

CHAPTER 11

Wine and Amphorae in Campania in the Hellenistic Age: The Case of Ischia

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1 Introduction

This chapter presents research on Graeco-Italic amphorae from Ischia, Lacco Ameno (ancient Pithekoussai) (Fig. 11.1) and other areas in south-central Italy that were part of the *Immensa Aequora* Project, which consists of a series of interconnected sub-projects.¹ Their purpose is to study the production and distribution of ceramics made in south-central Tyrrhenian Italy, using archaeological and archaeometric techniques, with a focus on the period between the 4th century BC and the 1st century AD. This period encompasses the initial stages of Roman commerce in the course of Rome's rise to the stature of a Mediterranean power, which is still little understood. Beginning in the 4th century BC, the conquests of the Roman Republic had created conditions for enrichment as well as a new powerful class that could benefit from the opportunities offered by expansion.² The project's final goal is to study and reconstruct aspects of the ancient economy, starting with ceramics, whilst maintaining an overall historical perspective on the archaeological and archaeometric data.³

Archaeology has produced little real information so far on Campanian wine between the 4th and 3rd centuries BC, particularly regarding the identities of the producers and sellers, and the role played by Rome.⁴ Ancient Graeco-Italic

¹ The results of studies of the pottery produced in this area are still awaiting publication in a number of archaeological and archaeometric fora (i.e. Olcese (2010); Olcese et al. (2013); Olcese (2015)). For the necropoleis of Pithekoussai, see the fundamental works of Buchner and Ridgway (1993) and Ridgway (1984). For the *Immensa Aequora* Project, see www.immensaaequora.org.

² Clemente (1990).

³ This project arose from discussions with Maurice Picon. A number of archaeometrists, including I. Iliopoulos, G. Montana, G. Thierrin Michael and V. Thirion Merle, participated in this project, collaborating over various time periods and working from different perspectives.

⁴ Of this opinion are Van der Mersch (2001), Morel (1986) and Tchernia (1986), who emphasized that certain aspects of the production of wine in 3rd century BC Campania are not clear; in particular, the identity of the producers, that of the sellers, and the role played by Rome.



FIGURE 11.1 *Map of Ischia (after Olcese (2010, 11)). 1: Lacco Ameno, Santa Restituta; 2: Lacco Ameno, Monte Vico; 3: Lacco Ameno, Baia di San Montano; 4: Casamicciola; 5: Cartaromana; 6: Punta Chiarito.*

amphorae are important indicators of the economic and commercial conditions of this period, in which Rome turned its attention south and extended its influence to Neapolis and the Gulf of Naples, acting as a stabilizing force in the Tyrrhenian Sea. During this period Neapolis, taking advantage of its alliance with Rome following the *Foedus Aequum* of 326 BC, saw its foreign trade relations notably expand, a fact evidenced also by coinage and by an increase in activity at the Neapolitan mint.⁵

Studies of the Graeco-Italic amphorae produced at Ischia, specifically archaeometric analyses, and comparisons with amphorae from Neapolis have generated data on the production and trade of wine in the Gulf of Naples as well as on the initial phase of Roman economic expansion in the western Mediterranean. In the following pages, results of the Ischia studies will be discussed in the form of preliminary observations on the production site of Santa Restituta, the amphorae produced there, their stamps, and the implications these finds

⁵ On the social and economic history of Neapolis, see Lepore (1952). On the coinage of Neapolis, see Cantilena et al. (1986).

have for our understanding of the systems of production and exchange of the late 4th and 3rd centuries BC, including the role of local elites and Rome. In the conclusion, I will also comment on the questions that have emerged from this study and require more exhaustive research by specialists from different fields, supplemented by new investigations that are not limited to the study of material culture.

2 Graeco-Italic Amphorae from Ischia and the Gulf of Naples

Many areas along the Tyrrhenian coast of Italy were involved in the production of wine, and in recent years there have been many efforts to study them. Campania and the broader region of the Gulf of Naples as the point of origin of Graeco-Italic amphorae (and more importantly, of the high quality wine they contained) increasingly asserted themselves between the late 4th and the early 3rd century BC. The Gulf of Naples formed a unique enclave for centuries, thanks to its favourable climate, the fertility of its land, its strategic position, and its artisanal tradition, which was well developed since the time of the region's colonization. Pithecusae was known for its fertility, was at the centre of very busy trade routes, having been rightly labelled as "the gateway to the rich traffic of the Tyrrhenian".⁶

Ischia's *eukarpia* is mentioned in ancient sources,⁷ and the island's influence on wine production has been significant until recent times (Fig. 11.2). A growing body of research on features associated with wine production on the island is currently unearthing new data. One may reasonably assume that amphora production continued at Ischia from the Archaic period up until late Antiquity, albeit with some interruptions.⁸ More generally, all types of Graeco-Italic amphorae, from Types II to VI,⁹ were produced in the Gulf of Naples. Their production may have increased from the second half of the 4th century BC onwards in the wake of the spread of the *Aminea* vine.¹⁰

At Neapolis, grape vines were cultivated on the hills above the city, and the wine-making traditions of the Gulf (probably introduced during the Euboean

6 Raviola (1995, 122).

7 *Strabo* V, IV.9; Mele (1986, 360–361 and 2000, 39–43).

8 Graeco-Italic amphorae of Type II have not yet been found, and the production of Type VI is still unconfirmed.

9 On the production of MGS (Magna Grecia, Sicilia) II amphorae in Naples, see Febbraro and Giampaola (2011/12); Tagliamonte (2010).

10 Mele (1986, 360–361); *Aminea*, *RE* I, II, 1835–1837.



FIGURE 11.2 *Vineyards on Ischia (after Olcese (2010, 17))*

colonization as the cult of Dionysus and the terminology related to wine suggest) remained alive and present throughout the Republican period.¹¹ In the 4th and 3rd centuries BC, specialized arboreal cultivation was widespread not only in the coastal regions of Campania, but also in the nearby territories of Benevento and Volturno.¹²

The relationship between Ischia and Neapolis emerged clearly from a study of Ischian pottery as well as from ancient sources, which claimed that a connection existed between the two centres. Ongoing research will clarify whether the first phase of Ischian production (associated with the ancient Graeco-Italic Types III and IV identified at the kilns of Santa Restituta) also involved Neapolitan workshops as is suggested by certain deposits found recently during excavations for the construction of the metro line.¹³ Other information may also emerge from the new studies, specifically on the administrative and economic relations between Neapolis and Ischia in the 4th and 3rd century BC.

¹¹ Mele (1986, 360–361 and 2000).

¹² Cerchiai (1995, 201 and 137). The existence of wine production in the Archaic period has already been documented for the region of Stabiae and the area of Deserto di S. Agata dei Due Golfi on the Sorrentine peninsula.

¹³ Currently studied by L. Pugliese and S. Febbraro. For the Graeco-Italic amphorae of Neapolis, see now Pugliese (2014).

