THE BENEFITS OF INTERDISCIPLINARY APPROACH – A CASE OF STUDYING THE CONSUMPTION OF GREEK WINES IN ROMAN ITALY

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Abstract:

This paper presents the advantages of an interdisciplinary approach in studying the consumption of Greek wines in Roman Italy. It shows how the research method may influence the obtained results, in some cases even by providing a false picture of reality. For example, the traditional, historical and philological approaches suggest Greek origins of ancient viticulture and winemaking in Italy, dated to the 8th-7th c. BC. However, while applying new, archeobotanical and genetic methods, local beginnings dated to the Bronze Age seem more probable. Literary sources highlight the popularity of high-quality Greek wines in Rome, whereas archaeological evidence proves that middle-quality beverages were statistically more important. Therefore, the image varies depending on the sources and methods applied. Looking from broader, multidisciplinary perspective allows us to verify information, reduce distortions and come closer to reality.

Key Words: Interdisciplinary Approach, Wine, Viticulture, Italy

Introduction

Interdisciplinary approaches have recently become popular in many fields of scientific investigation. New methods have been applied even in studying remote times, the traditional space for classical philologists, ancient historians and archaeologists. Some time ago, scientific work would be restricted to each particular research field. Now, more often scholars try to look from broader perspectives, applying methods from other, related areas, or collaborating with specialists from completely different research fields. But is it really useful? Is it right that, for example, an archaeologist rummages in epigraphist's or philologist's room? Is there any benefit for science to be brought by a team composed of geneticists, biologists, archaeologists and historians working together?

In my opinion a multidisciplinary approach is not only beneficial but in certain cases even necessary. As an example, I would like to present how interdisciplinary investigations may change our knowledge about wine in Italy. First of all, I would like to deal with the issue of the supposed Greek impact on the origins of wine in Italy, showing how the conventional assumptions may be changed by innovative approach. In this part, I will use, above all, the results of the projects VINUM and ArcheoVino, regarding the origins of winemaking and viticulture in Etruria and published in *Archeologia della vite e del vino in Toscana e nel Lazio*⁶⁰. Secondly, I will show the results of my own PhD study on the consumption of Greek wines in Roman Italy. On the one hand, I would like to present the image provided by analysing the texts of ancient authors, on the other, the results obtained by studying archaeological material – Aegean wine amphoras. I hope to prove that each category of sources gives different information and, while studied separately, may give an incomplete or even a false picture. Only an interdisciplinary approach allows us to come close to reality.

The origins of viticulture and winemaking in Italy

In this part of my paper I will present various approaches to the issue of the origins of viticulture and winemaking in Italy, as well as the results that we may obtain by applying each

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⁶⁰Archeologia della vite e del vino in Toscana e nel Lazio. Dalle tecniche dell'indagine archeologica alle prospettive della biologia molecolare, A. CIACCI, P. RENDINI A. ZIFFERERO (ed.), Firenze 2012

approach. Its aim is to show how the application of a particular scientific method and the use of specific types of sources influence the kind of knowledge we have of the past and leads us to different conclusions. Let us start with the analysis of written sources.

1. Historical approach

While looking for the origins of winemaking and viticulture from a historical perspective, there is a passage in Pliny the Elder's Natural History that has a crucial meaning:

Romulus made libations, not with wine but with milk; a fact which is fully established by the religious rites which owe their foundation to him, and are observed even to the present day. The Postumian Law, promulgated by King Numa, has an injunction to the following effect: "Sprinkle not the funeral pyre with wine;" a law to which he gave his sanction, no doubt, in consequence of the remarkable scarcity of that commodity in those days. By the same law, he also pronounced it illegal to make a libation to the gods of wine that was the produce of an unpruned vine, his object being to compel the husbandmen to prune their vines; a duty which they showed themselves reluctant to perform, in consequence of the danger which attended climbing the trees⁶¹

