range of origins and with a recognised decrease from Italy although not severe as scholarship always assumed, never reached low quantities (Chapter 9, Section 9.2). Olive oil, mainly coming from *Baetica* and North Africa with smaller amounts from the Eastern Mediterranean, was also much imported (Chapter 10, Section 10.2). These data express that they both were two continuously requested commodities. Fish sauces, with a predominance of Baetica and smaller amounts from North-Africa, the Eastern Mediterranean, Italy, and Gaul, seem to have been imported more in Rome than in Ostia (Chapter 11, Section 11.2). This cannot be totally explained by the fact that Ostia was closer to the sea and its inhabitants consumed larger quantities of fresh fish than the people living in Rome. Also considering data from the 'Terme di Elagabalo', other products (alum, *defrutum*, and dates) were imported much more in Rome than in Ostia (Chapter 12, Section 12.4). On the other hand these comparisons showed large differences between these two cites, which are partly related to diverse economic,

[1485] Lo Cascio 2007: 625.
[1486] Wilson 2007: 180; Marzano 2013b: 105.
[1487] Terrenato 2015: 528.
[1488] Allen 2009: 327.
[1489] MacMullen 1974: 106.

political, and social histories and possibly reflected their being characterised by different trading systems (as briefly expressed in Chapter 10, Section 10.2). At the same time, as expected, Rome received many more products than Ostia, also because it had a very large population (for the problems and literature about the size of population of Rome, cf. Appendix 4, Section 4.1).

The already seen decrease in the amounts for the majority of products after the Antonine age can partly be explained by the so-called 'Antonine plague' that occurred during those years, although this theme created a large debate and disagreements among scholars. A detailed analysis of this theme would go beyond the purposes of these Conclusions, but it deserves this small consideration. A recent book summarises all theories and effects about the spread of what might have been smallpox[1490]. Scholars in that recent book report all phases of infection from Eastern to Western domains[1491] and the subsequent problem of recruitment[1492]. Years ago Carandini connected the already mentioned 'crisis' of Italian productions (cf. above, Chapter 9, Section 9.2) to climate changes and to this plague[1493], but some scholars recently argue that it was not a real catastrophe for the population and for commerce (although with all the problems it created and the following decrease in population[1494]: cf., below, Appendix 4, section 4.1: 431, for the suggestion made by Noy after the plague). Even assuming that it did not entirely affect productions and commerce, a decrease in litres for almost all products considered in this investigation is sill visible. This decrease, as already mentioned, can be referred to the nature of publications which lack in Severan assemblages (not only because some sites were not considered for their intrinsic problems: cf. Chapter 3, Section 3.2.3), which may be underestimating the Severan age for the lack of contexts dating this period. Nevertheless, a possible connection to the plague need to be considered, at least until more contexts dating the Severan age will be published, possibly correcting and amending this assumption.

In spite of this interpretation, as already assumed, although the supply system of the Capital was surely mainly based on taxation, especially for olive oil from the Antonine age, a profit-based commerce in the products considered must have existed. It can be called, using a modern term, 'free-market' which must have had a significant role in trade[1495] not only to the Capital, but also to other cities in the Roman Empire (and possibly also in Ostia[1496]). In 1997 Goodman assumed that that "the great flurry of

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[1490] Lo Cascio 2012a.
[1491] Androlini 2012; Rossignol 2012; Storchi Marino 2012.
[1492] Eck 2012; Jones 2012.
[1493] Carandini 1989a: 520.
[1494] Jongman 2007b: 612, 616; Lo Cascio 2007: 619; Bruun 2012; Jongman 2012; Lo Cascio 2012b; Scheidel & Sutherland 2012.
[1495] Arnaud 2015: 1–2.
[1496] Cf. Gil 2008 for the analysis of two reliefs connected to shops selling of oil and wine in Ostia.

economic activity [...] must be accounted for by private initiative"[1497]. In 2005 Erdkamp stated that this 'free market' "operated at the margin of a system that was characterised by public supply channels"[1498], while in 2013 he seemed to have changed his mind. In fact he stated that "the involvement of trade channels cannot be ruled out, the more so regarding olive oil. [...] The supply of wine and other foodstuffs seems to have depended largely on the initiative of traders who were attracted by the numbers and aggregate buying power of Rome's consumers"[1499]. Assumptions made basing on data from the 'Terme di Elagabalo' partly confirm these interpretations, although they may change with future discoveries. The large amount of considered products in Rome also bring to questioning about the social significances of their consumption.

## 13.3 Social implication of food consumption[1500]

As stated by Smith "Archaeological evidence for consumption is ubiquitous, since each site is literally composed of the traces of such activities and is a collection of the physical remains of hundreds and thousands of acts of consumption"[1501]. Some scholars deny that ceramics carried social meanings apart from their function before the so-called 'ceramic revolution' of the late 15th century[1502], but during Roman times foodstuffs were mainly transported by and consumed on ceramic objects. Food is fundamental for survival and ancient Romans increased their amount of calories

[1497] Goodman 1997: 144.
[1498] Erdkamp 2005: 256-257.
[1499] Erdkamp 2013: 274.
[1500] Before the 18th century the word 'consumption' meant wasting disease, especifically referring to tuberculosis, or using up (as in a consuming fire: Aldridge 2003: 2; Brewer & Porter 1993: 4), but with the time this word was used also in economic and sociological terms, redefining it as a demand of something (Slater 1997: 177). Cf. Greene 2008 for a general overview of consumption studies and an analysis of the potential of them to be applied to the Roman Empire. Studies about various types of consumption during the Hellenistic, Roman and Late Antique periods can be found (just as matter of examples and not meant to be exhaustive) in: Allison 1999, Allison 2004, Carr 2001, Cool 2006, Cooper 1996, Courtney 1997, De Sena & Ikäemo 2003, Eckardt 2000, Eckardt 2002, Egri 2007, Freeman 1993, Fincham 2002, Gascoigne 2013, Hawkes 2001, Jongman 2007a, Keay & Terrenato 2001, MacKinnon 2004, Martins 2003, Martins 2005, Marzano 2013b: 269-300, Mattingly 2002, Millett 1990a, Millett 1990b, Millett 1991; Millett 2003/2004; Millett 2007; Monteil 2004, Pitts 2004, Ray 2006, Ray 2009, Rustoiu & Egri 2011, Spradley 2001, Van der Veen 1998; Roth 2007; Van der Veen 2008. For an example in the Andes, cf. Vaughn 2004. For examples in Historical Archaeology cf. Spencer-Wood 1987 (using G. L. Miller's index of prices: Miller 1980).
[1501] Smith 1999: 116.
[1502] Johnson 1996: 188-196. Many scholars consider this subject only 'modern', meaning that no consumption or consumers existed before the reign of Elizabeth I (McCracken 1988: 11), or Victorian age (McKendrik *et al.* 1982; Campbell 1983; Slater 1997: 14-16) or when the Protestant ethic spread also into production (Weber 1965), or when Capitalism started being considered the way in which people's desires had been satisfied only for personal reasons and without class restrictions (Slater 1997: 8-9; Corrigan 1997: 2). For an application of the theory of consumerism during the Greek times cf. Walsh 2014.

coming from grain (the usual basic meal of lower ranks[1503]) with wine, olive oil, and fish sauces, among other foodstuffs[1504].

Food has always been one of the major sources of pleasure[1505] because it produces positive experiences[1506], benefits[1507], and advantages in those who not only consume but also purchase it[1508]. During the centuries, these pleasures gained combined meanings[1509] with cultural systems[1510] and in building identities related to others[1511], because food played many roles such as being an agent for social relationships[1512], always connected to people's contexts[1513]. People's needs[1514] have always been closely tied to profound social interests[1515], projects[1516], and sustenance of lives they wanted to live[1517]. The use of codes of consumption to reproduce and demonstrate people's membership to specific social ranks[1518] (or to set groups apart[1519])

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[1503] Cf., for example, Garnsey 1998: 240–242; Jongman 2007b: 603; Erdkamp 2013: 262, 264; Buonopane 2015: 67.
[1504] Kingsley 2001: 46; Temin 2013: 30. Already Fischler 1990: 203–207 analysed the 'omnivore paradox' (cf. also Fiddes 1996) for which humans are autonomous, free, and adaptable relating to the environment, but at the same time they need a minimum variety so as to achieve all nutrients (Fischler 1988: 277–279). This scholar undermined the 'structuralist approach in consuming behaviour (which was influenced by works of anthropologists such as Lévi-Strauss 1964; 1965; 1968; Douglas 1974; 1975; 1978).
[1505] Rozin 1998a: 5.
[1506] As stressed by the experiential/existential perspective in consumer behaviour. This approach considers the role of possessing things and its connection to various meanings that objects may bear (Belk 1995: 65). It focuses on feelings and emotions that goods can generate to an individual leading also to an understanding of inner meanings about self-definitions and identity (Belk 1995: 71–73; Dalli & Romani 2003: 69).
[1507] As stated by Holbrook & Hirschman 1982 and Hirschman & Holbrook 1982. Benefits can be summarised with 3 F: *fantasies*, *feelings*, and *fun* (Dalli & Romani 2003: 70; Daccò 2005: 129).
[1508] Mill *et al.* 1987: 66. Schiffman and Kanuk defined, in fact, the concept of consumer behaviour as "the behaviour that consumers display in searching for, using, evaluating, and disposing of products, services, [practices,] and ideas which they expect will satisfy their needs" (Schiffman & Kanuk 1987: 6).
[1509] For several meanings of possessing things and the theory of the 'extended self' cf. Belk 1988 and the review of its impact in Ladik *et al.* 2015.
[1510] Rozin 1998b: 59; Maquet 1993: 35; Slater 1997: 132.
[1511] Dalli & Romani 2003: 72–75; Schuman 2008: 142; Musarò 2011: 73; The act of collecting objects is also included in these processes, especially thinking about time and efforts in creating them, thus making explicit that the individual put part of himself in it (Guerzoni & Troilo 1998).
[1512] Rozin & Tuorila 1998: 93.
[1513] Nadeau 2010: 441; Khare 1980: 525. Cf. also Doyal & Gough 1991.
[1514] For a theory about hierarchy among needs based on priorities they represent cf. Maslow 1943; 1954.
[1515] Tarde 1898 (cited by Petruzzellis & Chebat 2010: 5); Beaudrillard 1981: 63–87; 1988: 47; Corrigan 1997: 20; Di Nallo 2006: 19. For Beaudrillard, buyers are involved and studied in a social and relational network through the concept of tribe (cf., for example, Ritzer 2000; Sassatelli 2004).
[1516] Douglas 1999: 65-66, in fact, stated that "the consumer has what can be called cultural project: everything he chooses doing or buying is part of a project that lead to choose other people to live with [...] from which he captures signs and towards which emits proper ones".
[1517] Slater 1997: 2; Nadeau 2010:24.
[1518] Millett 1990a: 38; Slater 1997: 139; Nadeau 2010: 25; Marzano 2013b: 272; Pestle & Curet 2015: 200.
[1519] Mintz & Du Bois 2002: 109; Jones 2015: 6. Cf. the example of pork for Jews during Roman times (with also references to ancient sources) in Rosenblum 2010.

and 'to establish or enhance their location within the social order'[1520] was very likely true also during Roman times[1521] (especially during banquets[1522]), when products could be cheap for some and expensive for others[1523]. This can be reasonably true although prices of products are very little known[1524] and they might not have been fixed in times, but fluctuating responding to production quantities, transport expenses, and demand[1525].

Commodities might have been therefore chosen for their ability in expressing roles[1526], aggregating people, and creating connections among them[1527]. Being the social 'hierarchy' of Roman times[1528] based at first on birth-right[1529], legal *status*[1530], and the area in which people were born[1531], then on productive control[1532] (especially land ownership), duties for the Empire[1533], and social bonds[1534], an assumption about the existence of different consuming attitudes is possible, also because Romans often acted so as to display their social rank (for example using specific clothing[1535]). Whichever was the people's social *status*, during the Roman Empire, social standing was closely tied to wealth, money, and the subsequent possibility in buying commodities (foodstuffs included) and services[1536]. For this reason not all people could purchase the same products[1537], in spite of having the same needs or tastes (direct or influenced ones[1538]) in consuming foodstuffs as a daily practice[1539].

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[1520] Crompton 1993: 171; Csikszentmihalyi 1993: 23; Nadeau 2010: 26; Rodríguez-Alegría 2015: 195.
[1521] Cf., for example, the use of Italian wine by Gallic élite during the Republican age in order to show their wealth like silver or gold (Tchernia 1986: 191). For the wine-trade to Gaul, cf., for example, Tchernia 2009; Séguier 2013.
[1522] For a general overview about luxury during banquest cf. Dubois-Pelerin 2008: 61–93.
[1523] Loseby 2007: 6–7.
[1524] Too scarce information is available to create valid conclusions about all products, despite all good intentions held by Temin 2013 about grain.
[1525] Tchernia 2011a: 123–124, 130–131; Marzano 2013b: 300.
[1526] Cf. Solomon 1983, basing on Mead 1934 and Goffman 1959.
[1527] Cf. Cova 1997: 298–302; Cova & Cova 2001: 67–72; Siri 2001: 8–9. This suggestion comes from the post-modern scholarship about consumer behaviour (for the meaning of the word post-modern cf. Lyotard 1981, Slater 1997: 176, Codeluppi 2000: 16, Fabris 2003; Petruzzellis & Chebat 2010: 18–20) which started considering human interactions based on cultural processes created by attractions and repulsions, emotions and passions (Maffesoli 1993).
[1528] Cf. Harris 2011: 15–26 for the terms related to the Roman social hierarchy that can be used.
[1529] Alföldy 1987: 159.
[1530] Alföldy 1987: 160–161.
[1531] Alföldy 1987: 161–162.
[1532] Garnsey & Saller 1989: 132.
[1533] Garnsey & Saller 1989: 133. For the various appointments cf. Alföldy 1987: 170–172.
[1534] Sandberg 2005: 144.
[1535] Especially when they showed themselves in public or special circumstances: Garnsey & Saller 1989: 141.
[1536] The term service is very ambiguous: cf. Gershuny & Miles 1983; Bagguley *et al.* 1990; Fabris 2000: 177–189.
[1537] Whittaker 1989: 316–317. For the theoretical implications of the definition of luxury about food cf. Van der Veen 2003. For exotic foods and luxury during the Roman times cf. also, for example, Dalby 2002.
[1538] Harris 2011: 176.
[1539] Smith 2006: 481.

Higher social ranks of Rome surely had the power to determine factors in eating practices (reflecting what assumed by 'developmentalist' scholars in consumer behaviour[1540]) and the money[1541] for an easier accessibility to goods (as stated also by Baran and Sweezy about consumer behaviour of modern societies[1542]). What they bought and consumed, in fact, can be understood not only for its nutrients and/or calorific properties, but also because it assumed meanings referred to the buying/consuming subjects[1543]. These higher social ranks had two ways of living: *otium* (an abstinence to labour) and *negotium* (nothing more than a negation of *otium* and implied working commitments[1544]). During the *otium*, the Roman élite surely had the chance of consuming large varieties of foodstuffs, beverages[1545], and even drugs[1546]. They choose not only wines (as in Chapter 9, Section 9.2.1) or possibly *defrutum* (as in Chapter 12, Section 12.2), but also a large amount of meat deriving from different animals and species of fish which as well concurred in establishing and demonstrating social statuses[1547], especially during the 2nd century AD[1548]. This happened not only for its economic possibilities, but also for social attitudes it wanted to demonstrate[1549], bringing to what was called by Veblen the "conspicuous consumption"[1550], which meant the consumption of goods for the ability to pay only and not for reasons related to

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[1540] 'Desctruralist' scholars do not deny a certain power of symbolic meanings of food relating to a control of behaviours (Mennell *et al.* 1992: 14, 16; Lupton 1996: 12), but they also consider social class and economic system (thus power) the real determining factors in food/eating practices (Lupton 1996: 10). Main scholars in this approach are Goody 1982, Mintz 1985, Mennell 1985, and Harris 1996, with a latent influence by Elias's work about the civilizing process of society (Elias 2000 [1939]; cf. also Courtney 1997: 95 and Desmond 2003: 9–16).
[1541] Cf., for example, Scheidel & Friesen 2009: 75–82 for calculations about incomes of ranks.
[1542] These two scholars related meanings of objects only with needs of mere commodity exchange, arguing (with their example of cars) that costs of things change depending on societies (Baran & Sweezy 1968: 139–141). This theme also considers accessibility to goods ruled by money, thus signifying social culture and position (Slater 1997: 30).
[1543] The so-called 'bygone objects' identified by Beaudrillard for which objects can be understood only as referred to a subject (Beaudrillard 1990 [1968]: 43; Fabris 2000: 300–301). He updated Marx's assumptions for which commodities can be identified just in two ways: use-value ones and exchange-value ones (Marx 1974 [1967]: 87). The first ones are referred to the actual use they are made for. The latter ones have lost that identity to become symbols of alienated relations among people that are, for Marx, producers and not consumers (Corrigan 1997: 35). This perspective considers consumption as an act of choosing among alternative commodities produced solely for their economic value and the purpose of profit (Slater 1997: 25).
[1544] Cf., for example, *Sen.*, *De brev. vitae*; *Sen.*, *De Otio*; André 1962; 1966.
[1545] Salza Prina Ricotti 1988b: 93–94; Holleran 2012: 236–237. Cf. also De' Siena 2012: 175–190; Cuéllar 2015: 192–193.
[1546] Cf., for example, Martín Gutiérrez 2015.
[1547] For fish, cf. Marzano 2013b: 273–280, 284–285. Cf. also Carannante *et al.* 2014 for an exmple of luxurious food production, distribution, and consumption in Campania.
[1548] Salza Prina Ricotti 1986: 38.
[1549] Robert 1985: 154; De' Siena 2012: 177.
[1550] Veblen 1975 [1899]; cf. also Shack 1978: 212–213. The most userd reference for demonstrating this 'conspicuous consumption' during Roman times is Trimalcio's dinner in *Petronius*, *Satyricon*, V-XV, although the title of this work itself declares his intent and way of depicting it (about it cf. also Conton 2007).

subsistence[1551]. The élite also oriented choices towards commodities – foodstuffs included – which were more expensive (for example Palestinian dates considered in Chapter 12, Section 12.3[1552]) and higher in quality (reflecting what suggested by Duesenberry about consumer behaviour[1553]), sometimes from private dealers[1554], in order to show their wealth[1555]. This expresses a path suggested by semiologist Barthes[1556], who theorised that taste in food is influenced by people's culture[1557] and controlled by societies[1558] through conventions and with a wide series of norms and expectations[1559]. The creation of identities, which are both self-imposed and imposed by others[1560], could be assigned to sign-valued[1561] commodities[1562], in this way entrusting power and money (which is inversely related to prices[1563]) as two main social demonstrators[1564]. Taste during Roman times, might have become what Bourdieu called for later periods a social 'match-maker'[1565], because different ranks used different goods to declare their place in the social hierarchy[1566] and to express social differences[1567]. In this way, sometimes, consuming attitudes during the Roman times can be assimilated to the assumption that these people "liked what they ate" rather than "ate what they liked"[1568].

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[1551] Corrigan 1997: 23–24. This is recognised the contemporary method for wealth display (Corrigan 1997: 25–26). The other path, for Veblen, is the 'conspicuous leisure' (Veblen 1975 [1899]: 38) which means an abstention to labour (Veblen 1975 [1899]: 41) and a total devotion to non-productive activities (Petruzzellis & Chebat 2010: 8). He stressed, in fact, that people need to show their reputation by pecuniary exposition (Daccò 2005: 149).
[1552] Cf. also De Almeida & Jerez Linde 2015: 27 who suggest a private commerce of dates to Portugal and Spain.
[1553] Duesemberry 1969 [1949]; Fabris 2000: 296. Duesemberry posed the theory of 'preferences' interdependency' arguing that people try to improve their lives pressed by a shared culture (Parmiggiani 1997: 113; Daccò 2005: 143–144; Petruzzellis & Chebat 2010: 9).
[1554] Holleran 2012: 241–245; Erdkamp 2013: 276.
[1555] Corrigan 1997: 21; Courtney 1997: 95; Zaccaria Ruggiu 2003: 634; Holleran 2012: 238–240; Carannante *et al.* 2014: 181.
[1556] Barthes 1957; 1961.
[1557] Tremolières 1970; Montanari 2004: 73–74.
[1558] Shack 1978: 211; Mennell *et al.* 1992: 8; Falk 1994: 13; Bell & Meiselman 1995; Marshall 1995: 12; Montanari 2004: 85–88. Cf. also Nadeau 2010: 23–30.
[1559] Lupton 1996: 8; White & Beaudry 2009: 212. It also has a sense of variability and relativity (Fischler 1990: 17).
[1560] White & Beaudry 2009: 210.
[1561] In modern times this is linked to brands: Desmond 2003: 350–353; Petruzzellis & Chebat 2010: 137–160.
[1562] Leonini 1988.
[1563] Ritson & Hutchins: 1995: 45.
[1564] Leather 1992. This whole theory about consumer behaviour derives from Kellner 1989.
[1565] Bourdieu 1984 [1979]: 241. This scholar also questioned how groups decide which are the 'right goods' to have (Slater 1997: 160–161offering fashion as an example of this interaction of oppositions between old/powerful *versus* new/weak (Bourdieu 1984 [1979]: 233).
[1566] Bourdieu 1984 [1979]: 229; Corrigan 1997: 17.
[1567] Bourdieu 1984 [1979]: 226; Crompton 1983: 171. For a review of Bourdieu studies and their influence cf. Steinmetz 2011.
[1568] Marshall 1995: 5.

Determining if lower social ranks, who could have always used *popinae* to find cheap and warm food and something to drink[1569], had any active part in this is almost impossible[1570]. On one hand because imports to the Capital were very likely and heavily established by the ruling élite, through a codified system (which can just partly assimilated to the '*annona*' system: cf. Appendix 4, Section 4.3). On the other hand because, when and if a separate market[1571] meant to create only profit existed, the élite always tried to benefit of pecuniary incomes also from these buying-selling transactions[1572], as it usually had many land possessions throughout the Empire and produced crops to be sold in the Capital[1573]. At the bottom of the social pyramid of Roman times[1574], both many free-born poors[1575] and slaves[1576] can be found. While slaves' possibility in purchasing depended on their education[1577] and by whom they were owned, as they were classified as *instrumentum vocale*[1578], many free-borns were for the most part the real lowest rank of the Roman society, the 'poor of Rome'[1579]. Some of them, however, might have had small amounts of savings[1580] from salaries acquired during temporary jobs[1581] (wages calculated between 500 and 1,000 sesterces

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[1569] Salles 1983: 262–266; Staccioli 1985: 24–25; De' Siena 2012: 132–136. For some examples in Ostia cf. Kieburg 2008.
[1570] Smith 2006: 480 refers that lower strata have choices, although referring to modern times. Nevertheless many people involved in trade (*negotatiores*, *mercatores*, and *navicularii*) appear to have been freedmen or other individuals from lower ranks of the Roman society (D'Arms 1981: 15; Finley 1999: 50; Mattingly & Aldrete 2000: 150; Kehoe 2007: 550; Harris 2011: 178; Alföldy 2012: 289; for some examples in *Baetica* cf. Remesal Rodríguez 1990: 364 and 2008a; for a detailed analysis of *navicularii* cf. Di Salvo 1992: 183–598).
[1571] Cf. Tchernia 2011a: 101–131 about the problem of market.
[1572] Carandini 1989a: 507; Whittaker 1989: 538–539. For a wider discussion about production and commerce for the élite and scholarship about theories cf. Tchernia 2011a: 19–55.
[1573] Tchernia 1989: 534–536; Webster 1996: 3; Roth 2007: 86. Emperors and their families had private possessions, called *res privata*, that were made of large estates, mines and workshops (Alföldy 1987: 147; Levrero 2012: 58–59). Senators always exploited their estates and commerce with provinces (D'Arms 1981: 154, 159, 162; cf. also Tchernia 1986: 116–119, 191–193 and Tchernia 2011a: 26–41) in order to increase their wealth from the minimum required of 1 million sesterces (Alföldy 2012: 281) as reaised during the Principate of Augustus (between 18 and 13 BC: *Aug.*, *Res Gestae*, 8, 2; *Suet.*, *Aug.*, 35; *Cassius Dio*, *Hist. Rom.*, LII, 13–14, 17; Alföldy 1987: 165; Garnsey & Saller 1989: 136; Jongman 2007b: 600; an *ordo senatorius*, in fact, existed only from the time of *Augustus*: Nicolet 1989: 38). Also many equestrians (a social rank to which belonged also the *ordo decurionum*: Alfoldy 1987: 176; 178–183; Alföldy 2012: 284–285) were landowners (Harris 2011: 179) and some were involved in money lending, contracts, and tax-farming (Finley 1999: 49; Alföldy 2012: 283) again to increase their possessions, established during the 2nd century BC to a minimum property of about 400,000 sesterces (Carcopino 1939: 73, 87; Alföldy 1987: 174; Finley 1999: 46; Jongman 2007b: 600; Holleran 2012: 232)
[1574] Garnsey & Saller 1989: 140.
[1575] MacMullen 1974: 92–93.
[1576] MacMullen 1974: 92. A more detailed analysis about the role and social condition of slaves can be found in Thébert 1989.
[1577] Temin 2013: 133–135.
[1578] Garnsey & Saller 1989: 141.
[1579] About the concept and related issues of being poor cf. Harris 2011: 27–54.
[1580] MacMullen 1974: 93. Cf., for example, Scheidel & Friesen 2009: 82–84 for calculations about their incomes.
[1581] Holleran 2012: 36–37. These jobs might have been paid according to the respective work or by the day: Allen 2009: 330. For attempts in evaluating wages and costs for living cf. Allen 2009; Rathbone 2009; Scheidel 2009; Scheidel & Friesen 2009.

per annum[1582]) or through military service[1583] which allowed them (or their families) to buy basic products[1584]. Apart from some wines (Chapter 9, Section 9.2.1), possibly they also had to buy some oil for lighting, eating or washing activities and, although large part of it arrived through the supply system of the Capital from tax-collecting activities in *Baetica* and North-Africa, it is possible to suppose that they purchased it along with other oils (cf. Chapter 10, Section 10.2.1). Being the qualities of fish sauces less known, determining if some choice existed in purchasing them is much more difficult to suggest, although it was argued that they were mainly consumed by lower ranks who could not afford to buy fresh fish (Chapter 11, Section 10.2.1).

This research, based on the new data from the 'Terme di Elagabalo' which partly confirmed and partly slightly changed the current scholarship, has also briefly shown that Romans (especially the élite) very likely knew about the quality of products, had social influences[1585], and made choices when they had the chance to purchase them, conditioned also by their belonging to a group[1586] and by their will to demonstrate to others a specific degree of prestige. Changes in trade-flows in the Capital are usually considered as determined by alterations in economic and political strategies, following modifications in the ruling élite and their land possessions throughout the Empire[1587]. Although the available scholarship rarely offers assumptions in this direction, it is possible to suppose that this phenomenon of changes, analysed and seen through the lens of consuming behaviour, can also be interpreted with something that Bourdieu identified for later periods. Higher social ranks might have needed to modify their taste in products in order to preserve their distinguishing distance from lower ranks of society[1588], thus partly creating this transfer in origins for traded foodstuffs.

## 13.4 What about the future?

Chapter 2, Section 2.3 already expressed the situation of publications about ceramic materials in Rome. On the other hand, Chapter 3, Section 3.2.3 explained the

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[1582] Jongman 2007b: 601; Harris 2011: 44–45.
[1583] Rathbone 2009: 310–312.
[1584] Holleran 2012: 38.
[1585] Douglas & Isherwood 1979: 65. Cf. also the model offered by Engels *et al.* 1968.
[1586] Katona (Katona 1960; 1964; 1967; 1974; 1975; Katona & Mueller 1954) definitively introduced a psychological dimension to the consumer behaviour research considering socio-cultural norms, habits, emotions, and the belonging to a group influences that a consumer receives when trying to follow the shortest way to achieve his final goal, often with routine behaviours (Daccò 2005: 122). Pakard's 1957 publication started undermining this method, that was already strongly criticized for the distortion that may be used especially for subliminal advertising (Daccò 2005: 124).
[1587] Kehoe 2007: 549, 557.
[1588] Corrigan 1997: 30.

problems of some publications which brought to not consider them in this research. This section will therefore provide a further reflection about this theme as well as a brief suggestion for implementing studies and publications about finds in the Capital.

People always feel fascinated by the idea of Archaeology in general terms (although not knowing what it really implies[1589]) and attach meanings and values to the archaeological background around them[1590] and especially in Rome. Unfortunately this is true only until it does not touch people's own lives and affairs. Being the large stories of Roman times already written by very accredited scholars who already said everything, one could ask why should archaeologists and ceramic scholars continue to exist, to do their time-consuming researches, and to do tiring and useless jobs which actually only waste time and money of private companies. The Roman (and Italian) situation surely belong to this increasing negative point of view, with endless works caused, in the thought of many people influenced by propagandist (and not always true) speeches, by archaeological investigations imposed by law[1591]. At the same time these researches very rarely find the light of publications, apart – sometimes – brief (or very brief) articles which usually only describe architectural remains or sensational discoveries. Sensationalism is, in fact, one of the many plagues of contemporary Archaeology, which brings the idea that if nothing sensational is found, then what had been found is not meritorious of any kind of attention (or funds). Other plagues in archaeological investigations can be referred on one hand to the lack of trained and expert researchers in various field who are not called for doing their job, often substituted by someone who just manages to get along[1592] or who does not know how to effectively publish reports, on the other hand to the continuously increasing lack of funds[1593]. In fact, the global financial crisis that started in 2008 (and still heavily ongoing) is affecting every aspect of economy in Italy, especially Culture to which Archaeology belongs[1594], because it is commonly believed that it should (but actually does not) create valuable and monetized outcomes[1595]. This has been even more clear since 2009, when the Soprintendenza Speciale per i Beni Archeologici di Roma started being under a control-commissary (now it is called 'Soprintendenza Speciale per il

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[1589] For example that archaeologists are neither Indiana Jones nor Lara Croft only searching for treasures to gain reputation and fame. It also means a large amount of 'boring' theory. For an active learning method of teaching this theory cf. Smith & Burke 2005.
[1590] Jones 2015: 5.
[1591] Volpe 2014: 259–260. For the British situation cf., for example, Hamilakis 2015: 4–5.
[1592] The recent (10th November 2014) and largely criticized agreement among Rome's mayor, Enel S.p.A., and American universities, called "The Hidden Treasures of Rome" (http://www.ignaziomarino.it/the-hidden-treasure-of-rome/) to study many forgotten finds tries to surpass the limit of a cronic lack of funds, although this is obviously meant to not spend for culture and to not increase jobs for existing experts in this field in Italy and Rome.
[1593] Cf. Bonacchi 2014 for some ideas to find solutions to this problem of funds.
[1594] Paterlini 2014: 107.
[1595] Belvedere 2014: 15.

Colosseo, il Museo Nazionale Romano e l'Area Archeologica di Roma' and it is not under that figure anymore). The lack of funds can be one of the reasons why, for example, warehouses of the two Rome's Soprintendenze are filled with billions of unstudied and unpublished pottery fragments (and not planned to be studied and published in future). These sherds (in some cases even coming from 'not very important' excavations held during the 1970s or 1980s) are packed in boxes that sometimes collapse, due to humidity or because these boxes are too old, avoiding future possibilities of examining what they originally contained.

Books and a large quantity of articles reporting results of digging activities are disadvantaged by scarce attentions to pottery aspects and/or do not have clear and understandable quantities of finds and they usually lack in interpretations and solid conclusions. When pottery is not well considered the causes can be possibly ascribed to fours things: excavations were held without understanding pottery and what it implies; the authors of these articles do not have a pottery background; they do not use methods in studying and publishing finds that other scholars can understand and/or use while reading their articles; many of them forget the importance not only of sensational discoveries, but also – and sometimes even more – of what is considered ordinary, which is a key concept for understanding the context in which the 'important' found its genesis[1596]. Interpreting all data from excavations may appear already taken for granted, but many excavated contexts in Rome are not published or lack of well achieved pottery analyses (cf., above, Chapter 2, Section 2.3). This absence of studies for many cases, the lack of published reports that consider pottery, and the incomprehensibility of many pottery reports are clear examples that this goal is still not fully accomplished, creating a big lack of information for the Archaeology of Rome. At the same time, as many published studies about Rome did not consider why people or the State (or both) chose to buy and/or import what they did, this is also a big lack for an understanding of ancient people's everyday lives and economy[1597]. State institutions should be aware that the only collection of data, paper or electronic files[1598] (with their fragilities[1599]), or large amounts of boxes containing finds[1600] (when and if they are collected[1601]), in fact, without any serious planning of studying them, understanding what they imply, or when they are not finalised to be transformed into interpretations, not only increases costs for research, but also makes it impossible to

[1596] Carandini 1991: 223–224.
[1597] Anderson 1984: 13.
[1598] Brogiolo 2014: 7.
[1599] Cf. Bollmer 2015.
[1600] Pavolini 1998: 266.
[1601] Horejs et al. 2010: 11. For example Reece 2012 suggests, possibly exaggerating, to trow away all those things that are not necessary, especially when coming from excavations badly executed.

deal with those enormous amounts[1602] which are hidden in already filled storerooms and heavily passed to future generations of scholars[1603]. The lack of publications about Rome (but it can also be seen in other parts of Italy and in Britain[1604]) can clearly be included in the assumption that an excavation never published (or without interpretations) can be seen as never done[1605], entailing a large defeat of any archaeological excavation and Archaeology itself[1606]. At the same time, the strong difficulties in finding jobs bring many researchers (even very talented) to decide to abandon this frustrating life of troubles to find something which can permit to survive (for example teaching, tour-guiding, or other jobs[1607]). Unfortunately, all this seems a no way out road.

However, as the last thing left in the *pithos* opened by Pandora was hope[1608], a famous Italian motto says that hope is the last thing to die. As clearly shown by this whole investigation, pottery is not just 'insignificant rubbish' among sensational discoveries (such as walls), but has one of the biggest potential for an understanding of the Roman society. This potential is not only from the point of view of economy and commerce which is usually considered, but also ancient people's diet and behaviour, because "beyond amphorae there is [a] society"[1609]. The 'Terme di Elagabalo', in fact, surely demonstrated to offer a substantial contribution to the state of knowledge while updating, confirming or slightly changing scholarship about traded foodstuffs and shed also a significant new light on the culture and society of the City of Rome (especially during the Severan age which rarely resulted in archaeological remains in Rome). Although objects are usually discovered in dumps, representing the last activity of discard they experience when they cannot be used anymore, they can always inform about previous uses, their economic implications (in spite of what argued by Peña 2007b: 345), and their consuming implications when related to foodstuffs.

A very first step (but not insignificant) for future investigations would be increasing publications about pottery, with a serious planning of studying all ceramic (and also non-ceramic) materials found during all past, present, and future excavations in Rome[1610]. This activity should be made by trained people who actually know how to

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[1602] This was one of the reasons for publishing many finds from the Crypta Balbi excavations: Manacorda *et al.* 1990: 465, 486–487.
[1603] Giannichedda 2008: 61. This assumption is rather similar to the one already made by Keay in 1992: "there is the risk that they [amphora specialists] will become merely technicians who amass data, leaving its interpretations to others" (Keay 1992: 360).
[1604] Hamilakis 2015: 6–8.
[1605] Gandolfi 2005a: 17.
[1606] Panella & Saguì 2013c: VII–VIII.
[1607] Cf., for example, Mangialardi 2014; Papa & Canale 2014. For the British situation cf., for example, Hamilakis 2015: 5–6.
[1608] Hes., *Op.*, 96–98.
[1609] Gras 2006: 438.
[1610] This was also suggested for Sicily in Cugno & Zirone 2014: 155.

deal with them, how to interpret data, and how to publish them. This activity certainly increases costs (researchers should always be paid for doing their jobs) and creates delays in the end of archaeological activities (something that is obviously not much accepted by private companies), but it may avoid negligence and lack of studies. Archaeologists usually have to reconstruct general patterns basing on a sample of elements which take part of a site. Increasing the amount of studied (and hopefully published) sites and contexts would create a larger set of samples on which basing assumptions[1611]. Costly techniques can be possibly not used when they are not really necessary, because a mere counting of sherds could be achieved as a first step, although also with the identification of all diagnostic and indistinctive parts. Attempts to calculating the number of vessels should (and could) also be also achieved, with EVE, NMI, and NTI methodologies (explained in Chapter 3, Section 3.1), although always referring to (and publishing) the methodology used and lists of original data (with clear figures) on which these calculations were based.

This specific research, in fact, based on the importance of using data not only from the almost totally unpublished material from the 'Terme di Elagabalo', whose amount of amphorae resulted in new information about traded products to the Capital of the Empire, but also from published deposits in Rome and Ostia, showed that this can be accomplished in relatively short time, at times even filling the gap between classifications and their missing interpretations. Scholars should always remember that Archaeology is not just telling large stories or finding (and publishing) sensational discoveries, but as M. Proust said "the only true voyage of discovery [...] would be not to visit strange lands but to possess other eyes"[1612]. Offering new data which possibly can just slightly refine or confirm the current scholarship is as well very significant for the interpretations they can provide in order to better reconstruct ancient lives and their behaviour from tangible materials[1613], not only from ancient sources or sensational discoveries. This whole research, in fact, tried to avoid and surpass all these problems in all the best possible ways, offering new data and attempts in producing interpretations which updated the current scholarship. It also tried to show that a future is still possible for Archaeology and for ceramic researches, even when funds are not much available. After all, Hope should always be the last thing to die.

[1611] Martín Civantos 2006: 13.
[1612] Proust 1925: 69 "Le seul véritable voyage [...] ce ne serait pas d'aller vers de nouveaux paysages, mais d'avoir d'autres yeux".
[1613] Vidale 2007: 123.

**UNIVERSITY OF SOUTHAMPTON**

FACULTY OF HUMANITIES

Archaeology

# Amphorae from contexts of middle Imperial date found during the excavations of the so-called 'Terme di Elagabalo' in Rome. The implications of their study for our understanding of the economy of the City and of related imported products.

VOLUME 2 of 2

by

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Thesis for the degree of Doctor of Philosophy

July 2016

# Appendix 1: Contents, volumes, and chronologies of discovered amphorae including two new forms

The purpose of this Appendix is to offer data used during the analysis of previous Chapters:

1. The goods contained were needed in order to subdivide these forms into groups (cf., above, Chapter 3, Section 3.2.3);
2. The capacity of each form was essential for calculating the amounts of litres for products arriving in the analysed cities during the considered periods (Chapters 9–12);
3. The chronologies were fundamental in understanding the depositional role of specific forms (in-phase, residual, 'false-residual', or intrusive) into the considered contexts (Chapters 5–8).

This Appendix also provides descriptions of two forms of amphorae discovered for the first time during the excavations in the 'Terme di Elagabalo'.

## 1.1 Contents, volumes, and chronologies of amphorae

The forms of amphorae in the following sections are divided by origin and are listed in chronological order.

### 1.1.1 Italy

**Greco Italic (or MGS)**[1614].

Goods carried: wine[1615] or, at times, other products[1616].

Capacity: 20–25 litres[1617].

Chronology: end of 4th–third quarter of 2nd centuries BC[1618].

This group of forms is residual in the analysed contexts.

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[1614] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 103–105 (with further bibliography). For the production in *Bruttium* cf. Sangineto 2013: 110–111. For the production at Velia cf. Gassner *et al.* 2014; Gassner & Sauer 2015. For the Po valley cf. Ravasi 2006: 317–318 (about Piacenza); Malnati & Stoppioni 2008; Stoppioni 2009.

[1615] Peacock & Williams 1986: 85.

[1616] For example those found in the Secca di Capistello relic: Frey *et al.* 1978: 289; Olcese 2010: 241–248 and note 60.

[1617] University of Southampton 2005: 'Greco-Italic'.

[1618] Rizzo 2014a: 105.

**Dressel 1**[1619]

Goods carried: wine[1620].

Capacity: about 20–27 litres[1621].

Chronology: Dressel 1A = 150/130–50 BC[1622]; Dressel 1B = 97–13 BC (on the basis of consular dating[1623]; Dressel 1C = late 2nd–last decade of 1st centuries BC[1624].

This form is residual in the analysed contexts.

**Lamboglia 2**[1625]

Goods carried: wine[1626].

Capacity: about 33 litres[1627].

Chronology: end of 2nd BC–second half of 1st century BC (when they were slowly replaced by Dressel 6A)[1628].

This form is residual in the analysed contexts.

**'Ovoide di Brindisi'**[1629]

Goods carried: olive oil (or wine)[1630].

Capacity: about 40 litres[1631].

Chronology: late 2nd–late 1st centuries BC[1632]/Late Augustan age[1633].

This form is residual in the analysed contexts.

**Dressel 6**[1634]

Goods carried: Dressel 6A = wine and possibly other contents[1635]; Dressel 6B = olive oil and possibly other contents[1636].

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[1619] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 106–107.
[1620] University of Southampton 2005: 'Dressel 1'.
[1621] Tchernia 1986: 310.
[1622] Empereur & Hesnard 1987: 32; Bezeczky 2013: 102.
[1623] Buchi 1971: 534; Bezeczky 2013: 104.
[1624] Empereur & Hesnard 1987: 32; Bezeczky 2013: 106.
[1625] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 120–122.
[1626] Tchernia 1980: 305.
[1627] Calculated from the drawing published in University of Southampton 2005: 'Lamboglia 2'.
[1628] Bruno 2004a: 369; Bezeczky 2013: 115.
[1629] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 118–120.
[1630] *Ostia III*: 496; Cipriano 1985: 190; Manacorda 1990.
[1631] Toniolo 2000: 181.
[1632] Buchi 1971: 557–560; Manacorda 1995: 177–178; 2001: 391, 394–395.
[1633] Bezeczky 2013: 110.
[1634] For the description, typological division, production, and distribution, cf. Cipriano 2009; Rizzo 2014a: 123–125.
[1635] Tchernia 1986: 169–171.
[1636] Bruno 2004a: 376.

Capacity: 6A = 40 litres[1637]; 6B = 40 litres[1638].

Chronology: 6A = mid-1st BC[1639]–early 2nd centuries AD[1640]; 6B = possibly before the Augustan age[1641]–mid/late 2nd century AD[1642].

**Dressel 2–4**[1643]

Goods carried: wine[1644].

Capacity: about 30 litres[1645].

Chronology: 70/60 BC–2nd century AD[1646]; Vesuvian: 1st century BC–AD 79.

**Dressel 21–22**[1647]

Goods carried: fruits[1648] or more likely fish sauces[1649].

Capacity: 18.75 litres[1650].

Chronology: 50/12 BC–1st century AD (and very likely beyond)[1651].

**Richborough 527**[1652]

Goods carried: alum[1653].

Capacity: 20–30 litres[1654].

Chronology: second quarter of 1st BC–end of 3rd/early 4th centuries AD[1655].

**Ostia II, 522/523; Ostia I, 453/454 (=Benghazi MR1=Agora M254); Ostia III, 464**[1656]

Goods carried: wine[1657].

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[1637] Rizzo 2003: 204.
[1638] Rizzo 2003: 221.
[1639] The earliest chronological presence is the so called 'walls of amphorae' at Carthage, dated from 43 to after 15 BC (Zevi 1966: 217).
[1640] The latest chronological presence is AD 36 (Zevi 1966: 217); Rizzo 2003: 174, tab. 29.
[1641] Bruno 2004a: 376.
[1642] Rizzo 2003: 161, tab. 27a.
[1643] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 108–113 and 125–126.
[1644] University of Southampton 2005, 'Dressel 2–4 Italic'.
[1645] Rizzo 2003: 144, note 19.
[1646] Rizzo 2003: 161, tab. 27a.
[1647] For the description, typological division, production, and distribution, cf. Malfitana *et al.* 2009: 159–169; Rizzo 2014a: 135–136 and 147–148.
[1648] Bruno 2004a: 375.
[1649] Stefani 2006; Botte 2009: 117–162.
[1650] This is the capacity of the vessel stored in the Bodrum Museum, cf. Alpözen *et al.* 1995: 102.
[1651] Rizzo 2003: 174, tab. 29; Ferrandes 2008b: 255–257 and 262; Botte 2009: 176.
[1652] For the description, typological division, production, and distribution, cf. Ravasi 2005; 2006: 322–323; Rizzo 2014a: 148–150. For the production in *Bruttium* cf. Sangineto 2013: 113 (with further bibliography).
[1653] University of Southampton 2005: 'Richborough 527'.
[1654] University of Southampton 2005: 'Richborough 527'.
[1655] Bruno 2004a: 380; Borgard 2005: 157–158.
[1656] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 139–147.
[1657] Possibly it was *Tauromenitanium* wine: Rizzo 2003: 157.

Capacity: 18.12 litres[1658].

Chronology: Augustan age[1659]–4th/5th centuries AD[1660].

***Ostia II*, 521/*Ostia III*, 369–370 ('Anfora di Spello')**[1661]

Goods carried: wine[1662].

Capacity: 17 litres[1663].

Chronology: Tiberian/Claudian period (and possibly even from the Augustan age[1664])–end of 2nd century AD or more[1665].

**Camulodunum 139**[1666]

Goods carried: wine[1667].

Capacity: 20–25 litres[1668].

Chronology: second half of 1st–end of 2nd centuries AD[1669].

***Ostia IV*, 440–441 ('Anfora di Forlimpopoli')**[1670]

Goods carried: wine[1671].

Capacity: 20 litres[1672].

Chronology: Flavian age–mid/late 3rd century AD[1673].

**'Late Dressel 2–4'**[1674]

Goods carried: wine[1675].

Capacity: around 30 litres?[1676].

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[1658] Rizzo 2003: 205.
[1659] Ferrandes 2008b: 252 and note 19.
[1660] Bruno 2004a: 380.
[1661] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 130–133.
[1662] Tchernia 1986: 254–255.
[1663] Rizzo 2003: 204.
[1664] Personal communication of Prof. Clementina Panella.
[1665] Lapadula 1997; Panella 2001b: 195.
[1666] For the description, typological division, production, and distribution, cf. Martin-Kilcher 1994b: 383.
[1667] Martin-Kilcher 1994b: 384; Rizzo 2003: 183.
[1668] University of Southampton 2005: 'Camulodunum 139'.
[1669] Rizzo 2003: 183.
[1670] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 127–130.
[1671] Bruno 2004a: 377.
[1672] Rizzo 2003: 204.
[1673] Rizzo 2003: 139, tab. 29; Bruno 2004a: 377; Ferrandes 2008b: 261.
[1674] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 114–115.
[1675] Cf., above, Dressel 2–4.
[1676] Cf., above, Dressel 2–4.

Chronology: 2nd-3rd centuries AD[1677].

**'Late Dressel 1'**[1678]

Goods carried: wine[1679].

Capacity: about 20–27 litres[1680].

Chronology: found in contexts dated Late Antonine age.

**'Late Campana Dressel 2–4' (= *Ostia IV*, 282–283)**[1681]

Goods carried: wine[1682].

Capacity: around 30 litres?[1683].

Chronology: 2nd–3rd centuries AD[1684].

***Ostia I*, 455**[1685]

Goods carried: unknown.

Capacity: unknown.

Chronology: Severan age (early 3rd)[1686]–at least 4th centuries AD[1687].

***Ostia VI*, 57–58**[1688]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 59**[1689]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

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[1677] Rizzo 2014a: 114–115.
[1678] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 117.
[1679] Cf., above, Dressel 1.
[1680] Cf., above, Dressel 1.
[1681] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 115–117.
[1682] Bruno 2004a: 275.
[1683] Cf., above, Dressel 2–4.
[1684] Bruno 2004a: 275; Rizzo 2014a: 115–116.
[1685] For the description, production and distribution, cf. *Ostia I*: 485, 487; *Ostia IV*: 234–235; Franco & Capelli 2014: 352, 355 (identifying their origin in the North-Eastern Sicily). Recently some vessels were found in Pozzuoli (context dated second half of the 3rd century AD: De Filippo 2014: 340) and in Rome in a context dated end of 2nd/very early 3rd centuries AD in the excavations for the San Giovanni stop of the Undergroun Line C (personal communication of Prof. Clementina Panella).
[1686] *Ostia IV*: 235.
[1687] *Ostia I*: 487; *Ostia IV*: 234.
[1688] For the description, production, and distribution, cf. Rizzo 2014a: 133–134.
[1689] For the description, production, and distribution, cf. Rizzo 2014a: 135.

***Ostia VI*, 60**[1690]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 61**[1691]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 62**[1692]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 68–69**[1693]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 77**[1694]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

### 1.1.2 Gaul

**Gauloise 2**[1695]

Goods carried: wine?[1696]

Capacity: 30 litres[1697].

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[1690] For the description, production, and distribution, cf. Rizzo 2014a: 135.
[1691] For the description, production, and distribution, cf. Rizzo 2014a: 135.
[1692] For the description, production, and distribution, cf. Rizzo 2014a: 135.
[1693] For the description, production, and distribution, cf. Rizzo 2014a: 136.
[1694] For the description, production, and distribution, cf. Rizzo 2014a: 147.
[1695] For the description, typological division, production, and distribution, cf. Laubenheimer 1989: 123–125; Bertucchi 1992: 101, 110; Meffre & Meffre 1992: 29–30; Laubenheimer & Marlière 2010: 39.
[1696] University of Southampton 2005: 'Gauloise 2'.
[1697] Rizzo 2003: 204.

Chronology: Around 40 BC–Augustan age[1698].

This form is Residual in the analysed contexts.

**Gauloise 4 = Pélichet 47**[1699]

Goods carried: wine[1700].

Capacity: 33 litres[1701].

Chronology: Augustan age–3rd century AD[1702].

**Dressel 2–4**[1703]

Goods carried: wine and possibly fish sauces[1704].

Capacity: 30 litres[1705].

Chronology: end of 1st BC–end of 1st/2nd/3rd centuries AD[1706].

**Gauloise 7**[1707]

Goods carried: wine[1708].

Capacity: about 18 litres[1709].

Chronology: Augustan period[1710].

This form is residual in the analysed contexts.

**Dressel 28**[1711]

Goods carried: wine[1712].

Capacity: 13.5 litres[1713].

Chronology: Late Augustan–first half of the 2nd century AD[1714].

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[1698] University of Southampton 2005: 'Gauloise 2'.
[1699] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 175–177. For their presence in the Cala Cupa ship-wreck cf. Tito 2012.
[1700] *Tituli picti* borne by some Gauloise 4 in Lyon mention *ammineum* and *picatum* wines (Tchernia 1980: 306; Desbat 2004: 261); others mention *Maxsiliense* and *passum* wines (Laubenheimer & Marlière 2010: 39).
[1701] Rizzo 2003: 204.
[1702] Rizzo 2003: 161, tab. 27a; Bruno 2004a: 381; Laubenheimer & Marlière 2010: 39.
[1703] For the description, production, and distribution, cf. Rizzo 2014a: 167–168.
[1704] Bruno 2004a: 381.
[1705] Rizzo 2003: 204.
[1706] Laubenheimer 1989: 123; Laubenheimer & Marlière 2010: 38.
[1707] For the description, production, and distribution, cf. Rizzo 2014a: 181.
[1708] University of Southampton 2005: 'Gauloise 7'.
[1709] Calculated combining data from the drawings published in Laubenheimer 1985: fig. 161 and 162, 5, assuming the body similar to a sphere.
[1710] University of Southampton 2005: 'Gauloise 7'.
[1711] For the description, production, and distribution, cf. University of Southampton 2005: 'Dressel 28 similis – Lyon'.
[1712] Desbat 1987: 164.
[1713] Cf., below, Dressel 28 from *Baetica*.
[1714] Dangreaux *et al.* 1992: 44.

**Bertucchi 1992, fig. 76**[1715]

Goods carried: unknown.

Capacity: unknown.

Chronology: AD 25–100[1716].

**Gauloise 6**[1717]

Goods carried: unknown.

Capacity: unknown.

Chronology: 1st–3rd centuries AD[1718].

**Gauloise 1**[1719]

Goods carried: wine[1720].

Capacity: 30 litres[1721].

Chronology: 1st–3rd centuries AD[1722].

**Gauloise 3**[1723]

Goods carried: wine[1724].

Capacity: 29.5 litres[1725].

Chronology: 1st century AD[1726].

This form is residual from the Hadrianic age.

**Dressel 16**[1727]

Goods carried: fish sauces[1728].

Capacity: about 13 litres[1729].

Chronology: 1st–early 2nd centuries AD[1730].

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[1715] For the description, production, and distribution, cf. Bertucchi 1992: 141.
[1716] Bats 1993: 68, A-M-I Piri.
[1717] For the description, production, and distribution, cf. Laubenheimer 1985: 95–97, 300–301.
[1718] Terres d'Amphores 2014: 'Gauloise 6'.
[1719] For the description, production, and distribution, cf. Laubenhemier 1985: 243–257; Laubenheimer & Schmitt 2009: 21–35; Laubenheimer & Marlière 2010: 39.
[1720] Laubenheimer 1985: 399.
[1721] Rizzo 2003: 204.
[1722] University of Southampton 2005: 'Gauloise 1'.
[1723] For the description, production, and distribution, cf. Rizzo 2014a: 171.
[1724] Laubenheimer 2004: 163.
[1725] Rizzo 2003: 204.
[1726] University of Southampton 2005: 'Gauloise 3'.
[1727] For the description, production, and distribution, cf. Laubenheimer *et al.* 1992: 19–22.
[1728] A vessel from London bears the *titulus pictus: Liquam/Antipol/Exc/L Tetti Afri/Cani* followed by a sixth line in cursive *Afri* (Hassall & Tomlin 1984: 344; Panella 2001b: 198 and note 117.
[1729] Calculated from the drawing published in Caravale & Toffoletti 1997: 116, assuming a 100 cm of height.
[1730] Rizzo 2014a: 169.

**Gauloise 5 = Ostia Form L**[1731]

Goods carried: wine[1732].

Capacity: 30 litres[1733].

Chronology: half of 1st[1734]–first half of the 2nd centuries AD[1735].

***Ostia VI*, 168**[1736]

Goods carried: fish sauces[1737].

Capacity: unknown.

Chronology: end of Neronian/early Vespasian ages–first half of the 2nd century AD[1738].

**Ferrandes 2008b, fig. 7, 57**[1739]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Gauloise 13**[1740]

Goods carried: possibly nut oil[1741].

Capacity: unsure.

Chronology: second half of 3rd–5th centuries AD[1742].

This form is intrusive in the analysed contexts.

### 1.1.3 Iberian Peninsula

#### 1.1.3.1 *Hispania Baetica*

**Dressel 12**[1743]

Goods carried: fish sauces and possibly other products[1744].

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[1731] For the description, production, and distribution, cf. Rizzo 2014a: 171–173.
[1732] *Tituli picti* mention *picatum* and *massicum* wines (Laubenheimer 1985: 400; Bruno 2004a: 381).
[1733] Rizzo 2003: 204.
[1734] Found in contexts dated AD 40–60 in Lyon (Desbat & Dangréaux 1992: 151–152).
[1735] Laubenheimer 1985: 390; Panella 2001b: 198.
[1736] For the description, production, and distribution, cf. Rizzo 2014a: 181–182.
[1737] Rizzo 2014a: 181.
[1738] Rizzo 2014a: 181.
[1739] For the description, production, and distribution, cf. Ferrandes 2008b: 262 and note 61.
[1740] For the description, production, and distribution, cf. Baudoux *et al.* 1998: 26–36; Marlière 1998: 58–61; Laubenheimer & Marlière 2010: 69.
[1741] University of Southampton 2005: 'Gauloise 13'.
[1742] Laubenheimer & Marlière 2010: 69.
[1743] For the description, production, and distribution, cf. Rizzo 2014a: 230.
[1744] Rizzo 2014a: 230.

Capacity: around 22 litres[1745].

Chronology: 1st BC–end of 1st centuries AD[1746].

This form is residual from the Hadrianic age.

**Dressel 20**[1747]

Goods carried: olive oil[1748].

Capacity: 77 litres[1749].

Chronology: 1st BC–3rd centuries AD[1750].

**Haltern 70 = Camulodunum 185a = Vindonissa 583**[1751]

Goods carried: *defrutum*, olives, or fish sauces[1752].

Capacity: about 30 litres[1753].

Chronology: 80/60 BC–end of 2nd century AD[1754].

**Dressel 7–11**[1755]

Goods carried: fish sauces[1756] (and possibly even wine[1757]).

Capacity: around 17 litres[1758].

Chronology: end of 1st BC–early 2nd centuries AD (for the entire group[1759]).

This group of forms can be considered residual after the Hadrianic age.

**Dressel 21–22**[1760]

Goods carried: fruits or more likely fish sauces[1761].

Capacity: 18.75 litres?[1762]

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[1745] Bargagliotti 2000: 1116. The Dressel 12 from Algeciras, represented in *Ostia III*: 626, fig. 9 has the same capacity.
[1746] Étienne & Mayet 2002: 119-120.
[1747] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 209–217.
[1748] University of Southampton 2005: 'Dressel 20'
[1749] Rizzo 2003: 221.
[1750] Panella 2001b: 203–204.
[1751] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 202–205.
[1752] Carreras Monfort 2004: 88–89; Rizzo 2014a: 205–206.
[1753] Sealey 1985: 10.
[1754] University of Southampton 2005: 'Haltern 70'.
[1755] For the description, typological division, production, and distribution, cf. Étienne & Mayet 2002: 122–126; Rizzo 2014a: 228–229.
[1756] Bruno 2004a: 382.
[1757] Silvino *et al.* 2005: 502–503.
[1758] Sealey 1985: 10.
[1759] Panella 2001b: 203.
[1760] For the description, typological division, production, and distribution, cf. Étienne & Mayet 2002: 120–122.
[1761] Cf., above, Dressel 21–22 from Italy.
[1762] Cf., above, Dressel 21–22 from Italy.

Chronology: Augustan age–2nd century AD[1763].

**Beltrán IIA=Pélichet 46=Pompeii VII=Dressel 7 (late variety)=Vindonissa 586**[1764]

Goods carried: fish sauces[1765].

Capacity: 21.56 litres[1766].

Chronology: Augustan age–end of 2nd century AD[1767].

**Dressel 17 = Meylan Krause 2002, 386**[1768]

Goods carried: fish sauces[1769].

Capacity: 10.53 litres[1770].

Chronology: 1st–mid-2nd centuries AD[1771].

**Dressel 2–4**[1772]

Goods carried: wine[1773].

Capacity: about 30 litres[1774].

Chronology: Augustan/Tiberian age –end of 1st/early 2nd centuries AD[1775].

**Dressel 14A = Beltrán IV A = Ostia Form LXII**[1776]

Goods carried: fish sauces[1777].

Capacity: 24.04 litres[1778].

Chronology: Augustan/Tiberian age–3rd centuries AD[1779].

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[1763] Sotomayor 1969 (possibly considering Dressel 7–12 and not 21–22); Cambi & Volpe 1985: 75; Becker *et al.* 1986: 86; Desbat & Picon 1986: 639 and fig. 2, no. 9; Van der Werff 1986: 113–114; Étienne & Mayet 2002: 120–122; Bezeczky 2013: 126.
[1764] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 231.
[1765] Rizzo 2014a: 231.
[1766] Rizzo 2003: 225.
[1767] Étienne & Mayet 2002: 128
[1768] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 230.
[1769] Lagóstena Barrios 2007: 285 and Tav. IV.
[1770] Rizzo 2003: 225.
[1771] Beltrán Lloris 1970: 495–497; Étienne & Mayet 2002: 136; Rizzo 2014a: 230.
[1772] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 223.
[1773] Cf., above, Dressel 2–4 from Italy.
[1774] Rizzo 2003: 204.
[1775] University of Southampton 2005: 'Dressel 2–4 Baetican'.
[1776] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 235–236.
[1777] Étienne & Mayet 2002: 133–134.
[1778] Rizzo 2003: 225.
[1779] Rizzo 2014: 235–236.

**Beltrán IIB**[1780]

Goods carried: fish sauces[1781].

Capacity: 31.66 litres[1782].

Chronology: mid-1st–3rd century AD[1783].

**Dressel 28**[1784]

Goods carried: wine?[1785].

Capacity: 13.5 litres[1786].

Chronology: Augustan age–2nd century AD[1787].

**Late Dressel 28 = *Ostia I*, Form VIII**[1788]

Goods carried: wine?[1789]

Capacity: possibly 13.5 litres[1790].

Chronology: 1st–3rd century AD[1791]

**Late Beltrán IIA = Augst 30**[1792]

Goods carried: fish sauces[1793].

Capacity: possibly 21.56 litres[1794].

Chronology: second half/end of 2nd century AD[1795].

**Advanced Beltrán IIB = Puerto Real 1**[1796]

Goods carried: fish sauces[1797].

Capacity: possibly 31.66 litres[1798].

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[1780] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 231–232.
[1781] Étienne & Mayet 2002: 129.
[1782] Rizzo 2003: 225.
[1783] Rizzo 2014a: 232.
[1784] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 207–208.
[1785] Miró 1988: 95; Silvino *et al.* 2005: 507.
[1786] Rizzo 2003: 204.
[1787] Rizzo 2014a: 208.
[1788] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 208.
[1789] Cf., above, Dressel 28.
[1790] Cf., above, Dressel 28.
[1791] Ferrandes 2008b: 262; Radaelli 2013: 316; Rizzo 2014a: 208.
[1792] For the description, typological division, production, and distribution, cf. Martin-Kilcher 1994b: 401.
[1793] Martin-Kilcher 1994b: 401, with also an hypothesis of spicy olives during a second use.
[1794] Cf., above, Beltrán IIA.
[1795] Bernal *et al.* 2007: figs. 18, 3–4; 22, 1–2; 27, 4; 30, 1; 31, 7; 34, 1–2; 37, 3; 38, 1.
[1796] For the description, typological division, production, and distribution, cf. Rizzo 2014a: 232–235 (who, however, separate them).
[1797] Cf., above, Beltrán IIB.
[1798] Cf., above, Beltrán IIB.

Chronology: second half-end of 2nd/early 3rd centuries AD[1799].

**Almagro 50A**[1800]

Goods carried: fish and fish sauces[1801].

Capacity: about 44 litres[1802].

Chronology: end of 2nd-end of 4th/early 5th centuries AD[1803].

***Ostia VI*, 234**[1804]

Goods carried: possibly fish sauces[1805].

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

#### 1.1.3.2 *Hispania Tarraconensis*

**Tarraconense 1**[1806]

Goods carried: wine[1807].

Capacity: Tarraconense 1D = 26-27 litres[1808]

Chronology: around 40 BC-end of 1st BC/early 1st centuries AD[1809].

This form is residual in the analysed contexts.