3 The Artisans' Quarter of Santa Restituta and Graeco-Italic Amphorae

The artisans' quarter of Santa Restituta at Lacco Ameno, already established at the time of the Euboean colonization,¹⁴ was probably renovated and expanded in the second half of the 4th century BC. The expansion included the establishment of new kilns for the production of pottery, bricks and amphorae.¹⁵ The position of the kilns, close to the sea, the hills where the grape production took place, and near suitable clay beds, fits into a logistical production pattern already identified (also for the Hellenistic period) in other areas as well as on some of the Greek islands.¹⁶

Graeco-Italic amphorae dominate in the area of Santa Restituta with analyzed fragments belonging to Types III, IV, V and VI (fig. 11.3). Most of the material, however, consists of fragmentary stamped handles that are often unidentifiable as to the exact type. Some identical stamps from other sites, Neapolis, Aleria, Gela and Punic Sicily, as well as in North Africa, in addition to those documented in the Filicudi-F wreck discovered off the Aeolian islands, help to assign these stamps to amphorae of recognizable typology.¹⁷

Chemical and mineralogical analyses have revealed that the amphorae found at Ischia and Neapolis differ in composition from those found in other geographic areas of Campania; e.g. those from the area of Vesuvius, or north-central Campania are distinct in several respects.¹⁸

14 As thermoluminescence analyses of some kilns seem to confirm (Martini and Silinka in Olcese (2017).

15 Olcese et al. (1996); Olcese (2010 and 2015). Data on urban development in Campania in the late 4th century BC were collected for the Sarno Valley and Pompeii (see De Caro (1986) and Olcese (2017) for the new data). Pompeii was one of the *civitates foederatae* of the Roman Republic. New excavations have unearthed some kilns under the Casa dei Cubicoli, which were turning out rooftiles (Pesando (2010 with bibliography)).

16 For Rhodes (but also Thasos and Cnidos) see Empereur and Picon (1986); Picon and Garland (1986).

17 Graeco-Italic Amphorae Type IV, with some stamps that correspond to those of Ischia and Neapolis. For instance, the stamp "ZΩ" is well attested at Ischia but only on fragmentary handles; nonetheless it was possible to link it to MGS Type IV, thanks to an unbroken amphora from the cargo of the Filicudi-F shipwreck (Olcese (2010, and fig. 11.6 infra).

18 For the composition of amphorae from the Vesuvian area, see Peacock and Williams (1986) and Thierrin Michael (1992). For those from north-central Campania, see Olcese et al. (2013) and Picon (1988, 255).

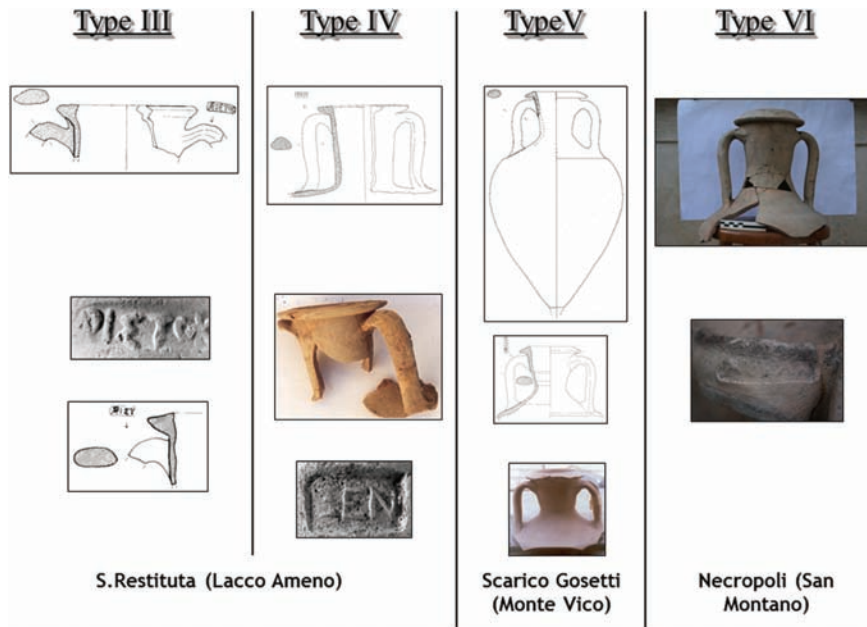


FIGURE 11.3 *Typology of the Graeco-Italic amphorae found in Ischia (after Olcese (2010, 24))*

Chemical analyses (XRF) of Campanian amphorae¹⁹ revealed the existence of groups and subgroups pointing to production at multiple workshops. One of these, Group D, can be attributed to Ischia based on archaeological and chemical laboratory data (Fig. 11.4). The other group of samples, which is labelled E and F and possibly includes material from multiple workshops, is derived from amphorae found at Naples (discovered during the excavation of the Metro trenches) as well as other parts of the Mediterranean.

Mineralogical analyses proved to be crucial, since they support the connection between the chemically defined groups and their possible sites of origin. Based on the initial analyses, the amphora in circulation may be attributed to the Gulf of Naples in general and perhaps to Naples itself. However, the question of the origin of the clay is still unanswered.

The ascription of some Graeco-Italic amphorae to the Gulf of Naples from 3rd century BC shipwrecks (i.e. the Tour Fondue and Bon Capò wrecks, perhaps also Meloria-A), which has been confirmed by mineralogical analyses, is significant as it provides evidence for the distribution of wine from Campa-

¹⁹ The complete dataset has been presented in Olcese (2010, Chapters VII/VIII). See also Thirion Merle (2010) and Iliopoulos (2010).

nia, probably from Naples, to the north-western part of the Mediterranean and along the routes leading to France and the Iberian Peninsula. To this mineralogical evidence can be added, but this has as of yet been only partially verified in the laboratory.²⁰

The epigraphic stamps on the Ischia amphorae are of great interest, since they inform us about the organization of production and the economic and social realities on the island during the Hellenistic period (Fig. 11.5). Our understanding of Ischian stamps from this period is much more limited than it is in the case of stamps found in Greece, where each centre seems to have developed its own stamping system.²¹

It is not known when exactly the practice of stamping Graeco-Italic amphorae started in Ischia and in Campania in general.²² Stamps have been found at the kiln site of Santa Restituta, on Types III, III/VI, and IV amphorae, which can be dated to the second half of the 4th and the first decades of the 3rd century BC. More than three hundred stamps have been identified that bear Greek (some probably Ionico-Euboean) and Oscan names, written in Greek letters. The practice of stamping seems to have been connected to sea-borne wine trade.