This passage was interpreted by Giulia Piccaluga from the Roman University "La Sapienza" that before Numa, the second king of Rome, its citizens did not know wine, because his predecessor, Romulus, made libations with milk. Therefore, it was Numa who introduced wine into Roman religious rites as well as encouraged Romans to the cultivation of *vitis vinifera*⁶². If we assume that Numa was not only a legendary personage, but the real person and lived in the turn of 8th and 7th c. BC, we may conclude that before this time both vine cultivation and the beverage made of fermented grape juice were unknown. Therefore, it must have been Greek colonists who introduced it in Italy, as they came from the region where wine drinking was popular and precisely in mid-8th c. BC they started to settle in Magna Graecia and Sicily. This statement seems to be confirmed by a linguistic approach.

2. Linguistic approach

In searching for the beginnings of wine drinking in Italy the study of the etymology of the Latin word *vinum* may be useful. According to L. Agostiniani it derives from Greek οινος and came to Lazio via Etruscan *vinun/vinum*, which was its direct etymological ancestor⁶³. On the other hand, M. Cristofani claims that Etruscan term *vinum* derives from the word *uinom* attested in Faliscan inscription in 7th c. BC and has nothing to do with Greek⁶⁴. But still, this evidence is from the period when Greek colonists were already settled in south Italy and started to export the culture of symposion, during which wine played a central role. Therefore, it is possible to say that these were Greeks who brought viticulture and winemaking to Italy. This hypothesis is generally supported by archaeological material, however, this category of sources may suggest also other explanations.

3. Archaeological approach

The study of archaeological material, such as vessels associated with the consumption of wine and wine amphoras, is the main source of information on the origin of Roman wine consumption for archaeologists. Most of this material supports the traditional model. The earliest wine amphoras in Sicily are of Greek origin and other vessels associated with wine consumption are also those typical for Greek culture (such as *krateroi*, *skyphoi*, *oinochoai*, *kylikes* etc.)⁶⁵. In Etruscan graves, as well as

65 Hodos 2000: 45-48

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⁶¹ Romulum lacte, non vino, libasse indicio sunt sacra ab eo instituta, quae hodie custodiunt morem. Numae regis Postumia lex est: Vino rogum ne respargito. quod sanxisse illum propter inopiam rei nemo dubitet. eadem lege ex inputata vite libari vina diis nefas statuit, ratione excogitata ut putare cogerentur alias aratores et pigri circa pericula arbusti. M. Varro auctor est Mezentium Etruriae regem auxilium Rutulis contra Latinos tulisse vini mercede quod tum in Latino agro fuisset. Plin. *HN* XIV 88

⁶² PICCALUGA 1962: 101-103

⁶³ Agostiniani 2000: 106-108

⁶⁴ Cristofani 1991: 70

in those in Lazio and Campania, Aegean tableware associated with wine is present⁶⁶. Moreover, in Campania and Etruria Greek amphoras are attested, starting from 7th c. BC⁶⁷.







Fig. 1: Greek wine ware from the collection of National Museum in Warsaw (from the left): krater, oinochoe and kylix

Vessels for wine consumption together with wine amphoras indicate clearly the consumption of beverages made from fermented grape juice. Therefore, drinking wine seems connected with the adoption of the Greek banquet – symposion and the idea of conviviality.

On the other hand, some of the vessels from Etruria may be dated to the 9th c. BC (such as Euboic skyphos from Osteria dell Osa), thus, indicate earlier, contacts with Greek merchants than the time of colonization⁶⁸. Moreover, there are local, Etruscan (without any Greek influence) forms of vessels that may be associated with wine drinking, as well as tools that serve for viticulture that can be dated on Early Iron or Late Bronze Age⁶⁹. Is it not enough to say that origins of winemaking in Italy should be moved back? Especially considering Mycenaean imports among archaeological findings from the south of Italy that may suggest that wine was known there yet in second half of second millennium⁷⁰. If it was so, would it be completely forgotten?