**Pascual 1**[1810]

Goods carried: wine?[1811]

Capacity: 20-25 litres[1812].

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[1799] Étienne & Mayet 2002: 130; Bernal *et al.* 2007: fig. 18, 1-2 and fig. 27, 2-3.
[1800] For the description, typological division, production, and distribution, cf. Étienne & Mayet 2007: 13; Rizzo 2014a: 236-237.
[1801] Rizzo 2014a: 236.
[1802] Cf., below, Almagro 50B from Lusitania.
[1803] Étienne & Mayet 2002: 138-139; Rizzo 2014a: 237.
[1804] For the description and production cf. Rizzo 2014a: 228.
[1805] Rizzo 2014a: 228.
[1806] For the description, typological division, production, and distribution cf. Comas i Solà 1984: 23-26; 1985: 65-66; Nolla & Solías 1984-1985: 107-144; Comas i Solà 1987: 161-173; Nolla 1987: 217-223; López Mullor & Martín Menédez 2007: 44-55; 2008: 694-697.
[1807] López Mullor & Martín Menédez 2007: 44-55; 2008: 694-697.
[1808] Capacity calculated from the drawing published in López Mullor & Martín Menédez 2008: 695, fig. 2, 11.
[1809] López Mullor & Martín Menédez 2008: 697.
[1810] For the description, typological division, production, and distribution cf. López Mullor & Martín Menédez 2008: 698-701.
[1811] University of Southampton 2005: 'Pascual 1'.
[1812] University of Southampton 2005: 'Pascual 1'.

Chronology: 40 BC–1st century AD (with an *acme* from the early Augustan to the Tiberian ages)[1813].

This form is residual in the analysed contexts.

**Oberaden 74**[1814]

Goods carried: wine?[1815]

Capacity: 13.5 litres?[1816]

Chronology:30 BC–50/60 AD[1817].

This form is residual in the analysed contexts.

**Dressel 2–4**[1818]

Goods carried: wine[1819].

Capacity: 27.25 litres[1820].

Chronology: Northern, 15/10 BC–2nd century AD[1821]; Southern, Neronian age–third quarter of the 2nd century AD[1822].

**Late Dressel 2–4**[1823]

Goods carried: wine[1824].

Capacity: 27.25 litres[1825].

Chronology: 1st–3rd centuries AD[1826].

**Imitation of Gauloise 4**[1827]

Goods carried: wine[1828].

Capacity: unknown.

Chronology: 1st–half of the 3rd centuries AD[1829].

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[1813] López Mullor & Martín Menédez 2008: 698; Bezeczky 2013: 139.
[1814] For the description, typological division, production, and distribution cf. Rizzo 2014a: 198.
[1815] Bertoldi 2012: 23.
[1816] Cf., above, Dressel 28 from *Baetica*.
[1817] López Mullor & Martín Menédez 2008: 710.
[1818] For the description, typological division, production, and distribution cf. López Mullor & Martín Menédez 2008: 704–705; Rizzo 2014a: 199.
[1819] Cf., above, Dressel 2–4.
[1820] Rizzo 2003: 204.
[1821] López Mullor & Martín Menédez 2008: 705.
[1822] López Mullor & Martín Menédez 2008: 705.
[1823] For the description, typological division, production, and distribution cf. Rizzo 2014a: 200.
[1824] Rizzo 2014a: 85.
[1825] Cf., above, Dressel 2–4 from *Tarraconesis*.
[1826] Rizzo 2014a: 200.
[1827] For the description, typological division, production, and distribution cf. Rizzo 2014a: 200.
[1828] Rizzo 2014a: 200.
[1829] Rizzo 2014a: 200.

#### 1.1.3.3 Lusitania

**Dressel 14B**[1830]

Goods carried: fish sauces[1831].

Capacity: 29.71 litres[1832].

Chronology: Claudian/Tiberian age–end of 2nd/first half of the 3rd centuries AD[1833].

**Almagro 50B**[1834]

Goods carried: fish sauces[1835].

Capacity: about 44 litres[1836].

Chronology: half of 3rd–5th centuries AD[1837].

This form is intrusive in the analysed contexts

### 1.1.4 North-Africa

#### 1.1.4.1 *Africa Proconsularis*

**Van der Werff 1977-1978, 3 = Mañá 1951, C1 = Martin-Kilcher 1999, B = Ramón 1995, T-7.2 = *Ostia III*, 532**[1838]

Goods carried: wine?[1839]

Capacity: about 20–21 litres[1840].

Chronology: 3rd BC–1st centuries AD[1841].

This form is residual in the analysed contexts.

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[1830] For the description, typological division, production, and distribution cf. Rizzo 2014a: 240–242.
[1831] Rizzo 2014a: 241.
[1832] Rizzo 2003: 225.
[1833] Bruno 2004a: 383; Rizzo 2014a: 241.
[1834] For the description, typological division, production, and distribution cf. Remolà Vallverdú 2000: 189; Étienne & Mayet 2002: 139–140 and notes 129–132; Fabião 2008: 742.
[1835] Remolà Vallverdú 2000: 189.
[1836] Calculated from the drawing publishded in Mayet 1990: 35, fig. 1, 2.
[1837] Étienne & Mayet 2002: 139–140.
[1838] For the description, typological division, production, and distribution cf. Rizzo 2014a: 264.
[1839] Fentress 2001: 263.
[1840] Calculated from the drawing published in Bonifay 2004a: type 3, fig. 47, 1.
[1841] Rizzo 2014a: 264.

**Van der Werff 1977-1978, 1 = Dressel 18 = Cintas 1950, 312 = Maña 1951, C1 = Ramón 1995 T-7.4 = Martin-Kilcher 1999 A1–6 = very similar to Zevi 2007, fig. 55h; Ferrandes 2008b, fig. 9, 85 = similar to *Ostia III*, 531 = Martin-Kilcher 1999, tav. 9, no. 44**[1842]

Goods carried: fish sauces?[1843]

Capacity: about 30 litres[1844].

Chronology: 3rd BC–1st centuries AD[1845].

This form is residual in the analysed contexts.

**Van del Werff 1977-1978, 2 = Schöne-Mau XL = *Ostia IV*, 449 = Martin-Kilcher 1999, B = Ramón 1995, T-7.5 = *Aqua Marcia*, Tav. IX, 1**[1846]

Goods carried: wine?[1847]

Capacity: 11.37 litres[1848].

Chronology: 2nd century BC–Flavian age[1849].

This form is residual in the analysed contexts.

**Mañá 1951, C2**[1850]

Goods carried: fish sauces[1851].

Capacity: undetermined[1852].

Chronology: 2nd–1st BC/early 1st centuries AD[1853].

This form is residual in the analysed contexts.

**Ramón 1995: T-7.6**[1854]

Goods carried: unknown, possibly wine for the inner resin[1855]?

Capacity: about 14–16 litres[1856].

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[1842] For the description, typological division, production, and distribution cf. Rizzo 2014a: 263, 268–270.
[1843] Bonifay 2004a: 474.
[1844] Calculated from the drawing published in Bonifay 2004a: type 1, fig. 47, 1.
[1845] Rizzo 2014a: 263, 270.
[1846] For the description, typological division, production, and distribution cf. Rizzo 2014a: 263–264, 268–270.
[1847] Fentress 2001: 263.
[1848] Rizzo 2003: 221.
[1849] Rizzo 2014a: 264, 268.
[1850] For the description, typological division, production, and distribution cf. Rizzo 2014a: 261–263.
[1851] Rizzo 2014a: 263.
[1852] It is undetermined because this is a group of several forms (Rizzo 2014a: 262–263).
[1853] Rizzo 2014a: 263.
[1854] For the description, typological division, production, and distribution cf. Ramón 1995: 217–218; Díaz 2000: 228; 238, fig. 40; 242, fig. 44, 6; 243, fig. 46; 246, fig. 49, 7; Toti 2003: 1208, nn. cat. 21–25, tavv. CCX–CCXI; Auriemma & Silvestrelli 2013: 446 and fig. 9.
[1855] Ramón 1995: 62 and 264.
[1856] Average capacity calculated from the drawings of this form published in Ramón 1995: 443, fig. 91 and 545, fig. 182.

Chronology: 2nd–1st centuries BC[1857].

This form is residual in the analysed contexts.

**Ferrandes 2008b, fig. 9, 86 = Ostia VI, 310**[1858]

Goods carried: unknown.

Capacity: unknown.

Chronology: last third of the 1st (–early 2nd?) century AD[1859].

This form should be residual in the analysed contexts.

**Dressel 2–4**[1860]

Goods carried: wine?[1861]

Capacity: 30 litres[1862].

Chronology: early 1st–mid-2nd centuries AD[1863].

**Pseudo Dressel 2–4**[1864]

Good carried: wine?[1865]

Capacity: perhaps 30 litres?[1866]

Chronology: early 1st–mid-2nd centuries AD[1867].

**Benghazi MR1 = Agora M254**[1868]

Goods carried: wine?[1869]

Capacity: 18.12 litres?[1870]

Chronology: Augustan age–4th/5th century AD[1871].

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[1857] Ramón 1995: 217–218.
[1858] For the description, production, and distribution cf. Ferrandes 2008b: 263; Rizzo 2014a: 270.
[1859] Rizzo 2014a: 270.
[1860] For the description, typological division, production, and distribution cf. Rizzo 2014a: 290.
[1861] Cf., above, Dressel 2–4 from Africa.
[1862] Rizzo 2003: 204.
[1863] Rizzo 2014a: 290.
[1864] For the description, typological division, production, and distribution cf. Bonifay 2004a: 146.
[1865] Cf., above, Dressel 2–4 from Africa.
[1866] Cf., above, Dressel 2–4.
[1867] Bonifay 2004a: 146.
[1868] Petrographic analyses seem to have confirmed an African production: Pacetti & Sfrecola 1989: 503; Blagg *et al.* 1990: 63; Bruno 2004b: 144–145; Schimmer 2012: 321 and note 13; Capelli & Bonifay 2007: 554. An imitation in Cyrenaica was also found: Mazou & Capelli 2011.
[1869] Cf., above, *Ostia II*, 522/523; *Ostia I*, 453/454 (= Benghazi MR1 = Agora M254); *Ostia III*, 464 from Italy.
[1870] Cf., above, *Ostia II*, 522/523; *Ostia I*, 453/454 (= Benghazi MR1 = Agora M254); *Ostia III*, 464 from Italy.
[1871] Cf., above, *Ostia II*, 522/523; *Ostia I*, 453/454 (= Benghazi MR1 = Agora M254); *Ostia III*, 464 from Italy.

**Oberaden, fig. 24, n. 5**[1872]

Goods carried: unknown.

Capacity: about 5-6 litres[1873].

Chronology: Augustan-early Flavian ages[1874].

This form is residual in the analysed contexts.

**Vindonissa 592**[1875]

Goods carried: olive oil?[1876].

Capacity: unknown.

Chronology: AD 30-70[1877].

This form is residual in the analysed contexts.

**Dressel 21-22**[1878]

Goods carried: fruits or more likely fish sauces?[1879]

Capacity: 18.75 litres?[1880]

Chronology: 1st-2nd century AD?[1881]

**'Pseudo Dressel 1'**[1882]

Goods carried: wine?[1883]

Capacity: unknown.

Chronology: 1st century AD[1884].

This form is residual in the analysed contexts.

**Carthage *Early Amphora* IV = Zevi & Pohl 1970, fig. 102, 552 = Martin-Kilcher 1999, A9 = Marucci 2006, A. 2, fig. 11, 54 = Bonifay 2004a, Type 11**[1885]

Goods carried: fish sauces?[1886]

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[1872] For the description, typological division, production, and distribution cf. Rizzo 2014a: 264-265.
[1873] Calculated from the drawing published in Rizzo 2014a: 265, fig. 23.
[1874] Rizzo 2014a: 265.
[1875] For the description, production, and distribution cf. Rizzo 2014a: 266-267.
[1876] Rizzo 2014a: 266.
[1877] Rizzo 2014a: 266.
[1878] Production sites are still not found, but fabrics of analysed fragments suggest this origin. Fragments of this form with the same fabric were also found in a context dated Neronian age in the *Meta Sudans* excavations in Rome (unpublished materials): De Santis 2004/2005: 226-229.
[1879] Cf., above, Dressel 21-22 from Italy.
[1880] Cf., above, Dressel 21-22 from Italy.
[1881] Cf., above, Dressel 21-22 from Italy and from *Baetica*.
[1882] For the description and production cf. Opaiţ 1998: 427-428.
[1883] Opaiţ 1998: 428.
[1884] Opaiţ 1998: 427-428.
[1885] For the description, typological division, production, and distribution cf. Rizzo 2014a: 272-275.
[1886] Bonifay 2004a: 99, 474.

Capacity: about 27 litres[1887].

Chronology: 1st –half of the 2nd centuries AD[1888].

**Ostia Form XXIII**[1889]

Goods carried: olive oil[1890].

Capacity: 40 litres[1891].

Chronology: 1st–3rd centuries AD[1892].

**Leptiminus II**[1893]

Goods carried: fish sauces[1894].

Capacity: 40–45 litres[1895].

Chronology: Flavian/Trajanic age–first half of 3rd century AD[1896].

**Ferrandes 2008b: fig. 10, 94**[1897]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Flavian and Late Antonine ages[1898].

**Ostia Form LIX**[1899]

Goods carried: olive oil[1900].

Capacity: 45.95 litres[1901].

Chronology: second half of 1st–central decades of 3nd centuries AD[1902].

**Uzita tav. 52, 10 = *Ostia III*, 374**[1903]

Goods carried: possibly fish sauces[1904].

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[1887] Calculated from the drawing published in Bonifay 2004a: type 11, fig. 52, 1.
[1888] Rizzo 2014a: 273–274.
[1889] For the description, typological division, production, and distribution cf. Rizzo 2014a: 281.
[1890] Panella 1983: 229.
[1891] Rizzo 2003: 221.
[1892] Panella 1983: 230; Rizzo 2014a: 281.
[1893] For the description, typological division, production, and distribution cf. Rizzo 2014a: 271.
[1894] Opaiţ 2000: 442; Bonifay 2004a: 92.
[1895] University of Southampton 2005: 'Leptiminus 2'.
[1896] Opaiţ 2000: 442.
[1897] For the description, production, and distribution cf. Ferrandes 2008b: 263 and note 72.
[1898] Ferrandes 2008b: 263 and note 72.
[1899] For the description, typological division, production, and distribution cf. Rizzo 2014a: 278–280.
[1900] Panella 1983a: 229.
[1901] Rizzo 2003: 221.
[1902] Panella 1983a: 230; Rizzo 2014a: 280.
[1903] For the description, typological division, production, and distribution cf. Bonifay 2004a: 103–105; Rizzo 2014a: 282.
[1904] Bonifay 2004a: 103 and note 122, 474.

Capacity: about 42 litres[1905].

Chronology: end of 1st–2nd AD, and possibly residual in the 3rd centuries AD[1906].

**Leptiminus I**[1907]

Goods carried: fish sauces[1908].

Capacity: 25–30 litres[1909].

Chronology: end of 1st–mid-3rd centuries AD (or even beyond)[1910].

***Ostia III*, 436**[1911]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Trajanic/Hadrianic ages[1912].

**Hammamet 1 = Zevi 2007, fig. 55g**[1913]

Goods carried: wine or even olive oil?[1914]

Capacity: 55–60 litres[1915].

Chronology: 2nd–early 3rd centuries AD[1916].

**Pupput T700.4**[1917]

Goods carried: olive oil?[1918].

Capacity: about 43 litres[1919].

Chronology: 2nd century AD[1920].

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[1905] Calculated from the drawing published in Bonifay 2004a: type 18, fig. 54, 4.
[1906] Bonifay 2004a: 105.
[1907] For the description, typological division, production, and distribution cf. Rizzo 2014a: 275.
[1908] Opaiţ 2000: 441; Bonifay 2004a: 101.
[1909] University of Southampton 2005: 'Leptiminus 1'.
[1910] Opaiţ 2000: 441; Rizzo 2014a: 275.
[1911] For the description, production, and distribution cf. *Ostia III*: 488.
[1912] *Ostia III*: 488.
[1913] For the description, typological division, production, and distribution cf. Rizzo 2014a: 271–272.
[1914] Bonifay 2004a: 97, 474.
[1915] University of Southampton 2005: 'Hammamet 1'.
[1916] Bonifay 2004a: 93.
[1917] For the description, typological division, production, and distribution cf. Bonifay 2004a: 103; Rizzo 2014a: 282.
[1918] Rizzo 2014a: 282.
[1919] Calculated from the drawing published in Bonifay 2004a: type 16, fig. 53, 3.
[1920] Bonifay 2004a: 103.

**Pupput T700.5**[1921]

Goods carried: olive oil?[1922].

Capacity: about 41 litres[1923].

Chronology: 2nd century AD[1924].

***Ostia VI*, 370**[1925]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated AD 120–160[1926].

**Africana I = Keay IIIA-B and similar = Bonifay type 21**[1927]

Goods carried: olive oil[1928].

Capacity: 40 litres[1929].

Chronology: A = mid/late 2nd–early 3rd centuries AD; B = end of 2nd–mid-3rd centuries AD; C = second half of 3rd–4th centuries AD[1930].

***Ostia IV*, 447**[1931]

Goods carried: olive oil[1932] or more likely wine[1933].

Capacity: about 30 litres?[1934]

Chronology: end of 2nd–early 3rd centuries AD.

**Africana II**[1935]

Goods carried: A = fish sauces/wine?; B = olive oil?; C = fish sauces?; D = fish sauces?[1936].

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[1921] For the description, typological division, production, and distribution cf. Bonifay 2004a: 103; Rizzo 2014a: 282.
[1922] Rizzo 2014a: 282.
[1923] Calculated from the drawing published in Bonifay 2004a: type 17, fig. 53, 1.
[1924] Bonifay 2004a: 103.
[1925] For the description, production, and distribution cf. Rizzo 2014a: 282.
[1926] Rizzo 2014a: 282.
[1927] For the description, typological division, production, and distribution cf. Bonifay 2004a: 107; Rizzo 2014a: 283.
[1928] Panella 1982: 174; Bonifay 2004a: 107, 471.
[1929] University of Southampton 2005: 'Africana 1 Piccolo'.
[1930] Bonifay 2004a: 107.
[1931] For the description, production, and distribution cf. Rizzo 2014a: 290.
[1932] Ferrandes 2008b: 264 and note 76.
[1933] Rizzo 2014a: 290.
[1934] Rizzo 2014a: 290 assuming that this form is a "container of full capacity" related to Dressel 2–4 which seems to be its ancestor.
[1935] For the description, typological division, production, and distribution cf. Bonifay 2004a: 107–119; Rizzo 2014a: 283–285.
[1936] Bonifay 2004a: 474.

Capacity: A = 60–65 litres[1937]; B = 65–70 litres[1938]; C = 55–60 litres[1939]; D = 45–50 litres[1940].
Chronology: A = end of 2nd–second half of 3rd centuries AD; B = 3rd century AD; C = mid-3rd–4th centuries AD; D = mid-3rd–first third of 4th centuries AD.

**Ferrandes 2008b, fig. 9, 82**[1941]
Good carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b, fig. 10, 92**[1942]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b, fig. 10, 93**[1943]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 11, 114**[1944]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 11, 115**[1945]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 11, 116**[1946]
Goods carried: unknown.

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[1937] University of Southampton 2005: 'Africana 2A Grande'.
[1938] Calculated from the drawings published in Bonifay 2004a: type 23, fig. 59, 2–3.
[1939] University of Southampton 2005: 'Africana 2C Grande'.
[1940] University of Southampton 2005: 'Africana IID Grande'.
[1941] For the description, production, and distribution cf. Ferrandes 2008b: 263.
[1942] For the description, production, and distribution cf. Ferrandes 2008b: 263.
[1943] For the description, production, and distribution cf. Ferrandes 2008b: 263.
[1944] For the description, production, and distribution cf. Ferrandes 2008b: 264.
[1945] For the description, production, and distribution cf. Ferrandes 2008b: 264.
[1946] For the description, production, and distribution cf. Ferrandes 2008b: 264.

Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 346**[1947]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Late Antonine age.

***Ostia VI*, 381**[1948]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 382, 383**[1949]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 384**[1950]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 385**[1951]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 386**[1952]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

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[1947] For the description, production, and distribution cf. Rizzo 2014a: 278.
[1948] For the description, production, and distribution cf. Rizzo 2014a: 287.
[1949] For the description, production, and distribution cf. Rizzo 2014a: 287.
[1950] For the description, production, and distribution cf. Rizzo 2014a: 287.
[1951] For the description, production, and distribution cf. Rizzo 2014a: 287.
[1952] For the description, production, and distribution cf. Rizzo 2014a: 287.

***Ostia VI*, 387, 388**[1953]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 389**[1954]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 390**[1955]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 391**[1956]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 392, 393**[1957]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 394**[1958]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Dressel 30**[1959]

Goods carried: wine[1960].

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[1953] For the description, production, and distribution cf. Rizzo 2014a: 287–288.
[1954] For the description, production, and distribution cf. Rizzo 2014a: 288.
[1955] For the description, production, and distribution cf. Rizzo 2014a: 288.
[1956] For the description, production, and distribution cf. Rizzo 2014a: 288.
[1957] For the description, production, and distribution cf. Rizzo 2014a: 288.
[1958] For the description, production, and distribution cf. Rizzo 2014a: 288.
[1959] For the description, production, and distribution cf. Bonifay 2004a: 148–151.
[1960] Bonifay 2004a: 474.

Capacity: 20–25 litres[1961].
Chronology: late 2nd/early 3rd–4th centuries AD[1962].

**Africana III = Keay XXV, subtypes 1, 2 and 3**[1963]
Goods carried: A = wine?; B = wine; C = wine?/preserved olives?[1964]
Capacity: A = 25–30 litres[1965]; B = 20–25 litres[1966]; C= 20–25 litres[1967].
Chronology: A = late 3rd–4th centuries AD; B = 4th century AD; C = late 4th–first half of 5th centuries AD.

This form is intrusive in the analysed contexts.

**Keay XXXV**[1968]
Goods carried: A = fish sauces; B = olive oil[1969].
Capacity: 45–50 litres[1970].
Chronology: end of 4th–5th centuries AD[1971].

This form is intrusive in the analysed contexts.

#### 1.1.4.2 *Tripolitania*[1972]

***Ostia VI*, 341, 342**[1973]
Goods carried: olive oil[1974].
Capacity: unknown.
Chronology: 2nd century BC–Augustan age[1975].

This form is residual in the analysed contexts.

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[1961] Cf., below, Dressel 30 from Mauretania.
[1962] Bonifay 2004a: 148, 151, 474.
[1963] For the description, production, and distribution cf. Bonifay 2004a: 119–122.
[1964] Bonifay 2004a: 474.
[1965] University of Southampton 2005: 'Africana 3A'.
[1966] University of Southampton 2005: 'Africana 3B'.
[1967] University of Southampton 2005: 'Africana 3C'.
[1968] For the description, production, and distribution cf. Keay 1984: 234–235; Remolá Vallverdú 2000: 145–146; Bonifay 2004a: 134–135.
[1969] Bonifay 2004a: 135.
[1970] University of Southampton 2005: 'Keay 35B'.
[1971] Remolá Vallverdú 2000: 146; Domínguez 2005: 152.
[1972] One of the first attempts in classifying Tripolitanian amphorae is offered by Panella 1977.
[1973] For the description, production, and distribution cf. Rizzo 2014a: 276–277.
[1974] Rizzo 2014a: 276.
[1975] Rizzo 2014a: 276.

**Dressel 26**[1976]

Goods carried: olive oil?[1977]

Capacity: about 52 litres[1978].

Chronology: third quarter of the 1st century BC–Flavian age[1979].

This form is residual in the analysed contexts.

**Tripolitana I**[1980]

Goods carried: olive oil?[1981]

Capacity: 56 litres[1982].

Chronology: Augustan age[1983]–mid-2nd century AD[1984].

**Tripolitana II**[1985]

Goods carried: fish sauces and/or wine and/or olive oil?[1986]

Capacity: 47–53 litres[1987].

Chronology: 1st–4th centuries AD[1988].

**Schöne-Mau XXXV**[1989]

Goods carried: wine[1990]

Capacity: 11 litres[1991].

Chronology: Tiberian/Claudian age–first half of 3rd century AD[1992].

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[1976] For the description, production, and distribution cf. Rizzo 2014a: 277–278.
[1977] Bonifay 2004a: 474.
[1978] Calculated from the drawing published in Bonifay 2004a: type 13, fig. 52, 1.
[1979] Rizzo 2014a: 277.
[1980] For the description, production, and distribution cf. Rizzo 2014a: 285.
[1981] Bonifay 2004a: 107, 474. Nevertheless, in the Grado ship-wreck, amphorae belonging to this form had been re-used for preserved fish (the species is *Scomber japonicus colias*: cf. Delussu & Wilkens 2000: 59–60): Auriemma 2000: 42.
[1982] Rizzo 2003: 221.
[1983] The oldest date is the 'wall of amphorae' in the house of the Porch at Ostia, dated 50–25 BC: cf. Van der Werff 1986: 112–113.
[1984] Bezeczky 2013: 152.
[1985] For the description, production, and distribution cf. Rizzo 2014a: 270–271.
[1986] This hypothesis take its support from the discovery of two Tripolitanian amphorae at Pompeii that both bear a *titulus pictus*. It seems to indicate the word *shmn*, corresponding to the neo-Punic for oil and similar to the modern arabic *samn*: cf. Panella 1977: 147–148; Arthur 1982: 62.
[1987] Rizzo 2003: 221.
[1988] Rizzo 2014a: 270–271.
[1989] For the description, production, and distribution cf. Rizzo 2014a: 289–290.
[1990] Bonifay 2004a: 475.
[1991] Rizzo 2003: 204.
[1992] Rizzo 2014a: 289.

**Tripolitana III**[1993]

Goods carried: olive oil?[1994]

Capacity: 80–85 litres[1995].

Chronology: second half of 2nd–second half of 4th centuries AD[1996].

#### 1.1.4.3 *Mauretania Caesariensis*

**Dressel 30 = Keay 1984, Type I**[1997]

Goods carried: wine[1998]

Capacity: 20–25 litres[1999].

Chronology: second half of 2nd–second half of 4th centuries AD[2000].

***Ostia VI*, 401, 402 = Bonifay 2004a, type 30?**[2001]

Goods carried: wine or olive oil?[2002].

Capacity: about 61 litres[2003].

Chronology: Flavian age?–2nd/3rd centuries AD[2004].

#### 1.1.4.4 Cyrenaica?

**Mid Roman 8**[2005]

Goods carried: wine[2006] or more likely olive oil[2007].

Capacity: about 57 litres[2008].

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[1993] For the description, production, and distribution cf. Rizzo 2014a: 285–286.
[1994] *Ostia III*: 568–570; Bonifay 2004a: 107, 474.
[1995] University of Southampton 2005: 'Tripolitana 3'.
[1996] Bruno 2004a: 389; Bezeczky 2013: 153.
[1997] For the description, production, and distribution cf. Keay 1984: 95–99; Peacock & Williams 1986: 171–172; Bruno 2004: 390.
[1998] Panella 2001b: 207. Laporte 1976-78: 140–141 on the contrary refers that their content was olive oil.
[1999] University of Southampton 2005: 'Dressel 30 – Keay 1A'.
[2000] Panella 1986b: 256–257; Bruno 2004a: 390.
[2001] For the description, production, and distribution cf. Rizzo 2014a: 291–292.
[2002] Rizzo 2014a: 291.
[2003] Calculated from the drawing published in Bonifay 2004a: type 30, fig. 66, 1.
[2004] Rizzo 2014a: 291–292.
[2005] For the description, typological division, production, and distribution cf. Caillou & Mazou 2012: 36; Rizzo 2014a: 292.
[2006] Panella 1989a: 177; Ferrantini 1993: 158.
[2007] Rizzo 2014a: 292.
[2008] Calculated from the drawing published in Rizzo 2014a: 293, fig. 40.

Chronology: end of 1st–3rd centuries AD[2009].

#### 1.1.4.5 North-Africa

***Ostia VI*, 405–410**[2010]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Antonine and Late Antonine ages.

### 1.1.5 Aegean/Oriental Area

#### 1.1.5.1 Oriental – Bosporus

**S Ib/Pseudo Coan**[2011]
Goods carried: wine?[2012]
Capacity: 12–14 litres[2013].
Chronology: 1st BC–early 2nd century AD[2014]

**Knossos 39 = similar to Zeest 85 (and possibly = Ferrandes 2008b: fig. 12, 156)**[2015]
Goods carried: olive oil?[2016]
Capacity: 53–78 litres[2017].
Chronology: 1st BC–2nd centuries AD[2018].

**Zeest 1960, 80 = Benghazi Mid Roman 5 = Dyczek 2001, Type 21 = Knossos 38**[2019]
Goods carried: olive oil[2020].

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[2009] Rizzo 2014a: 292.
[2010] For the description, production, and distribution cf. Rizzo 2014a: 293.
[2011] For the description, production, and distribution cf. Rizzo 2014a: 347.
[2012] Vnukov 2004: 407.
[2013] Average measure calculated from the drawings published in Vnukov 2004: 408, fig. 1.
[2014] Rizzo 2014a: 347.
[2015] For the description, production, and distribution cf. Rizzo 2014a: 351.
[2016] Hayes 1983: 155; Auriemma & Quiri 2006: 242. Opaiţ 2007: 113–114 refers that fish sauces were their content.
[2017] Rizzo 2003: 205; Rizzo 2014a: 351.
[2018] Rizzo 2014a: 351.
[2019] For the description, production, and distribution cf. Rizzo 2014a: 351–352.
[2020] Dyczek 2001: 159 (who also adds wine for the Black Sea and salted fish slices or fish sauces) and personal communication of Dr. Elena Lorenzetti.

Capacity: 66–78 up to 114 litres[2021], with an average of 100 litres[2022].

Chronology: end of 1st–3rd centuries AD[2023].

**Sin II**[2024]

Goods carried: wine?[2025]

Capacity: around 4–6 litres[2026].

Chronology: early 2nd–mid-3rd centuries AD[2027].

**Knossos 26/27 = B Snp III**[2028]

Goods carried: fish sauces[2029].

Capacity: 52 litres[2030].

Chronology: 2nd–3rd centuries AD[2031].

**Similar to Zeest 73**[2032]

Goods carried: wine[2033].

Capacity: unknown.

Chronology: 2nd–3rd centuries AD[2034].

**Zeest 94 = Knossos 14 = Šelov D**[2035]

Goods carried: wine (and petroleum?)[2036].

Capacity: 8 litres[2037].

Chronology: end of 2nd–first half of 3rd centuries AD[2038].

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[2021] Dyczek 2001: 157.
[2022] Bezeczky 2013: 173.
[2023] Dyczeck 2001: 159; Coletti & Lorenzetti 2010: 160. For Swan 2010: 112–115 it arrives into the 5th century AD, even though from the 4th century AD it only has an Oriental distribution and its rims change morphology.
[2024] For the description, production, and distribution cf. Rizzo 2014a: 348.
[2025] Vnukov 2004: 407.
[2026] Average measure calculated from the drawings published in Vnukov 2004: 408, fig. 4.
[2027] Rizzo 2014a: 348.
[2028] For the description, production, and distribution cf. Kassab Tezgör 2009: 125–127; Rizzo 2014a: 349–350. For a recent discovery in Albania cf. Disantarosa 2014: 356.
[2029] Reynolds 2010: 90.
[2030] Dyckzek 2001: 251.
[2031] Auriemma & Quiri 2004: 54.
[2032] For the description, production, and distribution cf. Rizzo 2014a: 350–351.
[2033] Opaiţ 2010b: 114.
[2034] Rizzo 2014a: 350.
[2035] For the description, production, and distribution cf. Rizzo 2014a: 347–348.
[2036] On the basis of *tituli picti* and chemical analyses both these suggestion have been made by Dyczek 2001: 202–220. Klenina 2010: 1006 only mentions wine. Rizzo 2014a: 347 refers to petroleum.
[2037] Vnukov 2011: 364.
[2038] Krapivina 2010: 71.

***Ostia VI*, 519**[2039]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

#### 1.1.5.2 Oriental – Crete

**Cretoise 7 (AC7)**[2040]

Goods carried: wine.

Capacity: unknown.

Chronology: Late Hellenistic age (2nd–1st centuries BC)[2041].

This form is residual in the analysed contexts.

**Cretoise 1 (AC1) = Agora G197**[2042]

Goods carried: wine[2043].

Capacity: 22 litres[2044].

Chronology: Julio/Claudian age (or even Augustan age)[2045]–4th century AD[2046].

**Cretoise 2 (AC2) = Schöne-Mau VIII = Dressel 36**[2047]

Goods carried: wine[2048].

Capacity: 22 litres[2049].

Chronology: Augustan age–2nd[2050]/early 3rd centuries AD[2051].

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[2039] For the description, production, and distribution cf. Rizzo 2014a: 348–349.
[2040] For the description, production, and distribution cf. Marangou-Lerat 1995: 67; Portale & Romeo 2000: 147. For a possible production centre recently found in Loutra cf. Tsatsaki & Nodarou 2014: 293.
[2041] Marangou-Lerat 1995: 67.
[2042] For the description, production, and distribution cf. Rizzo 2014a: 325 and further bibliography.
[2043] Rizzo 2003: 217.
[2044] Rizzo 2003: 205.
[2045] Riley 1979: 181 refers that an amphora of this form was found at Berenice in contexts dated Augustan age.
[2046] Marangou-Lerat 1995: 76. Portale & Romero 2000: 419, 412 on the contrary affirm that it reaches the 7th century AD (with their TRC5 = AC1e).
[2047] For the description, production, and distribution cf. Rizzo 2014a: 326–327 (with further bibliography).
[2048] Rizzo 2003: 217.
[2049] Rizzo 2003: 205.
[2050] Portale & Romero 2000: 419.
[2051] Bezeczky 2013: 78.

**Cretoise 3 (AC3)**[2052]

Goods carried: wine[2053].

Capacity: 22 litres[2054].

Chronology: Augustan age[2055]–early 3rd century AD[2056].

**Cretoise 4 (AC4) = Dressel 43 = Schöne-Mau XXXVI**[2057]

Goods carried: wine[2058].

Capacity: 12.5 litres[2059].

Chronology: 1st–early 3rd centuries AD[2060].

**Dressel 5**[2061]

Goods carried: wine[2062].

Capacity: 30 litres?[2063]

Chronology: 1st–2nd centuries AD[2064].

***Ostia VI*, 476–477**[2065]

Goods carried: wine[2066].

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

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[2052] For the description, production, and distribution cf. Rizzo 2014a: 327 (with further bibliography). For a possible production centre recently found in Loutra cf. Tsatsaki & Nodarou 2014: 292–293.
[2053] Several *tituli picti* inform about what type of wine they contained, called ἀθαλάσσος, referring to a wine not stirred with sea-water (Markoulaki *et al.* 1989: 574), contrarily to what happened in the same island (Tchernia 1986: 35).
[2054] Rizzo 2003: 205.
[2055] Hayes 1971: 269, pl. 39b, n. 52; Hayes 1983: 143; Portale & Romero 2000: 419.
[2056] Marangou-Lerat 1995: 83.
[2057] For the description, production, and distribution cf. Rizzo 2014a: 327 (with further bibliography).
[2058] University of Southampton 2005: 'Dressel 43' where is also mentioned a vessel bearing a *titulus pictus* that refers to sorp apples.
[2059] Rizzo 2003: 205.
[2060] Marangou-Lerat 1995: 88.
[2061] For the description and production cf. Rizzo 2003: 205.
[2062] Cf., above, forms Dressel 2–4s.
[2063] Rizzo 2003: 205.
[2064] Rizzo 2003: 180, tab. 30b.
[2065] For the description and production cf. Rizzo 2014a: 327.
[2066] Cf. other Cretan forms.

### 3.5.3 Oriental – Meander Valley

**Agora F65/66 = 'Contenitore monoansato' = *Ostia III*, 368**[2067]
Goods carried: wine[2068] (or olive oil[2069]).
Capacity: 8 litres[2070].
Chronology: 1st BC–4th centuries AD[2071].

**Dressel 2–5**
Goods carried: wine[2072].
Capacity: 30 litres?[2073]
Chronology: found in contexts dated 2nd–early 3rd centuries AD[2074].

**Carthage Late Roman 3**[2075]
Goods carried: wine[2076].
Capacity: 12 litres[2077].
Chronology: early 4th–7th centuries AD[2078].

This amphora was not found in the analysed contexts with the exception of a fragment which is in between the forms Agora F65/66 and LR3.

### 3.5.4 Oriental – Aegean/Microasiatic area

This origin is relatively wide and is meant to indicate all those 'Eastern productions' that are not clearly identified for the lack of excavated production areas and manufacture kilns.

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[2067] For the description, typological division, production, and distribution cf. Rizzo 2014a: 313–315.
[2068] Panella 1986a: note 29.
[2069] Whitehouse 1981: 191–192; Rothchild-Boros 1981: 83–86. Hautumm 1981: 163–164, on the contrary, suggested salt or vinegar.
[2070] Rizzo 2003: 205.
[2071] Lemaître 1997: 312–314; Bezezcky 2013: 65–71 and 162–163.
[2072] Cf., above, forms Dressel 2–4s.
[2073] Cf., above, Dressel 2–4 from Italy.
[2074] This chronology is based on the finds in the 'Terme di Elegabalo'.
[2075] For the description, typological division, production, and distribution cf. Keay 1984: 286–296; Bonifay & Pieri 1995: 111–112; University of Southampton 2005: 'Late Roman 3'.
[2076] Panella 1986b: 267. Analyses held on fragments discovered in the *Schola Praeconum* showed traces of lipids possibly connected to Sesam oil used for preparing unguents (Rothschild-Boros 1981: 83). In Rome and Marseille some vessels have pitch inside, suggesting something else than oil (Bonifay 1987: 279; Sorrenti e*t al.* 1985: 590). There is also a *titulus pictus* mentioning *κονδ(ίτιον)* wine, cf. Bezezcky 2010b: 353 and note 24.
[2077] Remolá Vallverdú 2000: 209, note 335.
[2078] Remolá Vallverdú 2000: 209–212; Murialdo 2004: 397.

**Coletti & Lorenzetti 2010: NMT 2, fig. 4, 2**[2079]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated 10 BC–110 AD[2080].

**Coletti & Lorenzetti 2010: NMT 8, fig. 5, 1**[2081]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Augustan age–140 AD[2082].

**Coletti & Lorenzetti 2010: NMT 4, fig. 4, 4**[2083]
Goods carried: wine?[2084]
Capacity: unknown.
Chronology: found in contexts dated Augustan age–4th century AD[2085].

**Coletti & Lorenzetti 2010: NMT 5, fig. 4, 5**[2086]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Augustan age–140 AD[2087].

**Coletti & Lorenzetti 2010: NMT 6, fig. 4, 6**[2088]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Augustan age–140 AD[2089].

**Coletti & Lorenzetti 2010: NMT 7, fig. 4, 7**[2090]
Goods carried: unknown.
Capacity: unknown.

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[2079] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 160.
[2080] Coletti & Lorenzetti 2010: 160.
[2081] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 162.
[2082] Coletti & Lorenzetti 2010: 162.
[2083] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 160.
[2084] Coletti & Lorenzetti 2010: 160.
[2085] Coletti & Lorenzetti 2010: 160.
[2086] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 162.
[2087] Coletti & Lorenzetti 2010: 162.
[2088] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 162.
[2089] Coletti & Lorenzetti 2010: 162.
[2090] For the description, production, and distribution cf. Coletti & Lorenzetti 2010: 162.

Chronology: found in contexts dated Augustan age–140 AD[2091].

**Majcherek 2007: fig. 6, n. 40 = Coletti & Lorenzetti 2010: NMT 3, fig. 4, 3 = *Ostia VI*, 491**[2092]

Goods carried: olive oil or wine?[2093]

Capacity: about 56 litres[2094].

Chronology: Augustan age–2nd/3rd century AD[2095].

**Dressel 2–5; Mau XLI; Pompei 6**[2096]

Goods carried: wine[2097].

Capacity: 30 litres?[2098]

Chronology: 1st–2nd centuries AD[2099].

**Knossos 19**[2100]

Goods carried: wine?[2101]

Capacity: 26 litres[2102].

Chronology: 1st–2nd centuries AD?[2103].

**Zemer 1977: 41 = Agora G 199 = Mau XXVII–XXVIII = 'pinched amphora' = Dyczek 2001: Type 22**[2104]

Goods carried: wine?[2105]

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[2091] Coletti & Lorenzetti 2010: 162.
[2092] For the description, production, and distribution cf. Majckereck 2007: 25 (the author refers to Rauh & Slane 2000: fig. 8, 12–13, even though there are no similarities between the two forms (of handles), also being the referred figures of the Rauh's and Slane's article only pictures and not drawings); Coletti & Lorenzetti 2010: 160; Rizzo 2014a: 331–333.
[2093] Rizzo 2014a: 333.
[2094] Calculated from the drawing published in Bruno 2002: 305, n. 72.
[2095] Coletti & Lorenzetti 2010: 160; Rizzo 2014a: 332.
[2096] For the description, typological division, production, and distribution cf. Rizzo 2014a: 315–318 (also considering other forms offered below).
[2097] Cf., above, forms Dressel 2–4s.
[2098] Cf., above, forms Dressel 2–4s.
[2099] Rizzo 2003: 175, tab. 29.
[2100] For the description cf. Hayes 1983: 151. For suggested origins cf. Coletti & Lorenzetti 2010: 159. The distribution is not fully known, because usually small fragments are not identified as belonging to this form that is very similar to other forms (Dressel 2–5, Schöne-Mau XIII, Agora M54). It seems, however, to have been found in Ostia, Porto Recanati (Mercando 1974: 297, fig. 207; 208, fig. 128 bis; 376, fig. 299, 293b; 384, fig. 308; 386, fig. 310, 305c), Brindisi (Auriemma & Quiri 2004: 49), Margherita di Savoia (Volpe 1991: 115) and Rome. Cf. also Auriemma & Quiri 2006: 232 and notes 33–34 for a complete list of finds).
[2101] Bertoldi 2012: 131.
[2102] Auriemma 2000: 33 and note 11.
[2103] Panella 1986a: 618, note 13; Coletti & Lorenzetti 2010: 159.
[2104] For the description, typological division, production, and distribution cf. Rizzo 2014a: 337–338.
[2105] For the description, typological division, production, and distribution cf. Rizzo 2014a: 337.

Capacity: 28.2 litres[2106].

Chronology: 1st–3rd and possibly further more into the 4th centuries AD[2107].

**Dressel 24 = Mid Roman 18 = Zeest 1960: 90; Knossos 15; Knossos 18 = *Ostia I*, 568; Similar to type Knossos 18 = Ferrandes 2008b: fig. 12, 141; Similar to Alba 37 = Ferrandes 2008b: fig. 12, 142; Coletti & Lorenzetti 2010, NMT18, fig. 5, 7 = *Ostia VI*, 497 (and possibly Ferrandes 2008b: fig. 12, 140, 143–144)**[2108]

Goods carried: olive oil?[2109]

Capacity: 57 litres[2110].

Chronology: 1st–3rd centuries AD (for the entire group)[2111].

**San Lorenzo 7**[2112]

Goods carried: unknown.

Capacity: 25–27 litres[2113].

Chronology: 1st–6th centuries AD?[2114]

**Schöne-Mau XIII= Agora G198**[2115]

Goods carried: wine?[2116]

Capacity: 32.77 litres[2117].

Chronology: late 1st–2nd centuries AD[2118].

**Opaiţ 1980, Type XIII = Ostia VI, 482–487 = Coletti & Lorenzetti 2010: NMT 1 fig. 4, 1 = Riley 1979: 155, fig. 80, 203**[2119]

Goods carried: olive oil?[2120]

Capacity: unknown.

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[2106] Rizzo 2003: 205.
[2107] Auriemma & Quiri 2004: 49; Rauh 2004: 330.
[2108] For the description, typological division, production, and distribution of this large series of containers cf. Auriemma & Quiri 2006: 234 and notes: 51–55; Opaiţ 2010c: 157–158; Auriemma *et al.* 2012: 276–277; Rizzo 2014a: 318–322.
[2109] Bruno 2002: 283.
[2110] Rizzo 2003: 221.
[2111] University of Southampton 2005: 'Dressel 24'.
[2112] For the description, typological division, production, and distribution cf. Rizzo 2014: 333–334.
[2113] Calculated from the drawing offered in Belotti 2004: fig. 18, 96.
[2114] Rizzo 2014a: 333.
[2115] For the description, typological division, production, and distribution cf. Rizzo 2014a: 339–340.
[2116] University of Southampton: 'Pompei 13'.
[2117] Rizzo 2003: 205.
[2118] University of Southampton: 'Pompei 13'.
[2119] For the description, production, and distribution cf. Opaiţ 1980: 308, 323, 327; Opaiţ 2014: 50–52; Rizzo 2014a: 330.
[2120] Coletti & Lorenzetti 2010: 160.

Chronology: end of 1st–2nd/3rd centuries AD[2121].

**Agora M94**[2122]

Goods carried: unknown.

Capacity: unknown.

Chronology: 2nd[2123]–3rd centuries AD[2124].

**Zeest 86**[2125]

Goods carried: unknown.

Capacity: unknown.

Chronology: 2nd–3rd centuries AD[2126].

**Ferrandes 2008b: fig. 12, 149**[2127]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 12, 150 = *Ostia VI*, 488**[2128]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Late Antonine age.

**Ferrandes 2008b: fig. 12, 151**[2129]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 12, 152**[2130]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

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[2121] Rizzo 2014a: 330.
[2122] For the description, production, and distribution cf. Rizzo 2014a: 330–331.
[2123] Robinson 1959: 93.
[2124] Auriemma & Quiri 2006: 235.
[2125] For the description, production, and distribution cf. Rizzo 2014a: 352.
[2126] Rizzo 2014a: 352.
[2127] For the description and production cf. Ferrandes 2008b: 266.
[2128] For the description and production cf. Ferrandes 2008b: 266.
[2129] For the description and production cf. Ferrandes 2008b: 266.
[2130] For the description and production cf. Ferrandes 2008b: 266.

**Ferrandes 2008b, fig. 12, 153**[2131]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 12, 154**[2132]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Ferrandes 2008b: fig. 12, 155**[2133]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 493**[2134]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 494**[2135]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 495**[2136]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

**Similar to Dressel 25 = *Ostia VI*, 496**[2137]

Goods carried: unknown.

Capacity: unknown.

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[2131] For the description and production cf. Ferrandes 2008b: 266.
[2132] For the description and production cf. Ferrandes 2008b: 266.
[2133] For the description and production cf. Ferrandes 2008b: 266.
[2134] For the description, typological division, production, and distribution cf. Rizzo 2014: 334.
[2135] For the description, typological division, production, and distribution cf. Rizzo 2014: 334.
[2136] For the description, typological division, production, and distribution cf. Rizzo 2014: 334.
[2137] For the description, typological division, production, and distribution cf. Mazzocchin & Gualtieri 2004 (about Dressel 25) and Rizzo 2014: 334.

Chronology: found in a context dated Antonine age.

**Similar to type *Ostia IV*, 284–285**[2138]

Goods carried: unknown, possibly wine[2139].

Capacity: unknown.

Chronology: found in contexts dated Late Antonine and Severan ages[2140].

#### 1.1.5.5 Oriental – Pamphilia?[2141]

**Zemer 1977: 41 = Agora G 199 = Mau XXVII–XXVIII = 'pinched amphora' = Dyczek 2001: Type 22**[2142]

Goods carried: wine?[2143]

Capacity: 28.2 litres[2144].

Chronology: 1st–3rd and possibly further more into the 4th centuries AD[2145].

**Kapitän I**[2146]

Goods carried: wine[2147].

Capacity: about 9[2148]–10[2149] litres.

Chronology: first quarter of 2nd[2150]–end of 3rd centuries AD[2151].

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[2138] For the description, production, and distribution cf. *Ostia IV*: 62; Ferrandes 2008b: 266.
[2139] Ferrandes 2008b: 266.
[2140] Ferrandes 2008b: 266.
[2141] This origin is an assumption made from their fabric as no kilns had been discovered yet and no studies were held on amphorae that might have been produced in this Province, with the exception of Brixhe & Cankardeş-Şenol 2012 about stamps of Hellenistic amphorae.
[2142] For the description, typological division, production, and distribution cf. Rizzo 2014a: 337–338.
[2143] For the description, typological division, production, and distribution cf. Rizzo 2014a: 337.
[2144] Rizzo 2003: 205.
[2145] Auriemma & Quiri 2004: 49; Rauh 2004: 330.
[2146] For the description, typological division, and production cf. Rizzo 2014: 327–328. For the distribution of this form cf. Panella 1986a: 267; Auriemma 2004: 206; Auriemma & Quiri 2004: 52; Auriemma & Quiri 2006: 239–240.
[2147] *Ostia III*: 595; *Ostia IV*: 227.
[2148] Calculated from the drawing published in Caravale & Toffoletti 1997: 167 (on left), assuming 90 cm of height.
[2149] Calculated from the drawing published in Kapitän 1972: 246, fig. 5, assuming 90 cm of height.
[2150] Usually this form is dated from the second half of 2nd century AD. This earlier date is due to the discovery of several vessels belonging to this form in a phase of Nuovo Mercato Testaccio dated 110–140 AD (Coletti & Lorenzetti 2010: 156).
[2151] Auriemma 2004: 206 and note 113.

**Kapitän II**[2152]

Goods carried: wine[2153].

Capacity: 15 litres[2154].

Chronology: first quarter of 2nd[2155]–advanced 4th centuries AD[2156].

**Dressel 2–4**

Goods carried: wine.

Capacity: 30 litres?[2157]

Chronology: found in contexts dated 2nd and early 3rd centuries AD[2158].

### 3.5.6 Oriental – Rhodes / Rhodian *Peraea*

**Camulodunum 184 = Agora F94 = Oberaden 79 = Haltern 67 = Augst 6**[2159]

Goods carried: wine[2160].

Capacity: 19.5 litres[2161].

Chronology: 'Ancient' = 300–1st century BC[2162]; 'Late' = 1st BC–end of 2nd[2163]/early 3rd centuries AD[2164].

***Ostia VI*, 451**[2165]

Goods carried: unknown.

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[2152] For the description, typological division, and production cf. Rizzo 2014: 328–329.
[2153] *Ostia III*: 599; *Ostia IV*: 229.
[2154] Dyckzek 2001: 140.
[2155] Usually this form is dated from the second half of 2nd century AD. This earlier date is due to the discovery of several vessels belonging to this form in a phase of Nuovo Mercato Testaccio dated 110–140 AD (Coletti & Lorenzetti 2010: 156).
[2156] Rizzo 2003: 183 and note 138. From the 5th and during the whole 6th centuries AD this container was produced essentially for the Eastern market (Auriemma 2004: 206) with a distribution that was centred in the Pontic and Danubian areas (Panella 1986a: 267).
[2157] Cf., above, forms Dressel 2–4s.
[2158] This chronology is based on the finds in the 'Terme di Elegabalo'.
[2159] For the description, typological division, production, and distribution cf. Rizzo 2014: 322–323.
[2160] In Pompeii an amphora was found bearing a *titulus pictus*: *Passum Rhodium/P(ubli) Coeli Galli* (cf. Maiuri 1933: 485–486). Wine was probably the main content, even though some vessels in the Dramont D ship-wreck contained helg figs (Joncheray 1974: 26–27). An hypothesis that figs were the usual content is supported by the study of ancient sources: a 3rd century AD papyrus mentions dried figs exported from Rhodes and traded in ceramic vessels, while *Atheneus* (*Deipnosophistae* I, 27, 6; III, 75, 5; III, 7 6; III, 80, 3) recalls a helg figs commerce from Rhodes and informs that they helped in creating good dreams, and Columella (*Rust.*, V, 10, 11) mentions fig trees in Rhodes. Cf. also Sealey 1985: 57.
[2161] Rizzo 2003: 205.
[2162] Grace 1953: 118–120, 128.
[2163] Bruno 2004: 384–385; Bezeczky 2013: 35–36.
[2164] Vilvorder *et al.* 2000: 478.
[2165] For the description, production, and distribution cf. Rizzo 2014: 323.

Capacity: unknown.

Chronology: found in a context dated Antonine age.

#### 1.1.5.7 Oriental – Palestine

**Coletti & Lorenzetti 2010: NMT11, fig. 5, 4 = Mau XIV = Reynolds 2005: fig. 89**[2166]

Goods carried: wine[2167].

Capacity: unknown.

Chronology: 50 BC–3rd century AD[2168].

**Kingsholm 117**[2169]

Goods carried: wine[2170].

Capacity: 3.15 litres[2171], but it more likely contained about 13 litres[2172].

Chronology: Augustan age–first half of the 3rd century AD[2173].

**Gazan Amphora/Majcherek 1995, form 1**[2174]

Goods carried: wine[2175].

Capacity: unknown.

Chronology: Flavian age–early 3rd century AD[2176].

**Camulodunum 189 = Schöne-Mau XV**[2177]

Goods carried: dates[2178].

Capacity: 2–3 litres[2179] up to 6 litres[2180].

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[2166] For the description, production, and distribution cf. Timby 2004: 388 and fig. 7; Reynolds 2005: 570; Coletti & Lorenzetti 2010: 162.
[2167] Coletti & Lorenzetti 2010: 162.
[2168] Reynolds 2005: 570.
[2169] For the description, production, and distribution cf. Rizzo 2014: 343–344.
[2170] Some vessels had traces of resin inside, but in the Tedoliére ship-wreck some of them contained dates (Joncheray 1975: 62).
[2171] Rizzo 2003: 205.
[2172] As calculated from the drawing published in Reynolds *et al.* 2010: fig. 16, 3.
[2173] Rizzo 2014: 344.
[2174] For the description, production, and distribution cf. Rizzo 2014: 344–345.
[2175] Rizzo 2014a: 345.
[2176] Rizzo 2014: 344.
[2177] For the description, production, and distribution cf. Rizzo 2014: 340–341; De Almeida & Jerez Linde 2015: 14–24.
[2178] Peacock & Williams 1986: 109; Bruno 2004: 386, who also suggests olives. Opaiţ 2007: 104–105, on the contrary, suggests it contained fish sauces.
[2179] As reported at the website: http://intarch.ac.uk/journal/issue1/tyers/C189.html.
[2180] Dyckzek 2001: 90.

Chronology: 1st–3rd centuries AD[2181].

**Rizzo 2003, A23, tav. XLIII, 244**[2182]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated Trajanic[2183] and Antonine ages[2184].

**Colchester 105 = Peacock & Williams 1986, Class 65 = Reynolds 2005, fig. 137 = Marucci 2006, A. 1, fig. 11, 53**[2185]
Goods carried: dates[2186].
Capacity: about 23 litres[2187].
Chronology: 2nd century AD[2188].

#### 1.1.5.8 Oriental – Syria

***Ostia VI*, 510**[2189]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated Late Antonine age.

#### 1.1.5.9 Oriental – Egypt

**Pompei 5/6 = Zevi 2007, fig. 52e = Dressel 5 = Amphores Egyptiénnes 4**[2190]
Goods carried: wine[2191].

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[2181] Peacock & Williams 1986: 110; Bruno 2004: 386; Rizzo 2014a: 340–341.
[2182] For the description and production cf. Rizzo 2003: 182.
[2183] Rizzo 2003: 182.
[2184] Marucci 2006: 87.
[2185] For the description and production cf. Marucci 2006: 87–88; Reynolds 2005: 571. It distribution is unknown, but it was found at least in Beirut, Rome, Verulanium, Augst, Colchester, London (Lemaître 2000: 473, note 34; Vilvorder *et al.* 2000: 481), Lyon (Bonnet 1998: 239 and fig. 2, 1–3; Lemaître 2000: 473 and fig. 9. 4–8) and Rome (Marucci 2006: 87–88).
[2186] Peacock & Williams 1986: 216.
[2187] Calculated from the drawing published in Reynolds *et al.* 2010: 107, fig. 11 a&b, 1, assuming that the base is located in the place where it is put in the drawing.
[2188] Lemaître 2000: 473.
[2189] For the description and production cf. Rizzo 2014: 343 and 338, tab. 50.
[2190] For the description, production, and distribution cf. Panella & Fano 1977: 173, fig. 34; Empereur & Picon 1989: 228; Liou & Sciallano 1989: 155, 167, fig. 6 no. 2; Ballet 1996: 818; Tomber & Williams 2000: 44–46; Rizzo 2007: 659, tab. 1 and 2; Zevi 2007: 163, tab. 3.6.12 and fig. 52e; Dixneuf 2011: 129–133.
[2191] Empereur 1986: 606; Dixneuf 2011: 198–200.

Capacity: 30 litres[2192].

Chronology: 1st–3rd centuries AD[2193].

**Amphore Egyptienne 3 (AE3)**[2194]

Goods carried: wine[2195] or fish sauces[2196].

Capacity: about 13[2197]–14.5[2198] litres.

Chronology: Augustan age–3rd century AD[2199].

**Meylan Krause 2002: pl. 49, 646**[2200]

Goods carried: unknown.

Capacity: unknown.

Chronology: end of 2nd–3rd centuries AD[2201].

#### 1.1.5.10 Oriental – Cilicia

**Zemer 1971: 41 = Agora G 199 = Mau XXVII–XXVIII = 'pinched amphora' = Dyczek 2001, type 22 = Williams 1989, Anemurium A**[2202]

Goods carried: wine?[2203]

Capacity: 28.2 litres[2204].

Chronology: 1st–3rd and possibly further more into the 4th centuries AD[2205].

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[2192] Rizzo 2003: 205.
[2193] Rizzo 2003: 154, note 63; Dixneuf 2011: 129.
[2194] For the description, production, and distribution cf. Dixneuf 2011: 97–124; Rizzo 2014a: 310–311.
[2195] Sciallano & Sibella 1991: 87; Caravale & Toffoletti 1997: 156; Dixneuf 2011: 198–200.
[2196] Dixneuf 2011: 208.
[2197] Calculated from the vessel represented in Tomber 2007: fig. 2, 4.
[2198] Dixneuf 2011: 118.
[2199] Tomber 2007: 528–530.
[2200] For the description, production, and distribution cf. Meylan-Krause 2002: 216.
[2201] Meylan-Krause 2002: 216.
[2202] For the description, typological division, production, and distribution cf. Meyza & Bagińska 2013: 141–142; Rizzo 2014a: 337–338.
[2203] For the description, typological division, production, and distribution cf. Rizzo 2014a: 337.
[2204] Rizzo 2003: 205.
[2205] Auriemma & Quiri 2004: 49; Rauh 2004: 330. At Ayaş/Elaioussa Sebaste a later variety was produced which seems to be a transitional between the Anemurium A and the Later Roman 1: Ferrazzoli & Ricci 2010: 193 and 194, fig. 187.

**Schöne-Mau V and later variety (Coletti & Lorenzetti 2010, NMT9, fig. 5, 2 = Reynolds 2005, fig. 19–22)**[2206]

Goods carried: wine[2207].

Capacity: 12.76 litres[2208].

Chronology: 1st–2nd centuries AD[2209]; Later variety = first half of 2nd–first quarter of 3rd centuries AD[2210].

**Agora M54 = Knossos 47 = Psuedo-Cos en cloche**[2211]

Goods carried: wine[2212].

Capacity: 28 litres[2213].

Chronology: second half of 1st–second half of 2nd centuries AD[2214].

**Schöne-Mau XIII = Agora G198**[2215]

Goods carried: wine?[2216]

Capacity: 32.77 litres[2217].

Chronology: late 1st–2nd centuries AD[2218].

#### 1.1.5.11 Oriental – Cyprus

**Zemer 1977: 41 = Agora G 199 = Mau XXVII–XXVIII = 'pinched amphora' = Dyczek 2001: Type 22**[2219]

Goods carried: wine?[2220]

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[2206] For the description, production, and distribution cf. Autret & Marangou 2011: 361–362; Rizzo 2014a: 340.
[2207] A *titulus pictus* on a Pompeian amphora (*R(ubrum?)*: *CIL* IV, 2731) suggests the quality of wine: cf. Böttger 1992: 340, tav. 99, no. 5.
[2208] Rizzo 2003: 205.
[2209] University of Southampton 2005: 'Pompeii 5'.
[2210] Reynolds 2005: 565 and figs. 19–22; Coletti & Lorenzetti 2010: 162.
[2211] For the description, production, and distribution cf. Autret & Marangou 2011: 360–361; Rizzo 2014a: 338–339.
[2212] Sciallano & Sibella 1991: 96; Empereur 1998: 395. Opaiţ 2007: 104, on the contrary, suggests fish sauces.
[2213] Rizzo 2003: 205.
[2214] Panella 1986a: 618 and note 15; Bezeczky 2013: 80.
[2215] For the description, production, and distribution cf. Rizzo 2014a: 339–340.
[2216] University of Southampton: 'Pompei 13'.
[2217] Rizzo 2003: 205.
[2218] Panella 1986a: 618, note 14; Bezeczcky 2013: 81.
[2219] For the description, production, and distribution cf. Lund 2000; Rizzo 2014a: 337–338. Cf. also Williams & Lund 2013: 158–160.
[2220] Rizzo 2014a: 337.

Capacity: 28.2 litres[2221].
Chronology: 1st–3rd and possibly further more into the 4th centuries AD[2222].

#### 1.1.5.12 Oriental – Cnidos

**Mau XXXVIII**[2223]
Goods carried: wine[2224].
Capacity: 17.76 litres[2225].
Chronology: 1st–2nd centuries AD[2226].

#### 1.1.5.13 Oriental – Cos

**Dressel 2–5 / Pompei 5–6**[2227]
Good carried: wine[2228].
Capacity: 30/32 litres[2229].
Chronology: 1st–2nd centuries AD[2230].

#### 1.1.5.14 Oriental – Syria/Lebanon

**Beirut 2a**[2231]
Goods carried: wine[2232].

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[2221] Rizzo 2003: 205.
[2222] Auriemma & Quiri 2004: 49; Rauh 2004: 330.
[2223] For the description, typological division, production, and distribution cf. Dünar 2013; Rizzo 2014a: 323–324.
[2224] Sciallano & Sibella 1991: 95.
[2225] Rizzo 2003: 205.
[2226] The ceasing of its production can be assigned to the 2nd century AD: Panella 1986a: 621 and note 22.
[2227] For the description, typological division, production, and distribution cf. Rizzo 2014a: 315–318 (also considering other forms offered above).
[2228] This hypothesis comes from a *titulus pictus* borne by an amphora from Pompeii: Choum v(etus): Panella 1986a: 617, note 12.
[2229] Rizzo 2003: 205.
[2230] Hesnard 1986: 75; Bezeczky 2013: 58.
[2231] For the description, production, and distribution cf. Reynolds 2000: 387–388; Rizzo 2014a: 341–342.
[2232] Rizzo 2014a: 342.