In some cases the names have been progressively truncated, a phenomenon possibly linked to the internal organization of the production; the exact significance of which is still unknown. Occasionally the names on the amphora stamps are the same as those found on bricks, sometimes preceded by the abbreviation ΔΗ (*demosia*). Different interpretations have been suggested for such abbreviations, which may indicate pottery and/or brick production controlled by the state, or private production on behalf of the state.²³

4 Graeco-Italic Amphorae: Tracing the Production System of Ischia and the Gulf of Naples in the Hellenistic Period

The wine trade, especially in quality wines, may have been both the foundation of great profits and the object of strict rules, control, and regulation by the

20 Mineralogical analysis of a sample of an amphora Type MGS v-v/v1 from the Terrasini-B shipwreck showing the Latin *graffito* L. AIMILIO (applied before firing) revealed a fabric composition similar to Campanian amphorae (Illiopoulos in Olcese et al. (2013)). For the Terrasini shipwreck, see Purpura (1974); Giustolisi (1975).

21 Garland (1993, 184).

22 Archaic amphorae found at Ischia bear no stamps (Di Sandro (1986)).

23 Olcese (2010, chapter v1); Garland (2001, 190–198); Raviola (1995, 118); Small (2006, 192).

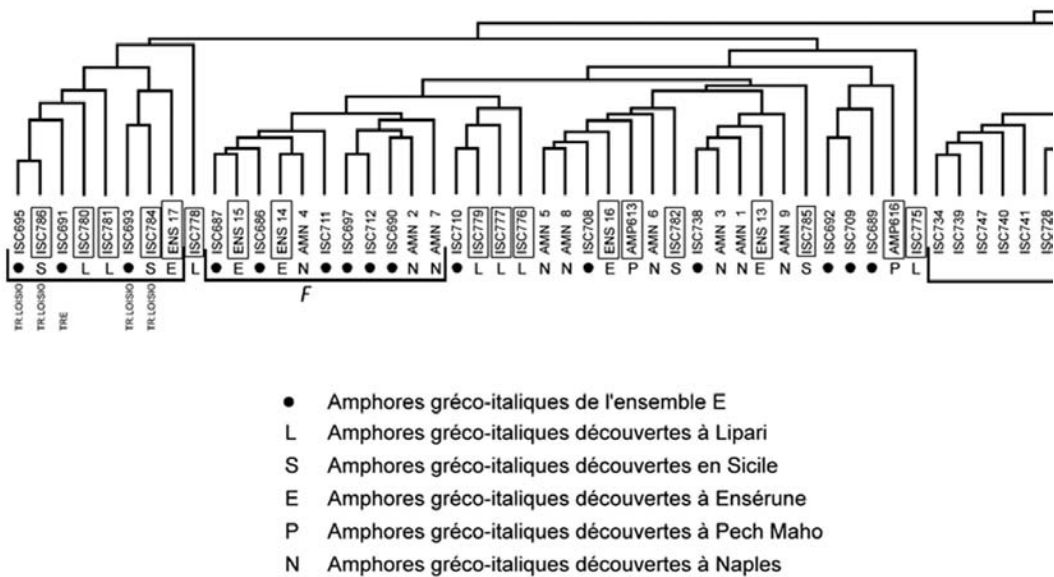


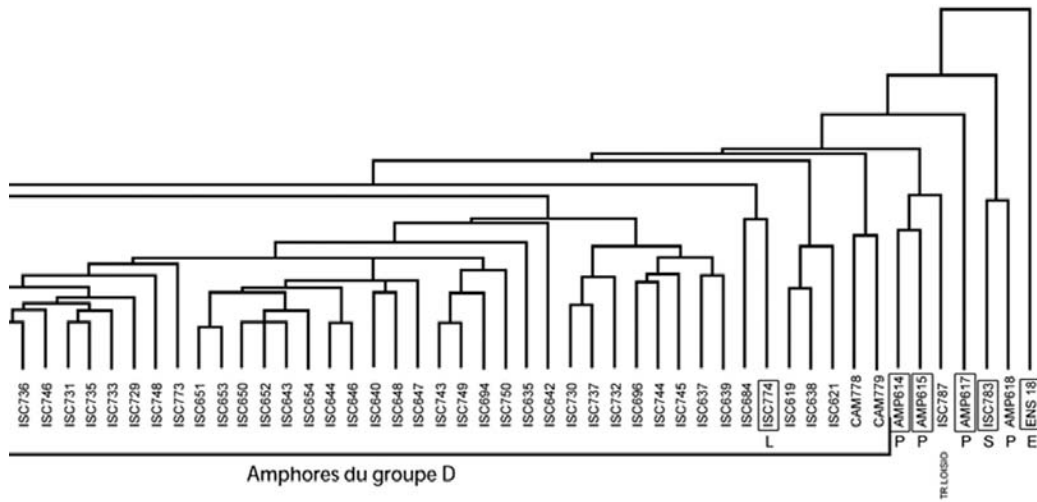
FIGURE 11.4 *Main groups of amphorae from Ischia and Naples as identified by cluster analysis of the chemical characterization (XRF) (v. Thirion Merle, after Olcese (2010, 196))*

Roman state, sometimes in the form of protectionism.²⁴ As the study of Greek wine (e.g. Thasos)²⁵ has shown, the wine trade was accompanied by new fiscal measures on the island and in other ports that were also centres of wine production. From the 5th century BC, there was a class of vine-growers, owners or renters with facilities for the production of wine, as well as a class of merchants who possessed capital and plied their maritime trade.²⁶

24 Salviat (1986, 183ff.) describes a series of measures ensuring the protection of Thasos wines, which according to the author benefited from an exemption, while other wines—such as those produced in the coastal regions of Thracia—were probably not allowed to be loaded onto Thasian ships.

25 Salviat (1986, 181). The publication illustrates the case of Thasos and some laws recorded in written sources.

26 Salviat (1986, 182 and note 66).



The most useful information for reconstructing the system of wine production is generated by the analysis of production facilities and amphora stamps. Similar data may be obtained by cross-examining epigraphic, archaeological, and archaeometric information. Data from Ischia and Neapolis reveal the presence of Graeco-Italic amphorae with similar characteristics at both sites. In addition, certain stamps occur at both Ischia and Neapolis, some types being more prevalent at one site than at the other.

Ongoing laboratory testing will shed more light on the characteristics of the amphorae produced at Neapolis.²⁷ It may even verify the existence of an analogous and parallel system of production at the two sites that was dependent on customs/common laws and involved the same historical figures, perhaps public ones. Such a scenario could be similar to the system that is described for some of the Greek islands in the Hellenistic period, such as Rhodes. Studies by Empereur and Picon, which were based on laboratory analyses, showed that amphorae with shared morphological characteristics

²⁷ Same as the case of mineralogical group II, see Iliopoulos (2010).



FIGURE 11.5 *Various stamps in Greek on Ischian Graeco-Italic amphorae (after Olcese (2010, 30))*

were produced at several island and mainland sites (the so-called *peraiai*) and in the integrated territories institutionally dominated by Rhodes in order to package the product central to the local economic system: Rhodian wine.²⁸

Pithecusae, situated on a commercial route that had been intensively used for centuries, is an example of an insular economy probably similar to that of Thasos that was also based on trade. In the Hellenistic period, the island was the *peraiia* of Neapolis (as it had been since the late 5th century BC), which allowed it to experience an economic boom.²⁹ The organization of the wine production on the island and the mainland appears to have been the same.