However, is pottery a reliable source of evidence on winemaking? It proves only consumption, thus, foreign wine wares indicate only foreign wine drinking. Moreover, foreign vessels might have been imported only as a sign of prestige, without having anything to do with the beverage⁷¹. Therefore, although pre-colonial wine consumption or even its local origin may be suggested by archaeological sources, they are not yet proved. Some evidence on production of this beverage (such as e.g. wine presses) and/or traces of the cultivation of *vitis vinifera* could be a confirmation of this suggestion.

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⁶⁶ TORELLI 2000: 92, LA ROCCA 2011: 46-47, D'AGOSTINO 55-57

⁶⁷ Marangou 2000: 72, Slaska 1985: 19-21, Di Sandro 1981:11-12

⁶⁸ Brun 2004: 172, Torelli 2000: 90

⁶⁹ TORELLI 2000: 93-94, DELPINO 1997: 186-190, 2007: 138-139

⁷⁰ La Torre 2011: 12-15, Voza 1986: 559-560, Gras 1985: 255

⁷¹ RUBY 1993: 823

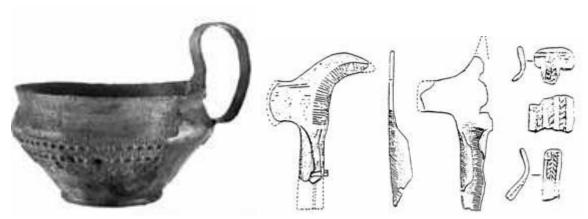


Fig. 2: Etruscan cup associated with wine drinking – a pottery form that has no foreign patterns (on the left) and billhooks that served for the cultivation of vitis (on the right)⁷².

Archaeobotanical approach

In some archaeological contexts botanical macro samples, such as grape pips, are attested. If their state of preservation is good, it is possible to verify if they come from a cultivated or a wild vine variety. For example, wild grape seeds have rounder pips with relatively short beaks, while seeds of domesticated vitis are oval and have longer tips⁷³. Careful measurements and appliance of Stumer index (length/width ratio) permit to distinguish them with certain degree of certitainty⁷⁴. The analysis of archeobotanical samples from Italy proved that domesticated grapes were known in central Italy in the Bronze Age. The earliest come from San Lorenzo a Greve (Middle Bronze Age)⁷⁵ then there are those from Chiusi nad Livorno-Stagno, Tarquinia (Late Bronze Age)⁷⁶. However, in the south (in the region of Bari), the vine might have been cultivated even in the Neolitic⁷⁷.

Was it cultivated only for fruit picking? Or rather were the Bronze Age inhabitants of Italy familiar with beverages made from fermented grape juice? The latter seems probable considering that in Livorno-Stagno and Chiusi, apart from grape seeds, the archeobotanical remains of cornel were also attested ⁷⁸. Cornel is a plant that may also serve for making fermented drink and, according to Forni, the Romans were aware of it⁷⁹. Therefore, a considerable amount of grape and cornel seeds found on some archaeological sites in Italy from the second half of 2nd millenium BC may indicate local wine production, from long before Greek colonization. Moreover, domesticated grape seeds suggest early cultivation of vitis, definitely earlier that the reign of king Numa.

On the other hand, seeds of domesticated vitis from the Bronze Age contexts were always found together with pips of the wild variety. Therefore, they do not prove that the vine was indeed cultivated, as they might have been an import. Indubitable evidence of the presence of vitis sativa on the Apennine Peninsula is not earlier than 9th c. BC⁸⁰. This is, however, the time when Aegean merchants could have had an influence⁸¹. In conclusion, the problem of a local origin of Italian viticulture or influenced by Greeks is still not solved, however, local variant should be definitely seriously considered. It seems more probable while compared with genetic data.