Capacity: about 31/32 litres[2233].

Chronology: Augustan age–late 1st/first half of 2nd centuries AD[2234]

***Ostia VI*, 506**[2235]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 507**[2236]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 508**[2237]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

***Ostia VI*, 509**[2238]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Late Antonine age.

### 1.1.6 Unidentified Origin

All forms whose origin is not offered in publications are listed in this Section.

***Ostia II*, 68**[2239]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated Flavian age–160 AD.

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[2233] Calculated from the drawings published in Reynolds 2008: 1, f = Reynolds *et al.* 2010: 101, fig. 5, f.

[2234] Rizzo 2014a: 342: it is found in a context dated Antonine age (AD 120–160) but not referred as a residual form.

[2235] For the description, production, and distribution cf. Rizzo 2014a: 342.

[2236] For the description, production, and distribution cf. Rizzo 2014a: 342.

[2237] For the description, production, and distribution cf. Rizzo 2014a: 342.

[2238] For the description, production, and distribution cf. Rizzo 2014a: 342.

[2239] For the description and production cf. *Ostia II*: 49. It has similarities with an unidentified amphora found in Brindisi: Auriemma & Quiri 2006: 245–246, and fig. 40.

***Ostia III*, 608**[2240]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated AD 80/90 and AD 190–200/225.

***Ostia III*, 611**[2241]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in contexts dated AD 80/90 and AD 190–200/225.

**Lissi Caronna & Rizzo 2009: fig. 94, 23**[2242]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated second half of the 2nd century AD.

**Zevi 2007: fig. 48d**[2243]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated second half of the 2nd century AD.

**Rizzo 2003: A24, tav. XLIV, 247**[2244]

Goods carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Antonine age.

**Rizzo 2003: A25, tav. XLIV, 248**[2245]

Good carried: unknown.

Capacity: unknown.

Chronology: found in a context dated Antonine age.

***Ostia I*, 469**[2246]

Goods carried: unknown.

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[2240] For the description and production cf. *Ostia III*: 271; *Ostia IV*: 383, tab. 5.
[2241] For the description and production cf. *Ostia III*: 271; *Ostia IV*: 383, tab. 5.
[2242] For the description and production cf. Lissi Caronna & Rizzo 2009: 107.
[2243] For the description and production cf. Zevi 2007: 144, tab. 3.5.12. The long cylindrical neck with a pointed enlargement below the rim recalls the form *Ostia III*, 608.
[2244] For the description and production cf. Rizzo 2003: 183.
[2245] For the description and production cf. Rizzo 2003: 183.
[2246] For the description and production cf. *Ostia I*: 101; *Ostia IV*: 373.

Capacity: unknown.
Chronology: found in contexts dated AD 190–200/225 and second half of the 3rd century AD.

***Ostia I*, 569**[2247]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated AD 190–200/225[2248] and second half of the 3rd century AD[2249].

***Ostia IV*, 445**[2250]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated AD 190–200/225.

***Ostia IV*, 446**[2251]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated AD 190–200/225.

***Ostia III*, 61**[2252]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in contexts dated AD 190–235.

**Zevi 2007: fig. 52f**[2253]
Goods carried: unknown.
Capacity: unknown.
Chronology: found in a context dated early 3rd century AD.

**Zevi 2007: fig. 52g**[2254]
Goods carried: unknown.

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[2247] For the description and production cf. *Ostia I*: 111; *Ostia IV*: 373. This amphora was also found at Aiaş/*Elaiussa Sebaste* (Ferrazzoli 2003: 685).
[2248] *Ostia IV*: 373.
[2249] *Ostia I*: 111.
[2250] For the description and production cf. *Ostia IV*: 374
[2251] For the description and production cf. *Ostia IV*: 374
[2252] For the description and production cf. *Ostia III*: 60.
[2253] For the description and production cf. Zevi 2007: 163, tab. 3.6.12.
[2254] For the description and production cf. Zevi 2007: 163, tab. 3.6.12. It recalls form Zevi 2007: fig. 48d.

Capacity: unknown.
Chronology: found in a context dated early 3rd century AD.

**Possible imitation of a Gauloise 4**[2255]
Goods carried: possibly wine.
Capacity: 33 litres?[2256]
Chronology: found in a context dated early 3rd century AD.

## 1.2 Two new forms of amphorae

In this section are offered descriptions of two forms of amphorae identified for the first time in the 'Terme di Elagabalo'.

### 1.2.1 Possible variety of Gauloise 3

This sub-form (cf. Table IV, **61**) of what may be a Gauloise 3 (for the shape of the rim) was found for the first time in two different sizes during the excavations in the 'Terme di Elagabalo'. It has an everted rim, flat on the upper part, with a quadrangular section and two mouldings under it, a short neck in the form of an hourglass, two handles attached to the neck and the rounded shoulder with a circular section and two small decorative protuberances applied on the upper part, an ovoid body with many grooves (those in the upper part of the body are big and triangular, those in the lower part are smaller and rounded, which differ much from all Gallic productions). The base is not preserved, but very likely it was a ring-foot. No confrontations were found for it in any publication.

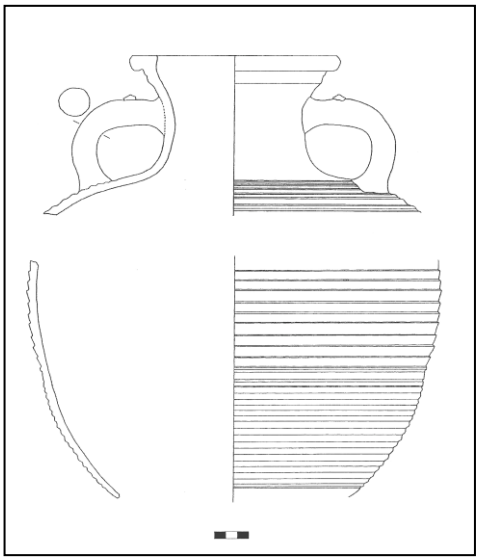

**Fig. A1.1: Possible variety of Gauloise 3 amphora, from Table IV, 61.**

[2255] For the description cf. Zevi 2007: 163, tab. 3.6.12, but neither suggestions about the production area were made nor a drawing was provided. Several areas had been identified imitating Gauloise 4 amphorae: cf., above, 'Imitation of Gauloise 4' from *Hispania Tarraconensis*, 'Dressel 30 from *Mauretania Caesariensis*' and 'Dressel 30 from *Africa Proconsularis*'. Cf. also Tomber 2009: 153 who recalls the manufacture of imitations also in Cilicia and possibly Pamphilia ("fabric similar to Kapitän 2").
[2256] Cf., above, Gauloise 4 from Gaul.

Production areas: Gaul Narbonnaise?
Fabrics found: GAUL4.
Goods carried: wine?
Capacity: about 28 litres[2257].
Chronology: found in contexts dated Severan age in the 'Terme di Elagabalo'.

### 1.2.2 'Terme di Elagabalo' Form 1

This form was identified for the first time during the excavations in the 'Terme di Elagabalo' in contexts dated Severan age (early 3rd century AD), although a few fragments of walls were also found in phases dated the Hadrianic age. It was reconstructed to the shoulder by various fragments (cf. Table XX, **384**). It has an enlarged and everted rim with a rounded lip, a cylindrical neck, two handles with an ovoid section and slight grooves on the outer surface attached just below the lip and to the rounded shoulder. The body is not preserved, but fragments of walls of the same fabric suggest that it could have been grooved. The preserved base of the same fabric reminds of some Kingsholm 117: it is a solid knob-base with a rounded lower part. The fabric of this amphora is similar to some Palestinian containers (such as Kinghsolm 117), but it is much closer to the fabric of a Beirut 3 fragment found among the Mid-Imperial ceramic materials in the so-called 'Area II' of the excavations on the Palatine's N-E slopes in Rome[2258]. For this reason a Lebanese origin can be suggested, even though it is not assured as containers from that origin usually have a central groove in the handles. No confrontations were found for this form in any publication, thus no information is available about its content, capacity, and distribution.

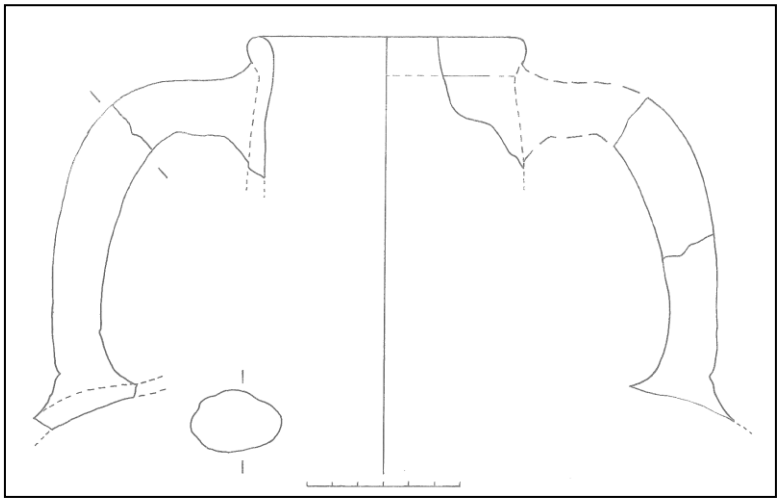

**Fig. A1.2: 'Terme di Elagabalo' Form 1 amphora, from Table XX, 384.**

[2257] Calculated from the drawing in Table **IV, 61**, assuming that the body is similar to a sphere.
[2258] This fragment was analysed by the same author of this research.

Production areas: Oriental – Lebanon?

Fabrics found: NI1.

Goods carried: unknown.

Capacity: unknown (the form is not well enough preserved).

Chronology: found in contexts dated from the first half of the 2nd to the early 3rd centuries AD in the 'Terme di Elagabalo'.

# Appendix 2: Lists of amphorae from all the analysed sites

The purpose of this Appendix is to provide tables of finds relevant to the sites discussed in Chapter 4. The main reason for presenting these tables in this Appendix, and not in the relevant sections of the previous chapters, is to facilitate the reading of this study. These tables are strictly related to all sections from that Chapter, and for this reason they will be divided with almost the same structure. Criteria stated by Panciera 1991 and the special epigraphic font 'Cardo'[2259] will be used for all transcriptions of stamps and *tituli picti* borne by the amphorae. For space reasons these abbreviations are used: F = Fabric[2260]; R = Rims; B = Bases; W = Walls; S = Shoulders; H = Handles; V = Number of Vessels; N. Fr = Number of Fragments; Nk. = Necks. For the 'Terme di Elagabalo', in bold are references to Tables of Drawings.

**Table 1: 'Terme di Elagabalo', Phase 1 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Unidentifiable | Unidentifiable | ITAC3 | | | 1 | | | 1 |
| Italy - Tyrrhenian | Dressel 1 | Unidentifiable | ITAT3 | | | | | 1 | 1 |
| Italy - Tyrrhenian | Camulodunum 139 | Martin-Kilcher 1994, 3749 (Table **II**, **29**) | ITAT3 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 9 | | | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV1 | | | | | 1 | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | *Ostia III*, 253 | ITAS1 | 1 | | | | | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 6 | | | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 9 | | | 1 |
| *Baetica* | Dressel 7-11 | Unidentifiable | BAE4 | | | | | 1 | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE6 | | | | | 1 | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 5 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 22 | | | 1 |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | 6 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 1 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | 12 | | | 1 |
| Oriental - Crete | AC1a | Marangou Lerat 1995, fig. 31, A29 (Table **XV**, **266**) | OR2 | 1 | | | | | 1 |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR14 | | | 2 | | | 1 |
| Oriental - Pamphilia | Kapitän I/II | Unidentifiable | OR6 | | | 1 | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2380 | OR22 | 1 | | | | | 1 |

[2259] This font can be downloaded at www.edr-edr.it site.
[2260] For the F (Fabric) abbreviations, cf., below, Appendix 3. This column is shown only for the tables of the 'Terme di Elagabalo'.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Cilicia | Agora G199 = Zemer 41 = Mau XXVII-XXVIII | Unidentifiable | OR18 | | | | | 1 | 1 |
| **TOTAL** | | | | **4** | **0** | **74** | **0** | **5** | **18** |

**Table 2: 'Terme di Elagabalo', Phase 3 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2-4' | Ferrandes 2008b, fig. 6, 46 | ITAC2 | 1 | | 42 | | | 1 |
| Italy - Vesuvian | Dressel 2-4 | Unidentifiable | ITAC3 | | | 20 | | | - |
| Italy - Tyrrenian (Ager Cosanus) | Dressel 2-4 | *Ostia IV*, 494 | ITAT1 | 1 | | 17 | | | 1 |
| Italy - Tyrrenian | Dressel 2-4 | Unidentifiable | ITAT3 | | | 126 | | 1 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV2 | | | 53 | | 1 | 1 |
| Italy - Adriatic | 'Anfora di Forlimpopoli' | Unidentifiable | ITAA1 | | | 24 | | 1 | 1 |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 13 | | | - |
| Italy - Sicily | Dressel 21-22 | Table **I**, **11** | ITAS3 | 1 | | | | | 1 |
| Italy - Sicily | Dressel 21-22 | Table **I**, **11** | ITAS3 | 1 | | 2 | | | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 1 | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | 1 | 17 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 14 | | | - |
| Gaul | Gauloise 3 | Martin Kilcher 1994, 2557 (Table **IV**, **60**) | GAUL2 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin Kilcher 1994, 2617 (Table **IV**, **59**) | GAUL1 | 1 | | | | | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 2 | | 1 | - |
| *Baetica* | Dressel 7-11 | (Table **VII**, **105**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | (Table **VIII**, **118**) | BAE5 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | (Table **VIII**, **118**) | BAE6 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin Kilcher 1987, 3 (Table **V**, **64**) | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin Kilcher 1987, 965 (Table **V**, **65**) | BAE7 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | (Table **VI**, **85**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE4 | | | 84 | | 2 | 1 |
| *Baetica* | Dressel 21-22 | Unidentifiable | BAE2 | | | 2 | | 1 | 1 |
| *Baetica* | Dressel 2-4 | Unidentifiable | BAE3 | | | 2 | | 1 | 1 |
| *Baetica* | Dressel 28 | Unidentifiable (cf. the base Table **IX**, **138**) | BAE4 | | 1 | 7 | | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE1, 3, 4, 8 | | 1 | 45 | | 6 | 4 |
| *Tarraconensis* | Dressel 2-4 | Unidentifiable | TAR1 | | | 6 | | 1 | 1 |
| Africa | Africana IA | Bonifay 2004a, Type 21A, fig. 56, 1 | AFR1 | 1 | | 9 | | 2 | 1 |
| Africa | Benghazi MR1 = Agora M254 | Unidentifiable | AFR4 | | | | | 1 | 1 |
| Africa | Africana I | Unidentifiable | AFR2 | | 1 | | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 71 | | | - |
| Tripolitania | Mau XXXV | (Table **XV**, **246**) | TRIP2 | 1 | | | | 1 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Tripolitania | Tripolitan II | Keay 1984, Type XI, fig. 47, 5 (Table **XIV**, **234**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana I–III | Unidentifiable (not enough preserved) | TRIP3 | 1 | | | | 3 | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 54 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Ferrandes 2008b, fig. 5, 27 (Table **XX**, **365**) | OR12 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | | 50 | | 1 | 1 |
| Oriental – Meander Valley | Agora F65/66 | Unidentifiable | OR3 | | | 2 | | | 2 |
| Oriental – Meander Valley | Agora F65/66 | Unidentifiable | OR21 | | 1 | 11 | | 1 | 1 |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 16 | | | - |
| Oriental - Crete | AC2 | (Table **XVI**, **275**) | OR2 | 1 | | | | 2 | 1 |
| Oriental - Crete | AC1b | Marangou Lerat 1995, fig. 39, A55 (Table **XV**, **272**) | OR2 | 1 | | | | 1 | 1 |
| Oriental - Crete | AC2a | Marangou-Lerat 1995, fig. 54, A87 | OR25 | 1 | 1 | | | | 1 |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR2 | | | 30 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2–5 | Unidentifiable | OR4 | | 1 | 1 | 5 | | 1 |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 133 | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable | OR19 | | | 11 | 3 | 3 | 1 |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR5 | | | | | 3 | 1 |
| Oriental - Pamphilia | Kapitän I/II | Unidentifiable | OR5 | | | 29 | | | - |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR23 | | | 3 | | | 1 |
| Oriental – Lebanon? | Unidentifiable | Unidentifiable | NI1 | | | 10 | | 1 | 1 |
| **TOTAL** | | | | **22** | **7** | **905** | **8** | **34** | **44** |

**Table 3: 'Terme di Elagabalo', Phase 4 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 1 | | | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE7 | | | 2 | | | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 3 | | | - |
| **TOTAL** | | | | **0** | **0** | **6** | **0** | **0** | **1** |

**Table 4: 'Terme di Elagabalo', Phase 5 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tyrrhenian | Dressel 1B | *Ostia III*, 380 | ITAT3 | 1 | | | | | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 5 | | | - |
| *Baetica* | Haltern 70 | Martin Kilcher 1994, 3874 (Table **VII**, **101**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 3 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 2 | | | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 1 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 2 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 1 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR16 | | | 2 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 1 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 5 | | | - |
| Oriental - Pamphilia? | Kapitän I/II | Unidentifiable | OR6 | | | 1 | | | - |
| Oriental - Pamphilia? | Kapitän I/II | Unidentifiable | OR5 | | | 8 | | | - |
| **TOTAL** | | | | **2** | **0** | **31** | **0** | **0** | **3** |

**Table 5: 'Terme di Elagabalo', Phase 6 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Dressel 2-4 | Unidentifiable | ITAC3 | | | | | 1 | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT1 | | | 3 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 3 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 1 | | | - |
| *Baetica* | Haltern 70 | (Table **VII**, **103**) | BAE8 | 1 | | | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE4 | | | 14 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 4 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | | | 1 | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 4 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2380 | OR10 | 2 | | | | 2 | 2 |
| Oriental - Lebanon? | Unidentifiable | Unidentifiable | NI1 | | | | | 1 | - |
| **TOTAL** | | | | **3** | **0** | **29** | **0** | **5** | **3** |

**Table 6: 'Terme di Elagabalo', Phase 7 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 2-4 | Unidentifiable | ITAC2 | | | | | 1 | 1 |
| Italy - Tyrrhenian | Dressel 1 | Martin-Kilcher 1994, 2035 | ITAT2 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 3 | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 369 | ITAV1 | 1 | | | | | 1 |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 1 | | | - |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | | 7 | | 1 | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 2 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 5 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 2 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 4 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 3 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 2 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP2 | | | 6 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 13 | | | - |
| Mauretania | Dressel 30 | Unidentifiable | MAUR1 | | | | | 1 | 1 |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 4 | | | - |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR5 | | | | | 2 | 1 |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR6 | | | | | 2 | 1 |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR8 | | | 3 | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2380 (Table **XX**, **367**) | OR16 | 1 | 1 | 2 | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR10 | | | 7 | | 2 | 1 |
| **TOTAL** | | | | **3** | **1** | **65** | **0** | **9** | **10** |

**Table 7: 'Terme di Elagabalo', Phase 8 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT2 | | | 13 | | | - |
| Italy - Adriatic | 'Anfora di Forlimpopoli' | Unidentifiable | ITAA1 | | | | | 1 | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 19 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 1 | | | - |
| Gaul | Gauloise 1 | Unidentifiable | GAUL1 | | 2 | | | | 1 |
| Gaul | Gauloise 4 | Unidentifiable | GAUL1 | | 1 | | | 1 | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 6 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 11 | | | - |
| *Baetica* | Dressel 20 (same vessel of Phase 15) | Martin-Kilcher 1987, 550 (Table **VI**, **88**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 119 (Table **VI**, **89**) | BAE4 | 1 | | | | | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE2 | | | 8 | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 2 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 7 | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 1 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 3 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 8 | | | - |
| Tripolitania | Mau XXXV | Unidentifiable | TRIP2 | | | | | 2 | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 3 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 2 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 1 | | | - |
| Oriental - Pamphilia | Kapitän I/II | Unidentifiable | OR5 | | | 1 | | | - |
| Oriental - Pamphilia | Kapitän I/II | Unidentifiable | OR6 | | | 1 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 11 | | | - |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR13 | | | 23 | | | 1 |
| **TOTAL** | | | | **2** | **3** | **122** | **0** | **4** | **7** |

**Table 8: 'Terme di Elagabalo', Phase 10 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Unidentifiable | Unidentifiable | ITAC3 | | | 1 | | | - |
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT4 | | | 2 | | | 1 |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 1 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS3 | | | 1 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 2 | | | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR2 | | | 2 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | 4 | | | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR25 | | | 1 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 2 | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR5 | | | 1 | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 1 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR12 | | | 1 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR22 | | | 4 | | | 1 |
| **TOTAL** | | | | **0** | **0** | **24** | **0** | **0** | **3** |

**Table 9: 'Terme di Elagabalo', Phase 11 (Hadrianic age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC2 | | | 3 | | | - |
| Italy - Tyrrhenian | Dressel 1 | *Ostia II*, 546 | ITAT2 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 3 | | | - |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2646 (Table **IV**, **56**) | GAUL1 | 2 | | | | | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 8 | | | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1365 | BAE6 | | | | | 2 | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1176 | BAE7 | | | | | 2 | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE4 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 4 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 2 | | | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS2 | | | 2 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 3 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 5 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 2 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 1 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 2 | | | - |
| **TOTAL** | | | | **3** | **0** | **37** | **0** | **4** | **6** |

**Table 10: 'Terme di Elagabalo', Phase 12 (Antonine age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 1 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV5 | | | 2 | | | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE1 | | | 10 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 4 | | | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | 1 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 6 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 92 | | | 1 |
| **TOTAL** | | | | **0** | **0** | **116** | **0** | **0** | **3** |

**Table 11: 'Terme di Elagabalo', Phase 14 (Antonine age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 2-4 | Unidentifiable | ITAC2 | | | | | 2 | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 1 | | | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV1 | | | | | 1 | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 1 | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 2 | | | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 1 | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 1 | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 2 | | | 1 |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR13 | | | 1 | | | 1 |
| **TOTAL** | | | | **0** | **0** | **9** | **0** | **3** | **8** |

**Table 12: 'Terme di Elagabalo', Phase 15 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 12 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 1 | | | 1 |
| *Baetica* | Haltern 70 | Martin-Kilcher 1994, 3896 (Table **VII**, **102**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 (same vessel of Phase 8) | Martin-Kilcher 1987, 550 | BAE4 | 1 | | | | | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 550 | BAE4 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE4 | | | | | 1 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE6 | | | 3 | | 2 | 1 |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | | | 1 | 1 |
| Africa | Ostia Form XXIII | Panella 1983a, 34 | AFR3 | 1 | | | | | 1 |
| Africa | Africana IID (intrusive) | Bonifay 2004a, Type 26, fig. 62a, 6 (Table **XIII**, **223**) | AFR1 | 1 | | | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR4 | | | 2 | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 12 | | | - |
| Tripolitania | Tripolitana III | Keay 1984, Type XI, fig. 51,4 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, Type XI, fig. 51,2 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, Type XI, fig. 51,2 | TRIP2 | 1 | | | | | 1 |
| Oriental - Crete | AC7 | Marangou 1995, fig. 25, A2 (Table **XV**, **263**) | OR25 | 1 | | 5 | | | 1 |
| Oriental – Meander Valley | Agora F65/66 | Unidentifiable | OR3 | | | | | 1 | 1 |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR18 | | | 2 | | | 1 |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR5 | | | 2 | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | | | | 1 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 4 | | | 1 |
| **TOTAL** | | | | **10** | **0** | **43** | **0** | **6** | **18** |

**Table 13: 'Terme di Elagabalo', Phase 16 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy – Campania | Dressel 2-4 | Unidentifiable | ITAC2 | | 1 | 7 | | | 1 |
| Italy - Campania | Dressel 1B | Unidentifiable (not enough preserved) | ITAC1 | 1 | | | | 1 | 1 |
| Italy - Campania | Dressel 21-22 | Unidentifiable (not enough preserved) | ITAC2 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2108 | ITAT1 | 2 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2053 | ITAT1 | 2 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Unidentifiable | ITAT3 | | 2 | | | 1 | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT1 | | | 6 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT2 | | | 2 | | | - |
| Italy – Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 12 | | | - |
| Italy - Tyrrhenian? | Camulodunum 139 | Unidentifiable | ITAT2 | | | | | 1 | 1 |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 6 | | | - |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia II*, 521 | ITAV4 | 2 | | | | 3 | 2 |
| Italy – Tiber Valley | Unidentifiable | Unidentifiable | ITAV1 | | | 1 | | | - |
| Italy – Tiber Valley | Unidentifiable | Unidentifiable | ITAV4 | | | 5 | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | 2 | | | 2 | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 21 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 10 | | | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS4 | | | 3 | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2646 | GAUL1 | 2 | | | | 1 | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 22 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | 1 | 18 | | 2 | 1 |
| *Baetica* | Dressel 14A | Martin Kilcher 1994, 5356 | BAE3 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Étienne & Mayet 2002, fig. 34, 2 | BAE4 | 2 | | 8 | | | 2 |
| *Baetica* | Beltràn IIB | Ferrandes 2008b, fig. 7, 62 | BAE4 | 1 | | | | | 1 |
| *Baetica* | Late Dressel 28 | Unidentifiable | BAE5 | | | 4 | | | 1 |
| *Baetica* | Haltern 70 | Unidentifiable | BAE2 | | | | | 1 | 1 |
| *Baetica* | Dressel 20 | Unidentifiable (rim not enough preserved) | BAE6 | 1 | 2 | 10 | | 5 | 3 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE3 | | | 33 | | 3 | 1 |
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 4 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE2 | | | 7 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 5 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | 13 | | | - |
| *Lusitania* | Dressel 14 B | Unidentifiable | LUS1 | | | | | 1 | 1 |
| Africa | Ostia Form LIX | *Ostia III*, 386 | AFR2 | | | | | 1 | 1 |
| Africa | Africana IA | Keay 1984, Type IIIA, fig. 37, 8 | AFR1 | 1 | | | | | 1 |
| Africa | Africana IA | Keay 1984, Type IIIA, fig. 37, 2 | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Keay 1984, fig. 38, 6 | AFR3 | 1 | | | | | 1 |
| Africa | Africana IIB | Bonifay 2004a, type 23, fig. 59, 1 | AFR3 | 1 | | | | | 1 |
| Africa | Benghazi MR1 = Agora M254 | Martin-Kilcher 1994, 5649 (Table **X**, **151**) | AFR3 | 1 | | | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 223 | | 7 | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 12 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | 1 | 8 | | 1 | - |
| Tripolitania | Tripolitana I | *Ostia I*, 517 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, type XI, fig. 51, 8 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Bonifay 2004a, type 58, fig. 79, 1 | TRIP2 | 1 | | | | 2 | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 14 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 25 | | | - |
| Mauretania | Dressel 30 | Unidentifiable | MAUR1 | | | | | 1 | 1 |
| Oriental – Bosphorus-Heraclea Pontica | Unidentifiable | Unidentifiable | OR1 | | 1 | 115 | | 3 | 1 |
| Oriental - Bosphorus | Zeest 80 | Unidentifiable | OR35 | | | | | 1 | 1 |
| Oriental - Crete | Cretoise 1/2 | Unidentifiable | OR2 | | | | | 1 | 1 |
| Oriental - Crete | Cretoise 2/3 | Unidentifiable | OR33 | | | | | 1 | 1 |
| Oriental - Crete | Cretoise 4 | Unidentifiable | OR3 | | | | | 2 | 1 |
| Oriental – Crete | Unidentifiable | Unidentifiable | OR2 | | | 8 | | | - |
| Oriental – Crete | Unidentifiable | Unidentifiable | OR25 | | | 45 | | | - |
| Oriental - Meander Valley | Agora F65/66 | Lemaître 1997, fig. 3, 1 | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Agora F65/66 | Lemaître 1997, fig. 5, 4 | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Agora F65/66 | Unidentifiable | OR3 | | | 29 | | | - |
| Oriental – Meander Valley | Unidentifiable | Unidentifiable | OR21 | | | 4 | | | - |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | Martin-Kilcher 1994, 2235 | OR4 | 1 | 1 | | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 = Mid Roman 18 = Zeest 90 | Auriemma & Quiri 2004, fig. 10, c | OR9 | 1 | | | | 2 | 1 |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 4 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 4 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR11 | | | 8 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR19 | | | 7 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR20 | | | 5 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR29 | | | 1 | | | - |
| Oriental – Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR32 | | | 2 | | | - |
| Oriental - Pamphilia | Kapitän I | *Ostia IV*, 439 (Table **XIX**, **343**, **352**) | OR5 | 2 | | | | | 2 |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR6 | | 1 | | | 1 | 1 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR5 | | | | | 1 | 1 |
| Oriental - Pamphilia | Kapitän I/II | Unidentifiable | OR6 | | | 55 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR10 | | | | | 4 | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 7 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR22 | | | 1 | | | - |
| Oriental - Palestine | Kingsholm 117 | Unidentifiable | OR13 | | | 2 | | | 2 |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR23 | | | 2 | | | - |
| Oriental - Cilicia | Agora M54 | Unidentifiable | OR24 | | | | | 1 | 1 |
| **TOTAL** | | | | **29** | **12** | **777** | **0** | **50** | **54** |

**Table 14: 'Terme di Elagabalo', Phase 17 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Dressel 2-4 | Unidentifiable | ITAC3 | | 1 | | | 1 | 1 |
| Italy - Vesuvian | Unidentifiable | Unidentifiable | ITAC3 | | | 46 | | | - |
| Italy - Campania | 'Late Campana Dressel 2-4' (same vessel of Phase 18) | Ferrandes 2008b, fig. 6, 46 (Table **II**, **30**) | ITAC1 | 1 | | | | | 1 |
| Italy - Campania | 'Late Campana Dressel 2-4' | Ferrandes 2008b, fig. 6, 46 (Tables **II**, **32-33**; **III**, **34**, **36**, **41**) | ITAC1 | 5 | | | | | 4 |
| Italy - Campania | 'Late Campana Dressel 2-4' | Ferrandes 2008b, fig. 6, 46 (Tables **II**, **31**; **III**, **39-40**) | ITAC2 | 6 | | | | 1 | 5 |
| Italy - Campania | 'Late Campana Dressel 2-4' | (Table **III**, **35**) | ITAC2 | 1 | | | | | 1 |
| Italy - Campania | 'Late Campana Dressel 2-4' | Unidentifiable | ITAC1 | | 3 | | | 6 | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2-4' | (Table **III**, **42**) | ITAC2 | | 1 | | | 3 | - |
| Italy - Campania | Dressel 2-4 | Ferrandes 2008b, fig. 3, 4 *similis* | ITAC1 | 2 | | | | | 1 |
| Italy - Campania | Dressel 2-4 | Martin-Kilcher 1994, 2133 | ITAC2 | 1 | | | | | 1 |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC1 | | | 414 | | | - |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC2 | | | 412 | | | - |
| Italy - Tyrrenian | MGS II | Van der Mersch 1994: 66, B (Table **I**, **3**) | ITAT2 | 1 | | | | | 1 |
| Italy - Tyrrenian | MGS V | Costantini & Ghizzani Marcìa 2004, fig. 1,3 (Table **I**, **1**) | ITAT1 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 1 | Unidentifiable | ITAT3 | | 2 | | 1 | 3 | 2 |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2088 (Table **I**, **7**) | ITAT1 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2055 | ITAT2 | 1 | | | | | 1 |
| Italy – Tyrrhenian | Dressel 2-4 | Unidentifiable | ITAT2 | | 2 | | | 5 | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Unidentifiable | ITAT3 | | 1 | | | 5 | 2 |
| Italy - Tyrrenian | Dressel 2-4 | Unidentifiable | ITAT4 | | 1 | | | 5 | 1 |
| Italy - Tyrrhenian | Camulodunum 139 | Unidentifiable | ITAT3 | | | | | 1 | 1 |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT1 | | | 341 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT2 | | | 142 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 174 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT4 | | | 56 | | | - |
| Italy - Adriatic | Dressel 2-4 | Martin-Kilcher 1994, 2055 | ITAA1 | 2 | | | | | 1 |
| Italy - Adriatic | Dressel 2-4 | Unidentifiable | ITAA1 | | | | | 6 | - |
| Italy - Adriatic | Lamboglia 2/Dressel 6A | Unidentifiable | ITAA1 | | | | | 1 | 1 |
| Italy - Adriatic | 'Anfora di Forlimpopoli' | Unidentifiable | ITAA1 | | | | | 4 | 1 |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 190 | | | - |
| Italy - Tiber Valley | MGS VI (same vessel of Phase 18) | Molina Vidal 2008, tav. II, CP.180.562 (Table **I**, **2**) | ITAV4 | 1 | | | | | 1 |
| Italy - Tiber Valley | Dressel 1 | Unidentifiable | ITAV2 | | | | | 1 | 1 |
| Italy - Tiber Valley | Dressel 1 | Unidentifiable | ITAV1 | | | | | 1 | 1 |
| Italy - Tiber Valley | Dressel 2-4 | Molina Vidal 2008, tav. III, CP.218.375 (Table **I**, **9**) | ITAV1 | 1 | | | | | 1 |
| Italy - Tiber Valley | Dressel 2-4 | Unidentifiable | ITAV6 | | 1 | | | | 1 |
| Italy - Tiber Valley | Dressel 2-4 | Unidentifiable | ITAV1 | | | | | 3 | 1 |
| Italy - Tiber Valley | Small Dressel 2-4 | (Table **I**, **10**) | ITAV3 | 1 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia II*, 521 (Table **II**, **19-20**, **22**) | ITAV2 | 3 | | | | | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia II*, 521 (Table **II**, **28**) | ITAV3 | 2 | | | | | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 369 (Table **II**, **21**, **27**) | ITAV2 | 2 | | | | | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 369 (Table **II**, **25**) | ITAV5 | 3 | | | | | 3 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 369 (Table **II**, **24**) | ITAV6 | 3 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | Ostia III, 370 (Table **II**, **23**) | ITAV3 | 2 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 370 | ITAV4 | 2 | | | | | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' | Ferrandes 2008b, fig. 6, 41 (Table **II**, **26**) | ITAV1 | 1 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | Ferrandes 2008b, fig. 6, 41 | ITAV3 | 1 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV1 | | | | | 5 | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV2 | | 4 | | | 8 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV3 | | 3 | | | 4 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV4 | | | | | 9 | 3 |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV7 | | | | | 4 | 1 |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV1 | | | 146 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV2 | | | 174 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV3 | | | 229 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV4 | | | 44 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV5 | | | 63 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV6 | | | 102 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV7 | | | 99 | | | - |
| Italy - Sicily (Alcamo) | Dressel 21-22, Type A | González Muro 2006, fig. 28 (Table **I**, **12**) | ITAS3 | 3 | | | | | 1 |
| Italy - Sicily (Alcamo) | Dressel 21-22, Type A | González Muro 2006, fig. 32, d (Table **I**, **13**) | ITAS4 | 1 | | | | | 1 |
| Italy – Sicily (Alcamo) | Dressel 21-22, Type A | González Muro 2006, fig. 32, b (Table **I**, **14**) | ITAS3 | 2 | | | | | 1 |
| Italy - Sicily | Dressel 21-22 | *Ostia II*, 570 | ITAS2 | 1 | | | | | 1 |
| Italy - Sicily | Dressel 21-22 | Unidentifiable | ITAS1 | | | 1 | | 1 | 1 |
| Italy - Sicily | Dressel 21-22 | Unidentifiable | ITAS3 | | | | | 1 | 1 |
| Italy - Sicily (Naxos) | *Ostia II*, 522/523 | Ferrandes 2008b, fig. 7, 54 (Table **II**, **18**) | ITAS1 | 3 | | | | | 3 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | 1 | | | 13 | 4 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS2 | | 1 | | | 2 | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS3 | | | | | 5 | 3 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS4 | | | | | 4 | 2 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 378 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 256 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS3 | | | 164 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS4 | | | 6 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2667 (Table **III**, **45**) | GAUL1 | 2 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2668 (Table **III**, **46**) | GAUL1 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 3083 (Table **III**, **47**) | GAUL2 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2974 (Table **III**, **48**) | GAUL1 | 2 | | | | | 2 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2977 (Table **IV**, **51**) | GAUL1 | 1 | | | 2 | 2 | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2710 (Table **IV**, **52**) | GAUL1 | 2 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2638 (Table **IV**, **53**) | GAUL1 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2705 (Table **IV**, **54**) | GAUL3 | 3 | | | | | 2 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 3064 (Table **IV**, **58**) | GAUL3 | 1 | | | | | 1 |
| Gaul | Gauloise 4 (same vessel of Phase 18) | Martin-Kilcher 1994, 2640 (Table **IV**, **57**) | GAUL1 | 3 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 3116 | GAUL3 | 1 | | | | | 1 |
| Gaul | Gauloise 3 | (Table **IV**, **62**) | GAUL4 | 4 | | 1 | | 1 | 2 |
| Gaul | Gauloise 3 (same vessel of Phase 18) | (Table **IV**, **61**) | GAUL4 | 2 | | 127 | | 1 | 1 |
| Gaul | Dressel 28 | Unidentifiable | GAUL1 | | | | | 1 | 1 |
| Gaul | Dressel 2-4 | Unidentifiable | GAUL1 | | | | | 3 | 1 |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | 1 | 227 | 2 | 18 | 2 |
| Gaul | Unidentifiable | Unidentifiable | GAUL2 | | | 8 | | 2 | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | 4 | 211 | | 9 | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL4 | | | 34 | | | - |
| *Baetica* | Dressel 14A | Similar to Table **VIII**, **118** | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | Ferrandes 2008b, fig. 8, 65 (Table **VIII**, **119**, **120**, **121**) | BAE3 | 5 | | | | | 3 |
| *Baetica* | Dressel 14A | Ferrandes 2008b, fig. 8, 65 (Table **VIII**, **123**, **124**, and Table **IX**, **132**) | BAE4 | 5 | | | | | 4 |
| *Baetica* | Dressel 14A | Étienne-Mayet 2002, fig. 37,1 (Table **VIII**, **128**, **129**, **130**) | BAE4 | 4 | | | | | 3 |
| *Baetica* | Dressel 14A | *Ostia III*, 207 | BAE4 | 2 | | | | | 2 |
| *Baetica* | Dressel 14A | *Ostia III*, 207 | BAE7 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | *Ostia III*, 207 | BAE2 | 2 | | | | | 2 |
| *Baetica* | Dressel 14A | *Ostia III*, 529 | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | (Table **VIII**, **131**) | BAE4 | 1 | | | | 1 | 1 |
| *Baetica* | Dressel 14A | (Table **IX**, **133**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | Unidentifiable | BAE3 | | | | | 2 | - |
| *Baetica* | Dressel 14A | Unidentifiable | BAE4 | | | | | 3 | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 14A | Unidentifiable | BAE5 | | | | | 1 | 1 |
| *Baetica* | Dressel 14A | Unidentifiable | BAE7 | | | | | 1 | - |
| *Baetica* | Dressel 2-4 | (Table **VII**, **115**) | BAE4 | 2 | | | | | 1 |
| *Baetica* | Dressel 2-4 | (Table **VII**, **116**) | BAE5 | 2 | | | | | 1 |
| *Baetica* | Dressel 2-4 | Unidentifiable | BAE5 | | | | | 2 | - |
| *Baetica* | Dressel 7-11 | (Table **VII**, **104**) | BAE7 | 2 | | | | | 2 |
| *Baetica* | Dressel 7-11 | Unidentifiable | BAE3 | | | | | 3 | 2 |
| *Baetica* | Dressel 7-11 | Unidentifiable | BAE4 | | | | | 3 | 2 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Rizzo 2003, tav. XLIII, 241 (Table **VII**, **107**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Ferrandes 2008b, fig. 9, 76 Table **VII**, **108**, **109**) | BAE4 | 4 | | | | | 2 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4173 | BAE4 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4200 | BAE4 | 2 | | | | | 2 |
| *Baetica* | Beltrán IIA = Pélichet 46 | (Table **VII**, **110**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4218 (Table **VII**, **114**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Rizzo 2003, tav. XXXVII, 191 (Table **VII**, **111**) | BAE8 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin Kilcher 1994, 4259 (Table **VII**, **112**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIB | Martin-Kilcher 1994, 4134 (Table **IX**, **136**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIB | Étienne & Mayet 2002, fig. 35, 3 (Table **IX**, **135**) | BAE5 | 2 | | | | | 2 |
| *Baetica* | Beltrán IIA-B | Unidentifiable | BAE8 | | | | | 1 | 1 |
| *Baetica* | Late Beltrán IIA = Augst 30 | Martin-Kilcher 1994, 4267 (Table **IX**, **139**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Late Beltrán IIA = Augst 30 | Martin-Kilcher 1994, 4254 (Table **IX**, **140**) | BAE8 | 2 | | | | | 2 |
| *Baetica* | Advanced Beltrán IIB | Ferrandes 2008b, fig. 9, 77 (Table **IX**, **141**) | BAE8 | 2 | | | | | 2 |
| *Baetica* | Dressel 28 | Martin-Kilcher 1994, 2486 | BAE4 | 1 | | 24 | | 2 | 1 |
| *Baetica* | Dressel 28 | Unidentifiable | BAE1 | | 1 | | | | 1 |
| *Baetica* | Dressel 28 | Unidentifiable | BAE4 | | 1 | | | | - |
| *Baetica* | Dressel 21-22 | (Table **VII**, **106**) | BAE5 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 962 (Table **V**, **67**) | BAE8 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 969 (Table **V**, **68**) | BAE2 | 1 | 1 | 17 | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 672 (Table **VII**, **100**) | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 561 (Table **V**, **71**, **72**, **75**) | BAE2 | 3 | | | | | 3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 604 (Table **V**, **73**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 604 | BAE6 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 673 (Table **V**, **74**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 716 (Table **VI**, **80**) | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 (same vessel of Phase 18) | Martin-Kilcher 1987, 673 (Table **V**, **76**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 565 (Table **VI**, **81**) | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 599 (Table **VI**, **83**) | BAE2 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 470 (Table **VI**, **72**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 605 (Table **VI**, **84**) | BAE6 | 2 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 869 (Table **VI**, **91**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 557 (Table **VI**, **92**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 558 (Table **VI**, **86**) | BAE7 | 1 | | | | | 1 |
| *Baetica* - La catria, Almano alto, Peña flor | Dressel 20 (same vessel of Phase 18) | Martin-Kilcher 1987, 599 (Table **VI**, **91**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 841 (Table **VI**, **94**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 981 (Table **VI, 95**) | BAE8 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 351 (Table **VII**, **99**) | BAE7 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 672 (Table **V**, **70**) | BAE2 | 1 | | | | | 1 |
| *Baetica* - Villar de Brenes | Dressel 20 | Martin-Kilcher 1987, 970 (Table **V**, **69**) with stamp on handle Hermes F(ecit)= Berni Millet 2008: 245, fig. 121, 16; 573, n. 793 | BAE1 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Unidentifiable with stamp P(ortus) Q. F(lavi) F(laviani) = *CIL* XV, II, 3104d = Berni Millet 2008: 594, n. 1842 | BAE2 | | | | | 1 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* - Alcolea del Río (*Canania*) | Dressel 20 | Unidentifiable with stamp Dom(iti vel itianis) [S(ervi)? ---] = Berni Millet 2008: 270, fig. 131, 3-5; 567, nos. 501-503 | BAE2 | | | | | 1 | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1439 | BAE2 | | | | | 1 | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE1 | | 1 | | | 8 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE2 | | 1 | | | 9 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE3 | | | 64 | | | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE4 | | | 15 | | 1 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE5 | | | 82 | | | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE6 | | | | | 10 | 4 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE7 | | 1 | 7 | | 2 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE8 | | | | | 3 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE1 | | | | | 3 | 2 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE2 | | | | | 3 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE3 | | 1 | | | 6 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE4 | | 2 | | | 8 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE5 | | | | | 5 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE6 | | | | | 4 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE8 | | | | | 4 | - |
| *Baetica* | Unidentifiable | Unidentifiable with graffito *ante cocturam* [---] +Ermet[is?---] / [---]+ibes | BAE1 | | | 2 | | | 1 |
| *Baetica* | Unidentifiable | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | BAE3 | | | 2 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | BAE4 | | | 1 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 367 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE2 | | | 485 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 478 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE4 | | | 611 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE5 | | | 212 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 371 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 220 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE8 | | | 198 | | | - |
| *Tarraconensis* | Tarraconense 1D | López Mullor & Martín Menéndez 2008, fig. 2, 11 (Table **IX**, **143**) | TAR1 | 1 | | | | | 1 |
| *Tarraconensis* | Pascual 1 | Unidentifiable | TAR1 | | | | | 1 | 1 |
| *Tarraconensis* | Dressel 2-4 | (Table **IX**, **144**) | TAR1 | 3 | | | | | 3 |
| *Tarraconensis* | Dressel 2-4 | Unidentifiable | TAR1 | | | | | 1 | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | 29 | | | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR2 | | | 28 | | | 1 |
| *Lusitania* | Dressel 14B | Ferrandes 2008b, fig. 9, 79 | LUS1 | 1 | | | | | 1 |
| *Lusitania* | Dressel 14B | (Table **IX**, **145**) | LUS1 | 1 | | | | | 1 |

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|---|---|---|---|---|---|---|---|---|---|
| *Lusitania* | Dressel 14B | (Table **X**, **148**) | LUS2 | 1 | | | | | 1 |
| *Lusitania* | Dressel 14B | Unidentifiable | LUS1 | | | | | 3 | - |
| *Lusitania* | Dressel 14B | Unidentifiable | LUS2 | | 1 | | | 2 | 1 |
| *Lusitania* | Unidentifiable | Unidentifiable with traces of a *titulus pictus* (unreadable traces) | LUS1 | | | 2 | | | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS1 | | | 82 | | | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS2 | | | 113 | | | - |
| Africa | Neo-Punic | Unidentifiable | AFR3 | | | | | 3 | 3 |
| Africa | Maña C1 | (Table **X**, **149**) | AFR4 | 1 | | | | 1 | 1 |
| Africa | Dressel 2-4 | (Table **X**, **150**) | AFR4 | 2 | | | | | 1 |
| Africa | Dressel 2-4 | Bonifay 2004a, Type 50, fig. 79, 1 | AFR3 | 1 | | | | | 1 |
| Africa | Dressel 2-4 | Unidentifiable | AFR2 | | | | | 3 | 2 |
| Africa | Dressel 2-4 | Unidentifiable | AFR3 | | 1 | | | 11 | 5 |
| Africa | Pseudo Dressel 2-4 | Unidentifiable | AFR2 | | | | | 1 | 1 |
| Africa | Ostia Form XXIII (same vessel of Phase 23) | Panella 1983a, fig. 33 (Table **X**, **165**) | AFR1 | 1 | | | | | 1 |
| Africa | Ostia Form XXIII | Panella 1983a, fig. 33 (Table **XI**, **167**) | AFR2 | 1 | | | | | 1 |
| Africa | Ostia Form XXIII | Panella 1983a, fig. 33 (Table **XI**, **168**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 28 (Table **X**, **153-154**) | AFR3 | 2 | | | | | 2 |
| Africa | Ostia Form LIX | *Ostia III*, 386 (Table **X**, **152**) | AFR3 | 2 | | | | 2 | 2 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 31 (Table **X**, **161**) | AFR1 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 31 (Table **X**, **162**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 31 (Table **X**, **156**) | AFR4 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 32 (Table **X**, **155**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | (Table **X**, **160**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Bonifay 2004a, type 15, fig. 53, 2 | AFR4 | | 1 | | | | 1 |
| Africa | Ostia Form XXIII/LIX | Unidentifiable | AFR3 | | | | | 4 | - |
| Africa | Ostia Form XXIII/LIX | Unidentifiable | AFR5 | | | | | 1 | 1 |
| Africa | Ostia Form XXIII/LIX | Unidentifiable | AFR2 | | | | | 2 | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **205**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **206**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **207**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **208**) | AFR1 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **209**) | AFR5 | 4 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **210**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **211**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **212**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | (Table **XIII**, **213**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 (same vessel of Phase 18) | (Table **XIII**, **214**) | AFR3 | 1 | | | | | 1 |
| Africa | *Ostia IV*, 447 | Unidentifiable (not enough preserved) | AFR3 | 1 | | | | | 1 |
| Africa | Benghazi MR1 = Agora M254 | Unidentifiable | AFR3 | | | | | 1 | 1 |

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|---|---|---|---|---|---|---|---|---|---|
| Africa | Benghazi MR1 = Agora M254 | Unidentifiable | AFR4 | | | | | 1 | 1 |
| Africa | Africana IA | Bonifay 2004a, type 21A, fig. 56, 1 (Table **XI**, **171**, **175, 177**) | AFR1 | 3 | | | | | 3 |
| Africa | Africana IA | Bonifay 2004a, type 21A, fig. 56, 1 (Table **XI**, **182**) | AFR5 | 1 | | | | | 1 |
| Africa | Africana IA | Keay 1984, Type IIIA, fig. 37, 2 (Table **XI**, **172**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IA (same vessel of Phase 18) | Keay 1984, Type IIIA, fig. 37, 2 (Table **XI**, **173**) | AFR3 | 1 | | | | | 1 |
| Africa | Africana IA | Keay 1984, type IIIA, fig. 37, 2 (Table **XI**, **180**) | AFR3 | 1 | | | | | 1 |
| Africa | Africana IA | Keay 1984, type IIIA, fig. 37, 2 (Table **XI**, **178**) | AFR4 | 1 | | | | | 1 |
| Africa | Africana IA | Keay 1984, type IIIA, fig. 37, 4 (Table **XI**, **176**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IA | Martin-Kilcher 1994b, 5582 (Table **XI**, **179**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IA | Martin-Kilcher 1994b, 5587 (Table **XI**, **183**) | AFR3 | 1 | | | | | 1 |
| Africa | Africana IB | Ferrandes 2008b, fig. 10, 106 (Table **XII**, **190**, **192**, **198**, **200**) | AFR1 | 4 | | | | | 4 |
| Africa | Africana IB | Ferrandes 2008b, fig. 10, 107 (Table **XII**, **198**) | AFR1 | 2 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 4 | AFR1 | 2 | | | | | 2 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 4 (Table **XIII**, **202**) | AFR2 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 4 | AFR3 | 2 | | | | | 2 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 5 (Table **XI**, **186**) | AFR6 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 6 (Table **XI**, **184-185**) | AFR1 | 4 | | | | | 3 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 6 | AFR5 | 2 | | | | | 2 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 10 (Table **XII**, **197**) | AFR1 | 2 | | | | | 2 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 12 (Table **XII**, **199**) | AFR4 | 1 | | | | | 1 |
| Africa | Africana I | Keay 1984, type III, fig. 41, 2 | AFR4 | | 2 | | | | 2 |
| Africa | Africana I | Unidentifiable | AFR1 | | 4 | | | 12 | - |
| Africa | Africana I | Unidentifiable | AFR2 | | | | | 3 | - |
| Africa | Africana I | Unidentifiable | AFR3 | | 1 | | | 8 | - |
| Africa | Africana I | Unidentifiable | AFR4 | | | | | 2 | - |

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|---|---|---|---|---|---|---|---|---|---|
| Africa | Africana I | Unidentifiable with a small hole (d. 0.5 cm) close to the spike made with a drill to pour out the content | AFR5 | | 1 | | | | - |
| Africa | Africana IIA1 | Keay 1984, type IV, fig. 43, 2 | AFR2 | 1 | | | | | 1 |
| Africa | Africana IIA1 | Keay 1984, type V, fig. 42, 3 (Table **XIII**, **219**, **221**) | AFR2 | 2 | | | | | 2 |
| Africa | Africana IIA1 | Keay 1984, type V, fig. 42, 3 (Table **XIII**, **218**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IIA1 | Keay 1984, Type V, fig. 43, 2 (Table **XIII**, **215**) | AFR5 | 1 | | | | | 1 |
| Africa | Africana IIA1 | Bonifay 2004a, type 22, fig. 57, 3 | AFR1 | 1 | | | | | 1 |
| Africa | Africana IIB | Bonifay 2004a, type 23, fig. 59, 1 (Table **XIII**, **222**) | AFR2 | 1 | | | | | 1 |
| Africa | Africana II | Unidentifiable | AFR1 | | 1 | | | 2 | - |
| Africa | Africana II | Unidentifiable | AFR2 | | 1 | | | 2 | - |
| Africa | Africana II | Unidentifiable | AFR3 | | | | | 2 | 1 |
| Africa | Africana II | Unidentifiable | AFR4 | | 2 | | | 1 | 1 |
| Africa | Africana II | Unidentifiable | AFR5 | | 2 | | | 1 | 1 |
| Africa | Unidentifiable | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | AFR2 | | | 1 | | | - |
| Africa | Unidentifiable | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | AFR4 | | | 1 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 1890 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 938 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 1387 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR4 | | | 438 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | 461 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR6 | | | 74 | | | - |
| Tripolitania | Mau XXXV | (Table **XIV**, **247**) | TRIP2 | 1 | | | | 1 | 1 |
| Tripolitania | Mau XXXV | (Table **XIV**, **248**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | (Table **XIV**, **249**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Meylan Krause 2002, pl. 48, 643 (Table **XIV**, **237**, **243**) | TRIP2 | 3 | | | | | 3 |
| Tripolitania | Mau XXXV | (Table **XIV**, **238**) | TRIP 2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | *Ostia IV*, 430 (Table **XIV**, **241**) | TRIP2 | 2 | | | | | 2 |
| Tripolitania | Mau XXXV | (Table **XIV**, **240**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Bonifay 2004a, type 58, fig. 79, 1 (Table **XV**, **250**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Bonifay 2004a, type 58, fig. 79, 2 (Table **XIV**, **239**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | (Table **XIV**, **242**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | *Ostia III*, 371 | TRIP1 | 3 | | | | | 3 |
| Tripolitania | Mau XXXV | Unidentifiable | TRIP2 | | 5 | 18 | 1 | 15 | - |
| Tripolitania | Mau XXXV | Unidentifiable | TRIP1 | | | | | 2 | - |

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|---|---|---|---|---|---|---|---|---|---|
| Tripolitania | Mau XXXV (same vessel of Phase 18) | Unidentifiable | TRIP2 | | | | | 1 | - |
| Tripolitania | Tripolitana I | (Table **XIV**, **227**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana I | Bonifay 2004a, type 19, fig. 55a, 1 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana II | Keay 1984, Type IX, fig. 47, 7 (Table **XIV**, **236**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana II | Bonifay 2004a, type 4, fig. 47, 4 (Table **XIV**, **231**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana II | Keay 1984, type IX, fig. 47, 5 (Table **XIV**, **234**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana II | Ferrandes 2008b, fig. 11, 119 (Table **XIV**, **232**) | TRIP1 | 2 | | | | | 2 |
| Tripolitania | Tripolitana II | *Ostia III*, 263 (Table **XIV**, **230**) | TRIP1 | 2 | | | | | 2 |
| Tripolitania | Tripolitana III | Bonifay 2004a, type 20, fig. 55a, 2 (Table **XV**, **252**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, Type XI, fig. 51, 1 (Table **XV**, **251**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, type XI, fig. 51, 3 (Table **XV**, **256**) | TRIP1 | 2 | | | | | 2 |
| Tripolitania | Tripolitana III (same vessel of Phase 18) | Keay 1984, type XI, fig. 51, 3 (Table **XV**, **255**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Keay 1984, type XI, fig. 51, 8 (Table **XV**, **253**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Martin-Kilcher 1994b, 5578 (Table **XV**, **257**) | TRIP3 | 2 | | | | | 2 |
| Tripolitania | Tripolitana III | (Table **XV**, **258**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana I–III | Unidentifiable | TRIP1 | | 4 | 1509 | 1 | 27 | 3 |
| Tripolitania | Tripolitana I–III | Unidentifiable | TRIP2 | | 2 | 261 | | 8 | 2 |
| Tripolitania | Tripolitana I–III | Unidentifiable | TRIP3 | | 5 | 976 | | 11 | - |
| Mauretania | Dressel 30 = Keay 1984, Type I | Unidentifiable | MAUR1 | | 3 | 77 | | 6 | 3 |
| Oriental – Bosphorus-Heraclea Pontica | Zeest 94 (same vessel of Phase 18) | (Table **XVI**, **279**) | OR1 | 3 | | | | 1 | 1 |
| Oriental – Bosphorus-Heraclea Pontica | Unidentifiable | Unidentifiable | OR1 | | | 147 | | | - |
| Oriental - Bosphorus | Zeest 80 | Unidentifiable | OR35 | | | | | 2 | 1 |
| Oriental - Crete | AC1a | Marangou Lerat 1995, fig. 28, A13 (Table **XV**, **265**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC1a | Marangou Lerat 1995, fig. 28, A14 (Table **XV**, **264**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC1a | Marangou Lerat 1995, fig. 30, A26 (Table **XV**, **267**) | OR25 | 2 | | | | | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Crete | AC1a | Unidentifiable (not enough preserved) | OR2 | 2 | | | | | 2 |
| Oriental - Crete | AC1b | Marangou Lerat 1995, fig. 38, A42 (Table **XV**, **269**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC1b | Marangou Lerat 1995, fig. 39, A56 (Table **XV**, **270**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC1d | Marangou Lerat 1995, fig. 45, A60 (Table **XV**, **273**) | OR25 | 1 | | | | | 1 |
| Oriental - Crete | Cretoise 1 | (Table **XV**, **274**) | OR2 | 1 | | | | 13 | 1 |
| Oriental - Crete | Cretoise 1/2 | Unidentifiable | OR2 | | | | | 3 | 2 |
| Oriental - Crete | Cretoise 2 | Unidentifiable | OR25 | | | | | 3 | 2 |
| Oriental - Crete | Cretoise 3 | Unidentifiable | OR2 | | | | | 4 | 2 |
| Oriental - Crete | Cretoise 4 | Ferrandes 2008b, fig. 11, 129 | OR25 | 2 | | | | | 2 |
| Oriental - Crete | AC4a | Marangou Lerat 1995, fig. 70, A127 (Table **XVI**, **276**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC4a | Marangou Lerat 1995, fig. 70, A130 (Table **XVI**, **277**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC4c | Marangou Lerat 1995, fig. 78, A143 (Table **XVI**, **278**) | OR33 | 1 | | | | | 1 |
| Oriental - Crete | Cretoise 4 | Unidentifiable | OR33 | | | | | 2 | - |
| Oriental - Crete | Cretoise 4 | Unidentifiable | OR2 | | | | | 1 | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR2 | | | 507 | | | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR25 | | | 64 | | | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR33 | | | 41 | | | - |
| Oriental - Meander Valley | Agora F65/66 | Lemaître 1997, fig. 8, 3 (Table **XVI**, **281**, **283**) | OR3 | 3 | | | | | 3 |
| Oriental - Meander Valley | Agora F65/66 | (Table **XVI**, **280**) | OR14 | 1 | | 4 | | | 1 |
| Oriental - Meander Valley | Agora F65/66 | Ferrandes 2008b, fig. 11, 126 | OR21 | | 1 | | | | 1 |
| Oriental - Meander Valley | Agora F65/66 / Late Roman 3 | (Table **XVI**, **284**) | OR21 | 1 | | | | | 1 |
| Oriental - Meander Valley | Agora F65-66 | Unidentifiable | OR3 | | | | | 5 | - |
| Oriental - Meander Valley | Agora F65/66 | Unidentifiable | OR21 | | | | | 3 | - |
| Oriental - Meander Valley | Dressel 2-5 | (Table **XVI**, **285**) | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Dressel 2-5 | Unidentifiable | OR3 | | 1 | | | 9 | 3 |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 470 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR14 | | | 32 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR21 | | | 145 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2235 (Table **XVI**, **288**) | OR4 | 1 | | | | | 1 |