Finally, G. Finkielsztein's recent studies of amphorae³⁰ and their stamps in the Hellenistic period in Greece offer interesting points of reflection. The author demonstrated that a relationship might have existed in the Hellenistic-Greek mind between coinage, weights and measures, and the manufacturing of amphorae (through their stamps), as expressions of a guarantee on the part of the city administration. Greek sources refer to units of measure (*étalons*) for *sekomata*, weights, and hypothetically, also for amphorae, which were perhaps used by multiple cities that formed a *koinè* and traded together.

Amphorae with triangular or *champignon* rims, produced in the south-east Aegean in the 4th and 3rd centuries BC, are a case in point.³¹ The adoption of the same form of amphora at multiple centres of production in a single region may reflect a shared decision to use a specific unit of volume on the part of the members of the community.³² This agreement may have been the result of a common policy for commercial relations in the Mediterranean in the late 4th and the early 3rd century BC.

It may not be a coincidence that in the Gulf of Naples the Graeco-Italic amphora was adopted in the late 4th/early 3rd century BC, a type that, although having its own specific forms, resembles the Greek type *champignon* rim. Hypothetically, this choice may indicate that similar receptacles were being adopted throughout the same area.

28 Empereur and Picon (1989).

29 Raviola (1995, 122–124) clarifies the similarities and differences; in the case of Naples and Ischia, the principal administrative centre was on the mainland. The implication of this hypothesis is that in this period (i.e. 4th to 3rd century BC) Ischia belonged to Naples.

30 Garland (2000, 76–78); Finkielsztein (2006, 28).

31 See the studies of Empereur, Picon, Lawall and Finkielsztein.

32 Finkielsztein (2002) and (2006).

5 Individuals, Graeco-Italic Amphorae, and Wine in the Gulf of Naples

What was the role of the Neapolitan elite and of influential Roman families in the wine trade? Van der Mersch considers the aristocracy of Campania as being implicated in the production of wine.³³ Indeed, the influence and economic success of the Campanian elite must have been considerable already by the 3rd century BC; the Punic Wars are regarded as having been instrumental for the expansionist pretensions of the Campanian upper classes and the defence of their own interests. With respect to this idea, Lancel remarks that the *Atilii* of Campania held the consulship seven times between 267 and 245 BC.³⁴

It is useful to reconsider and combine the available typological, epigraphic and archaeometric information in an attempt to identify some of the individual members of the “enterprising economic class of Neapolis”.³⁵ The names of these individuals—ΑΝΔΡΩΝ, ΑΝΔΡΩΝΟΣ, ΑΚΚΛΗ, ΕΥΞΕΝΟΣ, ΖΩ, ΖΟΙΛΟΣ, ΧΑΡ, ΧΑΡΜΗΣ, ΧΑΠΜΕΩ, ΧΑΡΜΕ, ΜΕΓ, ΜΑΙΩ, ΝΥΨΙ, ΤΡΕ, ΤΡΕΒΙΟΣ, ΤΡΕΒΙΩ (either complete or abbreviated)—appear on amphorae Types IV and V.³⁶ The fabrics of these types are compatible with the chemical composition of the clays of Ischia and, more generally, the area of the Gulf of Naples. Most of these individuals were Greek, perhaps members of the founding elites of Neapolis, and a few were Oscan.³⁷ They may have been involved in the production and trade of a wide range of wines. Recently, as a result of combining epigraphic evidence and historical data, the list of individuals could be expanded after a few more names emerged from studies of Graeco-Italic vases.³⁸

33 Van der Mersch (2001, 187). Earlier he had already considered the issue: “faut il considérer EYEENOS, Γ. Ἀρίστων, *Tr. Loasio* et autres Στάσιος Τράγγων comme de producteurs/négociants campaniens? C'est possible mais pas entièrement sûr” (Van der Mersch (1994, 145)).

34 Lancel (1992, 383); Heurgon (1969, 344).

35 See Lepore's contribution in *Storia di Napoli* I, 248.

36 See also Olcese (2010, chapter V).

37 Some names mentioned in funerary inscriptions from Neapolis are identical to those appearing on amphorae stamps, although they could also be homonyms: Leiwo (1994); Miranda (1995, vol. II—see e.g. the *Ipogeo dei Cristallini*).

38 A few stamps are in Latin, and studies of the Graeco-Italic vases bearing them are still ongoing.

6 The Circulation of Ancient Graeco-Italic Amphorae from the Gulf of Naples, an Ongoing Project

The available archaeological and archaeometric data can inform us about various aspects of the circulation of Graeco-Italic amphorae from the Gulf of Naples.

Firstly, wine from the Gulf of Naples³⁹ and the amphorae in which it was transported were being produced and circulated in the late 4th and early 3rd century BC (Fig. 11.6 for the amphorae stamped ΖΩ and ΖΟΙΑ).⁴⁰ The wine was evidently of a high quality and was produced mostly for overseas trade and moved in containers, which were being kept track of through their stamps. The finds from two shipwrecks (Filicudi-F and Secca di Capistello) off the Aeolian Islands serve as an example of the wide distribution. Coincidentally, the few Graeco-Italic amphora types that date from the late 4th to the first half of the 3rd century BC (Types IV and V) originate from the Gulf of Naples area. As was explained above, in the next period the trade in products from Campania intensified, perhaps in the wake of the increase in pottery production sites.⁴¹

Secondly, the transport of agricultural goods was accompanied by ceramic products in this phase, as finds from Aeolian excavations show.⁴²

Thirdly, the attribution of Graeco-Italic amphorae and stamps to the Gulf of Naples, based on laboratory analysis, makes it easier to reconstruct the distribution patterns of Neapolitan wine in the southern Tyrrhenian area, Sicily, and even North Africa, a century before the export 'boom' of Campanian products, which is usually placed after the Second Punic War.⁴³ This insufficiently studied phenomenon is often accompanied by the presence of black gloss ware

39 The definition includes the production of Ischia and of Neapolis, and perhaps other sites as well. Not much is known about the situation in the area of Neapolis; before 326, the *Chora* of Neapolis excluding the islands was quite small, i.e. 17 km² (Cassola (1986, 59)).

40 Some scholars believe that Roman wine production in Campania began only in the second quarter of the 2nd century BC, e.g. Carandini (1989c). According to Mele (1986) production and circulation of Campanian wine started in the 5th century BC.

41 Morel (2009, 77).

42 Unfortunately, it is impossible at present to attribute the black gloss ware pottery from the shipwreck with any certainty to a particular area. These forms are very common in Magna Graecia and Sicily and the material from the shipwreck has not yet been analyzed. Analyses on fairly similar pottery from the necropolis of Lipari have produced mixed results (Campania, Sicily, unidentified areas).