 $^{^{72}}$ Delpino 2007: 139, fig. 3, 142, fig. 7

⁷³ Zohary 1996: 27

⁷⁴ LENTINI 2009: 59 (Length/width ratio: index between 0.76 and 0.83 – wild species, 0.33-0.44 cultivated, 0.54-0.75 -undefiniable) ⁷⁵ pp. 125-131

⁷⁶ Mariotti Lippi, Mori Secci, Bellini 2012: 122, Delpino 2007: 134

⁷⁷ Setari 2010: 111

⁷⁸ Mariotti Lippi, Mori Secci, Bellini 2012: 122

⁷⁹ Forni 2012: 108

⁸⁰ FORNI 2012: 110, CINCIRELLI et al. 2008: 574-575

⁸¹ Sourisseau 2011: 155

5. Genetic approach

There is interesting information about the origins of Italian viticulture provided by the works of Project VINUM (2004-2006) and ArcheoVino (2006-2008) carried out in Etruria. These were focused on DNA study of modern vitis silvestris. Their results proved that specimens that grew near the inhabited areas in antiquity differ from the ones that were found in isolation from archaeological sites. Moreover, in their population more female and hermaphrodite plants were attested, whereas generally males should predominate. This may indicate that man had influence on the wild vine, e.g. by protecting it and selecting female and hermaphrodite plants (over male ones that do not bring fruit) still in the Bronze Age. However, it did not lead to full domestication, as neither vegetative reproduction nor pruning was applied⁸². Therefore, it is possible to form a hypothesis that the inhabitants of Italy in the Bronze Age were interested in vines and could make fermented beverage from its fruits. It was, however, rather primitive and on a small scale till the arrival of the Greeks, who taught them how to take proper care of vitis (pruning introduced by Numa in the times of Greek colonization of the Apennine peninsula). They also spread the idea of wine drinking during the symposion (Greek wine ware dominating in archaeological evidence).

As we have seen, the image of the origins of viticulture and winemaking differ depending on the sources we study. Starting from the hypothesis that Greek colonists in 8th c. BC were responsible for domestication of vitis in Italy provided by analysing only historical sources, we moved back to the Bronze Age, thanks to archeobotanical and genetic data. However, it should be noticed that to claim with certitude that viticulture and winemaking existed, both archeobotanical evidence on domestication and cultivation of vitis vinifera, as well as archaeological proofs of wine production and consumption, such as winepresses and vessels designed for wine storage and drinking (ideally with traces of tartaric acid) should be attested. Therefore, it should be noticed that we do not yet have firm and indubitable evidence of pre-Greek, local wine production. However, it is possible to claim that new approaches definitely reduced the importance of foreign influence in this matter and highlighted local factor. Moreover, moved the possible origins of viticulture and winemaking a few centuries backward. It is then possible to say that when the Romans appeared on Italian scene wine was almost certainly known there. In this case, what was the purpose of consuming Greek wines? What kind of Aegean beverages did they import?

Consumption of Greek wines in Italy – image painted by ancient writers

Among Aegean beverages that appear most frequently in Roman texts there are those from Chios, Lesbos, Thasos, Crete, Cos and Rhodes. Rarely do ancient writers mention wine from Leukadia, Tmolus, Ephesus, Clazomenae, Samos, Sicyon, Cyprus, Mystus, Peparethos (todays Skopelus) or Knidos⁸³ and there is no literary evidence that the Romans really imported them.

The most frequently mentioned, either by Greek and Roman authors, are wines from Chios and Lesbos. They were white wines⁸⁴ that had both a sweet and a dry variety⁸⁵. On the one hand, they were praised by poets due to their delicious taste⁸⁶, on the other, recommended by physicians because of medical values⁸⁷. They were present on the tables of outstanding Romans, such as Caesar and Lucullus, as well as Greeks ⁸⁸. Therefore, they were high-quality wines.