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|---|---|---|---|---|---|---|---|---|---|
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2237 (Table **XVII**, **289**) | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | (Table **XVII**, **290**) | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2305 | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2299 | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Unidentifiable | OR4 | | 3 | | | 15 | 3 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5? | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | OR4 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5? | Unidentifiable with traces of a black *titulus pictus* [---] I+[---] / [---] II [---] (numerals) | OR4 | | | 1 | | | - |
| Oriental- Aegeum / Microasiatic Area | Mau XIII | Unidentifiable | OR19 | | 1 | 4 | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Hayes 1987, A53 | OR19 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Hayes 1987, A53 | OR20 | 1 | | 2 | | 2 | 1 |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable | OR19 | | 1 | | | 17 | 7 |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable | OR20 | | | | | 6 | 2 |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | OR19 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | OR20 | | | 16 | | | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with traces of a red *titulus pictus* (unreadable traces) | OR20 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with a red *titulus pictus* [---] K A [---] | OR20 | | | 1 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with traces of a red *titulus pictus* (traces of a cross) | OR20 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 = Knossos 15 | Auriemma & Quiri 2004, fig. 10, a (Table **XVII**, **293**) | OR9 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 = Middle Roman 18 | Bruno 2002, 33 (Table **XVII**, **295**) | OR29 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Ferrandes 2008b, fig. 12, 140 | OR9 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 = Middle Roman 18 | Ferrandes 2008b, fig. 12, 138 = Blázquez Martinez *et al.* 1994, T.98/SUP/386 (Table **XVII**, **294**) | OR11 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR9 | | | | | 4 | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR11 | | 2 | | | 3 | 2 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR17 | | 3 | | | 1 | 3 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24? | Unidentifiable traces of a red *tituls pictus* Π[---] | OR11 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 371 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 172 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR11 | | | 95 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR17 | | | 156 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR19 | | | 492 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR20 | | | 291 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR29 | | | 24 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR32 | | | 184 | | | 1 |
| Oriental - Pamphilia | Kapitän I | (Table **XVII**, **298**) | OR5 | 2 | | | | | 2 |
| Oriental - Pamphilia | Kapitän I | (Table **XVII**, **297**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Peña 1999, fig. 15, 033 (Table **XVII**, **299**; Table **XVIII**, **317**, **328**; Table **XIX**, **338**) | OR5 | 6 | | | | | 4 |
| Oriental – Pamphilia | Kapitän I | Peña 1999, fig. 15, 033 (Table **XIX**, **339**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Ferrandes 2008b, fig. 12, 136 (Table **XVII**, **300-301**, **303**; Table **XVIII**, **314**, **325**, **335**; Table **XIX**, **337**, **351**) | OR5 | 12 | | | | | 8 |
| Oriental – Pamphilia | Kapitän I | Ferrandes 2008b, fig. 12, 136 (Table **XVIII**, **310**, **320**, **326**, **336**; Table **XIX**, **350**) | OR6 | 5 | | | | | 5 |
| Oriental – Pamphilia | Kapitän I | (Table **XVII**, **304**) | OR5 | 3 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | (Table **XVII**, **305**) | OR5 | 2 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia IV*, 439 (Table X**VII**, **302**, **307**; Table **XVIII**, **323**) | OR6 | 8 | | | 2 | 1 | 3 |
| Oriental – Pamphilia | Kapitän I | Meylan Krause 2002, pl. 28, 419 (Table **XVII**, **306**, **308**; Table **XVIII**, **313**) | OR5 | 3 | | | | | 3 |
| Oriental – Pamphilia | Kapitän I | Meylan Krause 2002, pl. 28, 419 (Table **XVIII**, **316**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Meylan Krause 2002, pl. 50, 659 (Table **XIX**, **349**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia I*, 551 (Table **XIX**, **347**) | OR5 | 2 | | | | | 2 |
| Oriental – Pamphilia | Kapitän I | *Ostia I*, 551 | OR6 | 2 | | | | | 2 |
| Oriental – Pamphilia | Kapitän I | (Table **XVIII**, **309**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | (Table **XIX**, **348**) | OR5 | 1 | 1 | 7 | 2 | 2 | 1 |
| Oriental – Pamphilia | Kapitän I | (Table **XVIII**, **311**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Ceci 2006, fig. 2, 7 (Table **XVIII**, **312**; Table **XIX**, **341**) | OR5 | 2 | | | | | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental – Pamphilia | Kapitän I | Ceci 2006, fig. 2, 7 (Table **XVIII**, **319**, **332**, **333**, **334**; Table **XIX**, **340**) | OR6 | 5 | | | | | 5 |
| Oriental – Pamphilia | Kapitän I | (Table **XVIII**, **315**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | (Table **XVIII**, **318**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I (same vessel of Phase 18) | (Table **XVIII**, **321**) | OR6 | 3 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia III*, 70a (Table **XVIII**, **331**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia III*, 70a (Table **XVIII**, **324**; Table **XIX**, **342**) | OR6 | 2 | | | | | 2 |
| Oriental – Pamphilia | Kapitän I | (Table **XVIII**, **329**) | OR6 | 2 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR5 | | 7 | | 2 | 56 | - |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR6 | | 4 | | 3 | 54 | 5 |
| Oriental – Pamphilia | Kapitän I | Unidentifiable with graffito *ante cocturam*: ((asteriscus)) | OR6 | | 1 | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Unidentifiable with graffito *post cocturam*: [---]XX X? X? | OR6 | | | 2 | | | - |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR7 | | | | | 6 | 2 |
| Oriental – Pamphilia | Kapitän II | (Table **XIX**, **354**) | OR28 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän II | Keay 1984, Type XII, fig. 52, 2 (Table **XIX**, **355**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR5 | | 2 | | | 9 | 3 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR6 | | | | | 10 | 2 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR7 | | | | | 1 | 1 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR28 | | 1 | 1 | 2 | 5 | 1 |
| Oriental – Pamphilia | Kapitän I/II | Unidentifiable. Circular stopper cut on wall | OR6 | | | 1 | | | - |
| Oriental – Pamphilia | Zemer 41=Agora G199=Mau XXVIII-XXVIII | Rauh 2004, fig. 7 (Table **XIX**, **357**) | OR7 | 2 | | | 1 | | 1 |
| Oriental – Pamphilia | Zemer 41=Agora G199=Mau XXVIII-XXVIII | Unidentifiable | OR6 | | | | | 1 | 1 |
| Oriental – Pamphilia | Zemer 41=Agora G199=Mau XXVIII-XXVIII | Unidentifiable with traces of a red *titulus pictus*: O[---]? | OR7 | | | 1 | | | - |
| Oriental – Pamphilia | Dressel 2-4 | Unidentifiable | OR5 | | | | | 1 | 1 |
| Oriental – Pamphilia | Dressel 2-4? | (Table **XX**, **359**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR5 | | | 1003 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 948 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR7 | | | 72 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR8 | | | 20 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR28 | | | 166 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2380 (Table **XX**, **361**) | OR10 | 2 | | | | | 2 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2369 (Table **XX**, **369**) | OR10 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2433 (Table **XX**, **368**) | OR10 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Bezeczky 2004, 25 (Table **XX**, **364**) | OR22 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | (Table **XX**, **360**) | OR12 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR10 | | 2 | | | 9 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR12 | | 1 | | | 11 | 4 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | 1 | | | 13 | 5 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR22 | | | | | 10 | 6 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184? | Unidentifiable with traces of graffito *ante cocturam*: L?[---] | OR16 | | | | 1 | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184? | Unidentifiable with. traces of red *titulus pictus* (unreadable traces) | OR16 | | | 7 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 89 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR12 | | | 396 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR16 | | | 209 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR22 | | | 243 | | | - |
| Oriental - Palestine | Majkerek 1995, Form 1 | De Caprariis *et al.* 1988, fig. 2 | OR13 | 1 | | | | | 1 |
| Oriental - Palestine | Kingsholm 117 | Unidentifiable | OR13 | | | | | 2 | - |
| Oriental - Palestine | Kingsholm 117 | Unidentifiable | OR23 | | 2 | | | 3 | 2 |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR13 | | | 84 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR23 | | | 284 | | | - |
| Oriental - Egypt | Pompei 5 | Williams & Tomber 2007, fig. 1, 2 (Table **XX**, **377**) | OR15 | 1 | | | | | 1 |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR15 | | 3 | | | 4 | 2 |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR27 | | | | | 2 | 1 |
| Oriental - Egypt | Unidentifiable | Unidentifiable. One with *ante cocturam* graffito (unreadable signs) | OR15 | | | 49 | | | - |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR27 | | | 12 | | | - |
| Oriental - Cilicia | Zemer 41=Agora G199=Mau XXVIII–XXVIII | Rauh 2004, fig. 7 (Table **XX**, **379**) | OR31 | 4 | | | | | 3 |
| Oriental - Cilicia | Zemer 41=Agora G199=Mau XXVIII-XXVIII | Unidentifiable | OR18 | | | | | 1 | 1 |
| Oriental - Cilicia | Zemer 41=Agora G199=Mau XXVIII–XXVIII | Unidentifiable | OR24 | | | | | 1 | 1 |
| Oriental - Cilicia | Schöne V | (Table **XX**, **378**) | OR30 | 1 | | | | | 1 |
| Oriental - Cilicia | Schöne V | Unidentifiable | OR30 | | | | | 1 | - |
| Oriental - Cilicia | Agora M54 | Unidentifiable | OR24 | | | | | 4 | 1 |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR18 | | | 10 | | | - |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR24 | | | 55 | | | - |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR31 | | | 44 | | | - |
| Oriental - Cnidus | Mau XXXVIII | (Table **XX**, **380**) | OR26 | 1 | 1 | | | | 1 |
| Oriental - Cnidus | Unidentifiable | Unidentifiable | OR26 | 1 | | 41 | | | 1 |
| Oriental - Cos | Dressel 2–5 | (Table **XX**, **382**) | OR34 | 1 | | | | 1 | 1 |
| Oriental - Lebanon? | New type 1 | (Table **XX**, **384**) | NI1 | 4 | | | | 8 | 1 |
| Oriental - Lebanon? | Unidentifiable | Unidentifiable | NI1 | | | 244 | | | - |
| Unidentified | Unidentifiable | Unidentifiable | NI2 | | | 26 | | 2 | 1 |
| **TOTAL** | | | | **393** | **109** | **22724** | **20** | **680** | **495** |

**Table 15: 'Terme di Elagabalo', Phase 18 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Dressel 2–4 | Unidentifiable | ITAC3 | | 1 | | | | 1 |
| Italy - Campania | Dressel 2–4 | Martin-Kilcher 1994, 2099 (Table **I**, **8**) | ITAC2 | 1 | | | | | 1 |
| Italy - Campania | 'Late Campana Dressel 2–4' (same vessel of Phase 17) | Ferrandes 2008b, fig. 6, 46 (Table **II**, **30**) | ITAC1 | | | | | 1 | - |
| Italy - Campania | 'Late Campana Dressel 2–4' | Ferrandes 2008b, fig. 6, 46 (Table **III**, **37-38**, **43**) | ITAC1 | 4 | | | | | 3 |
| Italy - Campania | 'Late Campana Dressel 2–4' | Unidentifiable | ITAC2 | | | | | 1 | - |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC1 | | | 59 | | | - |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC2 | | | 132 | | | - |
| Italy - Tyrrenian | MGS | Unidentifiable | ITAT1 | | | | | 1 | - |
| Italy - Tyrrhenian | Dressel 1 | (Table **I**, **4**) | ITAT2 | 1 | | | | | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tyrrenian | Dressel 1 | Unidentifiable | ITAT3 | | 1 | | | 1 | - |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2097 (Table **I**, **6**) | ITAT1 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | (Table **I**, **5**) | ITAT3 | 1 | | | | | 1 |
| Italy - Tyrrenian | Dressel 2-4 | Unidentifiable | ITAT2 | | | | | 1 | - |
| Italy - Tyrrhenian | Camulodunum 139 | Unidentifiable | ITAT4 | | 1 | | | | 1 |
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT1 | | | 130 | | | - |
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT2 | | | 46 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 28 | | | - |
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT4 | | | 78 | | | - |
| Italy - Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | Unidentifiable | ITAA1 | | | | | 1 | - |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 24 | | | - |
| Italy - Tiber Valley | MGS VI (same vessel of Phase 17) | Molina Vidal 2008, tav. II, CP.180.562 (Table **I**, **2**) | ITAV4 | 1 | | | | | - |
| Italy - Tiber Valley | MGS | Unidentifiable (not enough preserved) | ITAV2 | 1 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV2 | | 1 | | | 1 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV3 | | 1 | | | 4 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV4 | | | | | 2 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV6 | | | | | 1 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV7 | | 1 | | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV1 | | | 13 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV2 | | | 1 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV3 | | | 40 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV6 | | | 2 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV7 | | | 29 | | | - |
| Italy - Sicily? | *Ostia II*, 522/523 | Ferrandes 2008b, fig. 7, 54 | ITAS1 | 1 | | | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Peña 1999, fig. 9, 010 (Table **II**, **16**) | ITAS1 | 1 | | | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Ferrandes 2008b, fig. 7, 54 (Table **II**, **17**) | ITAS2 | 1 | | | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | 3 | | | 4 | - |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS2 | | | | | 2 | - |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS4 | | | | | 3 | - |
| Italy - Sicily | Dressel 21-22 | Ferrandes 2008b, fig. 6, 43 | ITAS1 | 1 | | | | | 1 |
| Italy - Sicily | Dressel 21-22 | *Ostia I*, 570 | ITAS2 | 1 | | | | | 1 |
| Italy - Sicily | Dressel 21-22, Type A | González Muro 2006, fig. 32, a (Table **I**, **15**) | ITAS3 | 1 | | | | | 1 |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 147 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS2 | | | 69 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS3 | | | 46 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS4 | | | 4 | | | - |
| Italy - Lipari | Richborough 527 | Unidentifiable (not enough preserved) | ITAL1 | 1 | | | | | 1 |
| Gaul | Gauloise 3 | Table **IV**, **63** | GAUL3 | 1 | | | | | 1 |
| Gaul | Gauloise 3 | Table **IV**, **62** | GAUL4 | | | | | 2 | 1 |
| Gaul | Gauloise 3 (same vessel of Phase 17) | Table **IV**, **61** | GAUL4 | 2 | | 13 | | 1 | - |
| Gaul | Gauloise 4 (same vessel of Phase 17) | Martin-Kilcher 1994, 2640 | GAUL1 | 1 | | | | | - |
| Gaul | Gauloise 4 | Martin Kilcher 1994, 2797 (Table **IV**, **55**) | GAUL1 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2797 | GAUL3 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 3020 | GAUL3 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 3116 | GAUL3 | 2 | | | | | 1 |
| Gaul | Unidentifiable Gauloise | Unidentifiable | GAUL1 | | 3 | | | 1 | - |
| Gaul | Unidentifiable Gauloise | Unidentifiable | GAUL3 | | 1 | | | | - |
| Gaul | Unidentifiable Gauloise | Unidentifiable | GAUL4 | | | | | 1 | - |
| Gaul | Dressel 28 | Unidentifiable | GAUL1 | | | | | 1 | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 60 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL2 | | | 1 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 66 | | | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL4 | | | 11 | | | - |
| *Baetica* | Dressel 2-4 | Unidentifiable | BAE4 | | | | | 1 | - |
| *Baetica* | Dressel 14A | *Ostia III*, 207 | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | *Ostia III*, 207 (Table **VIII**, **127**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | Ferrandes 2008b, fig. 8, 65 (Table **VIII**, **125**) | BAE3 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | Ferrandes 2008b, fig. 8, 65 (Table **VIII**, **122**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 14A | (Table **IX**, **134**) | BAE3 | 1 | | | | 1 | 1 |
| *Baetica* | Dressel 14A | Unidentifiable | BAE3 | | | 1 | | | - |
| *Baetica* | Dressel 14A | Unidentifiable | BAE4 | | | | | 1 | - |
| *Baetica* | Beltrán IIB | (Table **IX**, **137**) | BAE1 | 1 | | | | | 1 |
| *Baetica* | Unidentifiable *Garum* amphora | Unidentifiable | BAE1 | | | | | 3 | - |
| *Baetica* | Unidentifiable *Garum* amphora | Unidentifiable | BAE3 | | | | | 4 | - |
| *Baetica* | Unidentifiable *Garum* amphora | Unidentifiable | BAE4 | | 1 | | | 4 | - |
| *Baetica* | Unidentifiable *Garum* amphora | Unidentifiable | BAE7 | | 1 | | | | - |
| *Baetica* | Unidentifiable *Garum* amphora | Unidentifiable | BAE8 | | | | | 2 | - |
| *Baetica* - La catria, Almano alto, Peña flor | Dressel 20 (same vessel of Phase 17) | Martin-Kilcher 1987, 599 (Table **VI**, **91**) with stamp: L(---) I(---) T(---) = Berni Millet 2008: 579, n. 1103 | BAE4 | 1 | | | | 1 | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 604 | BAE6 | 1 | | | | | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 20 (same vessel of Phase 17) | Martin-Kilcher 1987, 673 (Table **V**, **76**) | BAE1 | 2 | | | | | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 673 (Table **V**, **78-79**) | BAE6 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 704 (Table **V**, **77**) | BAE6 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 866 (Table **VI**, **93**) | BAE4 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 978 | BAE1 | | | | | 2 | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1418 | BAE2 | | | | | 2 | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1439 | BAE2 | | | | | 1 | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE1 | | | | | 2 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE3 | | | | | 1 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE6 | | | | | 2 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE8 | | | | | 1 | - |
| *Baetica* - La Catria | Dressel 20 | Unidentifiable with stamp: (ex figlinis) Acir[g(itanis? vel -gianis?)] = Berni Millet 2008: 331, fig. 149, 14; 557, nos. 18-19 | BAE1 | | | | | 1 | - |
| *Baetica* - La Catria | Dressel 20 | Unidentifiable with stamp: (ex figlinis) Acirg(itanis? vel -ianis?) = Berni Millet 2008: 331, fig. 149, 14; 557, nos. 18-19 | BAE2 | | | | | 1 | - |
| *Baetica* | Dressel 20 (same vessel of Phase 17) | Martin-Kilcher 1987, 599 | BAE1 | | | | | 1 | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 1457 with stamp: C. TRE(---) = Berni Millet 2008: 566, n. 467 | BAE2 | | | | | 1 | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 51 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE2 | | | 138 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 164 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE4 | | | 232 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE5 | | | 86 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 205 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 52 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE8 | | | 136 | | | - |
| *Tarraconensis* | Tarraconense 1D | López Mullor & Martín Menéndez 2008, fig. 2, 11 (Table **IX**, **142**) | TAR1 | 1 | | | | | 1 |
| *Tarraconensis* | Dressel 2-4 | Unidentifiable | TAR2 | | | | | 1 | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR1 | | | 8 | | | - |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR2 | | | 9 | | | - |
| *Lusitania* | Dressel 14B | (Table **X**, **146**) | LUS2 | 1 | | | | | 1 |
| *Lusitania* | Dressel 14B | Unidentifiable | LUS1 | | 1 | | | | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS1 | | | 3 | | | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS2 | | | 6 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Africa | Unidentifiable Punic amphora | Unidentifiable | AFR6 | | | | | 1 | - |
| Africa | Ostia Form XXIII | Bonifay 2004a, type 14, fig. 53,1 | AFR7 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | (Table **X**, **158**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 30 (Table **X**, **157**, **159**) | AFR3 | 2 | | | | | 2 |
| Africa | Ostia Form LIX | Panella 1983a, fig. 32 (Table **X**, **163**) | AFR3 | 1 | | | | | 1 |
| Africa | Ostia Form XXIII/LIX | Unidentifiable | AFR2 | | | | | 1 | - |
| Africa | Ostia IV, 447 (same vessel of Phase 17) | (Table **XIII**, **214**) | AFR2 | 1 | | | | | - |
| Africa | Dressel 2-4 | Unidentifiable | AFR3 | | 1 | | | 4 | 1 |
| Africa | Africana IA (same vessel of Phase 17) | Keay 1984, Type IIIA, fig. 37, 2 (Table **XI**, **173**) | AFR3 | 1 | | | | | - |
| Africa | Africana IA | Bonifay 2004a, type 21, fig. 56, 1 | AFR3 | 1 | | | | | 1 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 4 (Table **XII**, **196**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 10 (Table **XII**, **195**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 12 (Table **XII**, **194**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Ferrandes 2008b, fig. 10, 106 (Table **XII**, **193**, **201**) | AFR1 | 2 | | | | | 2 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 4 | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 4 (Table **XIII**, **203**) | AFR2 | 2 | | | | | 1 |
| Africa | Africana IB | (Table **XIII**, **204**) | AFR3 | 1 | | | | | 1 |
| Africa | Africana I | Unidentifiable | AFR1 | | 1 | | | 2 | - |
| Africa | Africana I | Unidentifiable | AFR2 | | | | | 1 | - |
| Africa | Africana I | Unidentifiable | AFR3 | | | | | 2 | - |
| Africa | Africana IIA1 | Keay 1984, type IV, fig. 43, 1 (Table **XIII**, **217**) | AFR2 | 1 | | | | | 1 |
| Africa | Africana IIA1 | Keay 1984, type V, fig. 42, 3 (Table **XIII**, **216**, **220**) | AFR1 | 2 | | | | | 2 |
| Africa | Africana IIA1 | Keay 1984, type V, fig. 42, 3 | AFR3 | 1 | | | | | 1 |
| Africa | Benghazi MR1 = Agora M254 | Unidentifiable | AFR3 | | | | | 2 | 1 |
| Africa | Keay XXXVA | Bonifay 2004a, type 40, fig. 72a, 1 (Table **XIV**, **225**) | AFR5 | 1 | | | | | 1 |
| Africa | Keay XXV | Keay 1984, fig. 77, 6 (Table **XIII**, **224**) | AFR5 | 2 | | | | | 2 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 425 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 120 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 668 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR4 | | | 104 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | 23 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR6 | | | 5 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Africa | Unidentifiable | Unidentifiable with stamp: O[---]? = *Ostia IV*, tav. XVIII, 125 | AFR4 | | | 1 | | | - |
| Tripolitania | Mau XXXV | Bonifay 2004a, type 58, fig. 79, 1 (Table **XIV**, **245**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Bonifay 2004a, type 58, fig. 79, 2 (Table **XIV**, **244**) | TRIP2 | 1 | | | | | 1 |
| Tripolitania | Mau XXXV | Unidentified | TRIP2 | | | | 1 | 9 | - |
| Tripolitania | Mau XXXV (same vessel of Phase 17) | Unidentified | TRIP2 | | | | | 1 | - |
| Tripolitania | Tripolitana I | Ferrandes 2008b, fig. 11, 118 (Table **XIV**, **228**) | TRIP1 | 3 | | | | 1 | 1 |
| Tripolitania | Tripolitana I | *Ostia I*, 517 (Table **XIV**, **229**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III (same vessel of Phase 17) | Keay 1984, type XI, fig. 51, 3 (Table **XV**, **255**) | TRIP1 | 1 | | | | | - |
| Tripolitania | Tripolitana III | Keay 1984, type XI, fig. 51, 3 (Table **XV**, **254**) | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana I–III | Unidentified | TRIP1 | | 3 | | | 8 | - |
| Tripolitania | Tripolitana I–III | Unidentified | TRIP2 | | 1 | | | 3 | - |
| Tripolitania | Tripolitana I–III | Unidentified | TRIP3 | | | | | 5 | - |
| Tripolitania | Unidentified | Unidentified | TRIP1 | | | 546 | | | - |
| Tripolitania | Unidentified | Unidentified | TRIP2 | | | 90 | | | - |
| Tripolitania | Unidentified | Unidentified | TRIP3 | | | 308 | | | - |
| Mauretania | Dressel 30 = Keay 1984, type 1A | Martin-Kilcher 1994, 3605 (Table **XV**, **261**) | MAUR1 | 3 | | | | 2 | 1 |
| Mauretania | Dressel 30 = Keay 1984, type IA | Keay 1984, type IA, fig. 35, 1 (Table **XV**, **259**) | MAUR1 | 2 | | | | | 2 |
| Mauretania | Dressel 30 = Keay IB | Keay 1984, type IB, fig. 35, 7 (Table **XV**, **262**) | MAUR1 | 1 | | | | | 1 |
| Mauretania | Dressel 30 | Unidentifiable | MAUR1 | | | | | 3 | - |
| Mauretania | Unidentifiable | Unidentifiable | MAUR1 | | | 17 | | | - |
| Oriental – Bosphorus-Heraclea Pontica | Zeest 94 (same vessel of Phase 17) | (Table **XVI**, **279**) | OR1 | | | | | 2 | - |
| Oriental – Bosphorus-Heraclea Pontica | Unidentifiable | Unidentifiable | OR1 | | | 78 | | | - |
| Oriental – Bosphorus | Zeest 80 (same vessel of Phase 23) | (Table **XIX**, **358**) | OR35 | 2 | | | | | 1 |
| Oriental - Crete | AC1a | Marangou-Lerat 1995, fig. 29, A16 (Table **XV**, **268**) | OR2 | 1 | | | | | 1 |
| Oriental - Crete | AC1b | Marangou-Lerat 1995, fig. 38, A42 (Table **XV**, **271**) | OR25 | 1 | | | | | 1 |
| Oriental - Crete | Cretoise 1 | Unidentifiable | OR2 | | | | | 2 | - |
| Oriental - Crete | Cretoise 1 | Unidentifiable | OR33 | | | | | 1 | 1 |
| Oriental - Crete | Cretoise 2 | Unidentifiable | OR25 | | | | | 1 | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR2 | | | 121 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Crete | Unidentifiable | Unidentifiable | OR25 | | | 25 | | | - |
| Oriental - Meander Valley | Agora F65/66 | (Table **XVI**, **282**) | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Agora F65/66 | Unidentifiable | OR3 | | 2 | | | 1 | - |
| Oriental - Meander Valley | Agora F65/66 | Unidentifiable | OR21 | | | | | 1 | - |
| Oriental - Meander Valley | Dressel 2-5 | Martin-Kilcher 1994, 2144 (Table **XVI**, **287**) | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Dressel 2-5 | Martin-Kilcher 1994, 2327 (Table **XVI**, **286**) | OR3 | 1 | | | | | 1 |
| Oriental - Meander Valley | Dressel 2-5 | Unidentifiable | OR3 | | | | | 4 | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 142 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR14 | | | 7 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR21 | | | 22 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Unidentifiable | OR4 | | | | | 3 | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5? | Unidentifiable with. traces of a *titulus pictus*: **T16** | OR4 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable | OR19 | | | | | 3 | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable | OR20 | | | | | 2 | - |
| Oriental - Aegeum / Microasiatic Area | Knossos 19 | Unidentifiable with traces of a red *titulus pictus*: (unreadable traces) | OR20 | | | 4 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 = Knnossos 15 | Auriemma & Quiri 2004, fig. 10, a (Table **XVII**, **292**) | OR9 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 = Middle Roman 18 = Zeest 90 | Auriemma & Quiri 2004, fig. 10, c (Table **XVII**, **291**) | OR9 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR9 | | | | | 1 | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR17 | | | | | 2 | - |
| Oriental - Aegeum / Microasiatic Area | Zemer 41=Agora G199=Mau XXVII-XXVIII | (Table **XVII**, **296**) | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR29 | | | 1 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 360 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 103 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable with a red *titulus pictus* in Greek: [---]ΤΡΟΥ[---] | OR11 | | | 1 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR17 | | | 13 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR19 | | | 70 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR20 | | | 85 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR29 | | | 5 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR32 | | | 21 | | 1 | - |
| Oriental – Pamphilia | Kapitän I (same vessel of Phase 17) | (Table **XVIII**, **321**) | OR6 | 1 | | | | | - |
| Oriental – Pamphilia | Kapitän I | Meylan Krause 2002, pl. 28, 419 (Table **XVIII**, **322**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Meylan Krause 2002, pl. 28, 419 (Table **XIX**, **345**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Peña 1999, fig. 15, 033 (Table **XVIII**, **327**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia III*, 70a (Table **XVIII**, **330**) | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Ferrandes 2008b, fig. 12, 136 (Table **XIX**, **344**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia I*, 550 (Table **XIX**, **346**) | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia I*, 551 | OR5 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | *Ostia I*, 551 | OR6 | 2 | | | | | 2 |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR5 | | 2 | | | 7 | - |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR6 | | 4 | | | 9 | - |
| Oriental – Pamphilia | Early Kapitän II | (Table **XIX**, **353**) | OR8 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR5 | | | | | 1 | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR6 | | | | | 1 | - |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR8 | | | | | 1 | 1 |
| Oriental – Pamphilia | Agora G199 = Zemer 41 = Mau XXXVII–XXXVIII | Unidentifiable | OR6 | | | | | 1 | 1 |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR5 | | | 347 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 288 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR7 | | | 42 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR8 | | | 12 | | | - |
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR28 | | | 37 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2368 (Table **XX**, **363**) | OR12 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2369 (Table **XX**, **366**) | OR16 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2412 (Table **XX**, **362**) | OR10 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR10 | | | | | 1 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | | | | 2 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR22 | | | | | 2 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 47 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR12 | | | 93 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR16 | | | 73 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR22 | | | 34 | | | - |
| Oriental - Palestine | Camulodunum 189 | Martin-Kilcher 1994, 5411 (Table **XX**, **375**) | OR13 | 1 | | | | | 1 |
| Oriental - Palestine | Camulodunum 189 | Martin-Kilcher 1994, 5412 | OR23 | 1 | | | | | 1 |
| Oriental - Palestine | Camulodunum 189 | Unidentifiable | OR23 | | | | | 1 | - |
| Oriental - Palestine | Camulodunum 189 | (Table **XX**, **374**) | OR13 | 4 | | | | | 4 |
| Oriental - Palestine | Kingsholm 117 | Unidentifiable | OR23 | | 2 | | | 4 | 2 |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR13 | | | 34 | | | - |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR23 | | | 50 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR15 | | | 6 | | | - |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR27 | | | 2 | | | - |
| Oriental - Cilicia | Agora M54 | Unidentifiable | OR24 | | | | | 2 | - |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR18 | | | 6 | | | - |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR24 | | | 32 | | | - |
| Oriental – Cilicia | Unidentifiable | Unidentifiable | OR30 | | | 18 | | | - |
| Oriental - Cilicia | Unidentifiable | Unidentifiable | OR31 | | | 1 | | | - |
| Oriental - Lebanon? | Elagabalo Form 1 | (same type of Table **XX**, **384**) | NI1 | | | | | 2 | - |
| Oriental - Lebanon? | Unidentifiable | Unidentifiable | NI1 | | | 35 | | | - |
| Unidentified | Unidentifiable | Unidentifiable | NI2 | | | 8 | | | - |
| **TOTAL** | | | | **110** | **32** | **6621** | **1** | **165** | **104** |

**Table 16: 'Terme di Elagabalo', Phase 19 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Tyrrenian | MGS | Unidentifiable | ITAT3 | | | | | 1 | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 370 | ITAV3 | 1 | | | | | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS2 | | 1 | | | | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE1 | | | | | 1 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE4 | | | | | 1 | - |
| Africa | Maña C1 | Unidentifiable | AFR2 | | 1 | | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2-5 | Unidentifiable | OR4 | | | | | 1 | - |
| Oriental – Lebanon? | Unidentifiable | Unidentifiable | NI1 | | | | | 1 | - |
| **TOTAL** | | | | **1** | **2** | **0** | **0** | **5** | **3** |

**Table 17: 'Terme di Elagabalo', Phase 21 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT3 | | | 82 | | | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE2 | | | 6 | | | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE4 | | | 2 | | | - |
| Africa | Van del Werff 2 | Bonifay 2004a, Type 2A, fig. 47,1 | AFR8 | 1 | | | | | 1 |
| Africa | Africana IA | Bonifay 2004a, type 21A, fig. 56, 1 | AFR5 | 3 | | | | | 3 |
| Africa | Africana I | Unidentifiable | AFR5 | | | | | 2 | - |
| Africa | Africana II | Unidentifiable | AFR5 | | 1 | | | | 1 |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 6 | | 1 | - |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR5 | | 1 | | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 14 | | | - |
| **TOTAL** | | | | **4** | **2** | **110** | **0** | **3** | **5** |

**Table 18: 'Terme di Elagabalo', Phase 22 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2-4' | Ferrandes 2008b, fig. 6, 46 | ITAC1 | 1 | | | | 1 | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV2 | | | | | 1 | - |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS2 | | | 1 | | 4 | - |
| Gaul | Gauloise 4 | Unidentifiable | GAUL1 | | 2 | 31 | | 2 | - |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 978 | BAE1 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE1 | | | 147 | | 4 | - |
| Africa | Ostia Form XXIII | Panella 1983a, fig. 33 (Table **XI**, **169**) | AFR3 | 1 | | | | 2 | 1 |
| Africa | Africana IA | Bonifay 2004a, type 21, fig. 56, 1 (Table **XI**, **182**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 5 (Table **XII**, **187**, **191**) | AFR3 | 4 | | | | | 2 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 6 (Table **XII**, **188**) | AFR1 | 1 | | | | | 1 |
| Africa | Africana I | Unidentifiable | AFR1 | | 29 | | | 13 | 2 |
| Africa | Dressel 30 | Bonifay 2004a, Type 60, fig. 81, 5 (Table **XIV**, **226**) | AFR3 | 1 | 7 | | | 2 | 2 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 1082 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 56 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 321 | | | - |
| Tripolitania | Mau XXXV | Unidentifiable | TRIP2 | | | | | 1 | - |
| Tripolitania | Tripolitana I-III | Unidentifiable | TRIP1 | | | 1 | | | - |
| Tripolitania | Tripolitana I | *Ostia I*, 517 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 2 | | | - |
| Mauretania | Dressel 30 = Keay 1984, Type IA | Keay 1984, Type IA, fig. 35, 1 (Table **XV**, **260**) | MAUR1 | 1 | | 48 | | 2 | 1 |
| Oriental - Crete | AC1a | Marangou Lerat 1995, fig. 29, A16 | OR33 | 1 | | | | | 1 |
| Oriental - Crete | Cretoise 1 | Unidentifiable | OR33 | | | | | 1 | - |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR5 | | | | | 3 | - |
| Oriental – Pamphilia | Kapitän II | Unidentifiable | OR6 | | | | | 1 | - |
| Oriental – Pamphilia | Agora G199 = Zemer 41 = Mau XXXVII-XXXVIII | Unidentifiable | OR6 | | 1 | | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 63 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | 1 | | | 1 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR16 | | | 48 | | | - |
| Oriental - Cos | Dressel 2-5 | Martin-Kilcher 1994, 2253 | OR34 | 2 | | | | | 2 |
| **TOTAL** | | | | **16** | **40** | **1800** | **0** | **38** | **17** |

**Table 19: 'Terme di Elagabalo', Phase 23 (Severan age)**

| Origin | Form | Type | F | R | B | W | S | H | V |
|---|---|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 1 | Unidentifiable | ITAC2 | | | | | 1 | 1 |
| Italy - Campania | Dressel 2-4 | Ferrandes 2008b, fig. 3,4 | ITAC1 | 1 | | | | | 1 |
| Italy - Campania | Dressel 2-4 | Ferrandes 2008b, fig. 3,8 | ITAC1 | 2 | | | | 1 | 2 |
| Italy - Campania | 'Late Campana Dressel 2-4' | Unidentifiable | ITAC1 | | 1 | | | 1 | - |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC1 | | | 14 | | | - |
| Italy - Campania | Unidentifiable | Unidentifiable | ITAC2 | | | 26 | | | - |
| Italy – Vesuvian | Dressel 2-4 | Unidentifiable | ITAC3 | | | | | 1 | 1 |
| Italy – Vesuvian | Unidentifiable | Unidentifiable | ITAC3 | | | 2 | | | - |
| Italy - Tyrrhenian | Dressel 2-4 | Martin-Kilcher 1994, 2097 | ITAT2 | 1 | | | | | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | Unidentifiable | ITAT1 | | | | | 3 | - |
| Italian - Tyrrhenian | Dressel 2-4 | Unidentifiable | ITAT3 | | | | | 3 | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT1 | | | 229 | | | - |
| Italy - Thyrrenian | Unidentifiable | Unidentifiable | ITAT2 | | | 2 | | | - |
| Italy - Tyrrhenian | Unidentifiable | Unidentifiable | ITAT3 | | | 312 | | | - |
| Italy - Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | Panella 2001b, tav. 3, 21 | ITAA1 | 1 | | | | | 1 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | Unidentifiable | ITAA1 | | | | | 1 | - |
| Italy - Adriatic | Unidentifiable | Unidentifiable | ITAA1 | | | 21 | | | - |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia II*, 521 | ITAV3 | 1 | | | | | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | *Ostia III*, 369 | ITAV3 | 1 | | | | 1 | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV2 | | | | | 3 | - |
| Italy - Tiber Valley | 'Anfora di Spello' | Unidentifiable | ITAV3 | | 1 | | | 3 | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV1 | | | 6 | | | - |
| Italy - Tiber Valley | Unidentifiable | Unidentifiable | ITAV7 | | | 1 | | | - |
| Italy - Sicily | *Ostia II*, 522/523 | *Ostia II*: 632, 44 | ITAS1 | 2 | | | | | 2 |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS1 | | 1 | | | 8 | - |
| Italy - Sicily | *Ostia II*, 522/523 | Unidentifiable | ITAS3 | | | | | 3 | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS1 | | | 370 | | | - |
| Italy - Sicily | Unidentifiable | Unidentifiable | ITAS3 | | | 17 | | | - |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2649 (Table **III**, **50**) | GAUL3 | 1 | | | | 1 | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2732 | GAUL1 | 1 | | | | | 1 |
| Gaul | Gauloise 4 | Martin-Kilcher 1994, 2747 (Table **III**, **49**) | GAUL1 | 1 | | | | | 1 |
| Gaul | Unidentifiable Gauloise | Unidentifiable | GAUL1 | | | | | 4 | - |
| Gaul | Unidentifiable Gauloise | Unidentifiable | GAUL3 | | 3 | 16 | | 3 | - |
| Gaul | Unidentifiable | Unidentifiable | GAUL1 | | | 22 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gaul | Unidentifiable | Unidentifiable | GAUL3 | | | 12 | | | - |
| *Baetica* | Dressel 2-4 | Martin-Kilcher 1994, 2341 (Table **VIII**, **117**) | BAE2 | 2 | | | | | 2 |
| *Baetica* | Dressel 2-4 | Unidentifiable | BAE8 | | | | | 2 | 1 |
| *Baetica* | Dressel 14A | Ferrandes 2008b, fig. 8, 65 (Table **VIII**, **126**) | BAE4 | 2 | | | | | 2 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4195 (Table **VII**, **113**) | BAE4 | 1 | | | | | 1 |
| *Baetica* - Puente Melchor | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1992, 4200 with double stamp (on the wall close to the upper and lower parts of the handle): Soc(iorum?)/ So[c(iorum?)] = Lagóstena Barrios 2001: 424, n. 118h. Cf. also Étienne & Mayet 2002: 130 and fig. 36, n. 25a | BAE8 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4260 | BAE8 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4272 | BAE8 | 2 | | | | | 2 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Martin-Kilcher 1994, 4301 | BAE8 | 1 | | | | | 1 |
| *Baetica* | Beltrán IIA = Pélichet 46 | Unidentifiable | BAE8 | | | | | 2 | - |
| *Baetica* | Late Beltrán IIA = Augst 30 | Ferrandes 2008b, fig. 7, 64 | BAE3 | 2 | | | | | 2 |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE1 | | | | | 2 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE3 | | | | | 3 | - |
| *Baetica* | Unidentifiable *garum* amphora | Unidentifiable | BAE4 | | 1 | | | 2 | - |
| *Baetica* | Dressel 20 | Martin Kilcher 1987, 400 (Table **V**, **66**) | BAE6 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 464 (Table **VI**, **97**) | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 469 (Table **VI**, **87**) | BAE7 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 604 | BAE2 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 604 (Table **VI**, **96**) | BAE7 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 971 | BAE2 | 2 | | | | | 2 |
| *Baetica* | Dressel 20 | Martin-Kilcher 1987, 971 (Table **VI**, **98**) | BAE7 | 1 | | | | | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE2 | | 1 | 30 | | 6 | 1 |
| *Baetica* | Dressel 20 | Unidentifiable | BAE6 | | 5 | 29 | | 2 | - |
| *Baetica* | Dressel 20 | Unidentifiable | BAE7 | | 6 | 31 | | 4 | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Baetica* | Unidentifiable | Unidentifiable | BAE1 | | | 98 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE2 | | | 45 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE3 | | | 160 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE4 | | | 677 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE5 | | | 32 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE6 | | | 85 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE7 | | | 12 | | | - |
| *Baetica* | Unidentifiable | Unidentifiable | BAE8 | | | 21 | | | |
| *Tarraconensis* | Dressel 2-4 | Unidentifiable | TAR1 | | | | | 1 | 1 |
| *Tarraconensis* | Unidentifiable | Unidentifiable | TAR2 | | | 2 | | | - |
| *Lusitania* | Dressel 14B | (Table **X**, **147**) | LUS1 | 1 | | | | | 1 |
| *Lusitania* | Dressel 14B | Unidentifiable | LUS1 | | | 13 | | 1 | - |
| *Lusitania* | Unidentifiable | Unidentifiable | LUS2 | | | 3 | | | - |
| Africa | Van del Werff 2 | Unidentifiable | AFR6 | | 1 | | | | 1 |
| Africa | Ostia Form XXIII | Bonifay 2004a, type 14, fig. 53,1 | AFR7 | 1 | | | | | 1 |
| Africa | Ostia Form XXIII (same vessel of phase 17) | Panella 1983a, fig. 33 (Table **X**, **165**) | AFR1 | 1 | | | | | - |
| Africa | Ostia Form XXIII | Panella 1983a, fig. 33 (Table **X**, **166**) | AFR1 | 1 | | | | | 1 |
| Africa | Ostia Form XXIII | Bonifay 2004a, fig. 53, 1 (Table **X**, **164**) | AFR3 | 1 | | | | | 1 |
| Africa | Pupput T700.5 | Bonifay 2004a, type 17, fig. 53, 1 (Table **XI**, **170**) | AFR2 | 1 | | | | | 1 |
| Africa | Africana IA (pitch inside and outside) | Ferrandes 2008b, fig. 10, 105 (Table **XI**, **174**) | AFR4 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 5 | AFR1 | 3 | | | | | 3 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 5 | AFR4 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 5 | AFR5 | 3 | | | | | 3 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 6 | AFR1 | 1 | | | | | 1 |
| Africa | Africana IB | Bonifay 2004a, type 21B, fig. 56, 6 | AFR4 | 1 | | | | | 1 |
| Africa | Africana IB | Keay 1984, type IIIB, fig. 38, 2 (Table **XII**, **189**) | AFR4 | 1 | | | | | 1 |
| Africa | Africana I | Unidentifiable | AFR1 | | 2 | | | 3 | - |
| Africa | Africana I | Unidentifiable | AFR3 | | 3 | | | 6 | 3 |
| Africa | Africana I | Unidentifiable | AFR5 | | 1 | | | 8 | 4 |
| Africa | Africana IIA1 | Keay 1984, Type V, fig. 43, 3 | AFR1 | 1 | | | | | 1 |
| Africa | Africana II | Unidentifiable | AFR1 | | 1 | | | 6 | - |
| Africa | Dressel 2-4 | Bonifay 2004a, Type 50, fig. 79, 1 | AFR3 | 1 | | | | | 1 |
| Africa | Dressel 2-4 | Unidentifiable | AFR3 | | 3 | | | | 2 |
| Africa | Unidentifiable | Unidentifiable | AFR1 | | | 264 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR2 | | | 58 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR3 | | | 145 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR4 | | | 22 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Africa | Unidentifiable | Unidentifiable | AFR5 | | | 579 | | | - |
| Africa | Unidentifiable | Unidentifiable | AFR6 | | | 6 | | | - |
| Tripolitania | Mau XXXV | Unidentifiable | TRIP2 | | | | | 7 | 4 |
| Tripolitania | Tripolitana II | Bonifay 2004a, type 4, fig. 47, 4 | TRIP1 | 3 | | | | | 3 |
| Tripolitania | Tripolitana II | Bonifay 2004a, type 4, fig. 47, 5 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana II | Keay 1984, Type X, fig. 50, 1 (Table **XIV**, **235**) | TRIP3 | 1 | | | | | 1 |
| Tripolitania | Tripolitana III | Bonifay 2004a, type 20, fig. 55a, 1 | TRIP1 | 1 | | | | | 1 |
| Tripolitania | Tripolitana I-III | Unidentifiable | TRIP1 | | | | | 4 | - |
| Tripolitania | Tripolitana I-III | Unidentifiable | TRIP3 | | | | | 1 | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP1 | | | 110 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP2 | | | 54 | | | - |
| Tripolitania | Unidentifiable | Unidentifiable | TRIP3 | | | 44 | | | - |
| Mauretania | Dressel 30 = Keay I | Bonifay 2004a, Type 60, fig. 82, 18 | MAUR1 | 1 | | | | | 1 |
| Mauretania | Dressel 30 = Keay IA | Keay 1984, Type IA, fig. 35, 1 | MAUR1 | 1 | | | | 2 | 1 |
| Mauretania | Dressel 30 = Keay I | Unidentifiable | MAUR1 | | | | | 1 | - |
| Oriental – Bosphorus-Heraclea Pontica | Unidentifiable | Unidentifiable | OR1 | | | 37 | | | - |
| Oriental - Bosphorus | Zeest 80 (same vessel of Phase 18) | (Table **XIX**, **358**) | OR35 | 1 | | | | 1 | - |
| Oriental - Crete | Cretoise 1 | Unidentifiable | OR25 | | | | | 2 | 1 |
| Oriental- Crete | Cretoise 3 | Unidentifiable | OR33 | | | | | 12 | 4 |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR2 | | | 32 | | | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR25 | | | 20 | | | - |
| Oriental - Crete | Unidentifiable | Unidentifiable | OR33 | | 2 | 198 | | | - |
| Oriental - Meander Valley | Agora F65/66 | Unidentifiable | OR3 | | 3 | | | 2 | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR3 | | | 128 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR14 | | | 1 | | | - |
| Oriental - Meander Valley | Unidentifiable | Unidentifiable | OR21 | | | 3 | | | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2297 | OR4 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Martin-Kilcher 1994, 2305 | OR4 | 2 | | | | | 2 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | Unidentifiable | OR4 | | 1 | | | 6 | - |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Ferrandes 2008b, fig. 13, 145 = Blázquez Martinez *et al.* 1994, T.98/C.50-70/D-44 | OR17 | 1 | | | | | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Ferrandes 2008b, fig. 12, 138 = Blázquez Martinez *et al.* 1994, T.98/SUP/386 | OR29 | 1 | | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR11 | | 1 | | | | 1 |
| Oriental - Aegeum / Microasiatic Area | Dressel 24 | Unidentifiable | OR29 | | 1 | | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR4 | | | 236 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR9 | | | 25 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR11 | | | 25 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR17 | | | 26 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR18 | | | 12 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR20 | | | 3 | | | - |
| Oriental - Aegeum / Microasiatic Area | Unidentifiable | Unidentifiable | OR29 | | | 8 | | | - |
| Oriental - Pamphilia | Kapitän I | *Ostia I*, 551 | OR5 | 5 | | | | | 5 |
| Oriental - Pamphilia | Kapitän I | *Ostia I*, 551 | OR6 | 2 | | | | | 2 |
| Oriental - Pamphilia | Kapitän I | Ferrandes 2008b, fig. 12, 136 | OR6 | 1 | | | | | 1 |
| Oriental – Pamphilia | Kapitän I | Unidentifiable | OR5 | | 5 | | | 11 | - |
| Oriental - Pamphilia | Kapitän I | Unidentifiable | OR6 | | 1 | | | 4 | - |
| Oriental - Pamphilia | Kapitän II | *Ostia I*, 544 (Table **XIX**, **356**) | OR6 | 2 | | | | | 1 |
| Oriental - Pamphilia | Kapitän II | Unidentifiable | OR5 | | | | | 5 | 2 |
| Oriental - Pamphilia | Kapitän II | Unidentifiable | OR6 | | 5 | | | 13 | 4 |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR5 | | | 385 | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR6 | | | 63 | | | - |
| Oriental - Pamphilia | Unidentifiable | Unidentifiable | OR7 | | | 5 | | | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oriental – Pamphilia | Unidentifiable | Unidentifiable | OR8 | | | 56 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2413 (Table **XX**, **371**) | OR22 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2432 (Table **XX**, **370**) | OR16 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Martin-Kilcher 1994, 2436 (Table **XX**, **372**) | OR22 | 1 | | | | | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR10 | | | | | 1 | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR12 | | | | | 1 | 1 |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR16 | | | | | 1 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Camulodunum 184 | Unidentifiable | OR22 | | 3 | | | 1 | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR10 | | | 15 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR12 | | | 38 | | | - |
| Oriental - Rhodes / Rhodian *Peraea* | Unidentifiable | Unidentifiable | OR16 | | | 7 | | | - |
| Oriental - Palestine | Kingsholm 117 | Marucci 2006, fig. 11, 52 | OR13 | 3 | | | | | 3 |
| Oriental - Palestine | Kingsholm 117 | Marucci 2006, fig. 11, 52 (Table **XX**, **373**) | OR23 | 1 | | | | | 1 |
| Oriental - Palestine | Kingsholm 117 | Unidentifiable | OR13 | | 1 | | | | - |
| Oriental - Palestine | Camulodunum 189 | Martin-Kilcher 1994, 5412 (Table **XX**, **376**) | OR13 | 2 | | | | | 2 |
| Oriental - Palestine | Camulodunum 189 | Unidentifiable | OR13 | | | | | 4 | - |
| Oriental - Palestine | Camulodunum 189 | Unidentifiable | OR23 | | | | | 1 | - |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR13 | | | 305 | | | - |
| Oriental - Palestine | Unidentifiable | Unidentifiable | OR23 | | | 17 | | | - |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR15 | | | 2 | | | - |
| Oriental - Egypt | Unidentifiable | Unidentifiable | OR27 | | | 1 | | | - |
| Oriental - Cnidus | Mau XXXVIII | Ferrandes 2008b, fig. 5, 29 (Table **XX**, **381**) | OR26 | | 2 | | | | 2 |
| Oriental – Cnidus | Unidentifiable | Unidentifiable | OR26 | | | 8 | | | |
| Oriental - Cos | Dressel 2-5 | Martin-Kilcher 1994, 2328 (Table **XX**, **383**) | OR34 | 1 | | | | | 1 |
| Oriental – Lebanon? | Elegabalo Type 1 | (like Table **XX**, **384**) | NI1 | | 1 | 3 | | 1 | 1 |
| Unidentified | Unidentifiable | Unidentifiable | NI2 | | 1 | 1 | 1 | | 1 |
| **TOTAL** | | | | **86** | **57** | **5230** | **1** | **166** | **120** |

**Table 20: Roma, Via Nova and Crypta Balbi (Trajanic age)**

| Origin | Form | V. Via Nova | V. Crypta Balbi |
|---|---|---|---|
| Italy - South | Ancient MGS | 0 | 3 |
| Italy - Campania | Dressel 21-22 | 5 | 1 |
| Italy - Tyrrhenian | Dressel 1 | 2 | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | 26 | 2 |
| Italy - Adriatic | Lamboglia 2 | 1 | 1 |
| Italy - Adriatic | Dressel 6A | 0 | 1 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | 0 | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | 53 | 34 |
| Italy – Sicily | *Ostia II*, 522/523 | 1 | 5 |
| Gaul | Gauloise 4 | 46 | 12 |
| *Baetica* | Haltern 70 | 10 | 0 |
| *Baetica* | Dressel 7-13 | 4 | 1 |
| *Baetica* | Dressel 20 | 42 | 21 |
| *Baetica* | Beltrán IIA | 16 | 6 |
| *Baetica* | Beltrán IIB | 14 | 6 |
| *Baetica* | Dressel 14A | 37 | 8 |
| *Tarraconensis* | Pascual 1 | 2 | 1 |
| *Tarraconensis* | Dressel 2-4 | 3 | 7 |
| *Lusitania* | Dressel 14B | 0 | 8 |
| Africa | Neo-punic | 3 | 3 |
| Africa | Ostia Form LIX | 0 | 1 |
| Africa | Ostia form LIX/XXIII | 4 | 0 |
| Africa (punic) | Mau XL | 1 | 0 |
| Tripolitania | Tripolitana I | 0 | 6 |
| Tripolitania | Tripolitana II | 1 | 0 |
| Oriental – Bosphorus | Knossos 39 | 0 | 1 |
| Oriental – Crete | Cretoise 1 | 1 | 1 |
| Oriental – Crete | Cretoise 2 | 10 | 0 |
| Oriental – Crete | Cretoise 4 | 25 | 3 |
| Oriental – Meander Valley | Agora F 65/66 | 1 | 1 |
| Oriental – Aegeum/ Microasiatic area | Mau XXVII-XXVIII | 0 | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 1 | 2 |
| Oriental - Egypt | Pompei 5 | 0 | 1 |
| Oriental - Cnidus | Mau XXXVIII | 4 | 0 |
| Oriental – Cos | Dressel 5 / Pompei 6 | 5 | 1 |
| Unidentified | Unidentified | 3 | 0 |

**Table 21: Roma, *Meta Sudans* (Antonine age)**

| Origin | Form | V. | W |
|---|---|---|---|
| Italy – Campania | Dressel 2-4 | 4 | 29 |
| Italy - Vesuvian | Dressel 2-4 | 3 | 5 |
| Italy - Tyrrhenian | Dressel 1 | 1 | 6 |
| Italy - Tyrrhenian | Dressel 2-4 | 29 | 200 |
| Italy – Tyrrhenian? | Camulodunum 139 | 1 | 0 |
| Italy - Adriatic | Dressel 6A | 0 | 3 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | 2 | 0 |
| Italy – Tiber Valley | 'Anfora di Spello' | 74 | 382 |
| Italy - Sicily | *Ostia II*, 522/523 | 8 | 30 |

| | | | |
|---|---|---|---|
| Gaul | Gauloise 4 | 10 | 0 |
| Gaul | Gauloise 5 | 1 | 0 |
| Gaul | Unidentifiable with flat base | 22 | 0 |
| Gaul | Unidentifiable | 0 | 337 |
| *Baetica* | Haltern 70 | 1 | 20 |
| *Baetica* | Dressel 7-13 | 5 | 0 |
| *Baetica* | Dressel 2-4 | 1 | 0 |
| *Baetica* | Dressel 20 | 30 | 259 |
| *Baetica* | Dressel 28 | 1 | 9 |
| *Baetica* | Beltrán IIA | 8 | 0 |
| *Baetica* | Dressel 14A | 13 | 0 |
| *Baetica* | Unidentifiable *garum* amphora | 0 | 300 |
| *Tarraconensis* | Dressel 2-4 | 1 | 42 |
| *Lusitania* | Dressel 14B | 1 | 4 |
| Iberian peninsula | Unidentifiable | 17 | 0 |
| Africa | Neo-punic | 4 | 0 |
| Africa | Ostia Form LIX | 2 | 0 |
| Africa | Ostia Form LIX/XXIII | 13 | 0 |
| Africa | Ostia Form XXIII | 3 | 0 |
| Africa | Africana I | 14 | 0 |
| Africa | Unidentifiable | 45 | 0 |
| Tripolitania | Mau XXXV | 23 | 0 |
| Tripolitania | Tripolitana II | 2 | 0 |
| Tripolitania | Unidentifiable | 6 | 0 |
| Oriental - Crete | Dressel 5 | 1 | 0 |
| Oriental - Crete | Cretoise 1 | 36 | 0 |
| Oriental - Crete | Cretoise 2 | 7 | 0 |
| Oriental - Crete | Cretoise 3 | 1 | 0 |
| Oriental - Crete | Cretoise 4 | 9 | 0 |
| Oriental - Crete | Unidentifiable | 0 | 365 |
| Oriental - Meander Valley | Agora F65/66 | 13 | 115 |
| Oriental - Aegeum/ Microasiatic area | Dressel 2-5 | 3 | 0 |
| Oriental - Aegeum/ Microasiatic area | Schöne XIII | 1 | 0 |
| Oriental - Aegeum/ Microasiatic area | Mau XXVII-XXVIII | 1 | 0 |
| Oriental - Aegeum/ Microasiatic area | Unidentifiable | 0 | 96 |
| Oriental - Aegeum/ Microasiatic area | Dressel 24 | 1 | 0 |
| Oriental - Pamphilia? | Kapitän I/II | 1 | 9 |
| Oriental - Rhodes/Rhodian *Peraea* | Camulodunum 184 | 12 | 29 |
| Oriental - Palestine | Kinghsolm 117 or similar | 3 | 0 |
| Oriental - Syria/Palestine | Schöne XV | 2 | 0 |
| Oriental - Syria/Palestine | Rizzo 2003, A23 | 6 | 0 |
| Oriental - Syria/Palestine | Unidentified | 0 | 94 |
| Oriental - Egypt | Likely an AE3? | 1 | 0 |
| Oriental - Egypt | Unidentifiable | 0 | 12 |
| Oriental - Cilicia | Agora M54/Schöne XIII | 5 | 0 |
| Oriental - Cnidus | Mau XXXVIII | 1 | 0 |
| Unidentified | Rizzo 2003, A24 | 1 | 0 |
| Unidentified | Rizzo 2003, A25 | 1 | 0 |
| Unidentified | Unidentified | 5 | 540 |

**Table 22: Roma, Trajan's Markets (Severan age)**

| Origin | Form | R | B | H | Nk | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 21-22 | 2 | 0 | 0 | 0 | 1 | 2 |
| Italy - Tyrrhenian | Dressel 2-4 | 1 | 1 | 4 | 0 | 0 | 2 |
| Italy - Adriatic | Dressel 6A | 1 | 0 | 0 | 0 | 0 | 1 |
| Italy - Tiber Valley | 'Anfora di Spello' | 4 | 0 | 5 | 0 | 0 | 4 |
| Italy - Sicily | *Ostia II*, 522/523 | 0 | 0 | 3 | 0 | 30 | 2 |
| Italy - Lipari | Richborough 527 | 1 | 2 | 0 | 0 | 15 | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Italy | Unidentified | 0 | 0 | 0 | 0 | 22 | 1 |
| Gaul | Gauloise 4 | 4 | 3 | 6 | 7 | 158 | 4 |
| Gaul | Unidentified | 0 | 0 | 0 | 0 | 73 | - |
| *Baetica* | Dressel 7 | 1 | 0 | 1 | 0 | 0 | 1 |
| *Baetica* | Haltern 70 | 1 | 0 | 0 | 0 | 0 | 1 |
| *Baetica* | Dressel 14A | 4 | 0 | 1 | 0 | 0 | 4 |
| *Baetica* | Dressel 20 | 5 | 2 | 8 | 0 | 51 | 5 |
| *Baetica* | Late Beltrán IIA = Augst 30 | 5 | 0 | 0 | 0 | 0 | 5 |
| *Baetica* | Unidentified | 0 | 0 | 0 | 0 | 38 | - |
| *Tarraconensis* | Dressel 2-4 | 2 | 0 | 1 | 0 | 7 | 2 |
| *Tarraconensis* | Unidentified | 0 | 0 | 0 | 0 | 13 | - |
| *Lusitania* | Dressel 14B | 2 | 1 | 4 | 0 | 13 | 2 |
| *Lusitania* | Unidentified | 0 | 0 | 0 | 0 | 16 | - |
| Iberian Peninsula | Unidentified | 1 | 2 | 4 | 0 | 162 | 1 |
| Africa | Ostia Form XXIII | 2 | 0 | 0 | 0 | 0 | 2 |
| Africa | Africana IA | 8 | 0 | 0 | 1 | 0 | 8 |
| Africa | Africana IIIA | 1 | 0 | 0 | 0 | 0 | 1 |
| Africa | Leptiminus II (Opaiţ 2000: 442, fig. 2, no. 27) | 1 | 0 | 0 | 0 | 0 | 1 |
| Africa | Unidentified | 0 | 6 | 2 | 0 | 22 | - |
| Africa/Tripolitania | Unidentified | 0 | 0 | 0 | 0 | 406 | - |
| Tripolitania | Tripolitana I | 1 | 0 | 0 | 0 | 0 | 1 |
| Tripolitania | Tripolitana II | 1 | 0 | 1 | 0 | 0 | 1 |
| Tripolitania | Tripolitana I-III | 1 | 0 | 0 | 0 | 0 | 1 |
| Tripolitania | Mau XXXV | 7 | 0 | 5 | 0 | 4 | 7 |
| Tripolitania | Unidentified | 1 | 0 | 0 | 0 | 0 | 1 |
| Oriental - Crete | AC1a | 5 | 0 | 0 | 0 | 0 | 5 |
| Oriental - Crete | AC1e | 0 | 0 | 8 | 0 | 99 | 4 |
| Oriental - Crete | AC2a | 0 | 0 | 0 | 1 | 0 | 1 |
| Oriental - Crete | AC3 | 2 | 0 | 0 | 0 | 0 | 2 |
| Oriental - Crete | Unidentified | 0 | 0 | 1 | 0 | 0 | - |
| Oriental - Meander Valley | Agora F65/66 | 1 | 0 | 0 | 0 | 33 | 1 |
| Oriental - Aegeum / Microasiatic Area | Mau XXVII-XXVIII | 1 | 0 | 0 | 0 | 3 | 1 |
| Oriental - Aegeum / Microasiatic Area | Unidentified | 0 | 3 | 3 | 0 | 153 | 3 |
| Oriental - Pamphilia? | Kapitän I | 6 | 5 | 16 | 18 | 272 | 8 |
| Oriental - Pamphilia? | Kapitän II | 2 | 0 | 0 | 0 | 48 | 2 |
| Oriental - Palestine | Kinghsolm 117 | 0 | 0 | 2 | 0 | 0 | 1 |
| Unidentified | Unidentified | 2 | 3 | 16 | 0 | 394 | 8 |

**Table 23: Roma, *Forum Transitorium*, Period 2 - Phase II, Sub-Phase 2 (Trajanic age)**

| Origin | Form | N. Fr. US 3089 | N. Fr. US 3076 | V. |
|---|---|---|---|---|
| Italy - Campania | Dressel 21-22 | 0 | 1 | 1 |
| Italy - Tyrrhenian | Dressel 2-4 | 0 | 2 | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' | 1 | 3 | 4 |
| Italy - Sicily | *Ostia II*, 522/523 | 0 | 2 | 2 |
| Gaul | Unidentified with flat base | 0 | 1 | 1 |
| *Baetica* | Dressel 20 | 0 | 2 | 2 |
| *Baetica* | Beltrán IIA | 0 | 1 | 1 |
| Iberian peninsula | Unidentified | 0 | 1 | 1 |
| Africa | Marucci 2006, A. 2, fig. 11, 54 (punic) | 0 | 1 | 1 |
| Africa | Ostia Form XXIII | 0 | 1 | 1 |
| Africa | Unidentified | 0 | 1 | 1 |
| Tripolitania | Mau XXXV | 0 | 3 | 3 |
| Oriental - Crete | Cretoise 1 | 0 | 1 | 1 |

| | | | | |
|---|---|---|---|---|
| Oriental - Crete | Cretoise 2 | 0 | 1 | 1 |
| Oriental – Crete | Cretoise 4 | (1) | 2 | 2 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | 0 | 2 | 2 |
| Oriental – Aregeum / Microasiatic area | Unidentified | 0 | 2 | 2 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 0 | 5 | 5 |
| Oriental - Palestine | Kingsholm 117 | 0 | 1 | 1 |
| Oriental - Palestine | Rizzo 2003, A 23 | 0 | 5 | 5 |
| Oriental – Palestine | Marucci 2006, A. 1, fig. 11, 53 | 0 | 1 | 1 |
| Oriental | Unidentified | 0 | 5 | 5 |
| Unidentified | Unidentified | 0 | 4 | 4 |

**Table 24: Roma, *Forum Transitorium*, Phase III, Sub-Phases 3–5 (second half of 2nd/early 3rd centuries AD)**

| Origin | Form | N. Fr. S-P 3, US 3073 | N. Fr. S-P 4, US 3070 | N. Fr. S-P, US 3067 | V. |
|---|---|---|---|---|---|
| Italy – Campania | 'Late Campana Dressel 2–4' | 0 | 1 | 0 | 1 |
| Italy – Tyrrhenian | Dressel 2–4 | 2 | 1 | 0 | 3 |
| Italy – Tiber Valley | 'Anfora di Spello' | 0 | 2 | 0 | 2 |
| Gaul | Unidentified with flat base | 2 | 5 | 0 | 7 |
| Gaul | Unidentified | 1 | 0 | 0 | 1 |
| *Baetica* | Dressel 20 | 1 | 1 | 0 | 2 |
| *Baetica* | Beltrán IIA | 1 | 0 | 0 | 1 |
| *Baetica* | Dressel 14A | 1 | 1 | 1 | 3 |
| *Baetica* | Dressel 28 | 0 | 1 | 0 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | 1 | 0 | 0 | 1 |
| *Baetica* | Unidentified | 1 | 1 | 0 | 2 |
| *Lusitania* | Dressel 14B | 1 | 0 | 0 | 1 |
| Iberian peninsula | Unidentified | 0 | 2 | 0 | 2 |
| Africa | Unidentified Punic amphora | 0 | 1 | 0 | 1 |
| Africa | Ostia Form LIX | 1 | 0 | 1 | 2 |
| Africa | Africana I | 2 | 2 | 1 | 5 |
| Africa | Africana II | 0 | 1 | 1 | 2 |
| Africa? | Benghazi MR1=Agora M254 | 0 | 1 | 0 | 1 |
| Africa | Keay XXVP [intrusive] | 1 | 0 | 0 | 1 |
| Africa | Unidentified | 1 | 1 | 1 | 3 |
| Tripolitania | Mau XXXV | 2 | 2 | 0 | 4 |
| Oriental – Crete | Cretoise 1 | 1 | 3 | 1 | 5 |
| Oriental – Crete | Cretoise 4 | 1 | 1 | 0 | 2 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 2–5 | 0 | 0 | 1 | 1 |
| Oriental – Aegeum/ Microasiatic Area | Unidentified | 0 | 1 | 0 | 1 |
| Oriental – Pamphilia? | Kapitän I | 0 | 4 | 3 | 7 |
| Oriental – Rhodes/ Rhodian *Peraea* | Camulodunum 184 | 3 | 4 | 0 | 7 |
| Oriental - Palestine | Rizzo 2003, A 23 | (1) | 3 | 0 | 3 |
| Oriental | Unidentified | 3 | 0 | 0 | 3 |
| Unidentified | Unidentified | 4 | 4 | 1 | 9 |