43 See e.g. data from Carthage (Bechtold (2007a)). A somewhat different situation seems to emerge from the ceramic materials found in the harbour than what recent excavations suggest: Wolff (1986a and b).

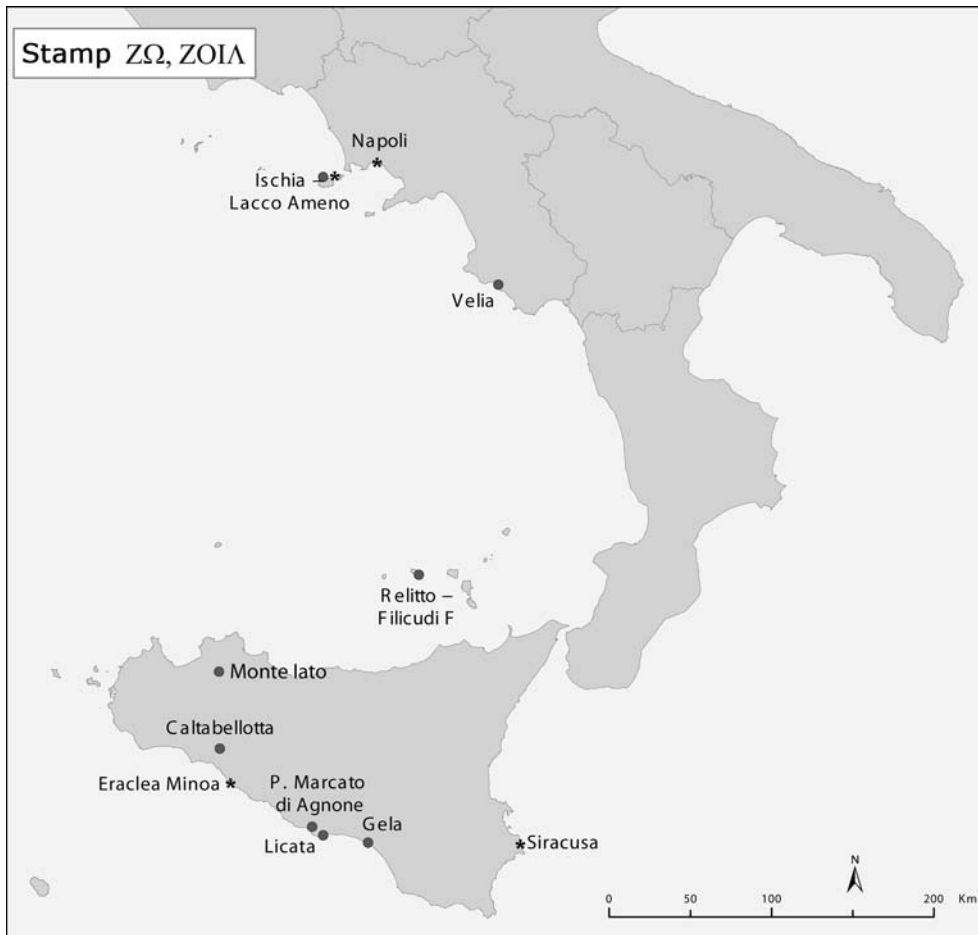


FIGURE 11.6 *Distribution of Graeco-Italic amphorae type IV stamped ZΩ or ZOIA (after Olcese (2010, 129))*

pottery (that Morel defined as ‘archaic’ and/or ‘primitive’ ‘Campana-A’ in his first publications).⁴⁴ This has been documented at Punic sites in western Sicily, but also in the north-west Mediterranean, Ensérune in southern France, Aleria in Corsica, and North Africa.⁴⁵ The distribution pattern of black gloss ware from Cales in the 3rd century BC (‘Byrsa Class 661’, attributed to workshops

44 See for example Morel (1980a). The author attributes this production to Ischia, dating it to the 4th to 3rd century BC (‘A primitive’) and 280–220 BC (‘A Archaic’) respectively.

45 In Sicily, ‘Archaic’ Campanian Type-A pottery has been identified among ‘early’ imports from different areas in Campania, which along with ‘Calenian’ pottery attests to the

of Cales),⁴⁶ documented at Carthage and Lilybaeum in the early 3rd century BC,⁴⁷ is starting to become clearer. A few Sicilian sites, such as Gela, Selinunte, Camarina, and Liparis, document this early trade in ceramics, showing similar characteristics and probably having a Campanian production origin. Laboratory analyses have already helped in identifying some of the production sites of such ceramics. Other contexts, such as the *oppida* of Pech Maho and Ensérune in southern France or Aleria in Corsica, have produced more data on the circulation of Campanian products in the 3rd century BC. The distribution of amphorae and black gloss ware pottery therefore seems to indicate that the early commercial introduction of products from the Gulf of Naples may have already reached North Africa, Tunisia and Libya (e.g. possibly Mellita and Sabratha).⁴⁸

Fourthly, it seems that in the earliest distribution phase of vessels from the Gulf of Naples, the route that led to Sicily, and perhaps also North Africa, also passed through Capo Lilibeo. In the late 4th and the 3rd century BC, Punic centres or sites under Punic influence (Eryx, Lilybaeum, Selinunte) on the coast, as well as some situated more inland (Caltabellotta, Monte Adranone, or Monte Iato), were locations where the wine and other amphora-packed products from the Gulf arrived and were sorted. These activities coincided with the period immediately after the third treaty between Rome and Carthage (306 BC).

At some sites (e.g. Monte Adranone) Campanian and Osco-Campanian coins have been found,⁴⁹ which Breglia linked to the presence of Campanian mercenaries on the island as part of the build-up to the First Punic War and the advance of Pyrrhus (278) during which the army left Campania.⁵⁰ Data on material culture may perhaps shed some light on the third Romano-Carthaginian treaty.⁵¹ The Sicilian markets were closed to Rome, and there was

existence of direct relations between different parts of Campania and Punic Sicily and North Africa. See in this regard Bechtold (1999) on Lilybaeum and Bechtold (2007a). On black gloss ware pottery found at Carthage, see Chelbi (1992).

46 Morel and Picon (1994); Morel (1998, 246). On the presence of Calenian pottery at Carthage (class Byrsa-661), see Pedroni (2001); Bechtold (2007b).

47 Bechtold (2007a).

48 Caputo (1959); Bisi (1969/70); Morel (1980b); De Miro and Fiorentini (1977, 42: Fig. 57, Tomb 5).

49 Fiorentini (1998); De Miro and Fiorentini (1982/83).

50 Breglia (1952b, 90 ff.). These are *quadrigati* found in Selinunte, which was destroyed in 250 BC (an *ante quem* date for the discovered hoards). The Campanian military emigration assumed a permanent character in Sicily as revealed by several studies, e.g. Tagliamonte (1999 and 2006, with refs.); De Cesare (2006).

51 The 348 BC treaty between Rome and Carthage already hinted at maritime interests not

a desire to limit the distribution of products, perhaps even those from the Gulf of Naples and from Campania in general, deriving from businessmen who were pushing for an invasion of the markets controlled by Carthage.⁵²

Finally, the distribution of products from Campania in the following period, after the mid-3rd century BC, is better understood. Following the capture of Agrigento (262 BC) and Lilybaeum (241 BC), Roman traffic with the southern Mediterranean, including Sicily, increased. New archaeometric studies have allowed the attribution of Graeco-Italic amphorae from various consumption sites, sometimes stamped in Greek, to the Gulf of Naples.⁵³

7 Discussion: Ischia, Neapolis and Rome

The study of Graeco-Italic amphorae from Ischia and Neapolis contributes to our understanding of the relationships that were forged between Rome, Neapolis, and the Gulf of Naples in the late 4th and throughout the 3rd century BC. The exploitation and organization of crafts on Pithecusae presupposed “economic capacities that were larger than local ones, through investment capital and the possibility for transport and distribution of the traded product. Only a merchant and trader class such as that of Neapolis, with her shipyards, her ships, and her organization, could have explained this phenomenon”.⁵⁴

The *Foedus Aequum* between Neapolis and Rome in 326 BC made Neapolis a *civitas foederata*.⁵⁵ Henceforth, it was independent within its territory and had the right to mint coins, although in an emergency the city had to make its navy available, a clause that was fulfilled during the First Punic War.⁵⁶

On its part, Rome in its southward expansion became a participant in commercial ventures and interests in Campania and *Magna Graecia*, beginning in

only in the Tyrrhenian Sea, but in the western Mediterranean in general. On the Rome–Carthage treaties, see Scardigli (1991).

52 As F. Sartori wrote, “It is not purely coincidence that Neapolitan businessmen, working in multiple, diverse markets, were considered by their trade “partners” as, above all, Romans” (Sartori (1976, 92)).

53 Olcese (2010, 187–286). In general, see Van der Mersch (1994, 128–130 and 2001, 191). They are part of a body of finds that can be dated to the mid-3rd century BC and perhaps even later from the site Tour Fondue in southern France, Bon Capò, and probably also Meloria (see Olcese (2010, 187–286) and Iliopoulos (2010, 206)).

54 Lepore (1952, 313).

55 Cicero *Pro Balb.* 55; on the institutions of Neapolis see De Martino (1952).

56 *Polybius*, I, 20.14.

340 BC.⁵⁷ Essentially, Rome's intention to bring at least a part of the Greek world under its 'protection' emerged already in the treaty with Tarentum (c. 303 BC).⁵⁸ As Cassola explained, what mattered most to Rome was not so much the subjugation of Neapolis and Capua, for example, but rather the guaranteed collaboration with a region that was rich in industrial activity and that was open to the sea.⁵⁹ This agreement led to a monetary system that was modelled after Neapolis', which must have helped penetrate the areas controlled by that city.⁶⁰

During its advance, Rome established contact with some important wine production areas on the Tyrrhenian coast.⁶¹ A number of scholars claim that between the 4th and 3rd century BC, forms of agricultural exploitation were initiated in the area between Capua and the Gulf of Naples that led to a structured system of wine production⁶² and that food products were exported from the newly controlled areas.⁶³

Some questions that are still open pertain to the economy and production of wine: was the distribution of products from the Gulf of Naples linked to the arrival of the Romans in Campania or to the activities of Neapolis?⁶⁴ According to Morel, it was Rome rather than cities like Neapolis that initiated long-distance trade.⁶⁵ Van der Mersch dates the start of the production of 'Roman'

57 Musti (1988, 531–537). The author points to the Romano–Campanian coin production as evidence, although it is not clear if they were intended for domestic or international circulation.

58 Musti (1988, 537). This treaty included delimitation of mutual spheres of interest with Capo Lacinio as the boundary.

59 Cassola (1962, 121 ff.).

60 On Neapolis coinage, see Breglia (1952a and b) and Taliercio Mensitieri (1987).

61 Van der Mersch (2001, 187).

62 Van der Mersch (2001, 189; No. 324). De Martino (1991, 201) believes that the standard view, according to which a major agrarian transformation with more profitable crops (e.g. vineyards and olive groves) only became possible after the war with Hannibal and the subsequent afflux of slaves, needs to be revised.

63 Van der Mersch (2001, 192).

64 This hypothesis seems to be accepted by Lepore (1952, 253). On the roles of Campania, and of Naples and Ischia, see Lepore (1952, 312–313); Hesnard et al. (1989, 31).

65 “*c'est Rome, et non pas Naples (non plus qu'aucune autre cité de la Grand Grèce) qui parmi les villes d'Italie manifeste le plus d'initiative et rencontre le plus de succès dans l'exportation de céramiques vers le pays de la Méditerranée occidentale*” Morel (1986, 335). The author refers to the production and circulation of the ceramics of the *Atelier des petites estampilles* that are widely spread in the western Mediterranean between the late 4th and the early / mid 3rd century BC, almost in parallel with the first productions of amphorae of Gulf of Naples.

wines in Campania to the period between the creation of the *Ager Falernus* and the First Punic War.⁶⁶ Controlling such a production would be highly desirable to members of the influential Roman elite who were already present in the period of the *foedus* and whose interests coincided with those of powerful Campanian families.⁶⁷

The earliest information available suggests that while Rome carried her path of conquest southward and beyond, corresponding to the construction of the Via Appia in 312–310 BC (both for military purposes and to improve relations with Capua), products from the Gulf of Naples and pottery from Campania made their way to markets along the southern Tyrrhenian coast.⁶⁸

However, wine production and pottery manufacture had traditionally been part of life in Ischia and Naples even before both sectors were reorganized and expanded upon the arrival of the Romans.⁶⁹ In the 1950s, E. Lepore produced some seminal publications on the history of Naples in the Hellenistic period. Although few archaeological data were available to him, his writings reflect an acute intuition, which has since been confirmed by the study of finds from Ischia and also by recent discoveries at Neapolis.⁷⁰ He underscored the very relevant industrial activity at Pithecusae, as well as at Neapolis, that in his view were linked to the “fairly large local economic capacities” of the mint and to the intensive level of production of ceramics, which he designated as ‘industrial’. These further illuminate the technical and cultural influence that the ‘city’ managed to hold over even Rome.⁷¹ Neapolis preserved its own institutions and the use of the Greek language for a long time after 326 BC, even after it had obtained citizenship, which has led some historians to believe that the area never was truly ‘Romanized’.⁷²

Following the alliance with Rome that united influential Roman families and the leaders of Naples (i.e. the Greek merchant class), the Gulf of Naples found itself in a privileged position of economic development and growth in the trade

66 Van der Mersch (2001, 190).

67 Frederiksen (1984, 232); Van der Mersch (2001, 190).

68 The Aléria finds include pottery from different areas as was already pointed out by Jehasse and Jehasse (1973 and 2001).