**Table 25: Roma, Domus Tiberiana, Period V, Sector 9, Sondage 24, units 3-4 (Hadrianic age)**

| Origin | Form | R | W | B | H | N. Fr. | V |
|---|---|---|---|---|---|---|---|
| Italy - Tyrrhenian | Dressel 2-4 | 2 | 1 | 0 | 7 | 10 | 2 |
| Italy - Tiber Valley | 'Anfora di Spello' - *Ostia III*, 369 | 2 | 0 | 0 | 0 | 2 | 2 |
| Gaul | Gauloise 4 | 0 | 0 | 0 | 1 | 1 | 1 |
| *Baetica* | Dressel 7-11 | 1 | 0 | 0 | 0 | 1 | 1 |
| Tripolitania | Tripolitana I | 0 | 0 | 0 | 1 | 1 | 1 |
| Tripolitania | Mau XXXV | 3 | 0 | 0 | 1 | 4 | 3 |
| Mauretania | Keay I = Dressel 30 | 0 | 0 | 0 | 1 | 1 | 1 |
| Oriental - Rhodes/ Rhodian *Peraea* | Camulodunum 184 | 0 | 0 | 0 | 1 | 1 | 1 |
| Unidentified | Unidentified | 0 | 43 | 0 | 0 | 43 | 1 |

**Table 26: Roma, *Domus Tiberiana*, Period V, Sector 11, Sondage 3, unit 7 (Hadrianic age)**

| Origin | Form | R | W | B | H | N. Fr. | V |
|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 17=Meylan Krause 2002, 386 | 0 | 1 | 1 | 0 | 2 | 1 |
| *Baetica* | Dressel 20 | 1 | 0 | 0 | 0 | 1 | 1 |

**Table 27: Roma, *Domus Tiberiana*, Period VI, Sector 11, Sondage 13, units 4-7 (Antonine-Severan ages)**

| Origin | Form | R | W | B | H | N. Fr. | V |
|---|---|---|---|---|---|---|---|
| Italy | Dressel 2-4 | 1 | 0 | 0 | 0 | 1 | 1 |
| Italy - Sicily / Campania | Dressel 21-22 | 1 | 0 | 0 | 0 | 1 | 1 |
| Gaul | Gauloise 4 | 1 | 0 | 1 | 0 | 2 | 2 |
| *Baetica* | Beltrán IIB | 0 | 0 | 4 | 0 | 4 | 3 |
| *Baetica* | Dressel 20 | 6 | 16 | 1 | 9 | 32 | 6 |
| Lusitania | Dressel 14B | 2 | 6 | 0 | 1 | 9 | 2 |
| Africa? | Benghazi MR1 = Agora M254 | 0 | 0 | 0 | 1 | 1 | 1 |
| Tripolitania | Mau XXXV | 2 | 0 | 0 | 0 | 2 | 2 |
| Oriental - Aegeum / Microasiatic Area | Dressel 2-5 | 1 | | | | 1 | 1 |
| Oriental - Pamphilia? | Kapitän I | 2 | 0 | 0 | 0 | 2 | 2 |
| Unidentified | Unidentified | 0 | 239 | 0 | 0 | 230 | 1 |

**Table 28: Roma, Gianicolo (Via Sacchi), Phase VIII, US 4, US 401-465 (end of 2nd century AD)**

| Origin | Type | V |
|---|---|---|
| Italy - Campania | MGS Van der Mersch 1994, VI | 1 |
| Italy - Campania | Dressel 2-4 | 5 |

| | | |
|---|---|---|
| Italy – Campania | Dressel 21–22 | 5 |
| Italy – Campania | Late Dressel 1 | 1 |
| Italy – Campania | 'Late Campana Dressel 2–4' | 5 |
| Italy – Vesuvian | Dressel 2–4 | 5 |
| Italy – Tyrrhenian | MGS Van der Mersch 1994, VI | 1 |
| Italy – Tyrrhenian | Dressel 1A | 2 |
| Italy – Tyrrhenian | Dressel 2–4 | 11 |
| Italy – Tyrrhenian | Late Dressel 2–4 | 5 |
| Italy – Adriatic | Dressel 6A | 2 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' – Aldini 1978, A1 | 3 |
| Italy – Tiber Valley | 'Anfora di Spello' | 101 |
| Italy – Sicily | *Ostia II*, 523 | 6 |
| Italy – Sicily | *Ostia III*, 464 | 1 |
| Italy – Sicily | *Ostia II*, 522/523; *Ostia III*, 464 | 15 |
| Italy – Sicily | Dressel 21–22 | 1 |
| Sicily? Africa? | *Ostia II*, 522/523; *Ostia III*, 464 | 13 |
| Italy – Lipari | Richborough 527 | 4 |
| Italy – Lipari | Dressel 2–4 | 1 |
| Gaul | Gauloise 4 | 84 |
| Gaul | Gauloise 5 | 3 |
| Gaul? | Ferrandes 2008b, fig. 7, 57 | 8 |
| Gaul - Marseille | Unidentifiable | 1 |
| *Baetica* | Haltern 70 | 4 |
| *Baetica* | Dressel 7–13 | 6 |
| *Baetica* | Dressel 12 | 1 |
| *Baetica* | Dressel 14A | 221 |
| *Baetica* | Late Dressel 28 – *Ostia IV*, 291 | 3 |
| *Baetica* | Dressel 20 | 166 |
| *Baetica* | Late Beltrán IIA = Augst 30 | 45 |
| *Baetica* | Advanced Beltrán IIB | 3 |
| *Baetica* | Almagro 50 | 1 |
| *Tarraconensis* | Dressel 2–4 | 4 |
| *Tarraconensis* | Oberaden 74 | 5 |
| *Lusitania* | Dressel 14B | 77 |
| Africa | Van der Werff 1 | 2 |
| Africa | Van der Werff 2 | 1 |
| Africa | Neopunic (Ferrandes 2008b, fig. 9, 82) | 1 |
| Africa | Neopunic (Ferrandes 2008b, fig. 10, 98) | 1 |
| Africa | Hammamet 1 | 2 |
| Africa | Ferrandes 2008b, fig. 9, 85 | 5 |
| Africa | Ferrandes 2008b, fig. 9, 86 | 1 |
| Africa | Leptiminus I | 33 |
| Africa | Ferrandes 2008b, fig. 10, 92 | 4 |
| Africa | Ferrandes 2008b, fig. 10, 93 | 3 |
| Africa | Ferrandes 2008b, fig. 10, 94 | 1 |
| Africa | Leptiminus II | 1 |
| Africa | Uzita tav. 52, 10 | 3 |
| Africa | Ostia Form LIX | 8 |
| Africa | Ostia Form LIX/XXIII | 1 |
| Africa | Ostia Form XXIII | 15 |
| Africa | *Ostia IV*, 447 | 3 |
| Africa | Africana I | 96 |
| Africa | Late Africana IB | 1 |
| Africa | Africana IIA | 4 |
| Africa | Dressel 2–4 | 4 |
| Africa | 'Pseudo Dressel 1' | 1 |
| Africa | Ferrandes 2008b, fig. 11, 114 | 1 |
| Africa | Ferrandes 2008b, fig. 11, 115 | 1 |
| Africa | Ferrandes 2008b, fig. 11, 116 | 1 |
| Africa? | *Ostia I*, 453,454/Benghazi MR1 | 1 |
| Tripolitania | Tripolitana I | 52 |
| Tripolitania | Tripolitana II | 21 |
| Tripolitania | Mau XXXV | 112 |

| | | |
|---|---|---|
| Mauretania? | Dressel 30 (Ferrandes 2008b, fig. 11, 117) | 1 |
| Oriental – Bosphorus | Ferrandes 2008b, fig. 12, 156 = Knossos 39 | 2 |
| Oriental – Crete | Cretoise 1 | 90 |
| Oriental - Crete | Cretoise 2 | 2 |
| Oriental - Crete | Cretoise 4 | 60 |
| Oriental – Meander Valley | Agora F65/66 | 32 |
| Oriental – Aegeum / Microasiatic Area | Dressel 5 | 37 |
| Oriental – Aegeum / Microasiatic Area | Similar to Agora M94 – P11692 | 1 |
| Oriental – Aegeum / Microasiatic Area | Mau XXVII–XXVIII | 12 |
| Oriental – Aegeum / Microasiatic Area | Benghazi MR18 | 6 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 140 | 1 |
| Oriental – Aegeum / Microasiatic Area | Similar to type Knossos 18 = Ferrandes 2008b, fig. 12, 141 | 2 |
| Oriental – Aegeum / Microasiatic Area | Similar to type Alba 37 = Ferrandes 2008b, fig. 12, 142 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 143 | 2 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 144 | 1 |
| Oriental – Aegeum / Microasiatic Area | *Ostia I*, 568 | 3 |
| Oriental – Aegeum / Microasiatic Area | Majcherek 1991, fig. 6, n. 40 | 2 |
| Oriental – Aegeum / Microasiatic Area | Opaiţ 1980, type XIII | 1 |
| Oriental – Aegeum / Microasiatic Area | Similar to type *Ostia IV*, 284–285 | 4 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 149 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 150 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 151 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 152 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 153 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 154 | 1 |
| Oriental – Aegeum / Microasiatic Area | Ferrandes 2008b, fig. 12, 155 | 1 |
| Oriental – Aegeum / Microasiatic Area | Unidentified with micaceous fabric | 4 |
| Oriental – Aegeum / Microasiatic Area | Unidentified | 6 |
| Oriental – Pamphilia? | Kapitän I | 21 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 38 |
| Oriental - Palestine | Kingsholm 117 | 9 |
| Oriental – Palestine | Unidentified | 1 |
| Oriental - Cilicia | Agora M 54 | 3 |
| Oriental - Cilicia | Late Schöne V (Reynolds 2005, fig. 19-22) | 1 |
| Oriental - Cnidus | Mau XXXVIII | 2 |
| Unidentified | Unidentified | 34 |

**Table 29 Roma, Testaccio, Nuovo Mercato (10 BC–AD 110 and AD 110–140)**

| Origin | Form | V, pre-*horreum* (10 BC–AD 110) | V, *horreum* (AD 110–140) |
|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2–4' = *Ostia IV*, 282-283 | 0 | 16 |
| Italy – Tyrrhenian | Dressel 1 | 175 | 82 |
| Italy – Tyrrhenian | Dressel 2–4 | 348 | 1961 |
| Italy – Adriatic | 'Anfora di Brindisi' | 0 | 1 |
| Italy – Adriatic | Dressel 6A | 148 | 184 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | 1 | 13 |
| Italy – Tiber Valley | 'Anfora di Spello' | 14 | 80 |
| Italy – Sicily | Dressel 21–22 | 1 | 2 |
| Italy – Sicily | *Ostia II*, 522-523 | 24 | 93 |
| Italy – Lipari | Richborough 527 | 0 | 1 |
| Gaul | Dressel 2–4 | 0 | 2 |
| Gaul | Gauloise 2 | 0 | 1 |
| Gaul | Gauloise 3 | 0 | 1 |
| Gaul | Gauloise 4 | 319 | 687 |
| Gaul | Gauloise 5 | 21 | 13 |
| Gaul | Gauloise 7 | 1 | 1 |
| Gaul - Marseilles | Bertucchi 1992, fig. 76 | 4 | 0 |
| Gaul - Frejus | Dressel 16 | 6 | 26 |
| *Baetica* | Haltern 70 | 42 | 24 |
| *Baetica* | Dressel 28 | 1 | 0 |
| *Baetica* | Beltrán IIA | 5 | 47 |
| *Baetica* | Beltrán IIB | 30 | 127 |
| *Baetica* | Dressel 7–11 | 85 | 308 |
| *Baetica* | Dressel 2–4 | 1 | 111 |
| *Baetica* | Dressel 20 | 288 | 386 |
| *Baetica* | Dressel 14A | 25 | 81 |
| *Tarraconensis* | Pascual 1 | 0 | 4 |
| *Tarraconensis* | Dressel 2–4 | 34 | 81 |
| *Lusitania* | Dressel 14B | 1 | 32 |
| Africa | Maña C2 | 4 | 9 |
| Africa | Unidentified Neo-punic amphora | 9 | 10 |
| Africa | Africana I | 12 | 113 |
| Africa | Ostia Form LIX | 3 | 40 |
| Tripolitania | Dressel 26 | 0 | 8 |
| Tripolitania | Tripolitana I–III | 4 | 49 |
| Tripolitania | Tripolitana I | 26 | 109 |
| Tripolitania | Tripolitana II | 7 | 34 |
| Tripolitania | Tripolitana III | 0 | 6 |
| Tripolitania | Mau XXXV | 28 | 69 |
| Mauretania | Dressel 30 | 0 | 83 |
| Oriental – Crete | Cretoise 1 | 46 | 4690 |
| Oriental – Crete | Cretoise 2 | 11 | 12 |
| Oriental – Crete | Cretoise 3 | 4 | 0 |
| Oriental - Crete | Dressel 43 = Cretoise 4 | 79 | 1705 |
| Oriental – Meander Valley | Agora F65/66 | 153 | 72 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | 8 | 85 |
| Oriental – Aegeum / Microasiatic Area | Knosssos 19 | 124 | 54 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 | 0 | 18 |
| Oriental – Aegeum / Microasiatic Area | NMT 1/ Riley 1979, fig. 203 = Coletti & Lorenzetti 2010, fig. 4, 1 | 5 | 152 |

| | | | |
|---|---|---|---|
| Oriental – Aegeum / Microasiatic Area | NMT 2 = Coletti & Lorenzetti 2010, fig. 4, 2 | 1 | 0 |
| Oriental – Aegeum / Microasiatic Area | NMT3 = Coletti & Lorenzetti 2010, fig. 4, 3 | 3 | 1 |
| Oriental – Aegeum / Microasiatic Area | NMT4 = Coletti & Lorenzetti 2010, fig. 4, 4 | 1 | 86 |
| Oriental – Aegeum / Microasiatic Area | NMT5 = Coletti & Lorenzetti 2010, fig. 4, 5 | 20 | 24 |
| Oriental – Aegeum / Microasiatic Area | NMT6 = Coletti & Lorenzetti 2010, fig. 4, 6 | 1 | 1 |
| Oriental – Aegeum / Microasiatic Area | NMT7 = Coletti & Lorenzetti 2010, fig. 4, 7 | 10 | 10 |
| Oriental – Aegeum / Microasiatic Area | NMT8 = Coletti & Lorenzetti 2010, fig. 5, 1 | 0 | 1 |
| Oriental – Aegeum / Microasiatic Area | NMT9/Reynolds 2005, fig. 19-22 = Coletti & Lorenzetti 2010, fig. 5, 2 | 0 | 2 |
| Oriental – Aegeum / Microasiatic Area | NMT11 = Mau XIV = Coletti & Lorenzetti 2010, fig. 5, 4 | 0 | 1 |
| Oriental – Aegeum / Microasiatic Area | NMT18 / Dressel 24? = Coletti & Lorenzetti 2010, fig. 5, 7 | 0 | 261 |
| Oriental – Pamphilia? | Kapitän I | 0 | 51 |
| Oriental – Pamphilia? | Kapitän II | 0 | 20 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 447 | 143 |
| Oriental - Palestine | Kingsholm 177 | 31 | 4 |
| Oriental – Cilicia | Mau XIII | 2 | 9 |
| Oriental – Cilicia | Agora M54 | 1 | 64 |
| Oriental – Cilicia | Mau XXVII–XXVIII | 2 | 7 |
| Oriental – Cilicia | Schöne V | 4 | 5 |
| Oriental - Cnidus | Mau XXXVIII | 32 | 42 |
| Unidentified | Unidentified | 34 | 144 |

**Table 30: Roma, Aqua Marcia, Period V, Phases 11–16 (Trajanic age)**

| Origin | Type | N. Fr. P. 12 | N. Fr. P. 13 | N. Fr. P. 16 | V. |
|---|---|---|---|---|---|
| Italy – South | Ancient MGS | 1 | 0 | 1 | 2 |
| Italy – Tyrrhenian | Dressel 1 | 0 | 1 | 0 | 1 |
| Italy – Tyrrhenian? | Dressel 2–4 | 3 | 8 | 1 | 12 |
| Italy – Tiber Valley | 'Anfora di Spello' | 1 | 6 | 0 | 7 |
| Italy – Sicily | *Ostia II*, 522/523 | 0 | 3 | 0 | 3 |
| Gaul | Unidentified | Not said | Not said | Not said | / |
| *Baetica* | Haltern 70 | 0 | 1 | 0 | 1 |
| *Baetica* | Dressel 20 | 0 | 1 | 0 | 1 |
| *Tarraconensis* | Dressel 2–4 | 1 | 1 | 0 | 2 |
| *Lusitania* | Dressel 14B | 0 | 1 | 0 | 1 |
| Africa | *Aqua Marcia*, Tav. IX, 1 | 0 | 1 | 0 | 1 |
| Africa | Ostia Form LIX | 0 | 1 | 0 | 1 |
| Tripolitania | Mau XXXV | 0 | 2 | 0 | 2 |
| Oriental - Crete | Cretoise 1 | 0 | 1 | 0 | 1 |
| Oriental - Crete | Cretoise 4 | 0 | 1 | 0 | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | 1 | 0 | 0 | 1 |
| Oriental – Aegeum / Microasiatic Area | Unidentified | 0 | 1 | 0 | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 1 | 2 | 0 | 3 |
| Unidentified | Unidentified | 0 | 7 | 0 | 7 |

**Table 31: Roma, Via Blaserna, Necropolis (2nd century AD)**

| Origin | Form | Tomb | N. Fr. | V. |
|---|---|---|---|---|
| Gaul | Gauloise 4 | 17 | 1 | 1 |
| Africa | Unidentified | 14 | 1 | 1 |

**Table 32: Roma, Via Blaserna, Riverbank (end of 2nd/early 3rd centuries AD)**

| Origin | Form | R | H | B | Total | V |
|---|---|---|---|---|---|---|
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | 2 | 0 | 2 | 4 | 2 |
| Italy – Tiber Valley | 'Anfora di Spello' | 0 | 0 | 1 | 1 | 1 |
| Italy - Sicily | *Ostia II*, 522/523 | 0 | 4 | 0 | 4 | 2 |
| Italy | Unidentifiable | 0 | 20 | 0 | 20 | 10 |
| Gaul | Gauloise 4 | 3 | 26 | 4 | 33 | 13 |
| *Baetica* | Dressel 20 | 2 | 0 | 1 | 3 | 2 |
| *Baetica* | Dressel 14A | 56 | 0 | 18 | 74 | 56 |
| *Baetica* | Beltran IIA | 5 | 0 | 0 | 5 | 5 |
| *Baetica* | Unidentifiable (*garum*?) | 0 | 79 | 0 | 79 | 40 |
| *Lusitania* | Almagro 50 [from other depositional phase] | 10 | 0 | 2 | 12 | 10 |
| Africa | Leptiminus I | 1 | 0 | 0 | 1 | 1 |
| Africa | Unidentified Punic amphora | 1 | 0 | 0 | 1 | 1 |
| Africa | Pupput T700.5 = Bonifay 2004a, type 17, fig. 53 | 3 | 0 | 0 | 3 | 3 |
| Africa | Dressel 2–4/*Ostia IV*, 447 | 243 | 523 | 191 | 957 | 243 |
| Africa | Africana I | 9 | 0 | 0 | 9 | 9 |
| Africa | Africana IIA | 17 | 0 | 0 | 17 | 17 |
| Africa | Africana IIC [from other depositional phase] | 12 | 0 | 0 | 12 | 12 |
| Africa | Unidentified | 21 | 39 | 14 | 74 | 21 |
| Tripolitania | Mau XXXV | 6 | 0 | 0 | 6 | 6 |
| Tripolitania | Tripolitana II | 2 | 1 | 0 | 3 | 2 |
| Tripolitania | Tripolitana III | 3 | 0 | 0 | 3 | 3 |
| Mauretania | Dressel 30 | 8 | 1 | 0 | 9 | 8 |
| Oriental - Bosphorus | Knossos 26/27 | 61 | 41 | 10 | 112 | 61 |
| Oriental - Bosphorus | Zeest 80 | 20 | 37 | 18 | 75 | 20 |
| Oriental - Crete | Cretoise 1 | 4 | 5 | 0 | 9 | 4 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 | 14 | 0 | 0 | 14 | 14 |
| Oriental – Pamphilia? | Kapitän II | 1 | 0 | 0 | 1 | 1 |
| Oriental – Rhodes/Rhodian *Peraea* | Camulodunum 184 | 0 | 18 | 0 | 18 | 9 |
| Oriental | Unidentified | 13 | 32 | 0 | 45 | 13 |

**Table 33: Roma, S. Stefano Rotondo, Building A – Room b, Second layer (Antonine age)**

| Origin | Form | V |
|---|---|---|
| Oriental – Pamphilia? | Kapitän II | 2 |
| Unidentified | Lissi Caronna & Rizzo 2009, fig. 94, 23 | 1 |

**Table 34: Roma, S. Stefano Rotondo, Levelling layer to build the Church (5th century AD, with many residuals dating Antonine age)**

| Origin | Form | V |
|---|---|---|
| Italy – Sicily | *Ostia II*, 522/523 | 3 |
| Italy – Sicily | *Ostia I*, 455 | 2 |
| *Baetica* | Dressel 7-11 | 2 |
| *Baetica* | Beltrán IIB | 1 |
| *Baetica* | Dressel 20 | 17 |
| *Baetica* | Late Dressel 28 = *Ostia I*, Form VIII | 1 |
| Africa | Ostia Form LIX | 2 |
| Africa | Africana I | 1 |
| Africa | Africana IB | 5 |
| Africa | Africana II | 1 |
| Africa | Africana IIB | 1 |
| Africa | Africana II? | 1 |
| Africa | Mid Roman 8 | 1 |
| Africa | Keay IIIA Similar | 5 |
| Mauretania | Keay I = Dressel 30 | 1 |
| Mauretania | Keay IB = Dressel 30 | 8 |
| Mauretania | Keay IB? = Dressel 30 | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 | 1 |
| Oriental – Pamphilia? | Kapitän II | 12 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 2 |
| Unidentified | Unidentified | 25 |

**Table 35: Ostia, Casa delle Pareti Gialle, Phase A, Sector IV, Unit A4, (Trajanic age: AD 110-115)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy – Tyrrhenian? | Dressel 2-4 | - | 5 | 5 |
| Italy – Tyrrhenian? | Dressel 2-4 | - | Several (at least 15) | 15 |
| Italy – Thyrrenian? | Dressel 1? | two rectangular: CW and MO | 1 | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 2 | 2 |
| Italy – Adriatic? | Dressel 6? (not drawn) | - | 1 | 1 |
| Gaul? | Gauloise 4? | - | 2 | 2 |
| Gaul | Gauloise 4? | - | 2 | 2 |
| Gaul | Unidentified | - | Several (at least 11) | 11 |
| *Baetica* | Dressel 7-11 | - | 4 | 4 |
| *Baetica* | Beltrán IIB | - | 1 | 1 |
| *Baetica* | Dressel 20 | - | 6 | 6 |
| *Baetica* | Dressel 20 | PTAIVB | 1 | 1 |
| *Baetica* | Dressel 20 | T.L.V. | 1 | 1 |
| *Baetica* | Dressel 20 | G.G.R. | 1 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | 8 | 8 |
| *Baetica* | Unidentified | - | Several | / |
| *Lusitania* | Dressel 14 B | - | 6 | 6 |
| Africa? | Ostia XXIII/LIX? (not understandable) | - | 1 | 1 |
| Tripolitania? | Mau XXXV? | - | 4 | 4 |
| Tripolitania | Tripolitana II | - | 4 | 4 |

| | | | | |
|---|---|---|---|---|
| Oriental - Crete | Cretoise 4 | - | 4 | 4 |
| Oriental – Aegeum / Microasiatic Area | Benghazi MR 18 | - | 2 | 2 |
| Oriental - Palestine | Kingsholm 117 or similar | - | 1 | 1 |
| Unidentifiable | Unidentifiable (not drawn) | - | 2 | 2 |
| Unidentifiable | Unidentifiable (not drawn) | T. AO | 1 | 1 |
| Unidentifiable | Unidentifiable | - | 8 | 8 |
| Unidentifiable | Ostia inv. 16281? | Zevi & Pohl 1970, fig. 95? | 2 | 2 |
| Unidentifiable | Unidentifiable | red lines | 2 | - |
| Unidentifiable | Unidentifiable | red unreadable letters (*titulus pictus*) | 1 | - |
| Unidentifiable | Unidentifiable | *black titulus pictus:* TYS[- - -] | 1 | - |
| Unidentifiable | Unidentifiable | *Post cocturam* graffito: PNH or PRIH | 1 | - |

**Table 36: Ostia, Casa delle Pareti Gialle, Phase A, Sector I, Unit A4, (Trajanic age: AD 110–115)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy – Tyrrhenian? | Dressel 1 | Over the rim: [Ap?]OLLO | 1 | 1 |
| Italy – Tyrrhenian? | Dressel 2–4 | - | 1 | 1 |
| Gaul | Gauloise 4 | - | 2 | 2 |
| *Baetica* | Dressel 7-13? (not drawn) | - | 1 | 1 |
| *Baetica* | Dressel 20 | - | 5 | 5 |
| *Baetica* | Unidentifiable *garum* amphora | - | 3 | 3 |
| *Lusitania* | Dressel 14B | - | 1 | 1 |
| Tripolitania | Tripolitana II | - | 1 | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | - | 3 | 3 |
| Oriental – Aegeum / Microasiatic Area | Knossos 19? | - | 1 | 1 |
| Unidentifiable | Unidentifiable | - | 6 | 6 |

**Table 37: Ostia, Casa delle Pareti Gialle, Phase A, Sector II, Unit A4, (Trajanic age: AD 110–115)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy – Tyrrhenian? | Dressel 1 | - | 1 | 1 |
| Italy – Tyrrhenian? | Dressel 2–4 | - | 2 | 2 |
| Gaul | Unidentifiable Gauloise | - | 4 | 4 |
| Gaul | Gauloise 4 | - | 1 | 1 |
| Gaul? | Gauloise 4? | - | Several (at least 3) | 3 |
| *Baetica*? | Dressel 7-13? | - | 1 | 1 |
| *Baetica* | Dressel 20 | - | 3 | 3 |
| Africa | Ostia Form LIX | - | 1 | 1 |
| Africa | Carthage *Early Amphora* IV (Zevi & Pohl 1970, fig. 102, 552) | - | 2 | 2 |

| | | | | |
|---|---|---|---|---|
| Africa? | Unidentifiable | rectangular: Ma[- - -] | 1 | 1 |
| Tripolitania | Mau XXXV | - | 2 | 2 |
| Oriental - Crete | Unidentifiable | - | 1 | 1 |
| Oriental - Palestine | Kingsholm 117 or similar (Zevi-Pohl 1970, fig. 109, 551) | - | 1 | 1 |
| Unidentifiable | Unidentifiable | not readable black *titulus pictus* | 1 | - |
| Unidentifiable | Unidentifiable | *post cocturam* graffito *P* in *tabula* | 1 | - |
| Unidentifiable | Unidentifiable | not readable *ante cocturam* graffito | 1 | - |
| Unidentifiable | Unidentifiable | - | 2 | 2 |

**Table 38: Ostia, Casa delle Pareti Gialle, Phase A, Sector III, Unit A4, (Trajanic age: AD 110–115)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy – Sicily? | Dressel 21–22? (Zevi-Pohl 1970, fig. 109, 660) | - | 1 | 1 |
| Gaul | Gauloise 4 | - | 5 | 5 |
| Gaul | Unidentifiable Gauloise | - | 2 | 2 |
| *Baetica* | Dressel 28? | - | 1 | 1 |
| *Baetica* | Dressel 20 | - | 5 | 5 |
| *Baetica* | Dressel 20 | Q ((hedera)) F ((hedera)) G [*CIL* XV, 2851 and Callender 1965, 1449 | 1 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | 4 | 4 |
| Tripolitania | Mau XXXV | - | 1 | 1 |
| Oriental – Aegeum / Microasiatic Area? | Dressel 2–5? | - | 12 | 12 |
| Oriental – Rhodes / Rhodian *Peraea*? | Camulodunum 184? | - | 2 | 2 |
| Unidentified | Dressel 2–4 | - | 1 | 1 |
| Unidentifiable | Unidentifiable (not drawn) | - | 1 | 1 |
| Unidentifiable | Unidentifiable | - | 1 | 1 |
| Unidentifiable | Unidentifiable | traces of a red *tituls pictus* | 1 | - |
| Unidentifiable | Unidentifiable | traces of a black *titulus pictus* | 1 | - |
| Unidentifiable | Unidentifiable | red *titulus pictus*: *IVS* | 1 | - |

**Table 39: Ostia, Casa delle Pareti Gialle, Phase A, Sector IV, Filling of the Southern wall's foundation trench (Trajanic age)**

| Origin | Form | N. Fr. | V |
|---|---|---|---|
| Italy – Tyrrhenian | MGS VI (Zevi & Pohl 1970, fig. 55, 373) | 1 | 1 |
| *Baetica* | Haltern 70 | 1 | 1 |
| Tripolitania | Tripolitana II | 1 | 1 |
| Unidentifiable | Not said (not drawn) | 6 | 6 |
| Unidentifiable | Dressel 2–4? | 2 | 2 |

**Table 40: Ostia, Casa delle Pareti Gialle, Phase A, Unit A3 (Hadrianic age)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli'? | - | 1 | 1 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 1 | 1 |
| Gaul | Gauloise 4? | - | 1 | 1 |
| Baetica | Dressel 28 | - | 3 | 3 |
| Baetica | Dressel 20 | - | 6 | 6 |
| Baetica | Unidentifiable *garum* amphora | - | 1 | 1 |
| Oriental – Aegeum / Microasiatic Area? | Dressel 2–5 | - | 2 | 2 |
| Oriental – Pamphilia? | Kapitän I | - | 1 | 1 |
| Oriental – Rhodes / Rhodian Peraea | Camulodunum 184 | - | 1 | 1 |
| Unidentifiable | Dressel 2–4 | - | 13 | 13 |
| Unidentifiable | Unidentifiable (not drawn) | - | 3 | 3 |
| Unidentifiable | Unidentifiable | - | 5 | 5 |
| Unidentifiable | Unidentifiable | *ante cocturam* graffito | 1+1 | - |
| Unidentifiable | Unidentifiable | with *ante cocturam* graffito: ((asteriscus)) | 1 | - |

**Table 41: Ostia, Taberna dell'Invidioso, Period 6, Phase I, Unit IV (Trajanic age: AD 104–110)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy - Campania | Dressel 2–4 | - | 2 | 2 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 13 | 13 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 5 | 5 |
| Gaul | Gauloise 4 | - | 10 | 10 |
| Gaul | Gauloise 4? | - | 13 | 13 |
| Gaul | Gauloise 13 | - | 1 | 1 |
| Gaul | Unidentifiable | - | 8 | 8 |
| *Baetica* | Beltrán IIA? | - | 3 | 3 |
| *Baetica* | Dressel 20 | - | 22 | 22 |
| *Baetica* | Dressel 20 | SAXOFERR (*CIL* XV, 3167) | 1 | 1 |
| *Baetica* | Dressel 20 | SCOROBRES (*CIL* XV, 3170) | 1 | 1 |
| *Baetica* | Dressel 20 | Q AE O (*CIL* XV, 2685b) | 1 | 1 |
| *Baetica* | Dressel 20 | [- - -]L | 1 | 1 |
| *Baetica*? | Haltern 70? (Carta 1978, fig. 143, 390) | - | 1 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | 2 | 2 |
| *Tarraconensis* | Dressel 2–4 | - | 1 | 1 |
| *Lusitania* | Dressel 14B | - | 5 | 5 |
| Africa | Ostia Form LIX | - | 4 | 4 |
| Africa | African IIA | - | 3 | 3 |
| Africa | Unidentifiable | - | 1 | 1 |
| Tripolitania | Mau XXXV | - | 5 | 5 |
| Orienta- Crete | Cretoise 1 | | 1 | 1 |
| Oriental – Crete? | Unidentifiable Cretan base | - | 1 | - |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | - | 1 | 1 |
| Unidentifiable | Unidentifiable | 1 with Stamp: TCA R? or P? / GEM; *titulus pictus*: SIN+OR | 5 | - |
| Unidentifiable | Handles | - | 22 | 11 |

| | | | | |
|---|---|---|---|---|
| Unidentifiable | Bases | - | 7 | 1 |
| Unidentifiable | Ring-feet | - | 5 | - |

**Table 42: Ostia, Taberna dell'Invidioso, Period 6, Phase II, Unit III (Hadrianic/ Antoninus Pius age, coin AD 126–138)**

| Origin | Form | N. Fr. | V |
|---|---|---|---|
| Tripolitania | Mau XXXV | 1 | 1 |

**Table 43: Ostia, Taberna dell'Invidioso, Period 6, Phase III, Unit II (Marcus Aurelius age, coin AD 161–175)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Africa | Unidentifiable | - | 1 | 1 |
| Unidentifiable | Unidentifiable | traces of a *titulus pictus*? | 1 | 1 |
| Unidentifiable | Unidentifiable | - | 1 | - |

**Table 44: Ostia, Taberna dell'Invidioso, Period 6, Phase IV, Unit I (Severan age, AD 193–208)**

| Origin | Form | N. Fr. | V |
|---|---|---|---|
| Italy – Tiber Valley | 'Anfora di Spello' | 1 | 1 |
| Italy – Sicily | *Ostia II*, 522/523 | 2 | 2 |
| Italy? | Unidentifiable | 3 | 3 |
| Gaul | Gauloise 4 | 1 | 1 |
| Africa | Ostia Form LIX | 1 | 1 |
| Africa | Ostia Form XIII | 1 | 1 |
| Africa | Africana II? | 1 | 1 |
| Africa? | Benghazi MR1 = Agora M254 | 3 | 3 |
| Africa? | Unidentifiable | 1 | 1 |
| Tripolitania | Tripolitania II | 2 | 2 |
| Tripolitania | Mau XXXV | 1 | 1 |
| Mauretania | Dressel 30 | 1 | 1 |
| Oriental – Meander Valley | Agora F65/66 | 1 | 1 |
| Unidentifiable | Unidentifiable | 1 | 1 |
| Unidentifiable (not said) | Unidentifiable (not said) | 1 | 1 |

**Table 45: Ostia, Piazzale delle Corporazioni, Portico Ovest, Sondage A, Unit II with over-excavation of Unit III, (after Hadrianic age)**

| Origin | Form | N. Fr. | V |
|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2–4' | 2 | 2 |
| *Baetica* | Dressel 7–11 (Pohl 1978, fig. 147, 85) | 1 | 1 |
| *Baetica* | Dressel 28? | 1 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | 3 | 3 |
| Unidentifiable | Unidentifiable | 1 | 1 |

**Table 46: Ostia, Piazzale delle Corporazioni, Portico Ovest, Unit II, Sondages A–F (Hadrianic age)**

| Origin | Form | Stamps | N. Fr. | V |
|---|---|---|---|---|
| Italy - Campania | 'Late Campana Dressel 2–4' | - | 6 | 6 |
| Italy - Vesuvian | Dressel 2–4 | One with not understandable letters | 6 | 6 |
| Italy – Tyrrhenian? | Dressel 1 | - | 2 | 2 |
| Italy - Adriatic | Dressel 6? | - | 1 | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 4 | 4 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 6 | 6 |
| Italy? | Dressel 2–4 | - | 11 | 11 |
| Gaul | Gauloise 4 | - | 5 | 5 |
| Gaul | Gauloise 5 | - | 8 | 8 |
| Gaul | Unidentifiable | - | 7 | 7 |
| *Baetica* | Dressel 7–13 | - | 15 | 15 |
| *Baetica* | Beltrán IIB | - | 12 | 12 |
| *Baetica* | Dressel 28 | | 1 | 1 |
| *Baetica* | Dressel 14A | | 1 | 1 |
| *Baetica* | Dressel 20 | | 17 | 17 |
| *Baetica* | Dressel 20 | CMMACRI (Callender 1965, 393) | 1 | 1 |
| *Baetica* | Dressel 20 | P.S. AVITI (*CIL* XV, 3143) | 1 | 1 |
| *Baetica* | Dressel 20 | IP[- - -] or IR[- - -] | 1 | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | 20 | 20 |
| *Tarraconensis* | Dressel 2–4 | - | 6 | 6 |
| *Lusitania* | Dressel 14B | - | 9 | 9 |
| Africa | Van der Werff 1 | - | 2 | 2 |
| Africa | Ostia Form LIX | - | 4 | 4 |
| Africa | Ostia Form XXIII | - | 2 | 2 |
| Africa | Africana I | - | 4 | 4 |
| Tripolitania | Mau XXXV | PETRONIORUM | 1 | 1 |
| Tripolitania | Mau XXXV | | 6 | 6 |
| Oriental - Crete | Cretoise 2 | | 2 | 2 |
| Oriental - Crete | Cretoise 4 | | 1 | 1 |
| Oriental – Meander Valley | Agora F65/66? | | 1 | 1 |
| Oriental – Pamphilia? | Kapitän I | | 1 | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | | 2 | 2 |
| Oriental - Cnidus | Mau XXXVIII | | 1 | 1 |
| Unidentifiable | Unidentifiable | | 11 | 11 |

**Table 47: Ostia, Piazzale delle Corporazioni, Portico Ovest, Unit I (a-b-c-d) and Unit I with under-excavation of Unit II (Hadrianic age)**

| Origin | Form | N. Fr. | V |
|---|---|---|---|
| Italy – Vesuvian | Dressel 2–4 | 1 | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | 3 | 3 |
| Gaul | Gauloise 5 | 1 | 1 |
| Gaul | Unidentifiable | 1 | 1 |
| *Baetica* | Dressel 7–11 | 1 | 1 |

| | | | |
|---|---|---|---|
| *Baetica* | Beltrán II | 1 | 1 |
| *Baetica* | Dressel 20 | 4 | 4 |
| *Tarraconensis* | Dressel 2-4 | 2 | 2 |
| *Lusitania* | Dressel 14B | 4 | 4 |
| Tripolitania | Mau XXXV | 1 | 1 |
| Oriental – Crete | Cretoise 4 | 1 | 1 |
| Oriental – Pamphilia? | Kapitän I | 1 | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | 2 | 2 |
| Unidentified | Unidentified | 6 | 6 |

**Table 48: Ostia, Terme del Nuotatore, Room I, Units II, Sondages α, β and γ (AD 160–200/230)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy - Sicily | *Ostia II*, 522/523 | 1 | | 1 | | 1 |
| *Baetica* | Dressel 20 | 1 | | | | 1 |
| Mauretania | Dressel 30 | 3 | | | | 3 |
| Oriental - Crete | Cretoise 1 | 2 | | | | 2 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 | 1 | | | | 1 |
| Oriental – Pamphilia? | Kapitän II | | 1 | | | 1 |

**Table 49: Ostia, Terme del Nuotatore, Room I, Units III, Sondages α, β, and γ (from the Flavian age to AD 160)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy – Tiber Valley | 'Anfora di Spello' | | | 4 | | 2 |
| Italy – Sicily | *Ostia II*, 522/523 | | | 1 | | 1 |
| Gaul | Unidentifiable | | 1 | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2-5 | | | 1 | | 1 |
| Unidentified | *Ostia II*, 68 | 1 | | | | 1 |
| Unidentified | Unidentified | | | 1 | | 1 |

**Table 50: Ostia, Terme del Nuotatore, Room VI, Units II (AD 190–235)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | | | 1 | | 1 |
| Gaul | Gauloise 4 | | | 1 | | 1 |
| Africa | Africana IIB | 1 | | | | 1 |
| Oriental - Crete | Cretoise 4 | 2 | | 1 | | 2 |

**Table 51: Ostia, Terme del Nuotatore, Room VI, Units III (AD 155/160–190)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Gaul | Gauloise 5 | 1 | | | | 1 |
| *Baetica* | Dressel 7-11 | 1 | | | | 1 |
| Tripolitania | Mau XXXV | | | 1 | | 1 |

**Table 52: Ostia, Terme del Nuotatore, Room VII, Units II, Sectors A and B, sewers 49 a-b-c-e-f-g and 50 (AD 190–235)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 2–4 | - | 2 | | 1 | | 2 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | - | 3 | | 4 | | 3 |
| Italy – Sicily? | *Ostia II*, 522/523 | - | | | 1 | | 1 |
| Gaul | Gauloise 4 | - | 1 | 1 | 1 | | 1 |
| *Baetica* | Beltrán IIB | - | 1 | | | | 1 |
| *Baetica* | Dressel 20 | PCA[- - -] | | | 1 | | 1 |
| Africa | Africana IB | - | 2 | 2 | 1 | | 2 |
| Africa | Africana IIA | - | 2 | | | | 2 |
| Tripolitania | Tripolitana III | - | 1 | | | | 1 |
| Mauretania | Dressel 30 | - | 1 | | | | 1 |
| Oriental - Crete | Cretoise 4 | - | 1 | | | | 1 |
| Oriental – Pamphilia? | Kapitän I | - | 11 | | 8 | | 11 |
| Unidentified | *Ostia III*, 50 | - | 1 | | | | 1 |
| Unidentified | *Ostia III*, 61 | - | 1 | | | | 1 |

**Table 53: Ostia, Terme del Nuotatore, Room VII, Units III, Sectors A and B, sewers 49 a, b, c, e, f, g and 50 (AD 155/160–190)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy – Tyrrhenian | Dressel 2–4 | - | 2 | | | 1 | 2 |
| Italy? | Dressel 1? | - | | 1 | | | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 1 | | | | 1 |
| Italy – Sicily | *Ostia II*, 522/523 | - | | | 1 | | 1 |
| Gaul | Gauloise 4 | - | 1 | | | | 1 |
| *Baetica* | Dressel 20 | 1 with: PNN = Callender 1965, 1358 | 3 | | | | 3 |
| *Baetica* | Dressel 7–11 | - | | | 1 | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | | 1 | 1 | | 1 |
| Africa | Dressel 2–4 | - | | | 1 | | 1 |
| Mauretania | Dressel 30 | - | 1 | | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | - | | 1 | | | 1 |
| Oriental – Pamphilia? | Kapitän II | - | 1 | | | | 1 |

**Table 54: Ostia, Terme del Nuotatore, Room VII, Units IV, sewer 49 g (AD 90–155/160)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Gaul | Gauloise 4 | | | 1 | | 1 |

**Table 55: Ostia, Terme del Nuotatore, Area SO, Units III, 'cuts' (sondages) A and B (AD 190–200/225)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 2–4 | | | 1 | | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | | | 3 | | 1 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | | | 1 | | 1 |
| Italy – Sicily | *Ostia II*, 522/523 | | | 3 | | 2 |
| Italy | *Ostia I*, 455 | 1 | | 2 | | 1 |
| Gaul | Gauloise 4 | 1 | 1 | | | 2 |
| Gaul | Gauloise 5 | 1 | | 2 | | 2 |
| *Baetica* | Dressel 20 | | 1 | | | 1 |
| *Baetica* | Dressel 14A | 1 | | | | 1 |
| *Baetica* | Beltrán IIB | 1 | | | | 1 |
| Africa | Africana I | 1 | | | | 1 |
| Africa | Africana II | 1 | 1 | 1 | | 2 |
| Tripolitania | Tripolitana I | 6 | | 1 | | 6 |
| Tripolitania | Tripolitana II | 1 | | | | 1 |
| Tripolitania | Mau XXXV | | | 3 | | 2 |
| Oriental - Crete | Cretoise 2 | | | 4 | | 2 |
| Oriental – Aegeum / Microasiatic Area | Dressel 2–5 | | | 1 | | 1 |
| Oriental – Pamphilia? | Kapitän I | 9 | 1 | 13 | | 9 |
| Oriental – Pamphilia? | Kapitän II | | | 2 | | 2 |

**Table 56: Ostia, Terme del Nuotatore, Area SO, Units IVA, IVB, IVC, 'cuts' (sondages) A and B (AD 80/98–138)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Campania | Dressel 2–4 | 1 H. with: [– – –] ICL FSAE | 14 | | 27 | | 14 |
| Italy – Tyrrhenian? | Dressel 1 | - | 2 | | | | 2 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 8 | | 28 | | 8 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 2 | | 16 | | 8 |
| Gaul | Gauloise 5 | - | 46 | | 35 | | 46 |
| Gaul | Gauloise 4 | - | 6 | 5 | 9 | | 6 |
| Gaul | Unidentifiable | - | | | 4 | | 4 |
| *Baetica* | Dressel 28 | - | 1 | | | | 1 |
| *Baetica* | Dressel 20 | 1 H. with: VAI; 1 H. with: CMARI SILVANI = Callender 1965, 387 | 14 | 1 | 14 | 1 | 14 |
| *Baetica* | Late Dressel 28 | - | 7 | 7 | | | 7 |
| *Baetica* | Beltrán IIA | - | 2 | | 2 | | 2 |
| *Baetica* | Beltrán IIB | - | 6 | | | | 6 |
| *Baetica* | Unidentifiable *garum* amphora | - | | | 4 | | 2 |
| *Tarraconensis* | Dressel 2–4 | - | 5 | | 6 | | 5 |
| *Lusitania* | Dressel 14B | - | 11 | | 8 | | 11 |
| Africa | Ostia Form LIX | - | 21 | | 10 | | 21 |
| Africa | Unidentifiable | - | | | 4 | | 2 |
| Africa | Uzita tav. 52, 10 | - | 1 | | | | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Africa? | *Ostia III*, 436 | - | 1 | | | | 1 |
| Tripolitania | Mau XXXV | - | 4 | | 13 | | 7 |
| Tripolitania | Tripolitana I | - | 1 | | 1 | | 1 |
| Mauretania | Dressel 30 | - | | 3 | | | 3 |
| Oriental – Crete | Cretoise 1 | - | 3 | | 7 | | 4 |
| Oriental – Meander Valley | Agora F65/66 | - | | | 1 | | 1 |
| Oriental – Aegeum / Microasiatic Area | Mau XXVII–XXVIII | - | 1 | | | | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | - | 16 | 5 | 9 | | 16 |
| Oriental – Palestine | Kingsholm 117 or similar | - | 1 | | | | 1 |

**Table 57: Ostia, Terme del Nuotatore, Area XXV, Units IV (AD 90–140)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy – Vesuvian | Dressel 2–4 | | | 1 | | 1 |
| Italy – Sicily? | Dressel 21–22 | 1 | | | | 1 |
| Gaul | Gauloise 4 | | | 1 | | 1 |
| *Baetica* | Dressel 7–11 | 2 | | | | 2 |
| *Baetica* | Dressel 20 | 2 | | 6 | | 3 |
| *Lusitania* | Dressel 14B | | | 1 | | 1 |
| Africa | Ostia Form LIX | 1 | | 2 | | 1 |
| Africa | Africana I | 1 | | | | 1 |
| Tripolitania | Mau XXXV | 1 | | 1 | | 1 |
| Tripolitania | Tripolitana I | 1 | | | | 1 |

**Table 58: Ostia, Terme del Nuotatore, Area XXV, Units III (AD 190–200/225)**

| Origin | Form | R | B | H | W | V |
|---|---|---|---|---|---|---|
| Italy – Vesuvian | Dressel 2–4 | 4 | | 2 | | 2 |
| Italy - Adriatic | Dressel 6 | 1 | | | | 1 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | | | 9 | | 4 |
| Italy – Tiber Valley | 'Anfora di Spello' | 8 | 3 | 12 | 2 | 8 |
| Italy – Sicily | *Ostia II*, 522/523 | 1 | 1 | | | 2 |
| Italy | *Ostia I*, 455 | 1 | | 3 | | 2 |
| Gaul | Gauloise 4 | 8 | 9 | 20 | | 10 |
| Gaul | Gauloise 5 | 2 | | | | 2 |
| *Baetica* | Dressel 7–11 | | 2 | | | 2 |
| *Baetica* | Beltrán IIB | 2 | | | | 2 |
| *Baetica* | Dressel 14A | 2 | | 4 | | 2 |
| *Baetica* | Dressel 20 | 14 | 3 | 11 | | 14 |
| *Baetica* | Late Dressel 28 | 2 | | 1 | | 2 |
| *Lusitania* | Dressel 14B | 3 | | 1 | | 3 |
| Africa | Van der Werff 3 | 2 | | | | 2 |
| Africa | Van der Werff 2 | 2 | | | | 2 |
| Africa | Africana I | 23 | 7 | 15 | | 23 |
| Africa | Africana II | 1 | 1 | | | 1 |
| Africa | Ostia Form XXIII | 37 | 8 | 18 | | 37 |
| Africa | *Ostia IV*, 447 | 2 | | | | 2 |
| Tripolitania | Tripolitana I | 1 | | 1 | | 1 |
| Tripolitania | Tripolitana III | 1 | | | | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Tripolitania | Mau XXXV | 7 | | 13 | | 7 |
| Mauretania | Dressel 30 | 1 | 1 | | | 1 |
| Mauretania | Small Dressel 30 | | | 1 | | 1 |
| Oriental - Crete | Cretoise 1 | 2 | | 4 | 1 | 2 |
| Oriental - Crete | Cretoise 2 | 1 | | | | 1 |
| Oriental - Crete | Cretoise 4 | 1 | | | | 1 |
| Oriental – Meander Valley | Agora F65/66 | | | | 1 | 1 |
| Oriental – Aegeum / Microasiatic Area | Dressel 24 = Middle Roman 18 | 1 | | | | 1 |
| Oriental – Pamphilia? | Kapitän I | 4 | | 16 | | 8 |
| Oriental – Pamphilia? | Kapitän II | | 2 | 1 | | 2 |
| Unidentified | *Ostia I*, 469 | 2 | | | | 2 |
| Unidentified | *Ostia I*, 569 | 1 | | | | 1 |
| Unidentified | *Ostia III*, 608 | 1 | | | | 1 |
| Unidentified | *Ostia III*, 611 | 2 | | | | 2 |
| Unidentified | *Ostia IV*, 445 | 1 | | | | 1 |
| Unidentified | *Ostia IV*, 446 | 2 | | | | 2 |

**Table 59: Ostia, Terme del Nuotatore, Area XXV/XXIV, Sondage B, Units IV (Trajanic–Hadrianic ages)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Gaul | Gauloise 4 | | 1 | 1 | 1 | | 1 |
| *Baetica* | Dressel 7–11 | | | | 2 | | 1 |
| *Baetica* | Dressel 20 | 1 H. with: C.S.P. = Callender 1965, 481; 1 H. with: CI[- - -] | 2 | | 4 | | 2 |

**Table 60: Ostia, Terme del Nuotatore, Area NE, Period 3b (Late Flavian–Trajanic ages, AD 90–120)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy – Vesuvian | Dressel 2–4 | - | 1 | 2 | 4 | 1 | 2 |
| Italy – Tyrrhenian | Dressel 1B | - | 1 | | | | 1 |
| Italy – Tyrrhenian | Dressel 2–4 | - | 6 | | 14 | 3 | 7 |
| Italy – Adriatic | 'Ovoide di Brindisi' | - | | | 1 | | 1 |
| Italy – Adriatic | Dressel 6A | - | | | 2 | | 1 |
| Italy – Adriatic - *Aemilia* | 'Anfora di Forlimpopoli' | - | | 1 | 2 | | 1 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | | | 3 | | 2 |
| Italy - Sicily | *Ostia II*, 522/523 | - | | | 6 | | 4 |
| Gaul | Gauloise 1 | - | 1 | | | | 1 |
| Gaul | Gauloise 2/3 | - | 1 | | | | 1 |
| Gaul | Gauloise 3/4 | - | 3 | | | | 3 |
| Gaul | Gauloise 5 | - | 3 | | | | 3 |
| Gaul | Gauloise 4 | - | 1 | | | | 1 |
| *Baetica* | Haltern 70 | - | 3 | 3 | 2 | 3 | 3 |
| *Baetica* | Dressel 28 | - | 1 | 1 | 2 | | 1 |
| *Baetica* | Dressel 7–11 | - | 5 | | 2 | | 5 |
| *Baetica* | Dressel 12 | - | 1 | | | | 1 |
| *Baetica* | Beltrán IIB | - | 1 | | | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | 1 | 3 | 8 | 3 | 4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 20 | 1 with P(---); 1 with Phileroti(s). | 7 | 1 | 3 | 2 | 7 |
| *Tarraconensis* | Pascual 1 | - | 1 | | | | 1 |
| *Tarraconensis* | Dressel 2-4 | - | 5 | 5 | 6 | 6 | 5 |
| Africa | Van der Werff 3 | - | 1 | | | | 1 |
| Africa | Oberaden fig. 24, n. 5 | - | 1 | | | | 1 |
| Africa | Mau XL | - | 2 | | | | 2 |
| Africa | Dressel 18=Ramón Torres1995 T-7.4.3.3 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 310 | - | 1 | | | | 1 |
| Africa | Unidentifiable Punic amphora | - | | 2 | 1 | | 2 |
| Africa | Carthage Early Amphora IV | - | 3 | | | | 3 |
| Africa | *Ostia VI*, 386 | - | 1 | | | | 1 |
| Tripolitania | Mau XXXV | - | 7 | 1 | 11 | 2 | 7 |
| North-Africa | Unidentifiable North-African amphorae | - | 5 | 2 | 14 | 1 | 7 |
| Oriental - Crete | AC1 | - | | 1 | 1 | | 1 |
| Oriental - Crete | AC4 | - | 1 | | 4 | | 2 |
| Oriental – Meander Valley | Agora F65/66 | - | | 1 | 1 | | 1 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 2-5 | - | | | 1 | 1 | 1 |
| Oriental – Aegeum/ Microasiatic Area | Unidentifiable | - | | | | 1 | 2 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 486 | - | 2 | | | | 2 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 487 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 25 similis = *Ostia VI*, 496 | - | 1 | | | | 1 |
| Oriental – Rhodes/Rhodian *Peraea* | Camulodunum 184 | - | 2 | 1 | 6 | | 3 |
| Oriental – Cnidos | Mau XXXVIII | - | | | | 1 | 1 |
| Unidentified | Unidentified | - | 3 | | 8 | 7 | 4 |

**Table 61: Ostia, Terme del Nuotatore, Area NE, Period 4 (Harianic–Antonine ages, AD 120–160)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy – Vesuvian | Dressel 2-4 | - | 9 | | 23 | 1 | 12 |
| Italy - Tyrrhenian | Dressel 1 | - | | 1 | 7 | | 4 |
| Italy - Tyrrhenian | Dressel 2-4 | - | 28 | 14 | 55 | 6 | 28 |
| Italy – Adriatic | 'Ovoide di Brindisi' | - | | 1 | | | 1 |
| Italy – Adriatic | Lamboglia 2 | - | | | 2 | | 1 |
| Italy – Adriatic | Lamboglia 2/Dressel 6A | - | 3 | 1 | 1 | | 3 |
| Italy – Adriatic | Dressel 6A | - | 1 | 1 | 2 | | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Italy – Adriatic | Dressel 2-4 | - | 3 | | | | 3 |
| Italy – Adriatic - *Aemilia* | 'Anfora di Forlimpopoli' | - | 16 | 13 | 37 | 4 | 19 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 9 | 5 | 8 | 2 | 9 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 4 | 2 | 11 | | 9 |
| Gaul | Dressel 2-4 | - | 1 | | | | 1 |
| Gaul | Dressel 2-4/16 | - | 1 | | | | 1 |
| Gaul | Gauloise 2/3 | - | 1 | | | | 1 |
| Gaul | Gauloise 3/4 | - | 5 | | | | 5 |
| Gaul | Gauloise 5 | - | 44 | | | | 44 |
| Gaul | Gauloise 4 | - | 30 | | | | 30 |
| Gaul | Gauloise 5/6 | - | 1 | | | | 1 |
| Gaul – Aquitania? | *Ostia VI*, 168 | With titulus pictus: MENA . OVATA / EXC(ellens) / S. H(---) D(---) / OCI[---] | 1 | | | | 1 |
| Gaul | Unidentifiable with flat base | 1 with [C.] M(---) S(---); 1 with F?(---) S(---) T+(---) | 1 | 31 | 52 | 20 | 31 |
| *Baetica* | Haltern 70 | - | 15 | 3 | 8 | 5 | 15 |
| *Baetica* | Dressel 28 | - | 2 | | 2 | | 2 |
| *Baetica* | Dressel 7-11 | - | 22 | | | | 22 |
| *Baetica* | Dressel 12 | - | | 1 | | | 1 |
| *Baetica* | Beltrán IIA | - | 6 | 1 | | | 6 |
| *Baetica* | Beltrán IIB | - | 6 | 1 | | | 6 |
| *Baetica* | Dressel 14A | - | 10 | 1 | 16 | 4 | 10 |
| *Baetica* | Unidentifiable *garum* amphoare | - | 53 | 21 | 15 | 21 | 27 |
| *Baetica* | Dressel 20 | 1 with C. Ser(vili) H[---]; 1 with G. G(---) R(---); 1 with T. (et) T. Lucre(tiorum). | 39 | 6 | 43 | 27 | 39 |
| *Tarraconensis* | Dressel 2-4 | 1 with *Fut(o)* | 17 | 7 | 29 | 14 | 16 |
| *Tarraconensis* | Late Dressel 2-4 | - | 1 | | | | 1 |
| *Tarraconensis* | Imit. Gauloise 4 | - | 2 | 1 | 1 | | 2 |
| *Lusitania* | Dressel 14B | - | 10 | 5 | 8 | | 10 |
| Iberian Peninsula | Dressel 2-4 | - | | 8 | 2 | | 8 |
| Africa | Maña C2 | - | 1 | | | | 1 |
| Africa | Van der Werff 2 | - | 2 | | | | 2 |
| Africa | Van er Werff 3 | - | 1 | | | | 1 |
| Africa | Oberaden fig. 24, n. 5 | - | 4 | | | | 4 |
| Africa | Vindonissa 592 | - | 1 | | | | 1 |
| Africa | Mau XL | - | 4 | | | | 4 |
| Africa | *Ostia VI*, 310 | - | 2 | | | | 2 |
| Africa | Unidentifiable Punic amphorae | - | | 3 | 6 | | 3 |
| Africa | Carthage Early Amphora IV | - | 2 | | | | 2 |
| Africa | Leptiminus I | - | 1 | | | | 1 |
| Africa | Ostia Form LIX | - | 26 | | | | 26 |
| Africa | Ostia Form XXIII | - | 15 | | | | 15 |
| Africa | Ostia Form XXIII/LIX | - | | 14 | 14 | | 14 |
| Africa | *Ostia VI*, 370 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 387/388 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 389 | - | 1 | | | | 1 |
| Tripolitania | *Ostia VI*, 341 | - | 1 | | | | 1 |
| Tripolitania | Dressel 26 | - | 4 | | | | 4 |
| Tripolitania | Tripolitana I | - | 3 | | | | 3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tripolitania | Tripolitana II | - | 4 | | | | 4 |
| Tripolitania | Tripolitana I-III | - | | 3 | 3 | 5 | 3 |
| Tripolitania | Mau XXXV | - | 29 | 14 | 40 | 7 | 29 |
| North-Africa | Unidentifiable North-African amphorae | - | 7 | 8 | 29 | 13 | 15 |
| Oriental - Crete | AC1 | - | 5 | 3 | 17 | 3 | 9 |
| Oriental - Crete | AC2 | - | | | 4 | | 2 |
| Oriental - Crete | AC4 | - | 10 | | 11 | 1 | 10 |
| Oriental – Meander Valley | Agora F65/66 | - | 2 | 1 | 5 | 7 | 5 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 2-5 | - | 1 | | 5 | 4 | 3 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 486 | - | 2 | | | | 2 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 487 | - | 1 | | | | 1 |
| Oriental – Rhodes/Rhodian *Peraea* | Camulodunum 184 | - | 7 | 2 | 24 | 2 | 12 |
| Oriental - Palestine | Kingsholm 117/Gazan amphora 1 | - | 1 | | 1 | 1 | 1 |
| Oriental - Cilicia | Zemer 41=Agora G199=Mau XXVII-XVIII | - | 1 | | 1 | | 1 |
| Oriental – Cilicia | Schöne V | - | 1 | | | | 1 |
| Oriental – Cilicia/ Cyprus | Zemer 41=Agora G199=Mau XXVII-XVIII | - | 1 | | | | 1 |
| Oriental - Cnidos | Mau XXXVIII | - | | 1 | 3 | | 2 |
| Oriental - Lebanon | Beirut 2a | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 529 | - | 1 | | | | 1 |
| Unidentified | Unidentified | - | 13 | 17 | 59 | 16 | 30 |