69 Van der Mersch connects part of the production of Graeco-Italic amphorae of MGS Type II to southern Campania (Van der Mersch (1994, 69)). Recent research revealed that the production of Type II is also attested in Naples (Febbraro and Giampaola (2011/12, 356–360).

70 Lepore (1952, 241 ff.).

71 Lepore (1952, 253).

72 De Martino (1952, 340).

and craft sectors, thanks to the loyalty the Neapolitans demonstrated towards Rome.⁷³ The port of Neapolis contained one of the most important harbour installations of the 4th and early to mid 3rd century BC.⁷⁴ Efforts to dredge the harbour floor during recent research by the *Soprintendenza Archeologica di Napoli* revealed material, which testifies to the intensive use of the harbour basin in the years following Neapolis' entrance into the Roman sphere of influence.⁷⁵

Beginning in the 4th century BC and for over a hundred years "... Naples was, in full luxuriance and without rivalry or limitations, a centre of economic gravity for Campania and also the Western Mediterranean ... The moneyed classes found themselves at full liberty for economic initiatives, which transformed into merchant activities. The Hellenistic city revolved around the port and her commercial activities were not only import and transport, but also the export of, for example, pottery produced thanks to the clay from Pithecusae".⁷⁶

We now know that in reality these activities revolved not only around fine ceramics but also, very likely, around amphorae and their contents (wine), which was certainly of high quality and intended for wide circulation.⁷⁷ The individuals whose names (both Greek and Oscan) appear on amphorae from Ischia and Naples help to shed some light on the social and economic reality of an area that is still poorly understood. While Rome strengthened its position, once more relying heavily on a partner with extensive commercial capacities (as it had done before with Caere to the north), Neapolis, thanks to its new alliance and the contributions of Ischia, acquired a higher standard of living, and expanded. Ultimately, the production and circulation of wine from the Gulf of Naples in the period following Rome's entrance onto the scene was the outcome of a combination of pre-existing local conditions and prevailing economic synergy.⁷⁸

Neapolis received compensation for its *eximia fides*, benefiting from the routes that had been opened up on behalf of the Roman armies by its merchants and navy. Rome deftly took advantage of the economic and manufactur-

73 Lepore (1952).

74 Frederiksen (1984, 225).

75 De Caro and Giampaola (2004); De Caro (2005, 658); Giampaola (2009, 41).

76 Lepore (1952, 239 ff.).

77 The amphorae may also have contained other products, as reported by the archaeologists who recovered the amphorae from the Secca di Capistello wreck; these also contained grapes, pistachios, olives, and fibres of unknown origin.

78 See contributions by Breglia (1952a and b), Lepore (1952) and Morel (1986, 348 with bibliography).

ing potential of the area of Neapolis and inserted itself into exchange networks that were already established by Naples. It then absorbed these networks, structuring and organizing them (starting with the mint and coinage), thus complying with the demands of the *negotiatores* who were perhaps already sufficiently influential in order to be able to shift Roman policy.⁷⁹

Following the *Foedus*, maritime trade became a *de facto* monopoly of the Greeks from Neapolis⁸⁰ who made up the merchant class, whereby “... friendship with the Romans meant peaceful relations with friendly *poleis* in the Tyrrhenian basin, and the return of traffic, perhaps even industrial production, in a position of privilege and respect towards other Italic and Greek competitors, for example the Tarentini, without the need to share any advantage with them.”⁸¹

What is certain is that a series of clues, renovations in the artisanal quarter of Lacco Ameno, the production of new amphora types (the ‘Graeco-Italics’), the introduction or expansion of a system of stamping and a new series of coins, point to a transformation of the economic and social reality in the wake of the Roman appearance onto the scene in the final decades of the 4th and the early 3rd century BC. It should be reiterated, however, that the Romans were entering an already existing network of economic and commercial relations, which was created by the Neapolitans themselves; thus, it is that Neapolitan commerce which needs to be investigated further.

In the following phase, around the mid- and late 3rd century BC, the range of activity increased appreciably. Amphorae from the Gulf of Naples (Types v and v/vi) that were stamped in Greek can be traced as far as the routes that led to the north-west Mediterranean and along the French and Iberian coasts.⁸²

The situation changed after the Punic Wars. Vineyards now extended into various areas of Campania and along the Tyrrhenian coast, a phenomenon that testifies to the activities of new workshops that appeared along grape-cultivating areas.

The production of new coinage ceased in Naples,⁸³ while the activities of new amphora production centres along the Tyrrhenian coast intensified, which

79 Musti (1988, 535). The author also points out that a commercial offshoot of the Roman policy of expansion into the south only materialized in the late 3rd and particularly the 2nd century BC, with the creation of the *Portoria Venalicium* of Capua and Puteoli in 199 BC being the turning point.

80 Zevi (2004, 819).

81 Lepore (1952, 234), citing *Dionysius of Halicarnassus*, xv 5,2.

82 Olcese (2010, chapter vii).

83 Breglia (1952b, 299).

in some cases supplanted those of the Gulf. Wine and amphorae of Graeco-Italic Type VI, still produced at Neapolis,⁸⁴ were now also being turned out by other workshops and distributed over a wider area along the Tyrrhenian coastal strip. This makes it even more difficult to distinguish products of different centres even in the laboratory.

8 Recent Developments in the *Immensa Aequora* Project

Preliminary studies on amphorae and their stamps from the production site of Santa Restituta on the island of Ischia, and their comparison with material from the site of Neapolis, provide important insights in the organization of production and exchange of Campanian wine in the Gulf of Naples during the later 4th and the 3rd centuries BC. With the industry already well-established and substantial, the Roman presence in the area contributed to a situation of mutual benefit. Whereas Rome had opened up an important territorial and commercial corridor (a gateway to the south and towards the sea) and was able to feed into an already present network of economic relations, Neapolitan producers and merchants were able to increase their market considerably, profiting from available Roman infrastructural networks.

The story is, however, far from complete and the *Immensa Aequora* Project continues the study of Campanian wine production through various initiatives. These comprise three main lines of research. The first concerns the comparative and multidisciplinary study, historical, archaeological, epigraphic and archaeometric, of cargoes from shipwrecks in the Italian Tyrrhenian area (fig. 11.7). A large number of mineralogical analyses on ceramics and amphorae from ship cargoes found in the western Mediterranean (around France and Spain in particular) have been performed in an attempt to identify their areas of production.⁸⁵ These datasets, which were previously treated separately, have now been considered together with a focus on their chronology and area of origin in combination with some 'crossed perspectives', an approach which may lead to a great step forwards in the study of Roman economy and commerce.⁸⁶

A second promising new avenue is the documentation of largely unknown ancient wine production sites in the regions of Campania and Sicily, especially

84 Febbraro and Giampaola (2009).

85 D. Asensio (Univ. Barcelona, ROCS, S.C.P.), for the samples of some shipwrecks on the Iberian Peninsula, and L. Long (DRASSM), for the shipwrecks of Southern France, have participated in this project.

86 Olcese (2013).

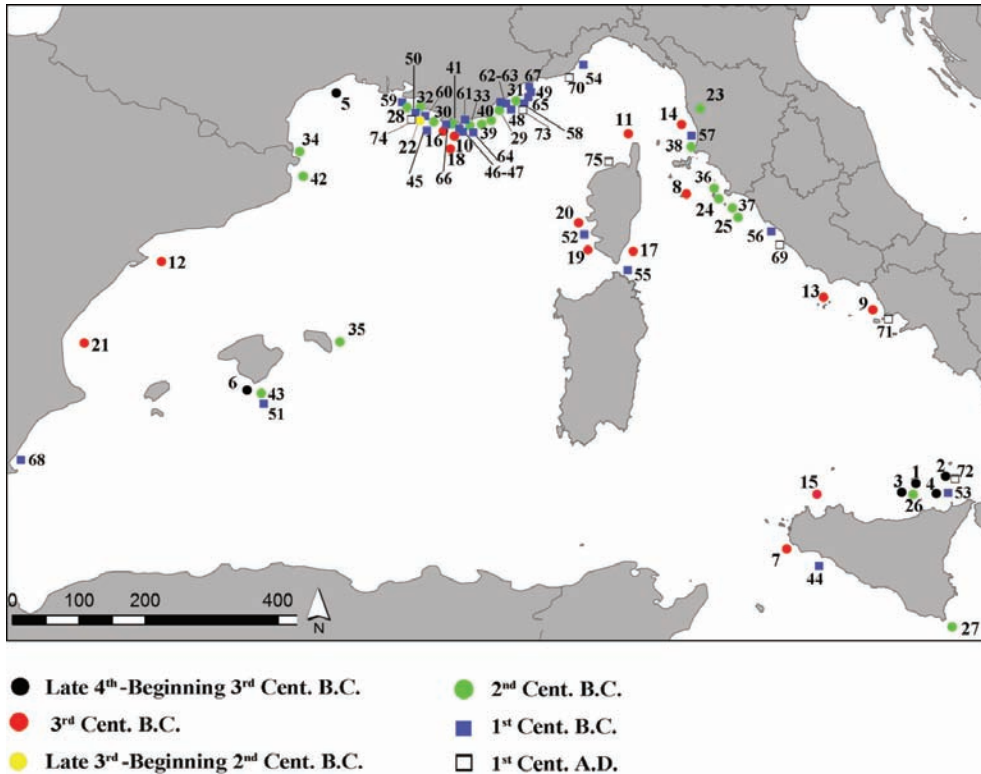


FIGURE 11.7 *Some shipwrecks of Italian origin (end 4th century BC–1st century AD) in the western Mediterranean (after Olcese (2013, 132)).* 1: Filicudi B; 2: Panarea-Roghi; 3: Filicudi F; 4: Secca di Capistello; 5: Tour de Castellás; 6: Cabrera 2; 7: Punta Scario-nave "punica" di Marsala; 8: Montecristo A; 9: Sinuessa A; 10: Tour Fondue; 11: Tour d'Agnello; 12: Ametlla de Mar; 13: Ponza A; 14: Meloria A; 15: Terrasini B; 16: Giens A; 17: Cala Rossa; 18: Pointe Lequin 2; 19: Bruzzi; 20: Sanguinaires A; 21: Bon Capó; 22: Grand Congloué 1; 23: Pisa-San Rossore; 24: Punta Lazzaretto A; 25: Cala Scirocco; 26: Filicudi A; 27: Porto Palo di Capo Passero; 28: Riou 1; 29: Baia di Briande; 30: Ciotat 1; 31: Chrétienne C; 32: Mont Rose; 33: Héliopolis 2; 34: Portaló; 35: Lazareto; 36: Punta Lazzaretto B; 37: Punta Scaletta; 38: Baratti B-Pozzino; 39: Ponte du Brouil; 40: Cap Bénat 4; 41: Grand Ribaud A; 42: Illa Pedrosa; 43: Colonia di S. Jordi E; 44: Porto Palo di Menfi; 45: Ciotat 3; 46: Cap de l'Esterél; 47: Cap Bénat 2; 48: Dramont C; 49: Cap Gros A; 50: Planier 1; 51: Colonia di S. Jordi A; 52: Pointe Calalu; 53: Vulcano-Punta Luccia; 54: Albenga; 55: Spargi; 56: Santa Marinelle-Santa Severa; 57: Perelli A; 58: Chrétienne A; 59: Riou 3; 60: Grand Congloué 2; 61: Baia di Cavalière; 62: Dramont A; 63: Dramont D; 64: Madrague de Giens; 65: Tradelière; 66: Grand Ribaud D; 67: Fourmigue C; 68: Punta de Algas; 69: Ladispoli A; 70: Diano Marina; 71: Bacoli A; 72: Panarea-Alberti; 73: Garoupe A; 74: Petit Congloué; 75: Île Rousse

focusing on rock-cut wine production sites (*palmenti*).⁸⁷ Assessing the relationships between these wine production facilities and nearby ceramic production sites will be of particular interest in the period between the 5th/4th century BC and the Roman era.

Finally, an innovative aspect of the project concerns the application of DNA analysis and gas chromatography to remains of the amphora contents. Preliminary research suggests that ancient DNA of the original contents can be recovered from amphorae retrieved from shipwrecks. However, no systematic studies have been conducted yet in which state-of-the-art high-throughput DNA-sequencing techniques were applied to a fairly large number of samples.⁸⁸ A pilot study to investigate DNA in soil and clay materials of a set of samples of Roman amphorae is still ongoing, involving the adaptation of analytical protocols and next-generation sequencing technology already developed and routinely used. Gas chromatography was used to analyse the contents of a number of van der Mersch's type-IV and V amphorae, recovered from the cargos of the Filicudi F (300–280/250 BC) and Secca di Capistello (300–280 BC) wrecks. In order to determine the original content and the nature of the traded foodstuffs, two series of chemical analyses have been conducted, the first one dealing with the sediment directly taken from the amphorae, and the second one using sherds of the fragmented walls of the amphorae even if no visible residue was present on the interior. Implementing the innovative two-step protocol allowed the identification of pitch obtained from *Pinaceae* wood used for waterproofing of the vases, and wine, especially red wine for four of them.⁸⁹

87 Olcese et al. (2017).

88 Foley et al. (2012).

89 The results of this study were presented by N. Garnier (LNG) and the author at the Congreso Roman Amphorae Contents International Interactive Conference 2015 in Cadiz (Garnier and Olcese (in press)).