**Table 62: Ostia, Terme del Nuotatore, Area NE, Period 5 (Late Antonine age, AD 160-180/190)**

| Origin | Form | Stamps | R | B | H | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Dressel 2-4 | - | 2 | 1 | 6 | | 2 |
| Italy - Campania | Dressel 2-4 | 1 with + L. D(---?) A(---?) ((ramus palmae)) | 18 | 14 | 48 | 22 | 27 |
| Italy - Campania | 'Late Dressel 2-4' | 1 with Claud[iorum] / Red[emptus] | 2 | | | | 2 |
| Italy - Campania | Dressel 21-22 | - | 2 | | | | 2 |
| Italy – Campania / Southern Latium | *Ostia VI*, 62 | - | 1 | | | | 1 |
| Italy – Campania / Southern Latium | *Ostia VI*, 60 | - | 1 | | | | 1 |
| Italy - Tyrrhenian | Dressel 1B | - | 1 | | | | 1 |
| Italy – Tyrrhenian | Dressel 1C | - | 1 | | | | 1 |
| Italy – Tyrrhenian | Dressel 2-4 | - | 11 | 6 | 23 | 2 | 13 |
| Italy – Tyrrhenian | 'Late Dressel 2-4' | - | 13 | | | | 13 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Italy – Tyrrhenian | 'Late Dressel 1' | - | 12 | | 8 | | 12 |
| Italy – Tyrrhenian (Central Etruria) | *Ostia VI*, 59 | - | 1 | 1 | | | 1 |
| Italy - Tyrrhenian | Unidentifiable | - | 1 | 3 | 7 | 1 | 2 |
| Italy – Tyrrhenian – Rome/Ostia? | *Ostia VI*, 57–58 | - | 2 | | 4 | | 2 |
| Italy – Adriatic | Lamboglia 2/Dressel 6A | Me((n))o͡la(us) | 1 | | | | 1 |
| Italy – Adriatic | Dressel 6A | - | 5 | | 4 | 1 | 5 |
| Italy – Adriatic | Dressel 2–4 | - | 1 | 3 | 1 | | 3 |
| Italy – Adriatic - *Aemilia* | 'Anfora di Forlimpopoli' | - | 149 | 174 | 398 | 59 | 200 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 159 | 98 | 251 | 91 | 167 |
| Italy – Tiber Valley | *Ostia VI*, 61 | - | 1 | | | | 1 |
| Italy – *Bruttium* | Dressel 21–22 | - | 18 | | | | 18 |
| Italy – *Bruttium* | *Ostia VI*, 68–69 | - | 10 | | 4 | | 10 |
| Italy - Sicily | *Ostia II*, 522/523 | 1 with MARA | 10 | 9 | 74 | 1 | 39 |
| Italy - Sicily | *Ostia VI*, 77 | - | 1 | | | | 1 |
| Italy - Sicily | Dressel 21–22 | - | 20 | | 12 | | 20 |
| Italy - Lipari | Richborough 527 | - | | 1 | | | 1 |
| Gaul | Dressel 2–4 | - | 2 | 4 | 8 | | 4 |
| Gaul | Dressel 16 | - | 1 | | | | 1 |
| Gaul | Gauloise 1 | - | 2 | | | | 2 |
| Gaul | Gauloise2/3 | - | 4 | | | | 4 |
| Gaul | Gauloise 3 | - | 2 | | | | 2 |
| Gaul | Gauloise 3/4 | - | 14 | | | | 14 |
| Gaul | Gauloise 5 | - | 21 | | | | 21 |
| Gaul | Gauloise 4 | 1 with T. V(---) P(---); 1 with A(----) [P(---) M(---)]; 1 with M. I (---) P(---) | 288 | | | | 288 |
| Gaul | Gauloise 5/6 | - | 2 | | | | 2 |
| Gaul | Gauloise 7? | - | 1 | | | | 1 |
| Gaul | Unidentifiable with flat base | 1 with A(---) P(---) M(---); 1 with Mat[uri]; 1 with Maturi; 1 with Q. C(---) A(---) | | 190 | 316 | 148 (25 Nk) | 190 |
| *Baetica* | Haltern 70 | - | 7 | 5 | 14 | 6 | 7 |
| *Baetica* | Dressel 28 | - | 12 | | 7 | | 12 |
| *Baetica* | Late Dressel 28 | - | 3 | | | | 3 |
| *Baetica* | Dressel 2–4 | - | 1 | | 4 | | 2 |
| *Baetica* | *Ostia VI*, 234 | - | 2 | | | | 2 |
| *Baetica* | Dressel 7–11 | - | 16 | | 1 | 3 | 16 |
| *Baetica* | Dressel 12 | - | 1 | 2 | | | 2 |
| *Baetica* | Dressel 17 | - | 3 | 6 | | 1 | 6 |
| *Baetica* | Beltrán IIA | - | 49 | 2 | | | 49 |
| *Baetica* | Beltrán IIB | - | 61 | 8 | 6 | 1 | 61 |
| *Baetica* | Advanced Beltrán IIB | - | 22 | | | | 22 |
| *Baetica* | Puerto Real 1 | 1 with Soc(iorum) | 12 | | | | 12 |
| *Baetica* | Dressel 14A | - | 188 | 28 | 131 | 59 | 188 |
| *Baetica* | Unidentifiable *garum* amphorae | - | | 50 | 148 | 107 | 74 |
| *Baetica* | Almagro 50A | - | 2 | | | | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 20 | 2 with C. En(ni) Hisp(ani) Sa(eniamensia); 1 with A(---) P(ortus?) N(---); 1 with Scorobre(n)s(ia); 1 with C. I(---) B(---); 1 with (L.) A(e)l(i) Fo(---); 1 with C. A?[---] or M?[---]; 1 with Vir(ginensia) A(ugustalis) V(---?); 1 with E++; 1 with Felic(is); 1 with C. L(---) Pude(ntis); 1 with [II]I Ennior(um) Iulior(um); 1 with Lec+; 1 with L. F(---) C(---); 1 with L. L(---) Fest[ini]; 1 with L. V(---) C(---); 1 with L. V(---) Ci[---]; 1 with M. A(---) R(---); 1 with O. A[---]; 1 with P. Q(---) F(---)?; 1 with Q. Ful(vius) N(---) P(ortus) Ar(vae); 1 with Q. I(---) E(---); 2 with (ex fundo) Saxo Ferreo; 1 with T. A(---) N(---) P(ortus?); 1 with Urc(i?); 1 with graffito Logi Mundi; 1 with graffito Monti | 121 | 2 | 180 | 85 | 121 |
| *Tarraconensis* | Oberaden 74 | - | 1 | | | | 1 |
| *Tarraconensis* | Dressel 2-4 | - | 6 | 16 | 13 | 5 | 16 |
| *Tarraconensis* | Late Dressel 2-4 | - | 4 | 1 | 7 | 1 | 4 |
| *Tarraconensis* | Local copy of a Gauloise 4 | - | 1 | | | | 1 |
| *Lusitania* | Dressel 14B | - | 104 | 73 | 114 | 63 | 104 |
| Iberian Peninsula | Dressel 2-4 | - | 3 | 10 | 9 | | 12 |
| Africa | Oberaden fig. 24, n. 5 | - | 1 | | | | 1 |
| Africa | Mau XL | - | 8 | | | | 8 |
| Africa | Dressel 18 = Ramón Torres1995 T-7.4.3.3 | - | 1 | | | | 1 |
| Africa | Leptiminus II | - | 3 | | | | 3 |
| Africa | Hammamet 1 | - | 4 | 6 | | | 6 |
| Africa | Unidentifiable Punic amphorae | - | | 30 | 5 | | 30 |
| Africa | Carthage Early Amphora IV | - | 11 | | | | 11 |
| Africa | Leptiminus I | - | 11 | | | 2 | 11 |
| Africa | *Ostia VI*, 346 | - | 4 | | | | 4 |
| Africa | Ostia Form LIX | - | 125 | | | | 125 |
| Africa | Ostia Form XXIII | - | 100 | | | | 100 |
| Africa | Ostia Form XXIII/LIX | - | | 158 | 261 | 59 | 158 |
| Africa | Similar to Pupput T.7004 | - | 5 | | | | 5 |
| Africa | Similar to Pupput T.7005 | - | 2 | | | | 2 |
| Africa | Uzita tav. 52, n. 10=Bonifay 2004a, type 18 | - | 1 | | | | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Africa | Dressel 2-4 | - | 8 | 4 | 2 | | 8 |
| Africa | Africana IA | 1 with M. V(---) I(---) | 51 | 9 | 27 | | 47 |
| Africa | Africana II | - | | 1 | | | 1 |
| Africa | *Ostia VI*, 381 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 382 | - | 5 | | | | 5 |
| Africa | *Ostia VI*, 383 | - | 5 | | | | 5 |
| Africa | *Ostia VI*, 384 | - | 3 | | | | 3 |
| Africa | *Ostia VI*, 387/388 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 390 | - | 3 | | | | 3 |
| Africa | *Ostia VI*, 391 | - | 1 | | | | 1 |
| Africa | *Ostia VI*, 392/393 | - | 2 | | | | 2 |
| Africa | *Ostia VI*, 394 | - | 1 | | | | 1 |
| Africa | Bonifay 2004a, type 30? | - | 1 | | | | 1 |
| Cyrenaica? | Mid Roman 8 | - | 17 | | 3 | | 17 |
| Tripolitania | Dressel 26 | - | 3 | | | | 3 |
| Tripolitania | Tripolitana I | 1 with Q. Sc(---) Sc(---) | 13 | | 1 | | 13 |
| Tripolitania | Tripolitana II | - | 30 | | 35 | | 30 |
| Tripolitania | Tripolitana III | - | 1 | | | | 1 |
| Tripolitania | Tripolitana I-III | - | | 22 | 12 | 13 | 22 |
| Tripolitania | Mau XXXV | 1 with Sat(---) N(---?) | 113 | 38 | 119 | 54 | 113 |
| North-Africa | Unidentifiable North-African amphorae | - | 2 | 23 | 85 | 22 | 43 |
| Oriental – Bosphorus – Heraclea Pontica | S Ib=Pseudo-Coan amphora | - | | | 1 | | 1 |
| Oriental – Bosphorus – Heraclea Pontica | Zeest 94=Knossos 14=Šelov D | - | 2 | | | | 2 |
| Oriental – Bosphorus – Sinope | Sin II | - | 3 | | | | 3 |
| Oriental – Bosphorus – Sinope | *Ostia VI*, 519 | - | 1 | | | | 1 |
| Oriental – Bosphorus – Sinope | B Snp III | With *titulus pictus* in Greek. Position α: ZMṬΙΓ; position β: Nς | 1 | | | | 1 |
| Oriental - Bosphorus | Similar to Zeest 73 | - | 1 | | | | 1 |
| Oriental - Bosphorus | *Ostia VI*, 523 | - | | | 1 | | 1 |
| Oriental - Bosphorus | Zeest 80 | - | 1 | | | | 1 |
| Oriental – Bosphorus | Similar to Zeest 85 – Knossos 39 | - | 1 | | | | 1 |
| Oriental - Crete | AC1a | - | 8 | | | | 8 |
| Oriental – Crete | AC1b | - | 12 | | | | 12 |
| Oriental – Crete | AC1 | 1 with Γ. H(---) Σ(---) | 50 | 13 | 136 | 20 | 52 |
| Oriental – Crete | AC2a | - | 1 | | | | 1 |
| Oriental – Crete | AC3 | - | 1 | | | | 1 |
| Oriental – Crete | AC4b | - | 7 | | | | 7 |
| Oriental – Crete | AC4 | - | 24 | 1 | 51 | | 24 |
| Oriental – Crete | *Ostia VI*, 476 | - | | | 6 | | 3 |
| Oriental – Crete | *Ostia VI*, 477 | - | | 1 | | | 1 |
| Oriental – Crete | Unidentifiable Cretan amphorae | - | | 2 | | | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oriental – Meander Valley | Agora F65/66 | - | 18 | 31 | 62 | 109 | 62 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 2-5 | - | 13 | 1 | 35 | | 18 |
| Oriental – Aegeum/ Microasiatic Area | Pompei 6 | - | | 1 | 2 | | 1 |
| Oriental – Aegeum/ Microasiatic Area | Mau XLI | - | | | | 6 | 1 |
| Oriental – Aegeum/ Microasiatic Area | Knossos 19 | 1 with *titulus pictus*in greek: position α = ΠΟ; position β = +++P | 4 | | | | 4 |
| Oriental – Aegeum/ Microasiatic Area | Dressel 24 and similar forms | - | 10 | | 12 | | 10 |
| Oriental – Aegeum/ Microasitiac Area | Zeest 86 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 482 | - | 1 | | 1 | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 483 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 484 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 485 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 486 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 487 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 488 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 491 | - | 2 | | | | 2 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 493 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 494 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 495 | - | | 1 | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | *Ostia VI*, 497 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasiatic Area | Agora M94 | - | 6 | | 1 | | 6 |
| Oriental – Aegeum/ Microasiatic Area | San Lorenzo 7 | - | 1 | | 1 | | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oriental – Aegeum/ Microasitiac Area | Unidentified | - | | 2 | 78 | 2 | 39 |
| Oriental – Aegeum/ Microasitiac Area | *Ostia VI*, 525 | - | 1 | 2 | 8 | | 4 |
| Oriental – Aegeum/ Microasitiac Area | *Ostia VI*, 526 | - | 1 | | | | 1 |
| Oriental – Aegeum/ Microasitiac Area | *Ostia VI*, 527/528 | - | 2 | | | | 2 |
| Oriental – Pamphilia? | Kapitän I | - | 18 | 4 | 31 | 4 | 18 |
| Oriental – Pamphilia? | Kapitän II | - | 1 | 1 | | | 1 |
| Oriental – Rhodes/Rhodian *Peraea* | Camulodunum 184 | - | 61 | 21 | 136 | 4 | 68 |
| Oriental – Rhodes/Rhodian *Peraea* | *Ostia VI*, 451 | - | 2 | | | | 2 |
| Oriental - Palestine | Schöne XV | - | 2 | 1 | 7 | 3 | 4 |
| Oriental – Palestine | Kingsholm 117 or similar | - | 2 | | | | 2 |
| Oriental – Palestine | Kingsholm 117/Gazan Amphora 1 | - | | | 7 | | 4 |
| Oriental – Palestine/Syria | *Ostia VI*, 510 | - | | | 3 | | 2 |
| Oriental - Egypt | AE3 | - | 4 | 1 | 11 | 2 | 5 |
| Oriental – Cilicia | Zemer 41=Agora G199=Mau XXVII–XVIII | - | 11 | 3 | 1 | | 11 |
| Oriental – Cilicia | Agora M54 | - | | 1 | 3 | | 2 |
| Oriental - Cilicia | Agora G198=Schöne XIII | - | | | 10 | 2 | 5 |
| Oriental – Cilicia/ Cyprus | Zemer 41=Agora G199=Mau XXVII–XVIII | - | | | | 1 | 1 |
| Oriental - Cyprus | Zemer 41=Agora G199=Mau XXVII–XVIII | - | | 1 | 1 | | 1 |
| Oriental - Cnidos | Mau XXXVIII | - | 3 | 4 | 3 | 2 | 4 |
| Oriental – Lebanon | *Ostia VI*, 506 | - | 1 | | | | 1 |
| Oriental – Lebanon | *Ostia VI*, 507 | - | 1 | | | | 1 |
| Oriental – Lebanon | *Ostia VI*, 508 | - | 1 | | | | 1 |
| Oriental – Lebanon | *Ostia VI*, 509 | - | | | 1 | | 1 |
| Unidentified | *Ostia VI*, 530 | - | 2 | | | | 2 |
| Unidentified | *Ostia VI*, 531 | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 532 | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 533 | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 534 | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 535 | - | 1 | | | | 1 |
| Unidentified | *Ostia VI*, 536 | - | 1 | | | | 1 |
| Unidentified | Unidentified | - | 46 | 22 | 43 | 3 | 38 |

**Table 63: Ostia, Domus dei Pesci, Period 3, Phase I (early 2nd century AD)**

| Origin | Form | Stamps | R | H | B | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Vesuvian | Dressel 1 | - | | 1 | | 2 | 1 |
| Italy – Tyrrhenian? | Dressel 2–4 | - | 4 | 6 | 2 | 20 | 4 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | - | | 4 | 8 | 76 | 4 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 8 | 6 | 6 | 150 | 8 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 2 | 4 | | 6 | 2 |
| Gaul | Dressel 2–4 | - | | 5 | | | 2 |
| Gaul | Gauloise 1 | - | 2 | | | | 2 |
| Gaul | Gauloise 4 | - | 7 | | | | 7 |
| Gaul | Gauloise 5 | - | 11 | | | | 11 |
| Gaul | Gaulise 4/5 | 1 H. with *titulus pictus* (Zevi 2007, fig. 46b) | | 18 | 12 | | 6 |
| Unidentifiable part of Gaul | Gauloise 5 | - | 5 | | | | 5 |
| Gaul | Unidentifiable | 1 with graffito | | | | 500 | - |
| *Baetica* | Haltern 70 | - | 1 | | | | 1 |
| *Baetica* | Dressel 7–11 | - | 2 | 9 | | | 2 |
| *Baetica* | Beltrán IIA | - | 5 | 4 | | | 5 |
| *Baetica* | Beltrán IIB | - | 5 | | | | 5 |
| *Baetica* | Dressel 14A | - | 1 | | | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | | | | 310 | - |
| *Baetica* | Dressel 20 | 1 H. with stamp: Zevi 2007, fig. 46c | 8 | 8 | 1 | 85 | 8 |
| *Tarraconensis* | Dressel 2–4 | - | 1 | 1 | | 36 | 1 |
| South *Tarraconensis*? | Dressel 2–4 | - | 5 | | | 9 | 5 |
| *Lusitania* | Dressel 14B | - | 3 | | | 41 | 3 |
| Africa | Ostia Form LIX | - | 10 | | 1 | | 10 |
| Africa | Ostia Form LIX/XXIII | - | | 7 | 2 | | 2 |
| Tripolitania | Tripolitana I | - | 5 | 1 | | | 5 |
| Tripolitania | Mau XXXV | - | 4 | 14 | | 33 | 4 |
| North Africa | Unidentifiable | - | | | | 218 | - |
| Oriental - Crete | Cretoise 1 | - | 1 | 9 | | | 1 |
| Oriental -Crete | Cretoise 2 | - | | 1 | | | 1 |
| Oriental - Crete | Cretoise 4 | - | | 1 | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Benghazi MR 18 | - | | | | 1 | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | - | | 3 | | | 1 |
| Oriental | Unidentifiable | - | | 1 | 1 | 26 | 1 |
| Unidentifiable | Dressel 2–4 | - | | 1 | | | 1 |
| Unidentifiable | Unidentifiable | - | 3 | 11 | 3 | 843 | 6 |

**Table 64: Ostia, Domus dei Pesci, Period 3, Phase II (second half of 2nd century AD)**

| Origin | Form | Stamps | R | H | B | W | V |
|---|---|---|---|---|---|---|---|
| Italy - Tyrrhenian | Dressel 1 | - | 1 | | | | 1 |
| Italy – Tyrrhenian? | Dressel 2–4 | - | 3 | | | 3 | 3 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Forlimpopoli' | - | 3 | | 5 | 5 | 3 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 4 | 7 | 4 | 146 | 4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Italy – Sicily | *Ostia II*, 522/523 | - | | 1 | | 2 | 1 |
| Italy | Unidentifiable | - | | 1 | | 105 | 1 |
| Gaul | Gauloise 4/5 | - | | 1 | | 1 | 1 |
| Gaul | Gauloise 5 | - | | 7 | 3 | 5 | 7 |
| Gaul | Unidentifiable | - | | | 3 | 233 | 3 |
| *Baetica* | Dressel 7–12 | - | | 2 | | | 1 |
| *Baetica* | Beltrán IIA | - | 1 | 3 | | | 1 |
| *Baetica* | Beltrán IIB | - | 1 | | | | 1 |
| *Baetica* | Dressel 14A | - | 2 | | 1 | | 2 |
| *Baetica* | Unidentifiable *garum* amphora | - | | | | 227 | - |
| *Baetica* | Dressel 20 | 1 with: G. St(– – –) = Callender 1965, 483, 1 with: Co.(–) | | 6 | | 152 | 3 |
| *Tarraconensis* | Unidentifiable | - | | | | 19 | 1 |
| *Lusitania* | Dressel 14B | - | 3 | 3 | | 47 | 3 |
| Africa | Van der Werff 1 | - | | 4 | | | 2 |
| Africa | Ostia Form LIX | - | 1 | | | | 1 |
| Africa | Ostia Form XXIII | - | 1 | 4 | 2 | | 2 |
| Africa | Leptiminus 1 (Zevi 2007, fig. 48 b-c) | - | 5 | | | | 5 |
| Africa | Unidentifiable | - | | | | 276 | - |
| Tripolitania | Mau XXXV | - | 4 | 6 | | 15 | 4 |
| Tripolitania | Tripolitana II | - | 2 | 2 | 3 | | 3 |
| Tripolitania | Unidentifiable | - | | | | 109 | - |
| Oriental - Crete | Cretoise 1 | - | | 1 | | | 1 |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | - | 2 | | | | 2 |
| Oriental - Egypt | Pompei V–VI | - | | 2 | | | 1 |
| Oriental | Unidentifiable | - | | 6 | | 32 | 3 |
| Unidentified | Zevi 2007, fig. 48d | - | 2 | | | | 2 |
| Unidentified | Unidentified | 2 W. with *post cocturam* graffiti | 1 | 2 | | 509 | 3 |

**Table 65: Ostia, Domus dei Pesci, Period 3, Phase III (early 3rd century AD)**

| Origin | Form | Stamps | R | H | B | W | V |
|---|---|---|---|---|---|---|---|
| Italy – Campania | Dressel 2–4 | - | 4 | 3 | 2 | 24 | 4 |
| Italy – Vesuvian | Dressel 1 | - | | 1 | | | 1 |
| Italy – Adriatic (*Aemilia*) | 'Anfora di Folimpopoli' | - | 3 | 11 | 5 | 125 | 5 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 8 | 11 | 10 | 455 | 8 |
| Italy – Sicily | *Ostia II*, 522/523 | - | 1 | 4 | 1 | 28 | 2 |
| Gaul | Dressel 2–4 | - | 3 | | | | 3 |
| Gaul | Gauloise 4 | - | 11 | 7 | 7 | | 11 |
| Gaul | Gauloise 5 | - | 4 | 4 | 5 | | 4 |
| Gaul | Unidentifiable | - | | 1 | 1 | 270 | 1 |
| *Baetica* | Dressel 7–11 | - | 1 | | | | 1 |
| *Baetica* | Beltrán IIA | - | 7 | 4 | | | 7 |
| *Baetica* | Beltrán IIB | - | 1 | 4 | 1 | | 1 |
| *Baetica* | Dressel 14A | - | | | 1 | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | | | | 336 | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Baetica* | Dressel 20 | 1 H. with: C. G(-) R(-) = Callender 1965, 325; 1 H. with: Q(-) F(-) R(-) A(-)? = *CIL* XV, 2869 a-d; Callender 1965, 1454 | 7 | 13 | | 380 | 7 |
| *Baetica* | Dressel 28 | - | 2 | | | | 2 |
| *Tarraconensis* | Dressel 2-4 | - | 2 | 2 | 1 | 13 | 2 |
| *Lusitania* | Dressel 14B | - | 17 | 5 | 21 | 308 | 17 |
| Africa | Ostia Form LIX | - | 9 | | | | 9 |
| Africa | Ostia Form XXIII | - | 7 | | | | 7 |
| Africa | Africana I | - | 3 | | 1 | | 3 |
| Africa | Leptiminus I | - | 3 | | | | 3 |
| Africa | Unidentifiable | - | | | | 823 | - |
| Tripolitania | Tripolitana I | - | 1 | 5 | | | 3 |
| Tripolitania | Mau XXXV | - | 2 | 10 | | | 5 |
| Tripolitania | Unidentifiable | - | | | | 100 | - |
| Oriental - Crete | Cretoise 1 | - | 1 | 11 | | | 6 |
| Oriental - Crete | Cretoise 4 | - | | 3 | | | 2 |
| Oriental – Meander Valley | Agora F65/66 | - | 1 | | | | 1 |
| Oriental – Aegeum / Microasiatic Area | Knossos 19 | - | 1 | | | | 1 |
| Orental – Aegeum / Microasiatic Area | Unidentifiable | - | | 6 | | 110 | 3 |
| Oriental – Pamphilia? | Kapitän I | - | | 1 | | | 1 |
| Oriental – Pamphilia? | Kapitän I/II | - | | | | 1 | - |
| Oriental – Rhodes / Rhodian *Peraea* | Camulodunum 184 | - | | 6 | 1 | | 3 |
| Oriental - Egypt | Pompei V-VI | - | 2 | | | | 2 |
| Oriental – Egypt | Pompei 6 | - | 1 | | | | 1 |
| Unidentified | Imitation of a Gauloise 4? | - | 2 | | | | 2 |
| Unidentified | Zevi 2007, fig. 52f | - | 1 | | | | 1 |
| Unidentified | Zevi 2007, fig. 52g | - | 1 | | | | 1 |
| Unidentified | Unidentifiable | - | | 6 | | 1805 | 3 |

**Table 66: Ostia, Domus dei Pesci, Period 3, Phase IV (first half of 3rd century AD)**

| Origin | Form | Stamps | R | H | B | W | V |
|---|---|---|---|---|---|---|---|
| Italy – Vesuvian | Dressel 1 | - | | 1 | | | 1 |
| Italy – Campania | Dressel 2-4 | - | 1 | 2 | | 6 | 1 |
| Italy – Adriatic (Aemilia) | 'Anfora di Forlimpopoli' | - | 3 | 3 | 4 | 56 | 3 |
| Italy – Tiber Valley | 'Anfora di Spello' | - | 2 | 1 | 1 | 87 | 2 |
| Gaul | Dressel 2-4 | - | | 1 | | | 1 |
| Gaul | Gauloise 4 | - | 7 | 5 | 1 | | 7 |
| Gaul | Unidentifiable | - | | | | 31 | - |
| *Baetica* | Beltrán II | - | 3 | 3 | | | 3 |
| *Baetica* | Dressel 14A | - | | 3 | | | 1 |
| *Baetica* | Unidentifiable *garum* amphora | - | | | | 39 | - |
| *Baetica* | Dressel 20 | - | 1 | | | 41 | 1 |
| *Tarraconensis* | Dressel 2-4 | - | 1 | 2 | | | 1 |
| *Lusitania* | Dressel 14B | - | 1 | 2 | | 7 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Africa | Hammamet 1 | - | 1 | | | | 1 |
| Africa | Van der Werff 1 | - | 1 | | | | 1 |
| Africa | Ostia Form LIX | - | 2 | 5 | | | 2 |
| Africa | Ostia Form XXIII | - | 4 | 5 | | | 4 |
| Africa | Africana I | - | 2 | 1 | 1 | | 2 |
| Africa | Leptiminus I | - | 2 | | | | 2 |
| Tripolitania | Tripolitana I | - | 1 | 1 | | | 1 |
| Tripolitania | Mau XXXV | - | 2 | 9 | | | 2 |
| North Africa | Unidentifiable | - | | | | 286 | - |
| Mauretania | Dressel 30 | - | 3 | 1 | | | 3 |
| Oriental - Crete | Cretoise 1 | - | 5 | 4 | 1 | | 5 |
| Oriental – Meander Valley | Agora F65/66 | - | 1 | 1 | 1 | | 1 |
| Oriental – Aegeum/ Microasiatic Area | Zemer 41 = Agora G199 = Mau XXVII–XXVIII | - | 2 | 1 | | | 2 |
| Oriental – Pamphilia? | Kapitän I | - | | 1 | | | 1 |
| Oriental – Pamphilia? | Kapitän II | - | | 1 | | | 1 |
| Oriental | Unidentifiable | - | | | | 35 | - |
| Unidentified | Unidentifiable | - | | 4 | 3 | 679 | 3 |

# Appendix 3: Fabrics from the 'Terme di Elagabalo'

The descriptions of all recognised fabrics of amphorae discovered in the 'Terme di Elagabalo' are offered in this appendix (cf. Chapter 3, Section 3.2.2: 56–57 for the criteria used in describing them). These fabrics are named firstly referring to their area of origin, followed by a progressive number which only depends on how many fabrics had been found for that particular area. These abbreviations are situated within the relevant tables of Appendix 2, in the column under 'F'.

These are the abbreviated fabric names and their meanings:

'ITAC' = Italy – Campania (comprehensive of Vesuvian area);

'ITAT' = Italy – Tyrrhenian coast;

'ITAA' = Italy – Adriatic coast;

'ITAV' = Italy – Tiber Valley;

'ITAS' = Italy – Sicily (and likely *Bruttium*);

'ITAL' = Italy – Lipari;

'GAUL' = Southern France (ancient *Gallia Narbonensis);*

'BAE' = Southern-Central Spain (Andalusia, ancient *Hispania Baetica*);

'TAR' = North-Eastern Spain (Catalonia, ancient *Hispania Tarraconensis*);

'LUS' = Portugal (ancient *Lusitania*);

'AFR' = *Africa proconsularis* (mostly Tunisia);

'TRIP' = *Tripolitania* (Libya);

'MAUR' = *Mauretania Caesariensis* (Morocco/Algeria);

'OR' = Aegean/Oriental Area (Egypt included);

'NI' = Unidentified origins.

## Italy

### Italy – Campania & Vesuvian

| Name | Found in form | Description |
|---|---|---|
| ITAC1 | Dressel 1B; Dressel 2–4; 'Late Campana Dressel 2–4'. | Colour: 5YR 7/6 (reddish yellow). Compact clay, rough to the touch, with a rather regular fracture. Many small-sized volcanic and augite inclusions. Several small-sized lamellar vacuoles. |

| | | |
|---|---|---|
| ITAC2 | Dressel 1;<br>Dressel 2-4;<br>'Late Campana Dressel 2-4';<br>Dressel 21-22. | Colour: 2.5 YR 6/6 (light red). Compact clay, rough to the touch, with a rather regular fracture. Many small-sized volcanic and augite inclusions, rare calcareous very small inclusions. Several small sized lamellar and circular vacuoles. |
| ITAC3 | Dressel 2-4. | Colour: 2.5 YR 4/8 (red). Friable clay, rough to the touch with an irregular fracture. Many small and very small-sized volcanic and augite inclusions. Several calcareous and quartz small-sized inclusions. Rare medium-sized augite and very small-sized mica inclusions. Frequent small-sized lamellar and angular vacuoles. |

**Italy – Tyrrhenian coast**

| Name | Found in form | Description |
|---|---|---|
| ITAT1 | MGS V;<br>MGS;<br>Dressel 2-4. | Colour: 2.5 YR 6/8 (light red). Compact clay, rough to the touch, with a regular fracture. Rare small-sized quartz and calcareous inclusions. Rare circular vacuoles. |
| ITAT2 | MGS II;<br>Dressel 1;<br>Dressel 2-4;<br>Camulodunum 139. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, rough to the touch, with an irregular fracture. Many very small and small-sized transparent and opaque quartz, calcareous, and volcanic inclusions. Several angular small-sized vacuoles. |
| ITAT3 | MGS;<br>Dressel 1;<br>Dressel 1B;<br>Dressel 2-4;<br>Camulodunum 139. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, rough to the touch, with a rather regular fracture. Several very small and small-sized transparent quartz and volcanic inclusions. Rare very small-sized calcareous inclusions. Some small-sized lamellar vacuoles. |
| ITAT4 | Dressel 2-4;<br>Camulodunum 139. | Colour: 2.5 YR 5/6 (red). Compact clay, rough to the touch, with an irregular fracture. Many small and medium-sized calcareous and volcanic inclusions. Several very small-sized angular vacuoles. |

**Italy – Tiber Valley**

| Name | Found in form | Description |
|---|---|---|
| ITAV1 | Dressel 1;<br>Dressel 2-4;<br>'Anfora di Spello'. | Colour: 7.5 YR 6/6 (reddish yellow). Compact clay, very rough to the touch with an irregular fracture. Many medium and small-sized quartz, volcanic and calcareous inclusions. Some medium-sized angular vacuoles and rare very small-sized lamellar ones. |
| ITAV2 | MGS;<br>Dressel 1;<br>'Anfora di Spello'. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, rough to the touch, with a rather regular fracture. Many small and very small-sized volcanic and calcareous inclusions. Rare small-sized transparent quartz inclusions. Several small and very small-sized lamellar and angular vacuoles. |
| ITAV3 | 'Small Dressel 2-4';<br>'Anfora di Spello'. | Colour: 7.5 YR 6/6 (reddish yellow). Compact clay, soapy to the touch, with a rather regular fracture. Some small-sized opaque quartz and calcareous inclusions. Some small-sized circular and lamellar vacuoles. |
| ITAV4 | MGS VI;<br>'Anfora di Spello'. | Colour: 10 R 6/8 (light red). Compact clay, rough to the touch, with an irregular fracture. Many small and very small-sized calcareous, opaque quartz and red inclusions. Rare very small-sized mica inclusions. Frequent small and very small-sized lamellar and circular vacuoles. |
| ITAV5 | 'Anfora di Spello'. | Colour: 5 Y 8/3 (pale yellow). Hard clay, rough to the touch, with a rather regular fracture. Many small and very small-sized calcareous, quartz and volcanic products inclusions. Many small and medium-sized lamellar and angular vacuoles. |
| ITAV6 | Dressel 2-4;<br>'Anfora di Spello'. | Colour: 2.5 YR 7/6 (pale yellow). Compact clay, soapy to the touch, with a regular fracture. Several very small, small and medium-sized volcanic inclusions. Rare very small sized calcareous inclusions. Very frequent small and extremely small-sized circular and lamellar vacuoles. |
| ITAV7 | 'Anfora di Spello'. | Colour: 2.5 YR 6/8 (light red). Friable clay, rough to the touch with an irregular fracture. Many small and medium-sized calcareous inclusions. Rare small-sized quartz and volcanic inclusions. Rare small-sized angular and lamellar vacuoles. |

**Italy – Adriatic coast**

| Name | Found in form | Description |
|---|---|---|
| ITAA1 | Lamboglia 2/Dressel 6A; Dressel 2-4; 'Anfora di Forlimpopoli'; | Colour: 7.5 YR 7/4 (pink). Compact clay, soapy to the touch, with a rather regular fracture. Several small and very small-sized chamotte inclusions. Rare very small-sized transparent quartz and calcareous inclusions. Frequent small and very small-sized lamellar vacuoles. |

**Italy – Sicily (and likely *Bruttium*)**

| Name | Found in form | Description |
|---|---|---|
| ITAS1 | *Ostia II*, 522/523; Dressel 21-22. | Colour: 7.5 YR 7/6 (reddish yellow). Hard clay, rough at the touch, with a regular fracture. Many small-sized opaque, grey and red quarts inclusions. Rare very small-sized gold mica inclusions. Some small-sized circular vacuoles. |
| ITAS2 | *Ostia II*, 522/523; Dressel 21-22. | Colour: 5 YR 7/4 (pink). Compact clay, rough to the touch, with a regular fracture. Some extremely small-sized calcareous and quartz inclusions. Frequent very small-sized lamellar vacuoles. |
| ITAS3 | *Ostia II*, 522/523; Dressel 21-22. | Colour: 5 YR 6/6 (reddish yellow). Compact clay, soapy to the touch with a regular fracture. Several small-sized calcareous and opaque grey and red quartz inclusions. Rare small-sized lamellar and angular vacuoles. |
| ITAS4 | *Ostia II*, 522/523; Dressel 21-22. | Colour: 2.5 YR 6/6 (light red). Compact clay, rough to the touch with a rather regular fracture. Many small-sized calcareous inclusions. Rare very small-sized opaque quartz inclusions. Rare small-sized angular vacuoles. |

**Italy – Lipari**

| Name | Found in form | Description |
|---|---|---|
| ITAL1 | Richborough 527. | Colour 5Y 7/2 (light grey). Compact clay, rough to the touch with an irregular fracture. Many medium and big-sized transparent quartz, black volcanic glass, and dark-grey volcanic inclusions. Some small-sized augite inclusions. Frequent angular and circular vacuoles. |

# Gaul

### Gaul Narbonensis

| Name | Found in form | Description |
|---|---|---|
| GAUL1 | Gauloise1; Gauloise 4; Dressel 28; Dressel 2-4. | Colour: 7.5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch with an almost regular fracture. Some very small-sized calcareous and transparent quartz inclusions. Very frequent very small-sized lamellar vacuoles. |
| GAUL2 | Gauloise 3; Gauloise 4. | Colour: 5 YR 6/6 (reddish yellow). Friable clay, rough to the touch with an irregular fracture. Several small-sized calcareous inclusions. Some medium-sized calcareous inclusions. Frequent small-sized lamellar and angular vacuoles. |
| GAUL3 | Gauloise 3; Gauloise 4. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch and with a rather regular fracture. Several small and very small-sized calcareous inclusions. Frequent small-sized lamellar vacuoles. |
| GAUL4 | Gauloise 3, type Table IV, **61** | Colour: 7.5 YR 6/4 (pink). Compact clay, rough to the touch and with a rather regular fracture. Some very small and small-sized calcareous inclusions. Very frequent small-sized and some medium-sized lamellar vacuoles. |

# Iberian Peninsula

### *Hispania Baetica*

| Name | Found in form | Description |
|---|---|---|
| BAE1 | Dressel 7-11; Dressel 20; Dressel 28; Beltrán IIB. | Colour: 5 YR 6/6 (reddish yellow). Hard clay, soapy to the touch and with a regular fracture. Many small and medium-sized calcareous, transparent and opaque grey and pink quartz inclusions. Frequent small-sized lamellar vacuoles. |

| | | |
|---|---|---|
| BAE2 | Haltern 70;<br>Dressel 20;<br>Dressel14A;<br>Dressel 2-4. | Colour: 7.5 YR 7/4 (pink). Friable clay, soapy at the touch with a rather regular fracture. Some small-sized calcareous and transparent quartz inclusions. Frequent small and very small-sized lamellar vacuoles. |
| BAE3 | Dressel 7-11;<br>Dressel 14A;<br>Dressel 20;<br>Dressel 2-4;<br>Beltrán IIA;<br>Late Beltrán IIA = Augst 30. | Colour: 10 YR 8/3 (very pale brown). Compact clay, rough to the touch with an irregular fracture. Many small and very small-sized transparent and opaque grey and pink quartz inclusions. Rare small-sized dark brown inclusions. Very frequent small and very small-sized lamellar and angular vacuoles. |
| BAE4 | Haltern 70;<br>Dressel 7-11;<br>Dressel 20;<br>Dressel 14A;<br>Dressel 2-4;<br>Dressel 28;<br>Beltrán IIA;<br>Beltrán IIB;<br>Late Beltrán IIA = Augst 30. | Colour: 7.5 YR 8/4 (pink). Compact clay, rough to the touch and with a rather regular fracture. Many small-sized transparent, opaque grey, and pink quartz inclusions. Rare very small-sized calcareous and golden mica inclusions. Some small-sized lamellar and angular vacuoles. |
| BAE5 | Dressel 14A;<br>Dressel 20;<br>Dressel 2-4;<br>Beltrán IIB;<br>Dressel 21-22;<br>Late Dressel 28. | Colour: 5 Y 8/2 (white). Compact clay, rough to the touch with an irregular fracture. Many very small-sized opaque grey and transparent quartz inclusions. Rare very small-sized calcareous inclusions. Frequent very small-sized lamellar and angular vacuoles. |
| BAE6 | Dressel 14A;<br>Dressel 20. | Colour: 7.5 YR 6/6 (reddish yellow). Compact clay, rough to the touch with a rather regular fracture. Many small and very small-sized calcareous and transparent quartz inclusions. Rare very small-sized golden mica inclusions. Frequent small and very small-sized lamellar and angular vacuoles. |
| BAE7 | Dressel 7-11;<br>Dressel 20;<br>Dressel 14A. | Colour: 2.5 YR 6/6 (light red). Compact clay, rough to the touch and with an irregular fracture. Many small and very small-sized opaque grey, pink and transparent quartz inclusions. Several small and very small-sized calcareous inclusions. Some very small-sized golden mica inclusions. Very frequent small and very small-sized lamellar and circular vacuoles. Rare medium-sized lamellar vacuoles. |

| | | |
|---|---|---|
| BAE8 | Haltern 70;<br>Dressel 20;<br>Dressel 2-4;<br>Beltrán IIA;<br>Beltrán IIA-B;<br>Late Beltrán IIA = Augst 30. | Colour: 7.5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch with a regular fracture. Rare small and very small-sized calcareous and quartz inclusions. Extremely rare medium-sized calcareous inclusions. Rare small-sized circular and lamellar vacuoles. |

***Hispania Tarraconensis***

| Name | Found in form | Description |
|---|---|---|
| TAR1 | Pascual 1;<br>Tarraconense 1D;<br>Dressel 2-4. | Colour: 7.5 YR 6/4 (light brown). Compact clay, rough to the touch and with a rather regular fracture. Several small and medium-sized calcareous inclusions. Rare very small-sized transparent quartz inclusions. Frequent very small-sized lamellar vacuoles. |
| TAR2 | Dressel 2-4. | Colour: 2.5 YR 5/6 (red). Friable clay, rough to the touch and with an irregular fracture. Many small and medium-sized calcareous and opaque grey and transparent quartz inclusions. Frequent small and medium-sized angular vacuoles. |

***Lusitania***

| Name | Found in form | Description |
|---|---|---|
| LUS1 | Dressel 14B. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, rough to the touch with a rather regular fracture. Many small, very small and medium-sized opaque grey, pink and transparent quartz inclusions. Several small-sized red inclusions. Rare very small-sized calcareous inclusions. Frequent small-sized lamellar vacuoles. |
| LUS2 | Dressel 14B. | Colour: 5 YR 7/4 (pink). Compact clay, soapy to the touch with a rather regular fracture. Many small and very small sized opaque grey, pink and transparent quartz inclusions. Rare medium-sized red inclusions. Very rare small-sized calcareous inclusions. Frequent small-sized circular and angular vacuoles. |

# North-Africa

### *Africa Proconsularis*

| Name | Found in form | Description |
|---|---|---|
| AFR1 | Ostia Form XXIII;<br>Ostia Form LIX;<br>Africana I;<br>Africana IA;<br>Africana IB;<br>*Ostia IV*, 447;<br>Africana II;<br>Africana IIA1;<br>Africana IID. | Colour: 2.5 YR 5/6 (red). Compact clay, rough to the touch with a rather regular fracture. Many small and very small-sized foraminifera inclusions. Rare small-sized transparent quartz inclusions. Some small-sized circular vacuoles. |
| AFR2 | Maña C1;<br>Pupput T700.5;<br>Ostia Form XXIII;<br>Ostia Form LIX;<br>Ostia Form XXIII/LIX;<br>*Ostia IV*, 447;<br>Africana I;<br>Africana IB;<br>Dressel 2-4;<br>Pseudo Dressel 2-4;<br>Africana II;<br>Africana IIA1;<br>Africana IIB. | Colour: 2.5 YR 5/6 (red). Compact clay, rough to the touch, with an irregular fracture. Several small and very small-sized foraminifera inclusions. Frequent very small-sized lamellar vacuoles. |
| AFR3 | Neo-Punic;<br>Ostia Form XXIII;<br>Ostia Form LIX;<br>Ostia Form XXIII/LIX;<br>*Ostia IV*, 447;<br>Africana I;<br>Africana IA;<br>Africana IB;<br>Dressel 2-4;<br>Africana II;<br>Africana IIA1;<br>Africana IIB;<br>Benghazi MR1 = Agora M254;<br>Dressel 30. | Colour: 5 YR 6/6 (reddish yellow). Compact clay, rough to the touch, with a rather regular fracture. Several small and very small-sized foraminifera inclusions. Rare medium-sized foraminifera inclusions. Frequent small-sized circular and angular vacuoles. |

| | | |
|---|---|---|
| AFR4 | Mana C1;<br>Ostia Form LIX;<br>Africana I;<br>Africana IA;<br>Africana IB;<br>Dressel 2-4;<br>Africana II;<br>Benghazi MR1 = Agora M254. | Colour: 2.5 YR 5/8 (red). Compact clay, rough to the touch, with rather regular fracture. Many small and very small-sized foraminifera inclusions. Rare medium-sized lamellar vacuoles. |
| AFR5 | Ostia Form XXIII/LIX;<br>*Ostia IV*, 447;<br>Africana I;<br>Africana IA;<br>Africana IB;<br>Africana II;<br>Africana IIA1;<br>Keay XXV;<br>Keay XXXVA. | Colour: 2.5 YR 6/8 (light red). Compact clay, soapy to the touch, with a rather regular fracture. Some small and very small-sized foraminifera inclusions. Rare small-sized circular vacuoles. |
| AFR6 | Van del Werff 2;<br>Africana IB. | Colour: 10 YR 8/3 (very pale brown). Compact clay, rough to the touch, with an irregular fracture. Many small-sized foraminifera inclusions. Frequent small-sized lamellar vacuoles. |
| AFR7 | Ostia Form XXIII. | Colour: 2.5 YR 6/8 (light red). Compact clay, rough to the touch, with an irregular fracture. Many very small-sized foraminifera inclusions. Rare big-sized foraminifera and small-sized red inclusions. Some small and very small-sized lamellar and circular inclusions. |
| AFR8 | Van del Werff 2. | Colour 5 YR 7/6 (reddish yellow). Compact clay, rough to the touch with an irregular fracture. Many small and very small-sized foraminifera inclusions. Many small and medium-sized light clay lumps. Clay deposed in several visible layers. Very frequent small, very small and medium-sized lamellar and angular vacuoles. |

**Tripolitania**

| Name | Found in form | Description |
|---|---|---|
| TRIP1 | Tripolitana I;<br>Tripolitana II;<br>Tripolitana III;<br>Tripolitana I-III;<br>Mau XXXV. | Colour: 7.5 YR 6/6 (reddish yellow). Hard clay, rough to the touch, with a regular fracture. Several small-sized foraminifera inclusions. Rare medium-sized lamellar vacuoles. |

| | | |
|---|---|---|
| TRIP2 | Tripolitana III; Tripolitana I–III; Mau XXXV. | Colour: 2.5 YR 6/6 (light red). Friable clay, rough to the touch with a regular fracture. Rare small and very small-sized foraminifera inclusions. Frequent very small-sized lamellar vacuoles. |
| TRIP3 | Tripolitana I; Tripolitana II; Tripolitana III; Tripolitana I–III. | Colour: 2.5 YR 5/6 (red). Hard clay, rough to the touch with a rather regular fracture. Many small and medium-sized foraminifera inclusions. Some small-sized lamellar inclusions. |

### *Mauretania Caesariensis*

| Name | Found in form | Description |
|---|---|---|
| MAUR1 | Dressel 30. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, rough to the touch, with an irregular fracture. Rare medium-sized calcareous and red inclusions. Frequent very small-sized lamellar and circular vacuoles. |

## Aegean/Oriental Area

### Oriental – Bosphorus

| Name | Found in form | Description |
|---|---|---|
| OR1 | Zeest 94. | Colour: 7.5 YR 7/6 (reddish yellow). Hard clay, rough to the touch, with a rather regular fracture. Many small-sized black and opaque grey quartz inclusions. Rare small-sized calcareous inclusions. Some small-sized lamellar and angular vacuoles. |
| OR35 | Zeest 80 | Colour: 5 YR 6/6 (reddish yellow). Friable clay, rough to the touch with an irregular fracture. Many small, very small and medium-sized calcareous, opaque grey, pink and transparent quartz, and black inclusions. Some medium and small-sized circular and angular vacuoles. |

**Oriental – Crete**

| Name | Found in form | Description |
|---|---|---|
| OR2 | Cretoise 1;<br>Cretoise 1a;<br>Cretoise 1b;<br>Cretoise 1d;<br>Cretoise 1/2;<br>Cretoise 2;<br>Cretoise 3;<br>Cretoise 4;<br>Cretoise 4a. | Colour: 5 YR 6/6 (reddish yellow). Compact clay, soapy to the touch, with a regular fracture. Rare small and medium-sized calcareous inclusions. Rare very small-sized circular vacuoles. |
| OR25 | Cretoise 7;<br>Cretoise 1;<br>Cretoise 1a;<br>Cretoise 1b;<br>Creroise 1d;<br>Cretoise 2;<br>Cretoise 2a;<br>Cretoise 4. | Colour: 5 YR 6/6 (reddish yellow). Compact clay, soapy to the touch with a rather regular fracture. Some small and very small-sized calcareous inclusions. Rare small-sized lamellar vacuoles. |
| OR33 | Cretoise 1;<br>Cretoise 1a;<br>Cretoise 2/3;<br>Cretoise 3;<br>Cretoise 4;<br>Cretoise 4c. | Colour 5 YR 7/6 (reddish yellow). Compact clay, rough to the touch with an irregular fracture. Many small-sized calcareous and opaque white quartz inclusions. Rare small-sized red inclusions. Frequent small-sized angular and circular vacuoles. |

**Oriental – Meander Valley**

| Name | Found in form | Description |
|---|---|---|
| OR3 | Agora F65/66;<br>Dressel 2-5. | Colour: 5 YR 6/6 (reddish yellow). Friable clay, soapy to the touch with an irregular fracture. Many very-small sized golden mica inclusions. Rare small-sized calcareous inclusions. Frequent very small-sized lamellar vacuoles. |
| OR14 | Agora F65/66. | Colour: 5 YR 5/3 (reddish brown). Friable clay, rough to the touch with an irregular fracture. Many small and medium-sized calcareous and golden mica inclusions. Frequent small-sized angular vacuoles. |
| OR21 | Agora F65/66;<br>Agora F65/66 /Late Roman 3. | Colour:5 YR 4/6 (yellowish red). Friable clay, soapy to the touch with a regular fracture. Many very small-sized golden mica inclusions. Rare very small-sized lamellar vacuoles. |

**Oriental – Aegean / Microasiatic area**

| Name | Found in form | Description |
|---|---|---|
| OR4 | Dressel 2-5; Mau XXVII-XXVIII. | Colour: 7.5 YR 7/6 (reddish yellow). Compact clay, rough to the touch, with a rather regular fracture. Several small and very small-sized calcareous and golden mica inclusions. Frequent small and very small-sized lamellar vacuoles. |
| OR9 | Dressel 24; Dressel 24=Mid Roman 18=Zeest 90; Dressel 24 = Knossos 15. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch, with a regular fracture. Rare very small-sized calcareous and golden mica inclusions. Rare very small-sized lamellar vacuoles. |
| OR11 | Dressel 24; Dressel 24 = Middle Roman 18. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch, with a rather regular fracture. Sporadic very small-sized calcareous and golden mica inclusions. Some very small-sized lamellar vacuoles. |
| OR17 | Dressel 24. | Colour: 7.5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch, with a rather regular fracture. Rare very small-sized calcareous, golden mica and transparent quartz inclusions. Some very small-sized lamellar vacuoles. |
| OR19 | Knossos 19; Mau XIII. | Colour: 5 YR 7/6 (reddish yellow). Friable clay, rough to the touch with an irregular fracture. Many very small-sized quartz inclusions. Rare very small-sized golden mica inclusions. Sporadic medium-sized red inclusions. Very frequent small and very small-sized lamellar and circular vacuoles. |
| OR20 | Knossos 19. | Colour: 7.5 YR 6/6 (reddish yellow). Compact clay, rough to the touch with an irregular fracture. Many very small-sized calcareous and opaque grey quartz inclusions. Rare small-sized golden mica inclusions. Very frequent small and very small-sized angular and circular vacuoles. |
| OR29 | Dressel 24; Dressel 24 = Middle Roman 18. | Colour: 5 YR 8/6 (yellowish red). Compact clay, rough to the touch with a rather regular fracture. Some small-sized calcareous inclusions. Rare very small-sized golden mica inclusions. Rare small-sized lamellar vacuoles. |

| | | |
|---|---|---|
| OR32 | Unidentifiable. | Colour: 5 YR 6/6 (reddish yellow). Very friable clay, rough to the touch with an irregular fracture. Several small and medium-sized calcareous inclusions. Extremely frequent small and very small-sized lamellar vacuoles. |

**Oriental – Pamphilia?**

| Name | Found in form | Description |
|---|---|---|
| OR5 | Kapitän I;<br>Kapitän I/II;<br>Kapitän II. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, soapy to the touch with a rather regular fracture. Some small-sized calcareous and opaque grey quartz inclusions. Some small-sized lamellar vacuoles. |
| OR6 | Kapitän I;<br>Kapitän I/II;<br>Kapitän II;<br>Dressel 2–4;<br>Mau XXVII–XXVIII. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, soapy to the touch with a rather regular fracture. Some medium and small-sized calcareous, opaque grey quartz, and black inclusions. Some medium and small-sized lamellar vacuoles. |
| OR7 | Kapitän I;<br>Kapitän II;<br>Mau XXVII–XXVIII. | Colour: 5 YR 6/6 (reddish yellow). Friable clay, rough to the touch with an irregular fracture. Many small, very small and medium-sized calcareous, opaque grey and transparent quartz, and black inclusions. Some medium and small-sized lamellar and angular vacuoles. |
| OR8 | Early Kapitän II;<br>Kapitän II. | Colour:10 R 6/6 (light red). Friable clay, rough to the touch with an irregular fracture. Many small and very small-sized calcareous, opaque grey and transparent quartz. Some small-sized lamellar and angular vacuoles. |
| OR28 | Kapitän II. | Colour: 5 YR 5/6 (yellowish red). Friable clay, soapy to the touch with a regular fracture. Some small and very small-sized calcareous and transparent quartz. Rare small-sized red inclusions. Some small-sized lamellar vacuoles. |

**Oriental – Rhodes / Rhodian *Peraea***

| Name | Found in form | Description |
|---|---|---|
| OR10 | Camulodunum 184. | Colour: 5 YR 7/6 (reddish yellow). Compact clay, soapy to the touch with a regular fracture. Some small-sized calcareous inclusions. Rare small-sized lamellar vacuoles. |

| | | |
|---|---|---|
| OR12 | Camulodunum 184. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, soapy to the touch with a rather regular fracture. Several small-sized calcareous inclusions. Some very small-sized lamellar and circular vacuoles. |
| OR16 | Camulodunum 184. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, soapy to the touch with a regular fracture. Some small-sized calcareous and opaque grey quartz inclusions. Some very small-sized circular vacuoles. |
| OR22 | Camulodunum 184. | Colour: 5 YR 6/8 (reddish yellow). Compact clay, soapy to the touch with a regular fracture. Some small and very small-sized calcareous inclusions. Some medium and small-sized lamellar vacuoles. |

**Oriental – Palestine**

| Name | Found in form | Description |
|---|---|---|
| OR13 | Kingsholm 117; Camulodunum 189. | Colour: 7.5 5/6 (strong brown). Friable clay, rough to the touch, with an irregular fracture. Several small and very small-sized calcareous and opaque grey and pink quartz inclusions. Rare small-sized dark grey inclusions. Some small-sized circular and lamellar vacuoles. |
| OR23 | Kingsholm 117; Camulodunum 189. | Colour: 5 Y 5/3 (olive). Compact clay, rough to the touch, with an irregular fracture. Several small and very small-sized calcareous and opaque grey quartz inclusions. Some small-sized circular and lamellar vacuoles. |

**Oriental – Egypt**

| Name | Found in form | Description |
|---|---|---|
| OR15 | Pompei 5. | Colour: 5 YR 5/6 (yellowish red). Friable clay, rough to the touch with an irregular fracture. Some very small-sized golden mica inclusions. Rare very small-sized opaque quartz inclusions. Very frequent small, very small, and medium-sized lamellar and angular vacuoles. Some empty spaces due to vegetal inclusions. |

| | | |
|---|---|---|
| OR27 | Unidentifiable. | Colour: 5 YR 4/2 (dark reddish grey). Hard clay, soapy to the touch, with a rather regular fracture. Many very small and small-sized calcareous and opaque quartz inclusions. Rare very small-sized golden mica inclusions. Frequent small, very small and medium-sized lamellar and angular vacuoles. Some empty spaces due to vegetal inclusions. |

**Oriental – Cilicia**

| Name | Found in form | Description |
|---|---|---|
| OR18 | Mau XXVII–XXVIII; | Colour: 5 YR 7/6 (reddish yellow). Compact clay, rough to the touch with a rather regular fracture. Some small-sized calcareous inclusions. Frequent small-sized lamellar vacuoles. |
| OR24 | Agora M54;<br>Mau XXVII–XXVIII. | Colour: 7.5 YR 8/4 (pink). Compact clay, rough to the touch with an irregular fracture. Several small-sized calcareous inclusions. Frequent small-sized lamellar vacuoles. |
| OR30 | Schöne V. | Colour: 7.5 YR 7/6 (reddish yellow). Friable clay, rough to the touch with a rather regular fracture. Several small-sized calcareous, transparent and opaque grey quartz inclusions. Frequent small-sized lamellar and angular vacuoles. |
| OR31 | Mau XXVII–XXVIII. | Colour: 10 YR 8/4 (very pale brown). Compact clay, rough to the touch with a rather regular fracture. Several small-sized calcareous, transparent and opaque grey quartz, and black inclusions. Frequent small and very small-sized lamellar and angular vacuoles. |

**Oriental – Cnidos**

| Name | Found in form | Description |
|---|---|---|
| OR26 | Mau XXXVIII. | Colour: 7.5 YR 7/8 (reddish yellow). Compact clay, rough to the touch, with an irregular fracture. Many small-sized calcareous and opaque grey, pink and transparent quartz inclusions. Some small-sized lamellar vacuoles. |

**Oriental – Cos**

| Name | Found in form | Description |
|---|---|---|
| OR34 | Dressel 2-5. | Colour: 7.5 YR 7/8 (reddish yellow). Friable clay, rough to the touch, with an irregular fracture. Some small and medium-sized calcareous and opaque grey quartz inclusions. Rare big-sized calcareous and opaque grey quartz inclusions. Some small-sized circular vacuoles. |

## Unidentified Origin

| Name | Found in form | Description |
|---|---|---|
| NI1 | 'Terme di Elagabalo' New Form 1 (Table XX, **384**) | Colour: 10 YR 5/6 (yellowish brown). Compact clay, rough to the touch, with a rather regular fracture. Many small and very small-sized calcareous inclusions. Frequent small-sized lamellar vacuoles. |
| NI2 | Unidentifiable. | Colour: 5YR 7/6 (reddish yellow). Compact clay, soapy to the touch, with a rather regular fracture. Many small-sized transparent and opaque grey quartz inclusions. Rare big-sized red inclusions. Frequent small and very small-sized angular and lamellar vacuoles. |

# Appendix 4: The population of Rome and the food supplied

Roma, *caput mundi*[2261]. The '*aeterna Urbs*'[2262]. In this city a vast number of building activities[2263] always coexisted, which continuously and perpetually pursued the need to create "new spaces for the *civitas* [citizens] and the planning of the real *Urbs*"[2264]. The city, in fact, had always been organised by central powers – especially during the Empire – and usually this planning is analysed from a political and ideological point of view, rather than a formal and functional one[2265].

During the Trajanic rule (AD 98–117), Rome was full of building activities on a larger scale than during past Emperors' rules, focussing on all the city centre, thanks to the generous amount of financial aid earned from the conquest of Dacia[2266]. With Hadrian (AD 117–138) and Antoninus Pius (AD 138–161) building activities reached a very high level. From AD 123 bricks started being stamped on a regular basis, demonstrating the intentions to construct[2267]. In AD 191/192, during the rule of Commodus (AD 180–193), a great fire destroyed several buildings[2268]. Septimius

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[2261] This appellative comes from a legend referred by Livy for which, during the construction of the Capitol, a human head was found, leading to interpret the discovery as a prophecy for Rome to become the capital of the world: *Liv.*, *Ab Urbe condita*, I, 55, 5.

[2262] For the origin and implications of this appellative cf. Edwards 1996: 86–88.

[2263] Cf., for example, DeLaine 2000 for different roles in this activity.

[2264] Sommella 1994: 366–367.

[2265] Sommella 1993: 220. Cf., for example, interpretation of monuments in Erskine 2010: 77–80.

[2266] Cf. Luttwak 1991: 134–135, 147, 155–156 (for political implications); Bennett 1997: 85–103 (Dacian wars), 148–160 (for implications in Rome's buildings); Mazzarino 2000: 298–299; De Caprariis & Zevi 2000: 297. Trajan focussed on organizing new spaces to satisfy the population's needs (for example the Trajanic Baths: cf. Caruso & Volpe 1999), creating public buildings (for example the Trajan's Markets: cf. Ungaro 1996; Lancaster 1999), and realising the biggest Forum ever existed (cf. Packer 1995; Papi 1995; Mafferi 1995; Meneghini 1999; Amici 1999; Packer 1999; Liverani 1999; De Caprarii & Zevi 2000: 297–302) which obliterated a more ancient *horreum* (cf. Larcan 2013). Cf. also Castagnoli *et al.* 1958: 35–36; Sommella 2001: 108–111.

[2267] Birley 1997: 1–2; Opper 2008: 106–109; De Caprariis & Zevi 2000: 304. For the building policy undertaken by Hadrian in Rome cf. Taliaferro Boatwright 1987. For example, Nero's *vestibulum/atrium* (cf. Cassatella & Panella 1995; Opper 2008: 126–127) was transformed into the temple of Venus and Rome (cf. Cassatella 1999; De Caprariis & Zevi 2000: 306–307; Del Monti 2010) that followed the ancient asset of streets and buildings, a new Pantheon was built (cf. Opper 2008: 110–125; De Caprariis & Zevi 2000: 304–306; for activities in the whole *Campus Martius* cf. Taliaferro Boatwright 1987: 33–73), and Palatine's substructures were completely rebuilt as is still possible to see nowadays. Cf. also Castagnoli *et al.* 1958: 36; Sommella 2001: 111–114. For the recent discovery close to Piazza Venezia of the so-called Atheaneum buily by Hadrian, cf., for example, López García 2012/2013, Serlorenzi & Egidi 2013; López García 2014, 2015a, 2015b (all with further bibliography). For bulding activities during the Antonines cf. Taliaferro Boatwright 2010.

[2268] For example the Peace Temple (cf. Coarelli 1999; Santangeli Valenziani 1999), *horrea Piperataria* (cf. Piranomonte 1996), Vesta's Temple (cf. Scott 1999), and large parts of Palatine's residential hill (for a general overview of this cf. Ammermann 1999; Tagliamonte 1999; Papi 1999a; Papi 1999b; Pollard 1999: 280). Cf. also Castagnoli *et al.* 1958: 36; Sommella 2001: 114; Lusnia 2014: 17–22.

Severus (AD 193–211), tried to rebuild the Capital after this fire, though he put less importance on city re-organisation, mainly concentrating on restorations[2269], with just little creation of buildings[2270].

Despite the knowledge about this city, its administration and its monuments, some topics are still permeated by doubts and uncertainties, such as the number of inhabitants and the amount of food supplied (which is strictly linked to the former). This Appendix briefly investigates two main questions in the administration of the city ('how many?' about population and 'how much?' about the amount of food), evaluating the scholar's theories and trying to understand the situation during the chosen period of time. It therefore offers supporting material to this research concerning these two historical questions. It will also offer a brief and general overview about the 'annona system' for the food supply of the Capital.

## 4.1 How Many?

Rome was surely the largest metropolis of ancient times, whose multiethnic and multicultural population was not equalled by any other city until the industrial revolution[2271]. The demographic growth of Rome can certainly be related to the continuous extent of political control over the accessibility to grain sources by river or sea[2272]. The number of people living in Rome had been something strongly debated (also with the corresponding overcrowding effect[2273]), but usually calculations had been made using very little information given by ancient sources, which actually never give an exact opinion or statement about the size of the City. Scholarship tried to combine ancient sources (sometimes even with comparisons with modern cities) in every possible way[2274], not recognising the anachronistic attempts they were making using sources coming from so many different periods. At the same time they only offered assumptions about the time of Augustus, rarely offering suggestions for the following centuries, again underestimating the elusiveness of their considerations. Population is, in fact, an elusive datum, because it always fluctuated over the years. These theories

[2269] Guidobaldi 2000: 317; Sommella 2001: 114.
[2270] He decided to create his triumphal arch on the western side of the Roman Forum (cf. Brilliant 1993; Diebner 1999; Lusnia 2006a; Lloyd 2013; Ventura Villanueva 2014), the now destroyed *Septizodium* (cf. Pisani Sartorio 1999; Pollard 1999: 288; Gorrie 2001; Lusnia 2004; 2006b), new Palatine's substructures and the so-called 'Terme di Elagabalo'. For a general overview of the Severan times and building activities cf. Lusnia 2014.
[2271] Lo Cascio 2000: 17–18.
[2272] Lo Cascio 2007: 639.
[2273] Lo Cascio 2001: 49–50.
[2274] Cf., for example, Noy 2000: 17.

will be summarised here, although Rickman (referring to other authors) already stated how results are uncertain[2275].

Morley in 1996, tried to summarise the methods used in assessing the population of Rome. Using the same structure suggested by Beloch in 1886[2276], he identified three approaches undertaken by scholars for their hypotheses: the built-up area of the city, the food supply of the city, and the number of people receiving the corn dole (*frumentationes*)[2277].

The first approach, born in the 1950s[2278], was mainly based on *Notitia* and *Curiosum* (the Regionary Catalogues of the city), ancient sources written during the Late Antiquity[2279]. Problems in using this source had already been stated by Hermansen in 1978, as they were not a real representation of the city, but merely an example of what could be seen by people during a tour of the city[2280]. More recently, Storey used another method, still based on the built-up area of the city, although his calculations had been made basing on Ostia and Pompeii, determining their densities[2281]. The final figure for Rome is of 440,000 people[2282], considering the 'city' as the one within the Aurelian Walls, without offering a suggested date for that figure.

The second approach was based on a few ancient sources giving information about the amount of food that arrived in the city[2283]. These ancient sources had been combined in several ways, although they represent very different periods. Combining the figures offered by an epitome[2284] and Josephus[2285], scholars calculated a population of at least 2 million people, which seems rather improbable[2286]. On the other hand, the combination of figures offered by *Historia Augusta*[2287] and a scholiast[2288] permitted them an evaluation of 900,000 inhabitants of the city[2289]. As Morley pointed out, many of these scholars also stressed that the amount of nutrients established in modern times might have been the same in ancient Rome, without any variation[2290].

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[2275] Rickman 1980a: 8.
[2276] Lo Cascio 2000: 23–26.
[2277] Morley 1996: 34. For distributions during the Republican age cf. also, for example, Cristofori 2002a (with further bibliography).
[2278] Lo Cascio 2000: 26–27.
[2279] Valentini & Zucchetti 1940: 63–188; Castagnoli 1980a: 12–13; Arce 1999.
[2280] Hermansen 1978: 157–165.
[2281] Storey 1997: 968–969.
[2282] Storey 1997: 975.
[2283] Cf., below, for the combining methods and also, very recently, Tchernia 2011b who added also an argument about more recent publications about this topic.
[2284] Epitome de *Caesaribus*, I. 6.
[2285] *Flavius Joseph.*, *Bell. Jud.*, II, 16, 4, 383–386.
[2286] Garnsey 1988: 232; Morley 1996: 35.
[2287] *H. A.*, *Sev.* 3.2.
[2288] *Schol. Lucan*, *Pharsale*, I, 318 as cited by Morley 1996: 35, note 13.
[2289] Morley 1996: 35.
[2290] Morley 1996: 35.

The third approach is the one most used and considers recipients of *frumentationes*[2291] during the age of Augustus. All scholars used a quotation from his *Res Gestae* (15.2) to make their assumptions[2292], not considering that this same source is self-praised, emphasized on his personal *grandeur*[2293], and offers a list of building activities[2294] that lead Suetonius to refer that he argued to have found Rome made of bricks and left it in marble[2295] (which is not true[2296]).

Rickman referred the Augustan figure of 320,000 'adult' males (14 years old) members of the plebs who received distributions[2297], suggesting that it should at least be doubled (640,000) so as to also consider females, children, slaves, resident aliens, and so on. Rickman, however, considered this figure too low[2298]: women and children might have been at least 400,000 (then reaching 750,000 people living in the city[2299]). The common figure for slaves (100-200,000 taken from Brunt[2300]) is considered again too low by Rickman, who suggests that at least 200,000 slaves lived in the Capital[2301]. These calculations lead him to reach a total amount of 1 million inhabitants in Rome during the Augustan age. This same method was used by Morley, who at the same time, questioned about who had the right to these distributions. Van Berchem suggested those who had a Roman *origo*[2302], while Virlouvet and Purcell disagreed. They suggested that free-borns (*ingenui*) were eligible, while freedmen[2303] were excluded. During the time of Augustus they accounted 200,000 males who received these distributions, considering about 260,000 freeborn males and a freeborn population of about 520,000[2304]. This calculation was accepted by Morley who also tried to suggest the amount of freedmen (at least 120,000 at the time of Augustus, to reach the figure of 240,000 for the rest of *plebs urbana*[2305]), soldiers, senators and *equites* (something like 20,000)[2306]. The amount of foreigners was calculated by Friedländer in 1928 to 60,000[2307] and this figure was accepted by Morley, because it is

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[2291] Lo Cascio 2000: 39–43.
[2292] Cf. also Lo Cascio 1997: 25–31.
[2293] Harris 2011: 208.
[2294] *Res Gestae* 19–21 (Brunt & Moore 1967: 27–29).
[2295] Suet., *Aug.* 28.
[2296] The first building completely made with bricks seems to have been the *Castra Praetoria*, dated Tiberian age (AD 21–23: Adam 2001: 157).
[2297] Ricman 1980b: 263.
[2298] Rickman 1980a: 9.
[2299] This figure is accepted by Robinson 1992: 8.
[2300] Brunt 1971: 383.
[2301] Rickman 1980a: 9.
[2302] Van Berchem 1939: 49.
[2303] A detailed investigation of this social rank and related themes can be found in Andreau 1989.
[2304] Virlouvet 1991: 49–55; Purcell 1994: 657.
[2305] Morley 1996: 38.
[2306] Morley 1996: 38.
[2307] Friedländer 1928: 17–18.

the only available theory[2308]. On the other hand the amount of slaves had been more difficultly calculated. Beloch, basing his assumption on a comment of Galen, suggested a figure of 300,000[2309], while Morley considered the already mentioned more plausible figure of 100-200,000 slaves offered by Brunt. The population of the Capital should have been between 850,000 and 1 million people living during the time of Augustus. Kolb, on the contrary, suggested 600,000 citizens, also adding a figure of at least 100,000 both for slaves and foreigners[2310]

Other scholars only accepted the figure of 1 million[2311], extending it to every period of the Empire. MacMullen offered a figure of half a million[2312], while Witcher in 2005 accepted the figure of 750,000 people while trying to calculate the population of Rome's *Suburbium* (in a radius of 50 km from the city centre)[2313], but again not offering a period for which this figure might have been at least plausible. Lacour-Gayet, on the contrary, offered a very high figure of 1,6 million people during the 2nd century AD[2314], with some 900,000 slaves[2315], although he did not offer any source for this calculation. Noy, analysing the amount of foreigners who lived in the Capital, suggested a 5% of inhabitants who were not born in Rome[2316], also suggesting that the population of Rome decreased to 650,000-800,000 people after the plague which occurred during the Antonine age[2317]. Kehoe kept a cautious position, referring that "under Augustus, the city of Rome had, on most estimates, between 750,000 and 1 million inhabitants"[2318]. The same caution was used by Hin, who suggested a figure of about 800,000 inhabitants, suggesting at least 9,600 immigrants *per annum*[2319].

All these studies falls far from being conclusive. The population of Rome might have decreased after the so-called 'Antonine plague'[2320] and possibly also during the Severan age[2321]. All the above mentioned figures seem precise and some of them had been taken for granted, but actually they cannot disguise the highly conjectural nature of evaluations on which they are based. The actual population of Rome during the Mid-

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[2308] Morley 1996: 38.
[2309] Beloch 1886: 403–404.
[2310] Kolb 1995: 451–453.
[2311] For example: Brunt 1971: 376–388; Hopkins 1978: 96–98; Hodges & Withehouse 1983: 48–52; Stambaugh 1988: 90; Bairoch 1989: 259; Garnsey & Saller 1989: 100; Di Salvo 1992: 84–85; Parkin 1992: 5; Robinson 1992: 8; Mattingly & Aldrete 2000: 142; Noy 2000: 16; Mattingly 2007: 576.
[2312] McMullen 1974: 57.
[2313] Witcher 2005: 126.
[2314] Lacour-Gayet 1968: 66.
[2315] Lacour-Gayet 1968: 79.
[2316] Noy 2000: 17.
[2317] Noy 2000: 16.
[2318] Kehoe 2007: 543.
[2319] Hin 2013: 219.
[2320] For a brief consideration about this plague cf., above, Chapter 13, Section 13.2: 271.
[2321] Lo Cascio 2000: 58–59.

Imperial age might have been higher than the figure suggested for the Augustan age, for all building activities undertaken during that period, which lead to many people being involved in temporary jobs (especially migrants[2322]), but it cannot be calculated with certainty as ancient sources, unfortunately, do not offer any information about it for that period. As Morley clearly stated, in fact, "It is still more difficult to offer convincing estimates of the population of Rome either before or after Augustus"[2323]. Therefore it is impossible to clearly state how many inhabitants were living in Rome during the Mid-Imperial age.

## 4.2 How Much?

As well as with considering the population of Rome, several scholars also tried to calculate the amount of foodstuffs traded to the city, mainly (or at times exclusively) considering wheat which was acknowledged as the basic product for eating[2324] and, at the same time, the only foodstuff for which clues are available from ancient sources[2325]. For the same, they used information from ancient sources without considering the period in which they lived, their audience, and the anachronistic relation between them. At the same time, the total income of grain transported to Rome always fluctuated in relation to harvests, even if almost certainly the Capital received more grain than was actually needed[2326]. Both Rickman and Morley, in fact, while suggesting the number of people living in Rome, also tried to estimate the amount of corn supplied to the Capital. Rickman at first tried to suggest the calorific intake of an adult male, which is, during modern times, about 3,000 calories. He suggested that during the Late Republic the calorific value was between 3,000-3,500 calories per day[2327], calculating it by the figure of 5 *modii* of grain which is the only figure offered by ancient sources regarding grain dole, then suggesting 60 *modii* per year per person. Using a suggestion made by Beloch[2328], he identified the average consumption of grain in 40 *modii* per person per year[2329]. Then, for the 200,000 recipients during the Augustan age, he calculated 12 million *modii* per year, and something like 40 million *modii* for the entire population[2330]. Morley referred to other scholars so as to create his

[2322] Hin 2013: 215–217.
[2323] Morley 1996: 38.
[2324] Jongman 2007b: 603.
[2325] Vilrouvet 2000: 105.
[2326] Garnsey & Saller 1989: 104.
[2327] Rickman1980b: 262.
[2328] Beloch 1886: 392–412.
[2329] Rickman 1980a: 10.
[2330] Rickman 1980a: 10; 1980b: 263 where there is also a calculation based on 320,000 recipients: 19 millions *modii* (over 120,000 tons) per year.

assumptions. Oates, for example, established a figure of 4 *modii* per month per head[2331], while Garnsey stated a figure of 2.5 *modii* per month per person[2332], although they both did not consider the only known ration in the distributions of Rome (5 *modii* per month). This figure permitted an evaluation of 60 million *modii* per year combining information offered by Epitome and Josephus[2333] and a figure of 27 million *modii* of grain combining *Historia Augusta* and a scholiast[2334]. Also Garnsey & Saller tried to consider the total amount of grain, however they offered different figures: trying to calculate all different recipients, they stated that grain reached 200,000–400,000 tons imported per year, corresponding to about 30–60 million *modii*[2335].

Other scholars also tried to suggest figures for other products. Tchernia tried to suggest the amount of wine and olive oil (accepting the 60 million *modii* per year for grain as very recently reappointed[2336]). He tried to calculate the amount of olive oil basing his assumption on amphorae found in Testaccio, assuming a total figure of 150,000 hectolitres per year, that should be doubled for other oils[2337]. In another book he tried to assess the amount of wine that should have reached a figure between 1,170,000–1,460,000 hectolitres (for a population of 800,000 people) and 1,750,000–2,200,000 hl (for a population of 1,2 millions people)[2338]. Also Mattingly and Aldrete tried to offer figures for other products, possibly for the early 2nd century AD (although this is not clear from their article). They suggested a total amount of 237,000 kg of wheat (237 kg per person per year[2339]), 100 million litres of wine (100 litres per person per year[2340]), and 18,000 metric tons of olive oil (20 litres per person per year[2341], which is an underestimated figure[2342]). However these figures had been more recently re-calculated by Morley: the amount of grain was reduced to 150,000 tons, wine to 75,000 litres, and olive oil was risen to 21-31 million litres per year[2343]. C. Virlouvet

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[2331] Oates 1934 [referred by Morley 1996: 35].
[2332] Garnsey 1983: 118.
[2333] This figure is considered the most likely true by Casson 1980: 22.
[2334] Morley 1996: 35. For references from ancient sources cf. above.
[2335] Garnsey & Saller 1989: 100–103. For another summary of all these calculations cf. also Di Salvo 1992: 85–90.
[2336] Tchernia 2011b: 262.
[2337] Tchernia 2011b: 256 (as in Tchernia 2000a).
[2338] Tchernia 1986: 21–27; Tchernia 2011b: 257. Harris 2011: 165 and 289, using the same scholar's hypothesis, refers 1.5 million hectolitres per year.
[2339] Referring to calculations offered by Foxhall & Forbes 1982: 72.
[2340] Referring to calculations offered by Foxhall & Forbes 1982: 68, reported also by Jongman 2007b: 603. Panella 1985: 190 refers other figures: 1,450,000/1,800,000 litres *per annum*.
[2341] Referring to calculations offered by Foxhall & Forbes 1982: 46; Amouretti 1986: 177–196; Mattingly 1988c: 22; Gallant 1991: 60–112; Mattingly 1996: 223. This figure is also referred by Jongman 2007b: 603. Panella 1985: 180 (using calculation made by Rodríguez Almeida 1984: 116–119) refers other figures: 22,480 tons *per annum* and 22,5 kg per person.
[2342] Mattingly & Aldrete 2000: 154. They even tried to calculate the amount of calories provided by these supplied foods, resulting in 2,326 calories per day per person, a figure they consider a good calculation considering lower intakes for women and children and the presence of other foodstuffs in diet that could add calories (Mattingly & Aldrete 2000: 154–155).
[2343] Morely 2007: 577.

also tried to assume the amount of meat that was consumed in a year, basing her calculation on later distributions (4th century AD: 12,5 kg per year). Then she argued a total amount of pork that could have reached something like 10,000–15,000 tons per year, a figure that does not take into account other animals[2344].

Once more this number of studies cannot be taken for granted. Although these calculations seem plausible, they have the same problem as figures for the population of Rome (also because about grain they are derived from the same calculations). At the same time they lack in quantities for fish sauces and other foodstuffs or products[2345]. Even taking for granted the above figures offered for the inhabitants of Rome, also the actual total amount of foodstuffs traded to the Capital during the Mid-Imperial age cannot be suggested with certainty because it cannot be securely calculated[2346].

## 4.3 The *annona* system

The *annona* system is a strongly debated and problematic topic, which resulted in very large amounts of publications, thus a complete account about it would go beyond the intentions of this Appendix. Only a brief analysis will be undertaken, offering principal information about it.

All ancient cities cared about storage of foodstuffs (especially cereals[2347]) in case of shortages or sieges, but in Rome this engaged a complexity never reached before. The word *annona* itself had multiple meanings. Deriving from *annuus*, it meant the annual crop of grain[2348], but it also engaged economic significances as the system for the supply of basic foodstuffs to Rome and her inhabitants (*annona civilis*[2349]) and military camps in central and northern Europe (*annona militaris*[2350]). During the first

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[2344] Virlouvet 2000: 106–107. For a detailed account of production and consumption of meat in Italy cf. MacKinnon 2004. Jongman 2007b: 604, on the contrary, does not offer figures.
[2345] This is possibly caused by silence in ancient sources as well by personal tastes and resources, cf. Panella 1985: 181. Rasmus Brandt 2005: 28–32, on the other hand offered different figures, with suggestions also for fish sauces and other commodities.
[2346] Cf. also Erdkamp 2013: 263.
[2347] For the cereals cultivated during the Roman times cf., for example, Buonopane 2015.
[2348] Veg., *Mil.*, III, 3; cf. also Cracco Ruggini 1985: 225; Chamay 2001: 37; Funari 2008: 275.
[2349] Stecher 2009: 19; Sanz Palomera 2010: 15.
[2350] Sanz Palomera 2010: 19–21. The existence of *annona militaris*, independent from *annona civilis*, comes from Van Berchem 1934, who dates it during the Severan age. About the concept of *annona* in *Hist. Aug.*, cf. Chastagnol 1994: CLXV–CLXIX. Cf. also Lesquier 1918: 349–50; Van Berchem 1977; Cerati 1975: 103–151; Kissel 1995: 123–124; Mitthof 2001: 68–70, 79–81; Pons Puyol 2004: 1663, note 2. Remesal Rodríguez 1986: 81–89, 104; 2002a: 295–296; 2002b: 82–83; 2008b: 158 where he denies that it was separated from duties of the *praefectus annonae* (cf. also Funari 2008: 278–279 and note 37), but cf. *contra* Lo Cascio 2009c: 294. Cf. also Di Salvo 1992: 94–102.

years of the Republic, the grain which grew in the hinterland of Rome and in areas nearby it was sufficient for the needs of the City[2351]. The continuous growth of Rome's population whose demand of grain (and other products as well) increased so as not to be satisfied with imports from the immediate hinterland[2352] lead to the creation of this system on which the city depended[2353]. This supply of grain was such an important matter for ancient Rome, being one of the main contracted duties of the Senate and *imperatores* during the Republic[2354] and then of Emperors[2355], that the concept was also personified in a divinity, *Annona*, depicted on various coins[2356]. At first, the food supply of Rome was not centrally governed (apart from sporadic occasions) and created profit for all the involved parties, but soon it became partly regulated by central powers[2357] and controlled by public offices which changed during the time: from the *aediles*[2358] who also had in charge the control of weights and measures[2359] to the *praefecti annonae*. The office and duties of the *praefectus annonae* were created and established for the first time by Augustus between AD 8 and AD 14[2360] to organise the supply of food to the *Urbs* (being also in charge of controlling the prices of basic foodstuffs in the City[2361]) as well to the *militiae*[2362]. Several changes were made during the centuries in terms of products involved: at first the main interest in this supply was only grain[2363], then (likely from the Antonine age as recent researches suggested) olive oil[2364] (although the first known free distribution of olive oil in Rome dates in the Severan age[2365]), and later possibly even pork[2366]. Early 'granaries of Rome' were Sicily[2367]

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[2351] About wine cf., for example, Volpe 2009.
[2352] Casson 1980: 21; Lo Cascio 1990: 231; Sirks 2007: 173.
[2353] Morley 2007: 570. For the role of the State in the food supply cf. also Tchernia 2011: 133–155.
[2354] Remesal Rodríguez 2002c: 120.
[2355] Remesal Rodríguez 2002c: 124–125; Sanz Palomera 2010: 9–10.
[2356] Floriani Squarciapino 1958.
[2357] Casson 1980: 24–25, 29; Stecher 2009: 21, 24–25.
[2358] Cracco Ruggini 1985: 225; Sanz Palomera 2010: 12.
[2359] Arnaud 2015: 7.
[2360] Rickman 1980b: 263, 270–271; Cracco Ruggini 1985: 228; Vismara 1989: 55; Lo Cascio 1990: 240–242; Robinson 1992: 148–150, 156–159; Dauget-Gagey 2000: 93–95; Virlouvet 2003: 66–67; Sanz Palomera 2010: 10. The first *praefaectus annonae* is C. Turrianus Gracilis, from *Hispania*: cf., for example, Lomas & Saez 1981: 66.
[2361] Remesal Rodríguez 1986: 85.
[2362] Blázquez Martínez 1992: 179; Remesal Rodríguez 2002c: 121; Carreras Monfort 2002: 80–82; Pons Pujol 2008: 1221, 1224. For the role of the *praefectus annonae* during the Late Antiquity (especially 4th and 5th centuries AD) cf. Giardina 1977.
[2363] Panella 1985: 181–182; Sanz Palomera 2010: 22–27.
[2364] Lomas & Saez 1981: 66; Blázquez Martínez 1992: 176–177; Virlouvet 2003: 66; Sanz Palomera 2010: 21 (note 120), 27–32; Broekaert 2011: 612–619; Harris 2011: 164, 214; Alfonso 2013: 367. Spanish scholars had been main supporters of this theory to which they dedicated many articles.
[2365] SHA, *Sev.*, 18, 3; Virlouvet 2000: 122–123; Brun 2004b: 188; Lo Cascio 2007: 641.
[2366] Free distribution of meat and wine existed since Aurelianus (AD 270–275) also with bread instead of grain, cf. Cracco Riggini 1985: 232–233; Lo Cascio 1990: 230, 248; Di Salvo 1992: 80; Broekaert 2011: 592; Harris 2011: 218.
[2367] Livy, *Ab Urbe condita*, XXVI, 40, 15–16; Lo Cascio 1990: 231–232; Stecher 2009: 43–44; Soraci 2011.

and Sardinia[2368], later replaced by *Baetica*[2369], Africa[2370], and above all Egypt[2371] whose wheat was used for public distributions[2372]. This supply system was not only closely tied to these free distributions of grain called *frumentationes*[2373] and to the basic daily supplies for the population of the Capital[2374], as "the needs of urban centres were substantial for any kind of item"[2375]. It also seems to have included all issues and workers related to production, transport, and storage[2376], although the demand was irregular in the city of Rome and this created irregularity in supply, as very recently stated[2377]. Several ports which created a trade-network were included in this supply system: origins-ports (where cargos were loaded) and arrival-ports (where cargos were unloaded). The latter ones, extremely significant for Rome, were Puteoli[2378], Ostia[2379], *Portus*[2380], and several others along the Tiber within the City itself[2381].

The problem of the food supply for the Capital was such an important issue for the Emperors (also in order to maintain their *consensus*[2382]) that, although it is argued that they did not have economic policies[2383], during the period considered for this investigation (the Mid-Imperial age), several provisions were undertaken by them. They were meant to ameliorate and increase the import of foodstuffs to the Capital and the Empire's economy, also because it was a matter of imperial propaganda to

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[2368] Fulford 1987: 66; Rowland 1994; Virlouvet 2003: 69; Stecher 2009: 44.
[2369] Lo Cascio 1990: 232; Stecher 2009: 44. For the supply of olive oil cf. Lomas & Saez 1981 (about *Kalendarium Vegetianum* and its implications); Pons Pujol 2008: 1226–1229, 1233–1235, 1239–1243.
[2370] Christol 1994; De Romanis 2003; Virlouvet 2003: 68; Stecher 2009: 45; De Romanis 2007: 187-196 (also including *Mauretania Tingitana*). North Africa had been the main source of grain during the Late Antiquity: cf. Jaïdi 2003: 90–94. For the supply of olive oil cf. Pons Pujol 2008: 1225–1226, 1230–1233, 1235–1239.
[2371] Lo Cascio 1972: 52–53, 55; Rickman 1980b: 264–265; Panella 1985: 182–183; Vismara 1989: 18; Geraci 1994; De Romanis 2002a; Virlouvet 2003: 68–69; Geraci 2003; De Romanis 2007: 196–218; Stecher 2009: 45–46.
[2372] Sirks 1991: 105; García 2000: 84.
[2373] Remesal Rodríguez 2002c: 122.
[2374] Sanz Palomera 2010: 13; Broekaert 2011: 593, 596. Remesal Rodríguez 2008b: 157 (citing a quotation from Sen., *De brev. vit.* 18, 5) affirms that the main duty of a *praefectus annonae* was "keeping everyone's belly full". Cf. also a few inscriptions in Friggeri 1985.
[2375] Arnaud 2015: 8.
[2376] Sanz Palomera 2010: 13; Broekaert 2011: 599.
[2377] Holleran 2012: 35. Surely safety from pirates helped in seaborne commerce (for piracy cf., for example, Rauh 2003 and De Souza 2009).
[2378] Lo Cascio 1972: 53, 56–57; Rickman 1980b: 267; Vismara 1989: 51; Di Salvo 1992: 43–47; Stecher 2009: 48–49; Tchernia 2003: 52–53; Aguilera Martín 2012: 108. For the port itself cf., for example, Gianfrotta 1972 and images in the same volume on pages 234–241. Cf. also Houston 1980: 162–163; Musti 1980.
[2379] Zevi 2001c for the problems related to the Claudian port and subsequent solutions.
[2380] Lo Cascio 1972: 58–59; Rickman 1980b: 267; Di Salvo 1992: 47–52. Puteoli, however, never ceased being an important port (cf. Lo Cascio 1972: 60; Di Salvo 1992: 46–47; Camodeca 1994: 113–115; Geraci & Marin 2003: 581). Cf. also Huston 1980: 157–162.
[2381] Castagnoli 1980b; Colini 1980; Meneghini 1985; Tchernia 2003: 51; Keay 2012a; Chioffi 2014.
[2382] About *consensus* during the Early Empire cf., for example, Lobur 2008; Rich 2015.
[2383] Harris 2011: 216. The following mentions are just examples and not an exhaustive recount of all Emperors' strategies.

demonstrate these improvements[2384]. Trajan, for example, dedicated and accomplished several interventions so as to improve communications, safety of people, and trade[2385]. He had an intention of implementing the amount of goods that could arrive in Rome[2386], in spite of a recognised decrease in the importance of Puteoli which had been a crucial port for the *annona* for many years[2387]. He reorganised the office of *curator alvei et riparum Tiberis et cloacarum urbis* (in AD 101[2388]) with an increase of the storage buildings in the *Emporium*[2389], created the *Fossa Traiana* (in order to reduce inundations in the *Urbs*[2390]), enlarged the previous Claudian harbour at *Portus* with a new hexagonal basin (called *Portus Traiani Felicis*[2391]), improved the road system between *Portus* and Ostia and possibly even the water supply to the latter[2392], built a completely new harbour 30 miles to the North in *Centumcellae* (nowadays Civitavecchia[2393]), and possibly widened another port in Terracina[2394]. Also Hadrian took significant decisions regarding the food supply. During one of his many journeys[2395] he went to North Africa (possibly in AD 123, most surely in AD 128[2396]) where he stayed for some months. On that occasion he eventually promulgated a law, the so called *lex Hadriana*, that followed and widened a measure taken by his predecessor Trajan at the end of his Principate and likely another previous law called *lex Manciana*[2397]. The *Lex Hadriana* seemed to have implied two main regulations. On one hand there would have been an acquiring of some rights of possession and inheritance for those who occupied and planted centuriated land with vines and olive trees. On the other hand it

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[2384] Remesal Rodríguez 2002c: 120, 124.
[2385] Rasmus Brandt 2005: 26–28. His policy "was wide and at same time strong and controlled" and his interventions "did not get drained in sporadic cases" (Garzetti 1960: 125).
[2386] García 2000: 89–90. The conquest of the province of Arabia (created in AD 106) was meant to occupy a strategic region in order to control the passage of products from the far East (China and India) and from the Red Sea (Garcìa 2000: 98, 101; Harris 2011: 215; Levrero 2012: 62–63; Naspi 2011/2012: 7–11, Section 1.2 with further bibliography; Nappo 2015: 63–64 and 55–57; for the importance of Nabateans in commerce and in Puteoli cf. Terpsta 2015).
[2387] Zevi 2000: 511–512.
[2388] With a single curator that lasted three years, named Ti. Iulius Ferox: Lonardi 2013: 21–22. For the history, duties, and epigraphic data of this office during the centuries cf. Segarra Lagunes 2004: 306–309; Lonardi 2013 (both with further bibliography). Cf. also Keay 2012a: 48.
[2389] Garzetti 1974: 330; Bennett 1997: 146.
[2390] Zevi 2000: 517–518.
[2391] Sirks 1991: 88; Zevi 2000: 514–525; De Caprariis & Zevi 2000: 297.
[2392] Zevi 2000: 529–535,
[2393] Plin., *Ep.*, VI, 31; Bennett 1997: 139–143. Cf. also Keay 2012a: 52–54; Granino Cecere & Ricci 2014.
[2394] García 2000: 88; Zevi 2000: 509 and note 1 for the controversy about this intervention.
[2395] His personality and the love for the Greek world (Goodman 1997: 71, 155–156), which earned him the nickname *Graeculus* (SHA, *Hadr.* 5; *Epit. de Caes.* 14, 2), let him pass a large part of his life mostly in Oriental domains (Birley 1997: 2–3, 151–188, 215–300; Mazzarino 2000: 318–319). His reputation of being a builder and benefactor, thanks to his passion for buildings and architecture in general (De Caprariis & Zevi 2000: 306; cf. also Ghedini 1989: 50–54), is visible from brick stamps and an increase in marble trade (Fraser 2006: 1, 6) which also generated an incredible creation of work in the city of Rome (Taliaferro Boatwright 1987: 19–20).
[2396] Ghedini 1989: 65–66; Fraser 2006: 129–130.
[2397] Date and regulations of this law are still not completely known, although it was referred to North Africa (Kehoe 2007: 558; Sanz Palomera 2010: 90–109).

implied an exemption from paying taxes during several years since vines, figs, and olives were planted for all those who cultivated marginal land, unallotted in the centuriation, allowing tenants of these lands to acquire a provisional title over them[2398]. This law, together with the policy undertaken to improve exploitation of imperial *latifundia* in Egypt[2399], lead to an increase not only of economic prosperity during his Principate[2400], but also of the food supplied to the Capital. Antoninus Pius continued his predecessor's policy and the Roman Empire benefited from this as it seemed to have maintained the previous prosperity[2401] with increased safety of communications[2402], severe punishments for those who attempted disturbing them[2403], and privileges to *navicularii*[2404] and possibly even to *collegia*[2405]. The provinces seemed to have had the main benefits from his policy, as shown both from the *Historia Augusta*[2406] and by several official evidences offered by the provinces[2407]. *Frumentationes* in Rome continued[2408] with the surveillance of the *praefectus Urbis* who received the functions of the *praefectus frumenti dandi* during his Principate[2409]. Despite his very brief rule (87 days[2410]), even Pertinax tried to think about the issue of food supply and, among other laws[2411], he tried to establish some fiscal alleviations so as to raise commerce with a drastic reduction of expenses[2412]. Ancient sources, unfortunately, do not inform

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[2398] Levi 1994: 91, 142–144; Birley 1997: 208–209; Galimberti 2007: 110; Pons Pujol *et al.* 2008: 1235–1239; Sanz Palomera 2010: 113–120.
[2399] De Martino 1979: 247–250; Gabba 1988: 208–209; Lo Cascio 1991a: 725.
[2400] Galimberti 2007: 110.
[2401] SHA, *Ant. Pius*, 7, 1. This prosperity is also shown by the exaggerated *Elogium* by Aelius Aristides who refers of high traffic in luxury items, although even basic products surely arrived in the Capital (cf. Vismara 1989: 57 and also Mazzarino 2000: 369).
[2402] Lacour-Gayet 1968: 179–180; Harris 2011: 209. Cf. also Lewis & Reinhold 1966: 135–138.
[2403] *Dig.*, XLVIII, VII, 1, Section 2 referring to Antoninus Pius's depositions.
[2404] Lacour-Gayet 1968: 189. Cf. also Arnaud 2015: 15–18 about them.
[2405] Many bases had been offered from *collegia* all across the city and the Empire in order to thank him for his interest: bakers in Rome (Lacour-Gayet 1968: 70, 203); boatmen from Ostia (Lacour-Gayet 1968: 202 and note 3); *dendrophori* at *Pollentia* (*CIL* V, 7617) Ostia, and Lyon (Lacour-Gayet 1968: 203 and notes 6, 7) *fabri tignarii* at Alba Fucens (*CIL* IX, 3923); and *centonarii* at Sevilla (*CIL* II, 1167), Rimini and Marseille (Lacour-Gayet 1968: 204 and notes 3, 4).
[2406] SHA, *Ant. Pius*, 7, 1.
[2407] Lacour-Gayet 1968: 219–222.
[2408] Even *cubicularii* (the Emperor's slaves) received crop distributions, as mentioned by an inscription (*CIL* VI, 8518 = *AE* 2001, 110 mentioned also in Weaver 2001: 110–113 note 4).
[2409] Lacour-Gayet 1968: 69.
[2410] Cf. also Parker 1958: 56–57; Boak & Sinnigen 1965: 336–337; Birley 1971: 144–152; Le Glay *et al.* 1996: 379.
[2411] One of these measures was to remit payment of interests for the last nine years on the land loans for *alimentationes* (Lo Cascio 1980). With this provision he tried both to relieve landowners (whose revenues had been decreased for the lack of manpower) and to increase production by encouraging the use of uncultivated lands offering the possibility of becoming landowner of these lands with a ten-years-exemption from the *tributum solis* (Soraci 1986: 317–330; Letta 1991: 646). Cf. also Soraci 1984.
[2412] Birley 1971: 147–148; Letta 1991: 646–647; Sanz Palomera 2010: 132–133. These measures, however, dissatisfied many Romans, thus leading to his murder (Mazzarino 2000: 434–435). Didius Giulianus succeeded him, but he lasted even less (66 days: Parker 1958: 57–59; Boak & Sinnigen 1965: 337) and he could not even think of creating programs, because Septimius Severus and Pescennius Niger had already revolted (Letta 1991: 647; Mazzarino 2000: 435) leading to his sentence to death (Birley 1971: 163; Letta 1991: 649).

much about Septimius Severus's measures related to the Empire's economy, possibly because he was at war for a long part of his Principate[2413]. He can be mentioned for a devaluation of the *denarius* with a decrease in its content of silver[2414], for several confiscations of lands of Clodius Albinus' allies[2415], for the privatisation in imperial domains of the production of Baetican oil[2416], and for some provisioning to stabilise the olive oil import to Rome[2417]. He also promulgated a large amount of laws when he stayed in Egypt in AD 199/early 200[2418] and left a very large donation in grain and olive oil to the people of Rome[2419] after his death in AD 211[2420].

In spite of all the imperial interventions and this complicated system, which functioned till the Late Antiquity (although it underwent many changes[2421]), several shortages happened over the centuries, obliging Emperors to find immediate solutions[2422]. For example, during the rule of Antoninus Pius a shortage of wine, grain, and olive oil in the Capital seems to have occurred and, possibly after being attacked by people who threw stones at him[2423], the Emperor bought these goods with money from his personal treasury so as to distribute them free to the people[2424]. Other shortages possibly happened in the Autumn of AD 161, after a severe flood of the Tiber which destroyed several buildings[2425], and probably also during the age of Commodus[2426] when revolts between people and garrisons arose in Rome[2427] which lead

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[2413] Platnauer 1918: 65–140; Parker 1958: 55–79; Boak & Sinnigen 1965: 337–343; Birley 1971; Letta 1991: 649–672.
[2414] Letta 1991: 653. For this devaluation, cf., for example, Harl 1996: 125–127 and Mazzarino 2000: 435–437.
[2415] Lo Cascio 2007: 645–646. About the war against Albinus, cf. Birley 1971: 189–200.
[2416] Lo Cascio 1990: 236; Letta 1991: 661; Broekaert 2011: 594–596; Alfonso 2013: 370–372.
[2417] Broekaert 2008; 2011: 599, 620.
[2418] Letta 1991: 666. These laws are proved by the collection of 13 *apokrimata* (answers) on the Columbia 123 papyrus. Among others, an answer confirmed the obligation of a payment in kind for some cases. It might have been caused by a reorganization of *annona militaris*, but this was likely decided because he did not want payments made with devaluated coins he created (Letta 1991: 667 and note 99 for the bibliography about the papyrus).
[2419] Lo Cascio 1990: 236–237; 1997: 40–47; 1999: 165–166; 2000: 58; De Romanis 2007: 222–225.
[2420] He was planning a third campaign to Britain at that time: Letta 1991: 672; Luttwak 1991: 172. For the entire campaign in Britain cf. Birley 1971: 244–268.
[2421] De Romanis 2002b: 356–357; Carrié 2003; Jaïdi 2003; Vera 2010.
[2422] Sanz Palomera 2010: 13–15.
[2423] *Epit. de Caes.*, 15, 9.
[2424] SHA, *Ant. Pius*, 8, 11; SHA, *Ant. Pius*, 9, 1. Cf. also Cerchiai Manodori Sagredo 2009: 130.
[2425] Birley 1966: 159.
[2426] This emperor, however, is strongly criticized by ancient authors (Gebbia 2004: 1627). The information deriving from them which depict him as a new Caligula or Nero with no interests in duties for the Empire (Garzetti 1974: 528–531, 539, 545–548; Mommsen 1996: 322–323; Goodman 1997: 75; cf. also Parker 1958: 26, 29–36; Boak & Sinnigen 1965: 335-336; Foster 1974: 528–553; Rodgers 2006: 74–75) and offering an autocratic rule (Alföldy 1987: 227) influenced scholars' opinions about his rule (cf. Gebbia 2004 who tried to review his policy).
[2427] Alföldy 1987: 254.

the Emperor to create a price control, the institution of a *classis Africana Commodiana Heraclea*[2428], and a serious restructure of *horrea* in Ostia and *Portus*[2429].

The very large amount of literature about this supply system often underlines that most of these interactions and imports were based on taxes due to Rome[2430], but a free commerce surely existed which had a large importance[2431] and paid custom taxes[2432] so as to be considered as having a complementary role in the supply of food to the Capital[2433]. Four inscriptions dating around AD 175 inform, in fact, that Marcus Aurelius and Commodus decided to locate stones to create a boundary around the city of Rome (corresponding to the later Aurelian Walls) for custom reasons, following earlier provisions[2434]. At the same time only part of the grain supplied by this system was meant for free distribution. The Roman State very likely acquired much more grain both from fiscal imposition and from imperial domains[2435] and the remaining part not meant for *frumentationes* was sold with controlled prices[2436] (as happened also to wine during the Late Antiquity[2437]) and the income was used to finance the public constructions in the Urbs[2438].

Therefore the word *annona*, which is usually (and sometimes rather simplistically) used by scholars to identify any kind of food supply to the Capital of the Empire, entailed a large variety of situations. It can be most likely referred to the supply system of foodstuffs arriving as matter of taxes (for example, grain and olive oil, which could have been sold anyway, although with controlled prices) or to its branch which consisted in the free distribution of grain in the Capital. On the other hand, this word is not applicable with certainty to the supply of products imported to be sold and which might have been requested in Rome and even by the Roman State, but not deriving from fiscal impositions to the Provinces, although it is used in this way by some scholars[2439]. For example, the inclusion of fish sauces and wine into products

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[2428] Lo Cascio 1997: 42. Cf. also Gebbia 2004: 1627, for the creation of that *classis*.
[2429] Lo Cascio 1997: 42; Pavolini 2006: 36.
[2430] Lo Cascio 1972: 55; Remesal Rodríguez 1990: 357–358; Cracco Ruggini 1985: 230; Remesal Rodríguez 2002a: 295; Virlouvet 2003: 67–70; Sirks 2006. For a wider analysis of activities from collection to arrival, and people involved in them cf. Di Salvo 1992: 106–182.
[2431] Lo Cascio 1972: 57; Casson 1980: 26–29; Di Salvo 1992: 69–78; Virlouvet 2003: 70–72; Morely 2007: 582; Stecher 2009: 28.
[2432] All foodstuffs traded into Rome were subjected to customs: cf. Palmer 1980.
[2433] Fulford 2009: 255; Vera 2010: 4.
[2434] Palmer 1980: 217–218. Possibly it followed a first attempt made by Augustus and another by Vespasian and Titus. For the inscriptions cf. Palmer 1980: 231. In AD 178 Marcus Aurelius also cancelled debts to those who incurred in them during the last forty-six years, burning documents in the Forum (Birley 1966: 280–281).
[2435] Virlouvet 2003: 69.
[2436] De Romanis 2002a: 279–280, 290; Broekaert 2011: 596.
[2437] De Romanis 2002b: 356.
[2438] De Romanis 2002b: 355.
[2439] Cf. Panella 1985: 187 and Remesal Rodríguez 2002: 122 and 123 about the exclusion of wine.

subjected to the *annona* during the analysed period (Mid-Imperial age) offered by Sanz Palomera 2010: 32–35 is not totally convincing, although it is not impossible to argue that the State likely controlled the supply and import of all foodstuffs to the Capital[2440]. For all these reasons, this research referred only to a generic supply system for the Capital, not calling it '*annona*'.

[2440] Personal communication of Prof. Clementina Panella.

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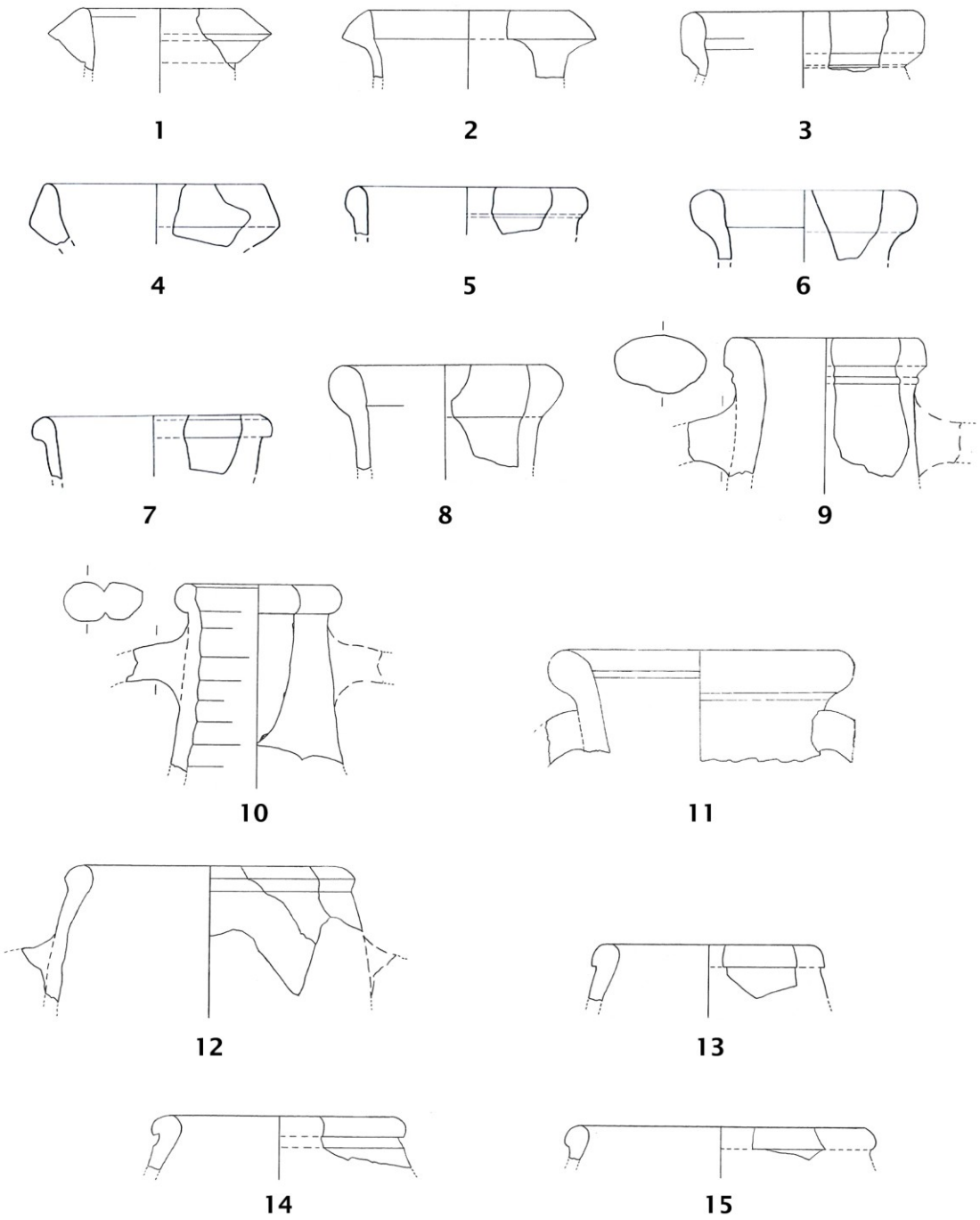
# TABLES OF DRAWINGS[2441]

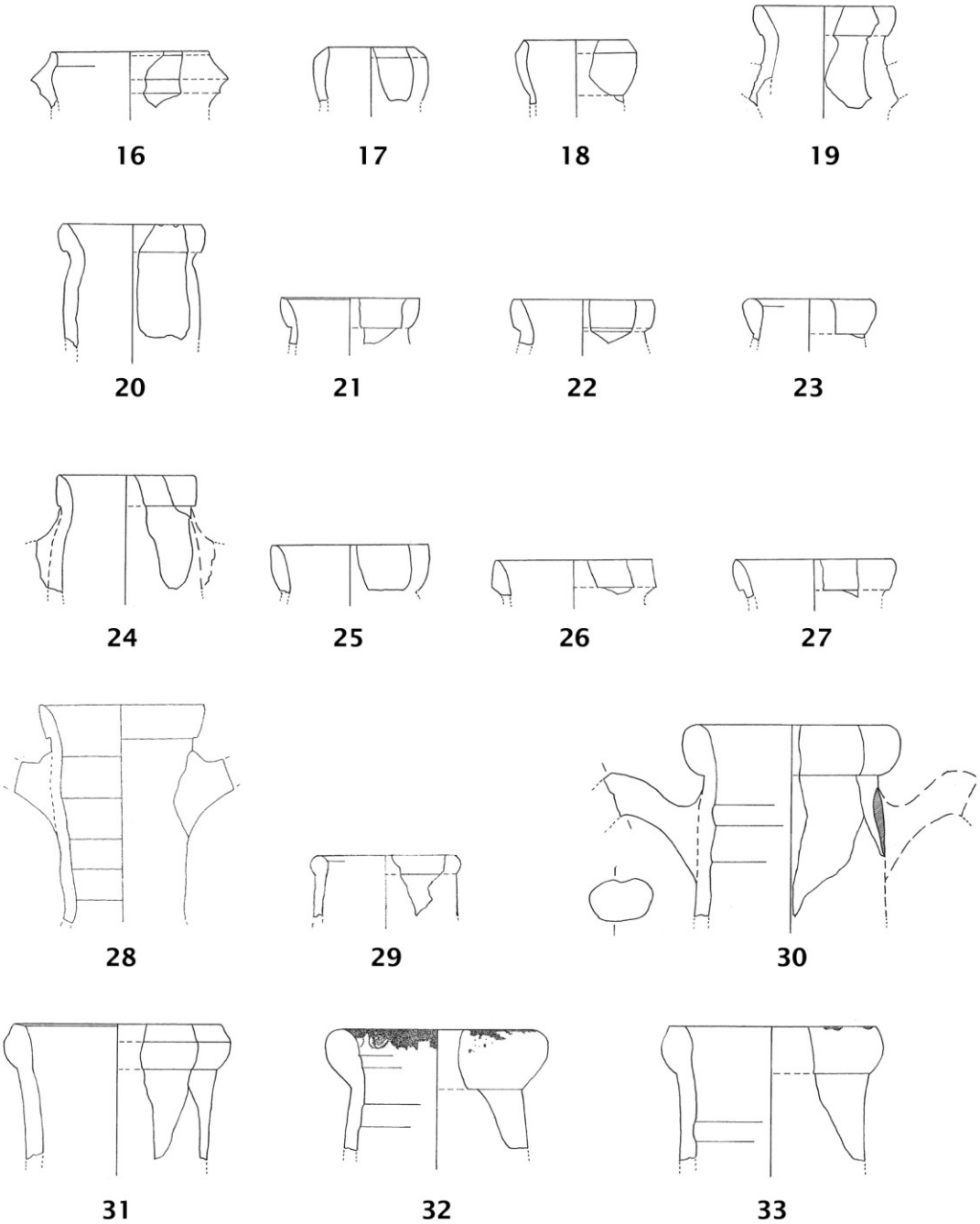
[2441] All drawings in the following Tables, where not otherwise stated, are in scale of 1:4.

# Table I



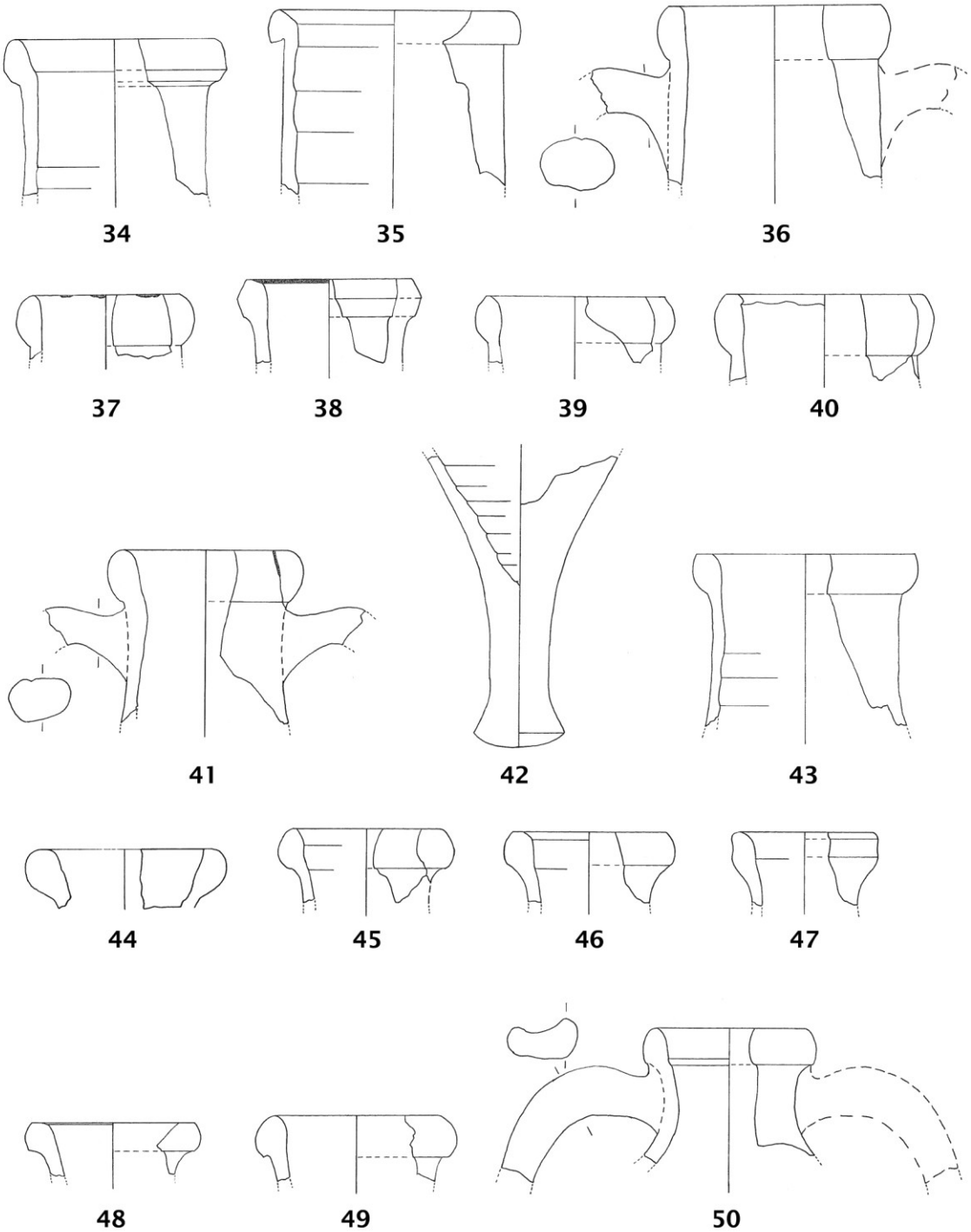

**1** = MGS V; **2** = MGS VI; **3** = MGS II; **4** = Italian Dressel 1; **5** = Italian Dressel 2-4; **6** = Italian Dressel 2-4; **7** = Italian Dressel 2-4; **8** = Italian Dressel 2-4; **9** = Italian Dressel 2-4; **10** = Italian Small Dressel 2-4; **11** = Italian Dressel 21-22; **12** = Italian Dressel 21-22; **13** = Italian Dressel 21-22; **14** = Italian Dressel 21-22; **15** = Italian Dressel 21-22.

# TABLE II



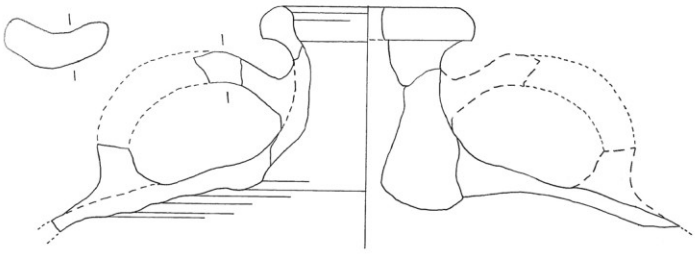

**16** = *Ostia II*, 522/523; **17** = *Ostia II*, 522/523; **18** = *Ostia II*, 522/523; **19** = 'Anfora di Spello'; **20** = 'Anfora di Spello'; **21** = 'Anfora di Spello'; **22** = 'Anfora di Spello'; **23** = 'Anfora di Spello'; **24** = 'Anfora di Spello'; **25** = 'Anfora di Spello'; **26** = 'Anfora di Spello'; **27** = 'Anfora di Spello'; **28** = 'Anfora di Spello'; **29** = Camulodunum 139; **30** = 'Late Campana Dressel 2-4'; **31** = 'Late Campana Dressel 2-4'; **32** = 'Late Campana Dressel 2-4'; **33** = 'Late Campana Dressel 2-4'.

# TABLE III




**34** = 'Late Campana Dressel 2-4'; **35** = 'Late Campana Dressel 2-4'; **36** = 'Late Campana Dressel 2-4'; **37** = 'Late Campana Dressel 2-4'; **38** = 'Late Campana Dressel 2-4'; **39** = 'Late Campana Dressel 2-4'; **40** = 'Late Campana Dressel 2-4'; **41** = 'Late Campana Dressel 2-4'; **42** = 'Late Campana Dressel 2-4'; **43** = 'Late Campana Dressel 2-4'; **44** = Gauloise 4; **45** = Gauloise 4; **46** = Gauloise; **47** = Gauloise 4; **48** = Gauloise 4; **49** = Gauloise 4; **50** = Gauloise 4.

# TABLE IV



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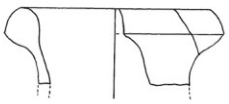

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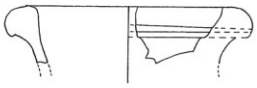
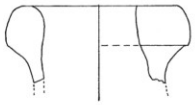


53

54



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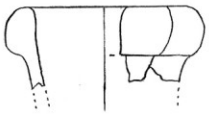
56



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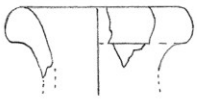

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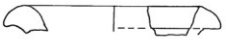
59



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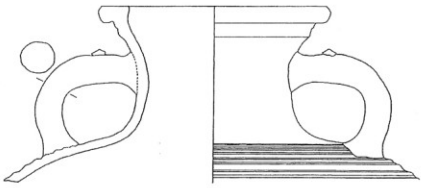

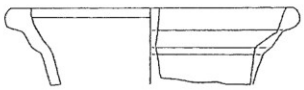

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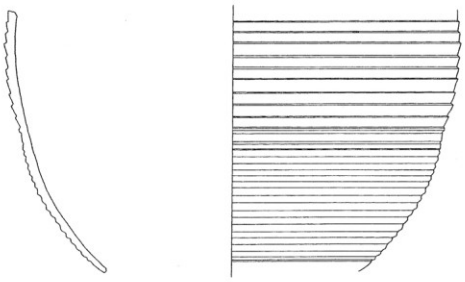

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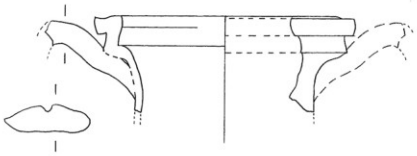
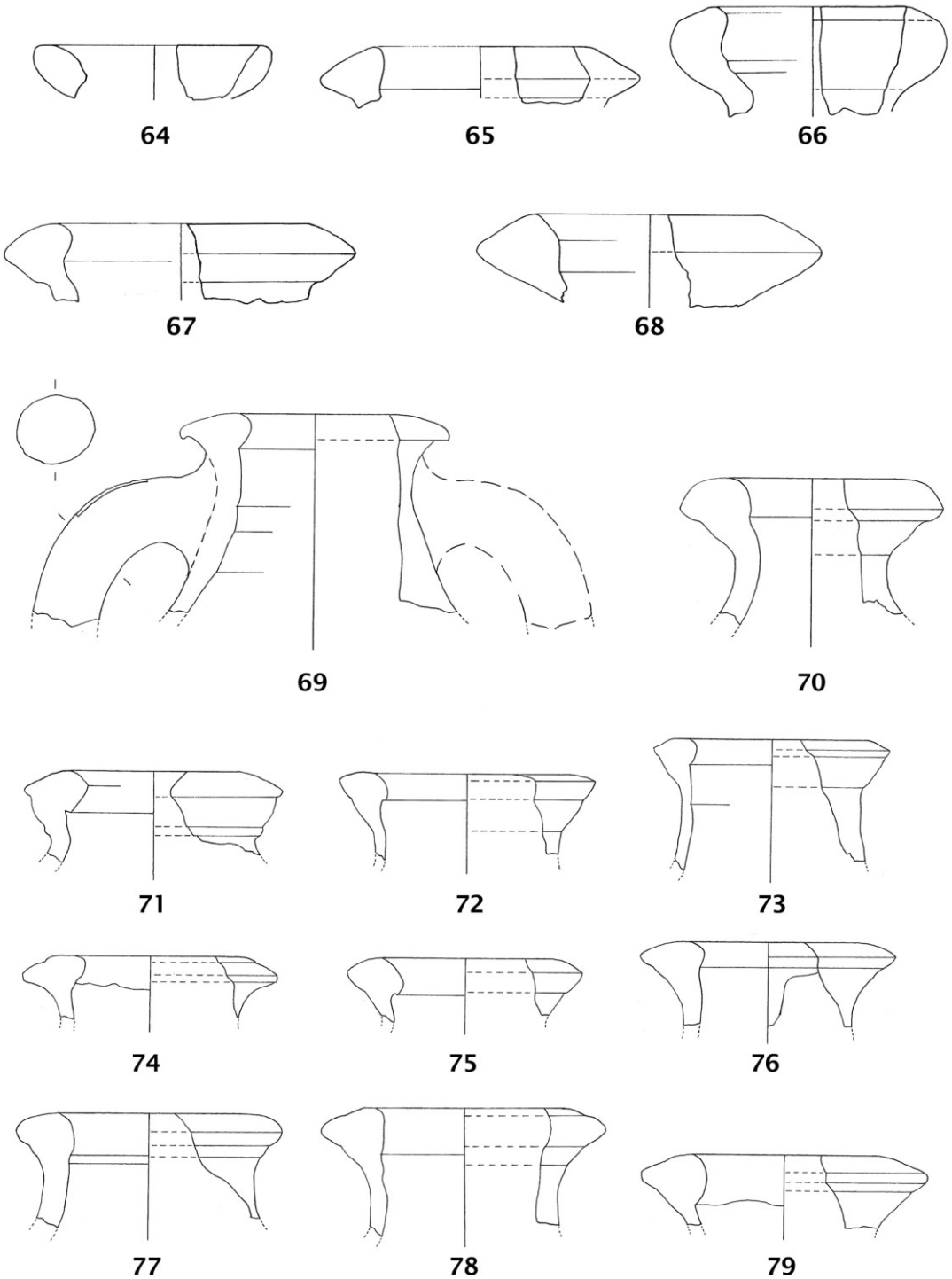


63

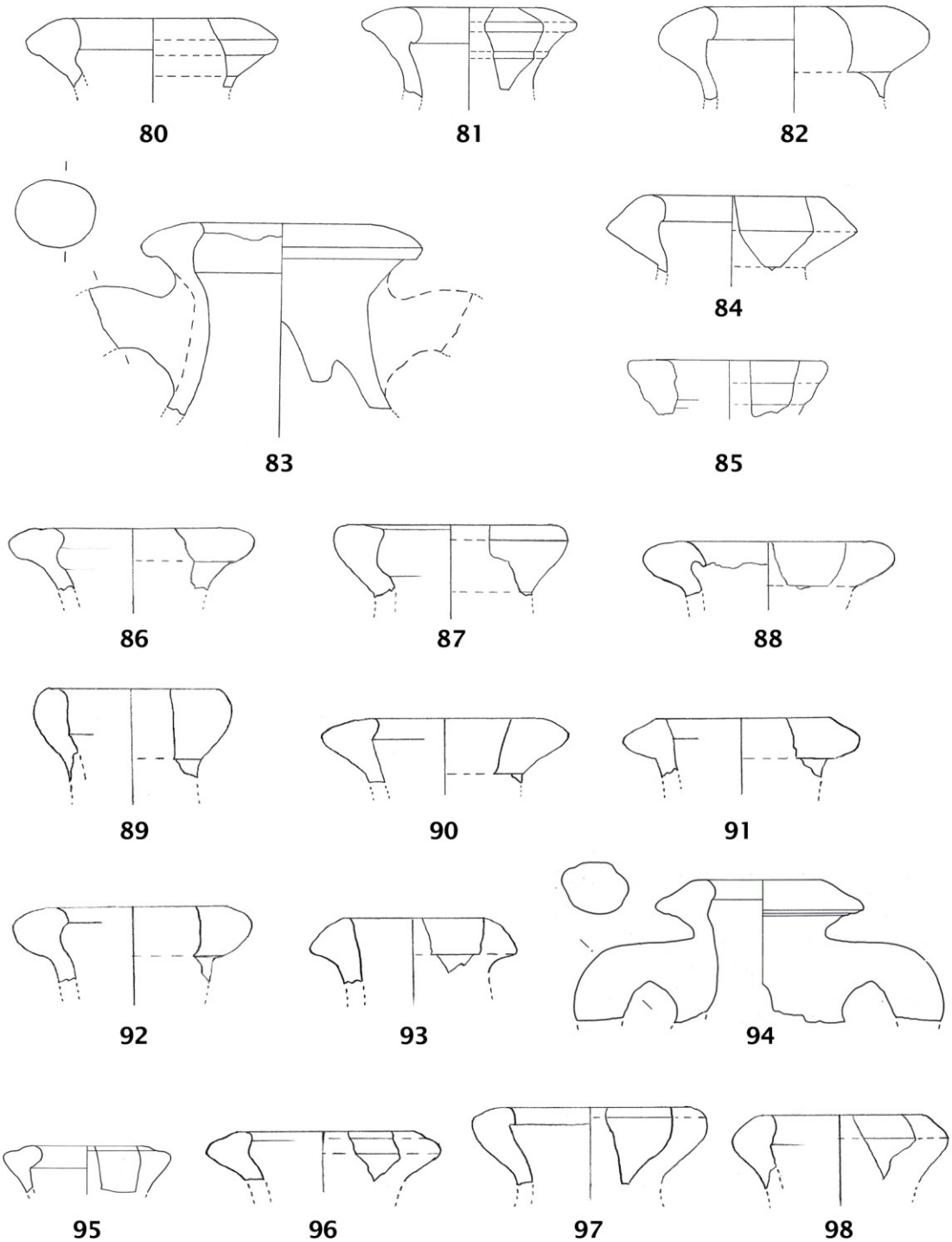
**51** = Gauloise 4; **52** = Gauloise 4; **53** = Gauloise 4; **54** = Gauloise 4; **55** = Gauloise 4; **56** = Gauloise 4; **57** = Gauloise 4; **58** = Gauloise 4; **59** = Gauloise 4; **60** = -Gauloise 3; **61** = Gauloise 3 variety (1:6); **62** = Gauloise 3 similar to n. 61; **63** = Gauloise 3.

# TABLE V



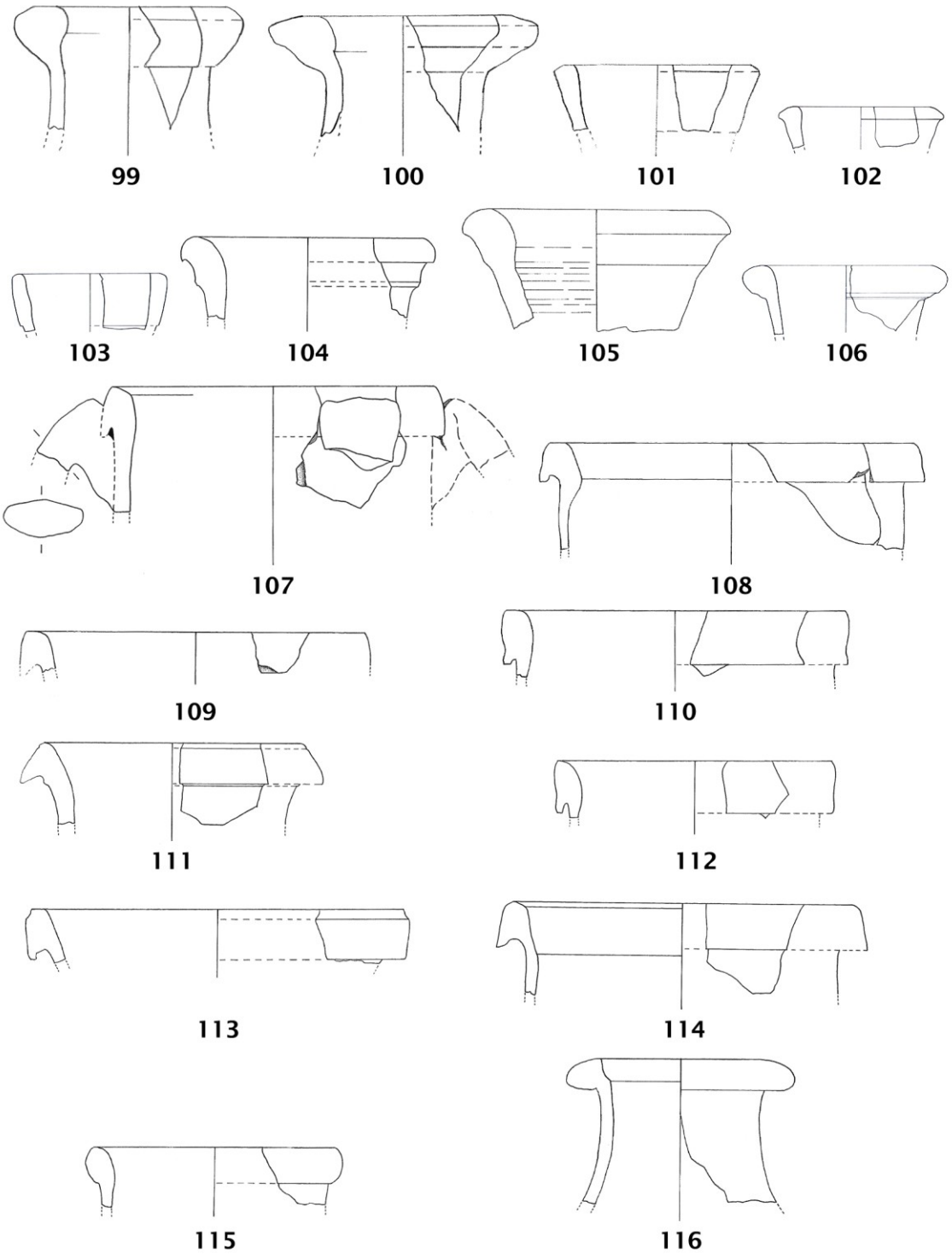

**64** = Dressel 20; **65** = Dressel 20; **66** = Dressel 20; **67** = Dressel 20; **68** = Dressel 20; **69** = Dressel 20 (with stamp *Hermes F.*); **70** = Dressel; **71** = Dressel 20; **72** = Dressel 20; **73** = Dressel 20; **74** = Dressel 20; **75** = Dressel 20; **76** = Dressel 20; **77** = Dressel 20; **78** = Dressel 20; **79** = Dressel 20.

# TABLE VI



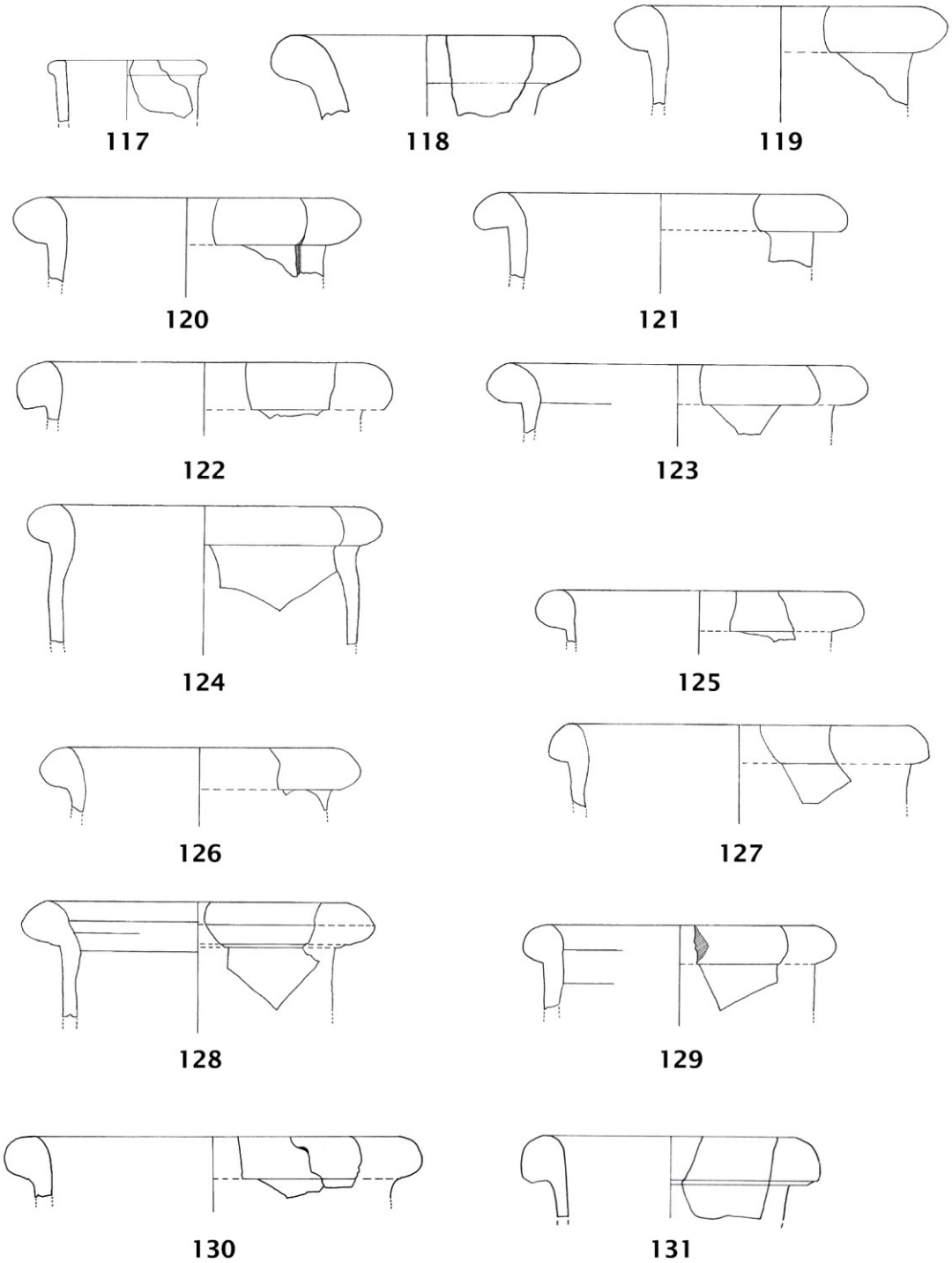

**80** = Dressel 20; **81** = Dressel 20; **82** = Dressel 20; **83** = Dressel 20; **84** = Dressel 20; **85** = Dressel 20; **86** = Dressel 20; **87** = Dressel 20; **88** = Dressel 20; **89** = Dressel 20; **90** = Dressel 20; **91** = Dressel 20; **92** = Dressel 20; **93** = Dressel 20; **94** = Dressel 20; **95** = Dressel 20; **96** = Dressel 20; **97** = Dressel 20; **98** = Dressel 20.

# TABLE VII



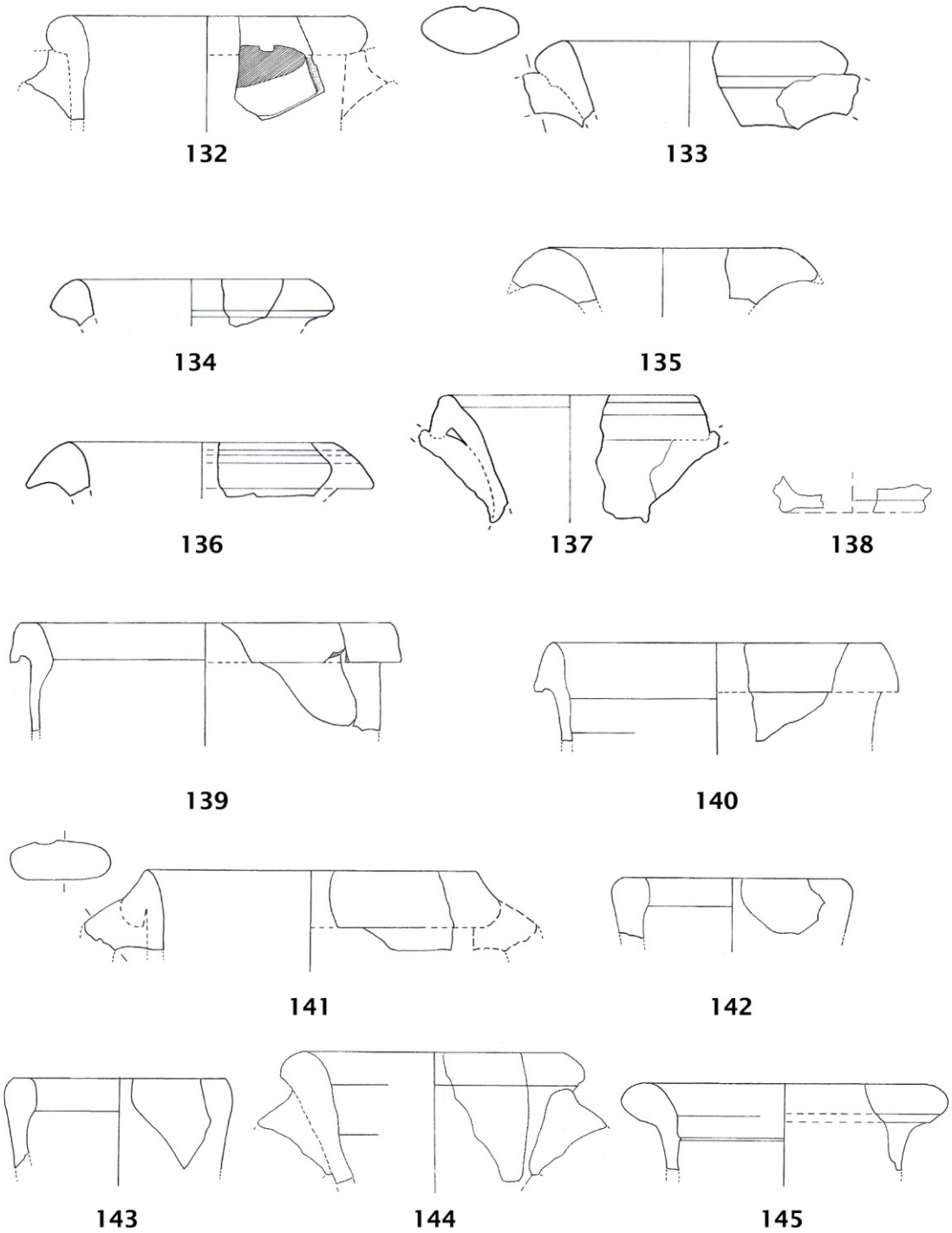

**99** = Dressel 20; **100** = Dressel 20; **101** = Haltern 70; **102** = Haltern 70; **103** = Haltern 70; **104** = Dressel 7-11; **105** = Dressel 7-11; **106** = Baetican Dressel 21-22; **107** = Beltrán IIA; **108** = Beltrán IIA; **109** = Beltrán IIA; **110** = Beltrán IIA; **111** = Beltrán IIA; **112** = Beltrán IIA; **113** = Beltrán IIA; **114** = Beltrán IIA; **115** = Baetican Dressel 2-4; **116** = Baetican Dressel 2-4.

# TABLE VIII



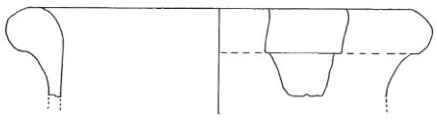

**117** = Baetican Dressel 2-4; **118** = Dressel 14A; **119** = Dressel 14A; **120** = Dressel 14A; **121** = Dressel 14A; **122** = Dressel 14A; **123** = Dressel 14A; **124** = Dressel 14A; **125** = Dressel 14A; **126** = Dressel 14A; **127** = Dressel 14A; **128** = Dressel 14A; **129** = Dressel 14A; **130** = Dressel 14A; **131** = Dressel 14A.

# TABLE IX

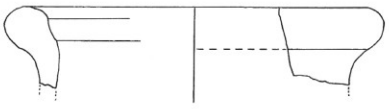



**132** = Dressel 14A; **133** = Dressel 14A; **134** = Dressel 14A; **135** = Beltrán IIB; **136** = Beltrán IIB; **137** = Beltrán IIB; **138** = Dressel 28; **139** = Late Beltrán IIA; **140** = Late Beltrán IIA; **141** = Advanced Beltrán IIB; **142** = Tarraconense 1D; **143** = Tarraconense 1D; **144** = Dressel 2-4 from Tarraconense; **145** = Dressel 14B.

# TABLE X



146



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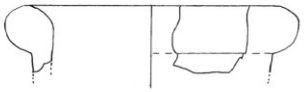

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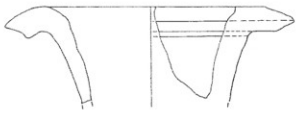
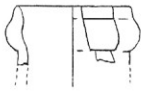


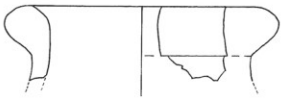
149

150



151

152



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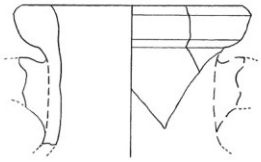

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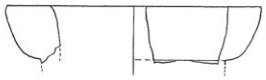

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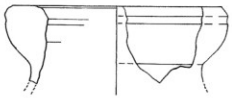

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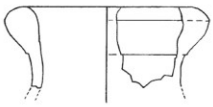

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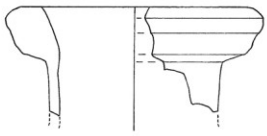

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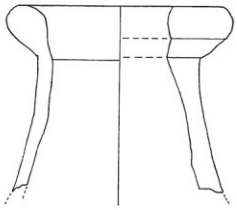

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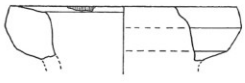

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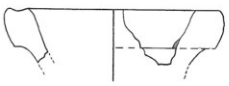

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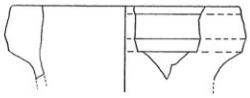

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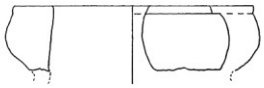

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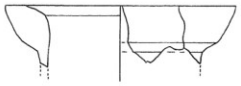

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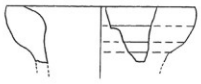
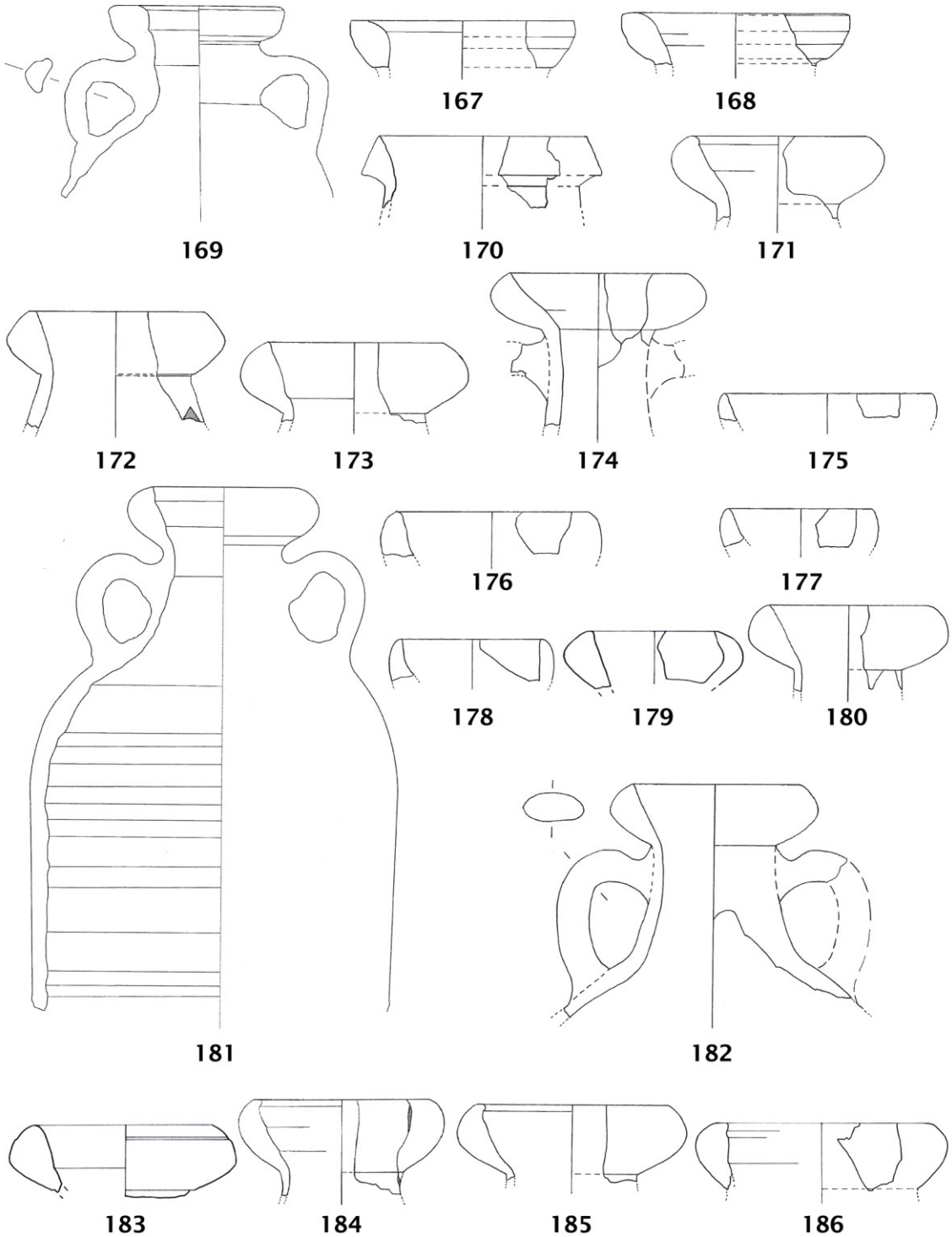


166

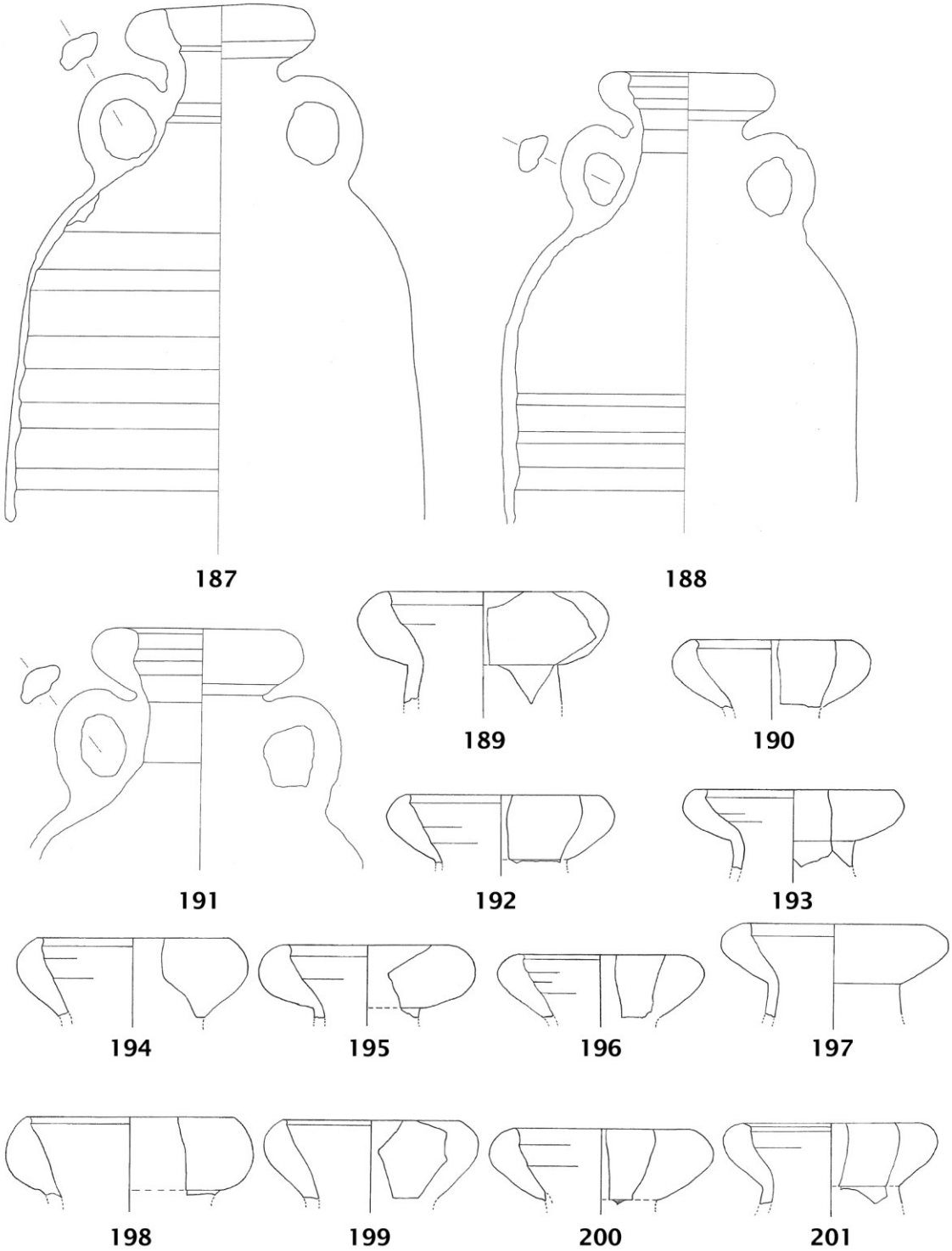
**146** = Dressel 14B; **147** =Dressel 14B; **148** = Dressel 14B; **149** = Van der Werff 3; **150** = African Dressel 2-4;
**151** = African Mid Roman 1; **152** = Ostia Form LIX; **153** = Ostia Form LIX; **154** = Ostia Form LIX;
**155** = Ostia Form LIX; **156** = Ostia Form LIX; **157** = Ostia Form LIX; **158** = Ostia Form LIX;
**159** = Ostia Form LIX; **160** = Ostia Form LIX; **161** = Ostia Form LIX; **162** = Ostia Form LIX;
**163** = Ostia Form LIX; **164** = Ostia form XXIII; **165** = Ostia form XXIII; **166** = Ostia form XXIII.

# TABLE XI



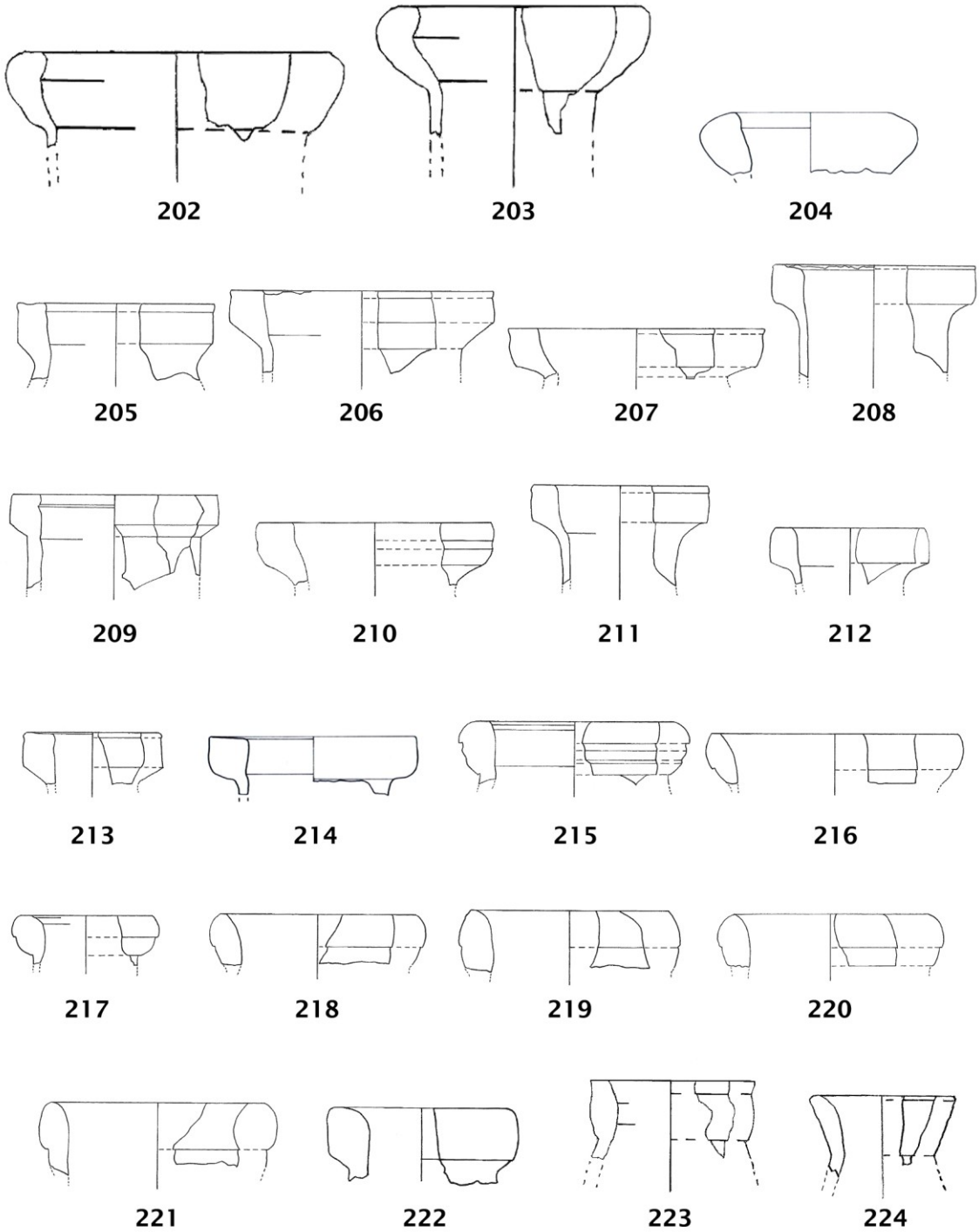

**167** = Ostia form XXIII; **168** = Ostia form XXIII; **169** = Ostia Form XXIII (1:5); **170** = Pupput T700.5; **171** = Africana IA; **172** = Africana IA; **173** = Africana IA; **174** = Africana IA; **175** = Africana IA; **176** = Africana IA; **177** = Africana IA; **178** = Africana IA; **179** = Africana IA; **180** = Africana IA; **181** = Africana IA (1:5); **182** = Africana IA; **183** = Africana IA; **185** = Africana IB; **185** = Africana IB; **186** = Africana IB.

# TABLE XII



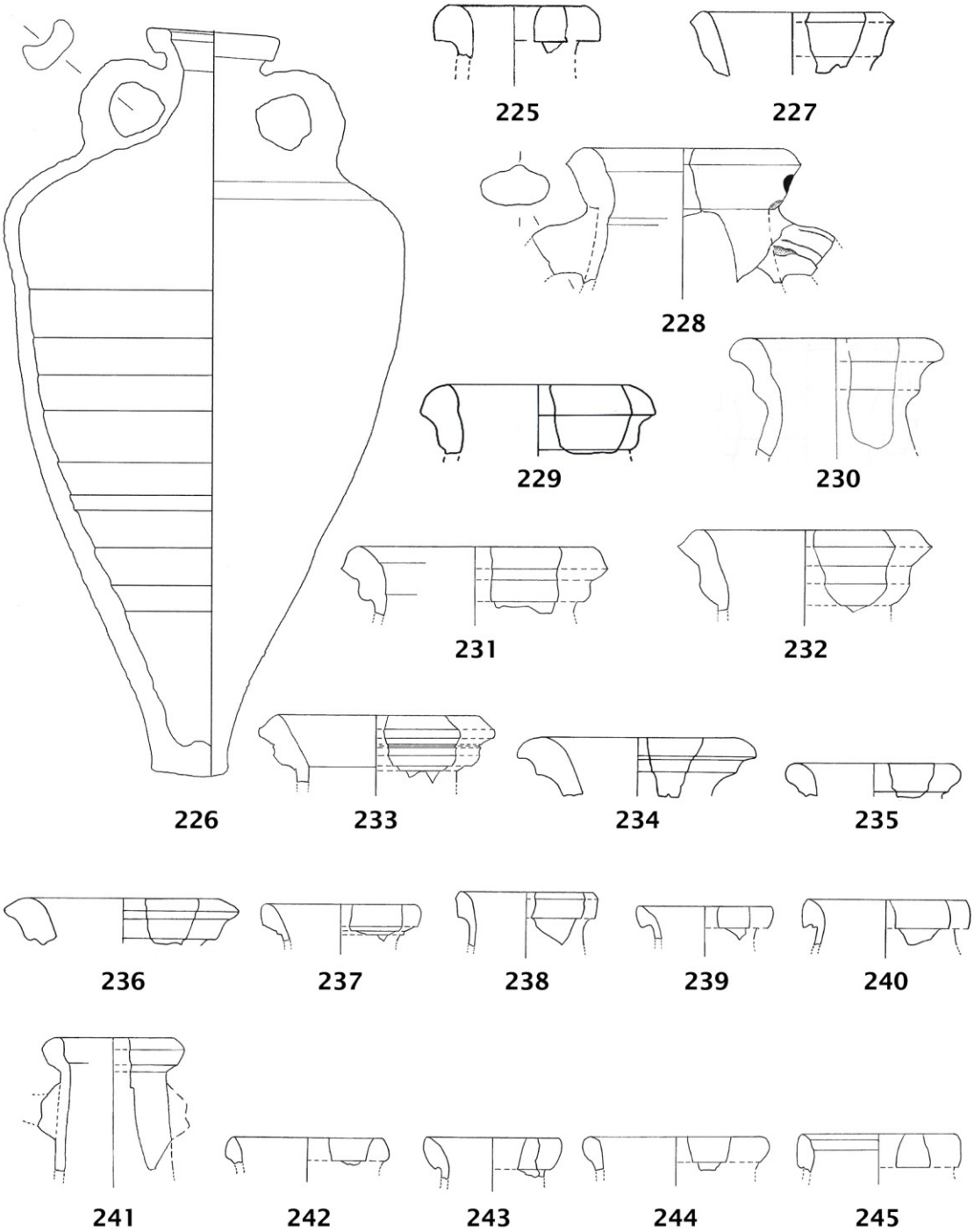

**187** = Africana IB (1:5); **188** = Africana IB (1:5); **189** = Africana IB; **190** = Africana IB; **191** = Africana IB (1:5); **192** = Africana IB; **193** = Africana IB; **194** = Africana IB; **195** = Africana IB; **196** = Africana IB; **197** = Africana IB; **198** = Africana IB; **199** = Africana IB; **200** = Africana IB; **201** = Africana IB.

# TABLE XIII



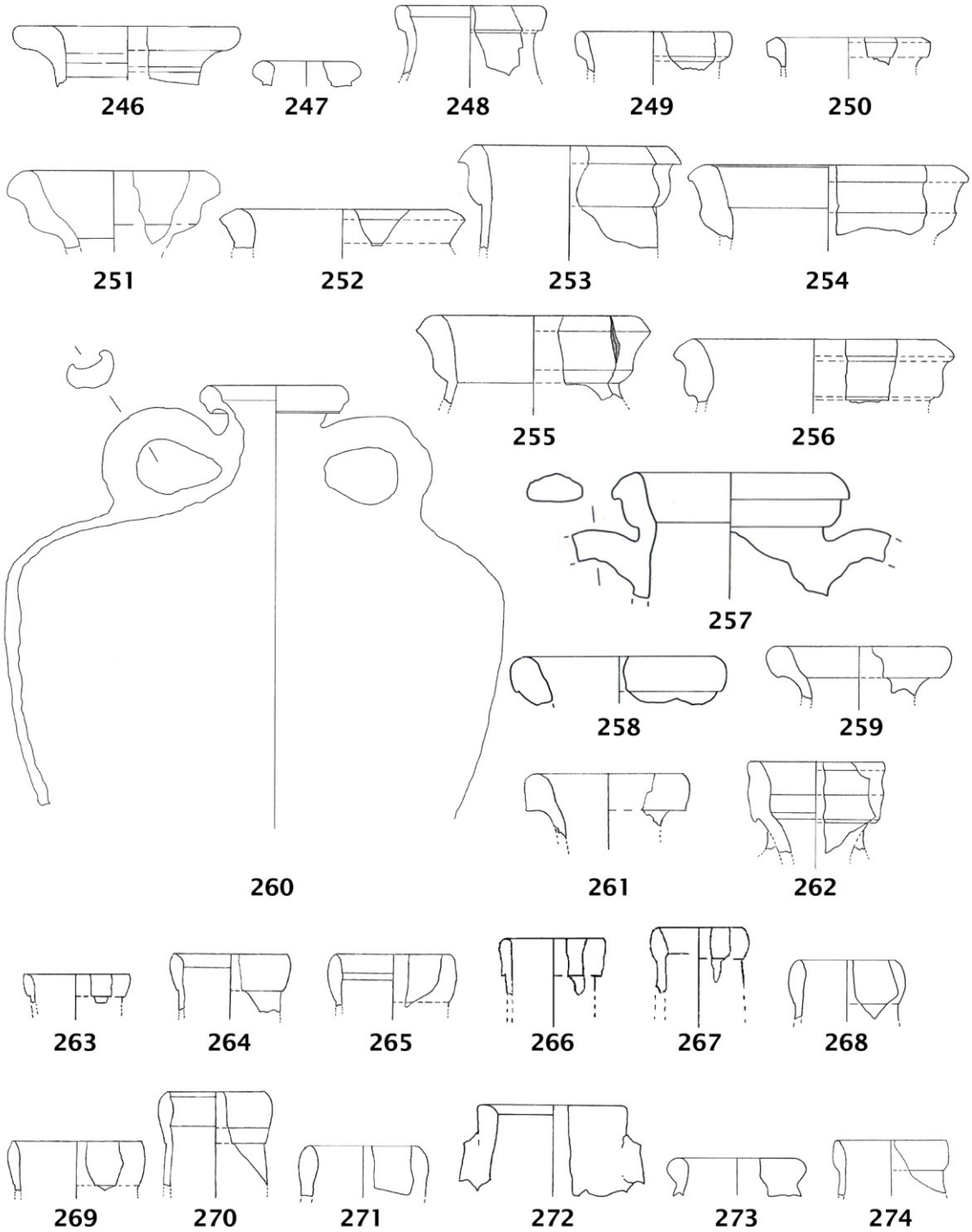

**202** = Africana IB; **203** = Africana IB; **204** = Africana IB; **205** = *Ostia IV*, 447; **206** = *Ostia IV*, 447; **207** = *Ostia IV*, 447; **208** = *Ostia IV*, 447; **209** = *Ostia IV*, 447; **210** = *Ostia IV*, 447; **211** = *Ostia IV*, 447; **212** = *Ostia IV*, 447; **213** = *Ostia IV*, 447; **214** = *Ostia IV*, 447; **215** = Africana IIA1; **216** = Africana IIA1; **217** = Africana IIA1; **218** = Africana IIA1; **219** = Africana IIA1; **220** = Africana IIA1; **221** = Africana IIA1; **222** = Africana IIB; **223** = Africana IID; **224** = Keay XXV (Africana III).

# TABLE XIV



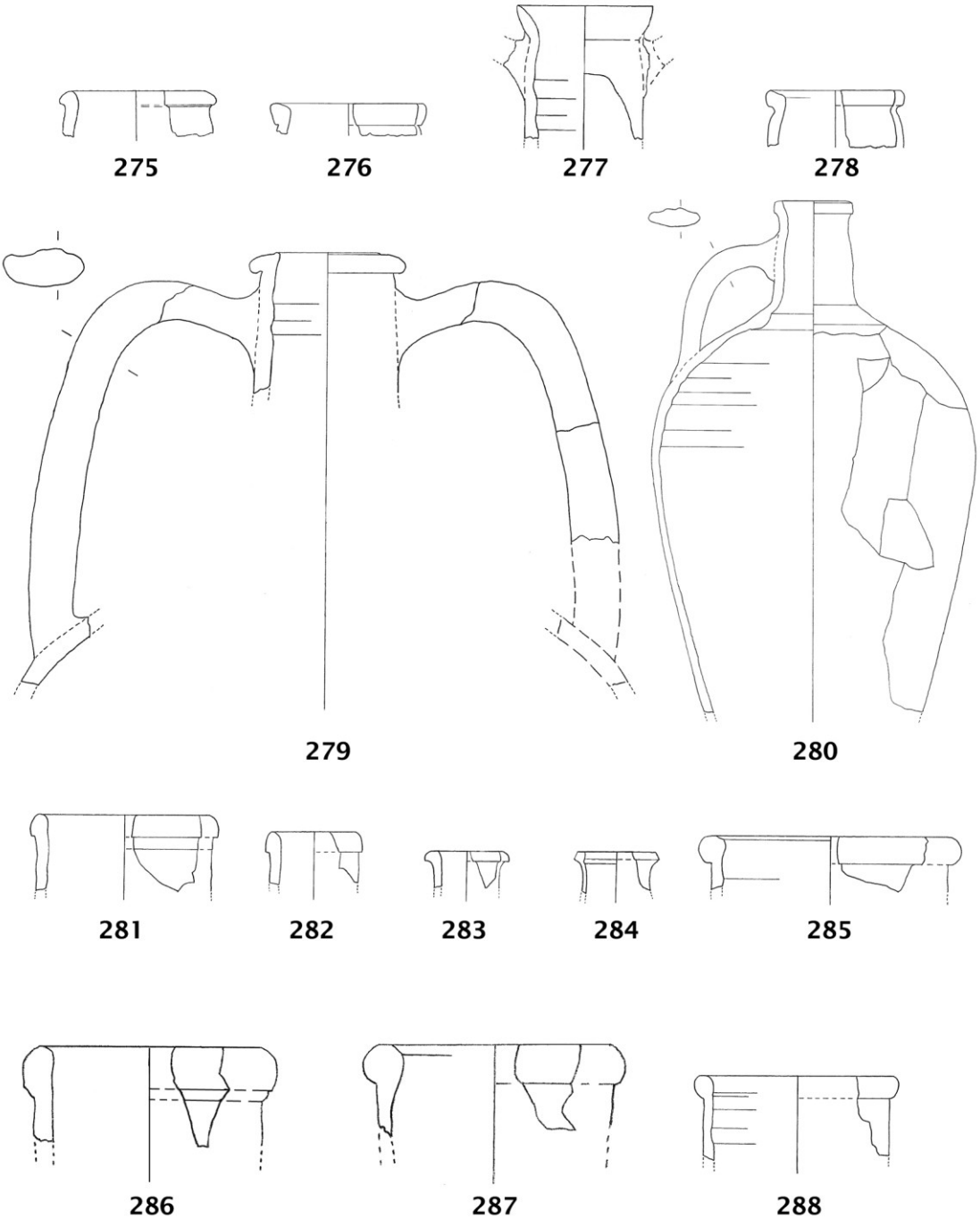

**225** = Keay XXXVA; **226** = African Dressel 30 - Bonifay type 60 (1:5); **227** = Tripolitana I; **228** = Tripolitana I; **229** = Tripolitana I; **230** = Tripolitana II; **231** = Tripolitana II; **232** = Tripolitana II; **233** = Tripolitana II; **234** = Tripolitana II; **235** = Tripolitana II; **236** = Tripolitana II; **237** = Mau XXXV; **238** = Mau XXXV; **239** = Mau XXXV; **240** = Mau XXXV; **241** = Mau XXXV; **242** = Mau XXXV; **243** = Mau XXXV; **244** = Mau XXXV; **245** = Mau XXXV.

# TABLE XV



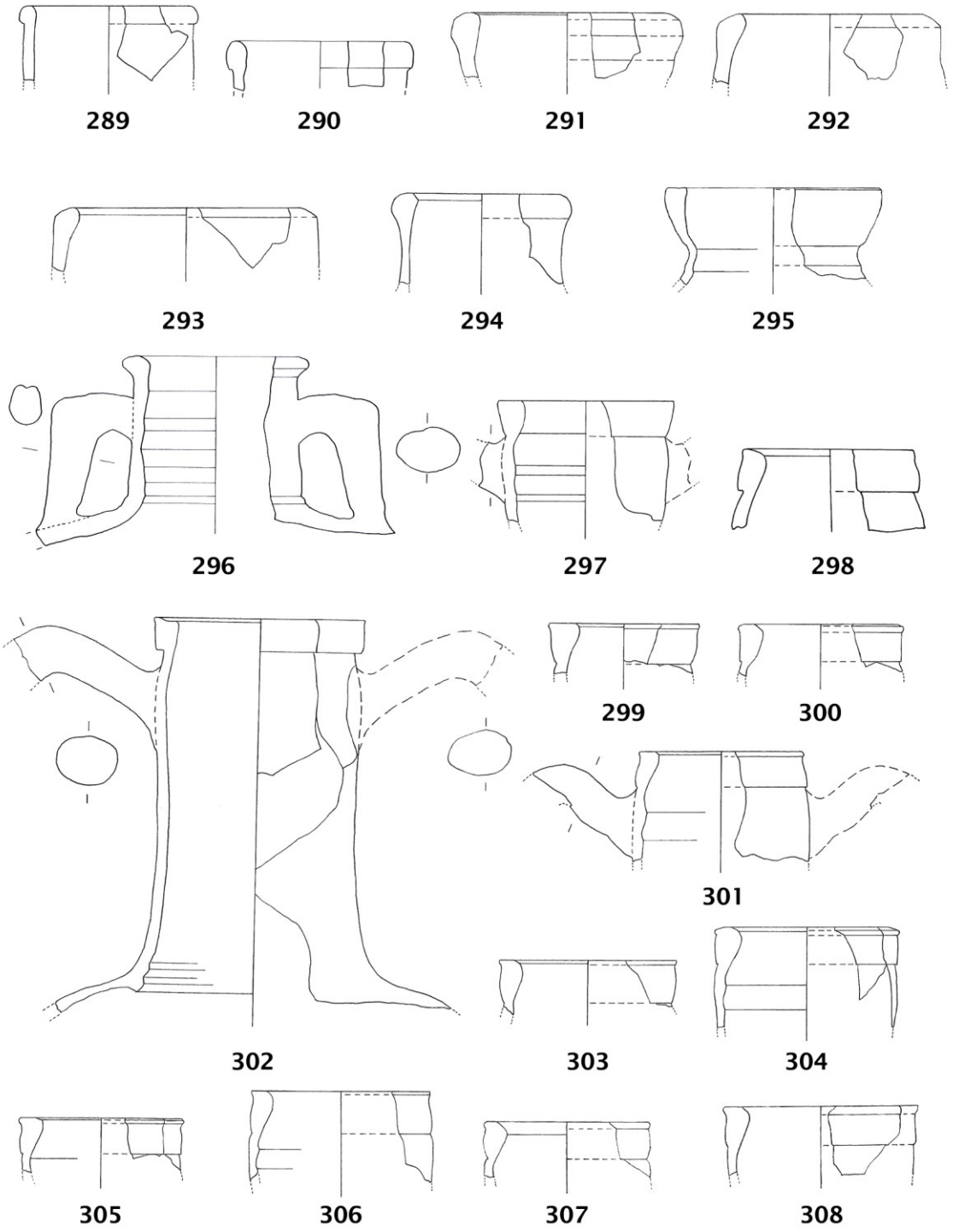

**246** = Mau XXXV; **247** = Mau XXXV; **248** = Mau XXXV; **249** = Mau XXXV; **250** = Mau XXXV;
**251** = Tripolitana III; **252** = Tripolitana III; **253** = Tripolitana III; **254** = Tripolitana III; **255** = Tripolitana III;
**256** = Tripolitana III; **257** = Tripolitana III; **258** = Tripolitana III; **259** = Mauretanian Dressel 30 = Keay IA;
**260** = Mauretanian Dressel 30 = Keay IA (1:5); **261** = Mauretanian Dressel 30 = Keay IA;
**262** = Mauretanian Dressel 30 = Keay IB; **263** = Cretoise 7; **264** = Cretoise 1a; **265** = Cretoise 1a;
**266** = Cretoise 1a; **267** = Cretoise 1a; **268** = Cretoise 1a; **269** = Cretoise 1b; **270** = Cretoise 1b;
**271** = Cretoise 1b; **272** = Cretoise 1b; **273** = Cretoise 1d; **274** = Cretoise 1.

# TABLE XVI



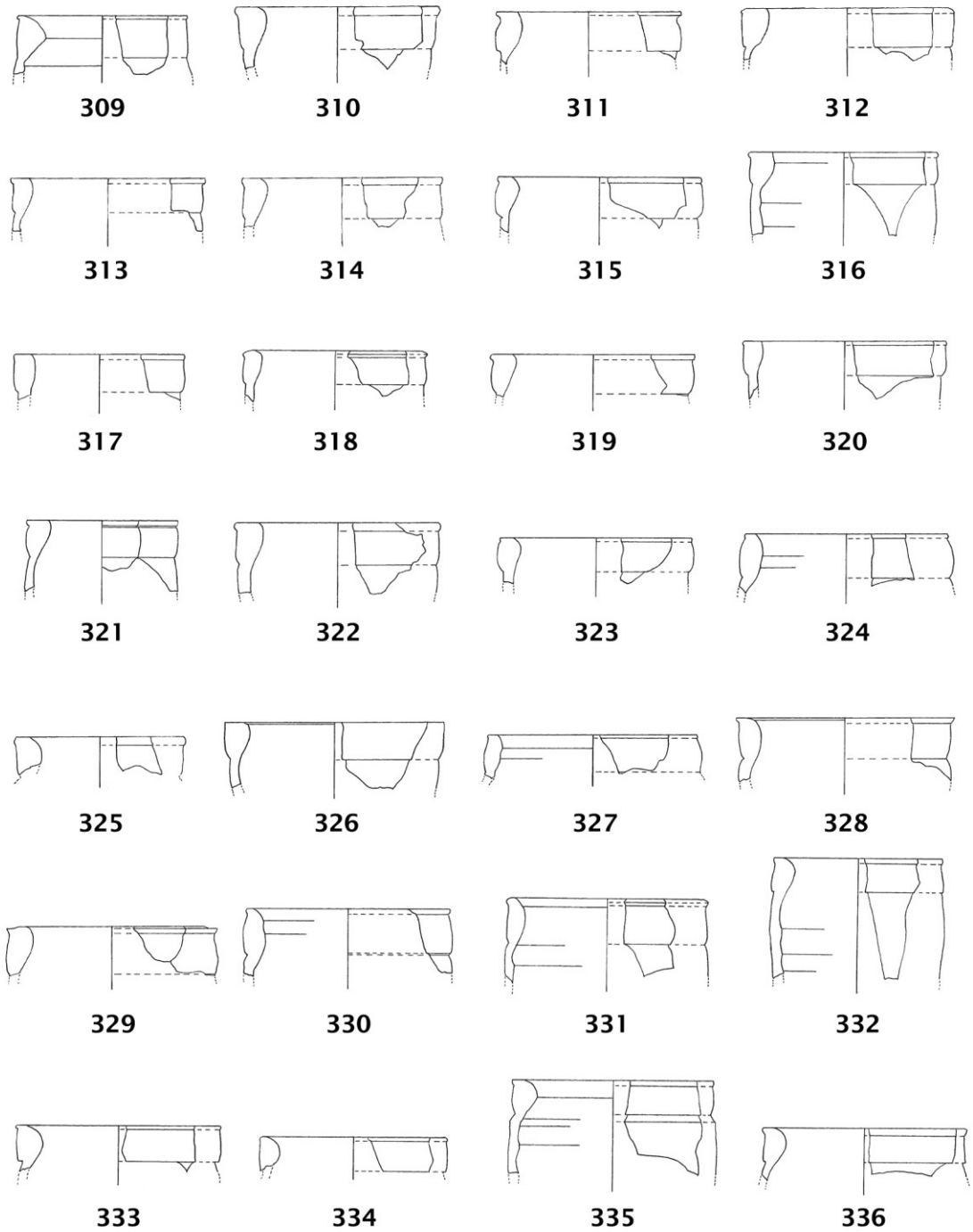

**275** = Cretoise 2; **276** = Cretoise 4a; **277** = Cretoise 4a; **278** = Cretoise 4c; **279** = Zeest 94 = Shelov D;
**280** = Agora F65/66; **281** = Agora F65/66; **282** = Agora F65/66; **283** = Agora F65/66;
**284** = Agora F65/66 / Late Roman 3; **285** = Dressel 2-5 from Meander Valley;
**286** = Dressel 2-5 from Meander Valley; **287** = Dressel 2-5 from Meander Valley;
**288** = Dressel 2-5 from the Aegeum/Microasiatic area.

# TABLE XVII



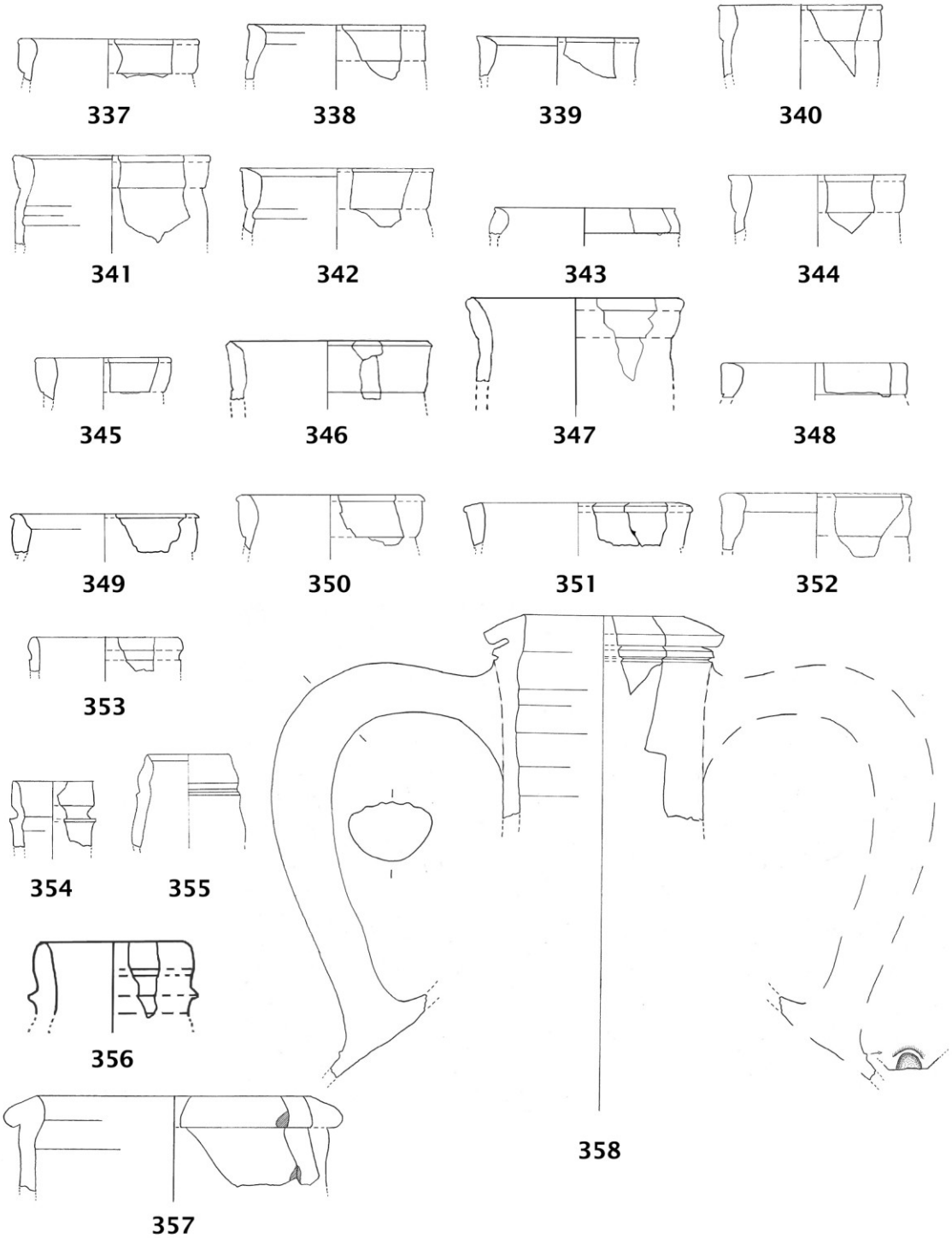

**289** = Dressel2-5 from the Aegeum/Microasiatic area; **290** = Dressel2-5 from the Aegeum/Microasiatic area;
**291** = Dressel 24=Middle Roman 18=Zeest 90; **292** = Dressel 24=Knossos 15;
**293** = Dressel 24=Knossos 15; **294** = Dressel 24=Middle Roman 18; **295** = Dressel 24=Middle Roman 18;
**296** = Mau XXVII-XXVIII from the Aegeum/Microasiatic area; **297** = Kapitän I; **298** = Kapitän I;
**299** = Kapitän I; **300** = Kapitän I; **301** = Kapitän I; **302** = Kapitän I; **303** = Kapitän I; **304** = Kapitän I;
**305** = Kapitän I; **306** = Kapitän I; **307** = Kapitän I; **308** = Kapitän I.

# TABLE XVIII



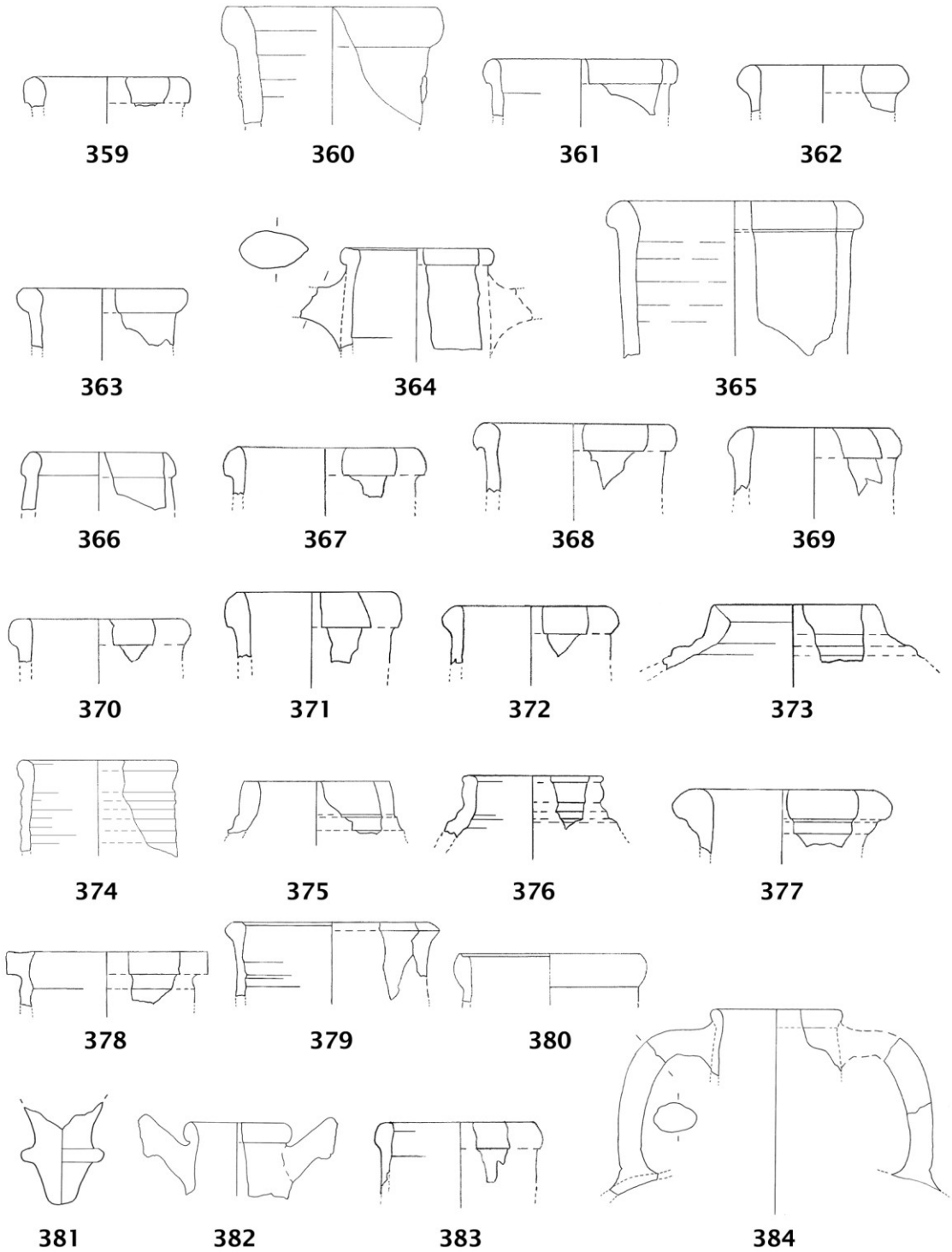

**309** = Kapitän I; **310** = Kapitän I; **311** = Kapitän I; **312** = Kapitän I; **313** = Kapitän I; **314** = Kapitän I; **315** = Kapitän I; **316** = Kapitän I; **317** = Kapitän I; **318** = Kapitän I; **319** = Kapitän I; **320** = Kapitän I; **321** = Kapitän I; **322** = Kapitän I; **323** = Kapitän I; **324** = Kapitän I; **325** = Kapitän I; **326** = Kapitän I; **327** = Kapitän I; **328** = Kapitän I; **329** = Kapitän I; **330** = Kapitän I; **331** = Kapitän I; **332** = Kapitän I; **333** = Kapitän I; **334** = Kapitän I; **335** = Kapitän I; **336** = Kapitän I.

# TABLE XIX




**337** = Kapitän I; **338** = Kapitän I; **339** = Kapitän I; **340** = Kapitän I; **341** = Kapitän I; **342** = Kapitän I; **343** = Kapitän I; **344** = Kapitän I; **345** = Kapitän I; **346** = Kapitän I; **347** = Kapitän I; **348** = Kapitän I; **349** = Kapitän I; **350** = Kapitän I; **351** = Kapitän I; **352** = Kapitän I; **353** = Early Kapitän II; **354** = Kapitän II; **355** = Kapitän II; **356** = Kapitän II; **357** = Mau XXXVII-XXXVIII from Pamphilia; **358** = Zeest 80.

# TABLE XX




**359** = Dressel 2-4 from Pamphilia; **360** = Camulodunum 184; **361** = Camulodunum 184;
**362** = Camulodunum 184; **363** = Camulodunum 184; **364** = Camulodunum 184; **365** = Camulodunum 184;
**366** = Camulodunum 184; **367** = Camulodunum 184; **368** = Camulodunum 184; **369** = Camulodunum 184;
**370** = Camulodunum 184; **371** = Camulodunum 184; **372** = Camulodunum 184; **373** = Kingsholm 117;
**374** = Camulodunum 189; **375** = Camulodunum 189; **376** = Camulodunum 189; **377** =Pompei 5;
**378** = Schöne V; **379** = Cilician Mau XXVII-XXVIII; **380** = Mau XXXVIII; **381** = Mau XXXVIII;
**382** = Dressel 2-5 from Cos; **383** = Dressel 2-5 from Cos; **384** ='Terme di Elagabalo' Form 1 (1:5).