The position of Thasian was similar, as it was also seen as a real dainty, drunk together with Chian by Hellenistic kings⁸⁹. It was very fragrant and appreciated by poets⁹⁰, but not so frequently

⁸² Imazio et al. 2012: 618-620

⁸³ Plin *HN* XIV 73-76

⁸⁴ But it cannot be excluded that Lesbian had red variety called pramnium

⁸⁵ Ath. Deipn. 147, 23-27, Orib. Syn. IV 3, 1, Col. Med. III 4, 1, V 6, 31, V 6, 45, Gal. Comp. Med. Loc. VII 10=Kuhn vol.13,

p.513, *Vict.At.* 94, *Mat. Med.* V 10=Kuhn vol. 25, p. 696, *Syn.*III 136, III, 160, IV 3.1, *Hor. Serm. Comm.* I, 10 ⁸⁶ Hor. *Carm.* III 19, 5, *Serm.* II 8, 48-49, *Greek Anthology* XIII 9, 1-2 Longus IV 10, 3, 5, Ath. *Deipn.* I 51, 15-17, I 52, 16-31, I 53, *Com. Att.* fr. 82.4-8 Kock

Aet. VII 112, Ath. Deipn. I 56, 27-36, Orib. Col. Med. V 6, 45 Gal. Comp. Med. Loc. VII 10=Kuhn vol.13, p. 513

⁸⁸ Plin. *HN* XIV 96-97, Plut. *Demetr.* 19, 4

⁸⁹ Plut. *Demetr.* 19, 4

⁹⁰ Cl. Alex. Paed. II 2, 30, 2, Aristoph. Eccl. 1118-1119, Com. At. fr. 82.2-5 Kock

mentioned in medical texts as Chian or Lesbian. All the wines mentioned above were already known to the Romans in 3rd c. BC, as they appear in Plautus' comedies⁹¹.

Crete was famous above all by its *passum*, white, very sweet wine made of raisins⁹². However, it was not an aristocratic drink, as Martial calls it a beverage for poor people⁹³, but it could not have been bad, as it is the only one Greek wine mentioned by this poet, who generally depreciated foreign drinks⁹⁴. It was probably not imported to Rome before 1st c. AD, as in literary evidence there is no information about such imports.

Wines from Cos and Rhodes were, similarly to Cretan, 'middle-class' beverages. They appear in the texts much less frequently than Chian, Lesbian or Thasian and they are never so highly regarded either by poets or by physicians. It may be due to the fact that they were mixed with seawater⁹⁵. This "adulteration", according to the ancients, could accelerate the maturation process of the wine and made it sweeter⁹⁶. It does not mean, however, that they were sweet, as in the texts they are described as white (at least in case of Coan) and dry⁹⁷ beverages⁹⁸. Although they were less popular and generally had lower position than Chian, Lesbian or Thasian, they were good⁹⁹, acceptable at second tables (Rhodian)¹⁰⁰ and frequently imitated by the Romans (Coan)¹⁰¹.

Summarising, Greek wines were consumed in Rome at least from 3rd c. BC. They were of good quality, some of them were even among the real delicacies, present above all on aristocratic tables. Therefore, Greece was famed in Italy mostly for its good wines and its production was targeted at high social orders. Is this image confirmed by archaeological data? Let us find out.

Consumption of Greek wines in Italy – picture based on archaeological evidence

There is no doubt that the ancient inhabitants of Tuscany and Campania consumed Greek wines (beverages from Chios, Lesbos, Corinth and Clazomenae), as the amphoras dated on 7-5th c. BC are widely attested in these regions¹⁰². However, the situation of their neighbours in Lazio is not so obvious. There is only one Greek amphora (from the island of Chios) from the archaic period that was found on the Palatine hill¹⁰³. Moreover, Greek wine containers from the republican age appear rarely in Rome and its neighbourhood. The exception are more than a hundred Aegean amphoras (Chian and Rhodian amoung them) found in east Suburbium (viale della Serenissima, Quarto del Cappello da Prete), from the times of the late republic¹⁰⁴.

Greek amphoras start to be widely visible in archaeological material in the Augustan period. Among them there are four types of Cretan amphoras, containers from Rhodes, Cos and Cnidos. One Chian amphora was found in Vigna Barberini¹⁰⁵. The discoveries in Pompei show that Cretan and Coan wines were sold in *tabernae*¹⁰⁶. Considering the fact that it is unlikely to sell very high-ranking wine in the tavern, as it was the place designed rather for common people than for higher class members¹⁰⁷, we may say that beverages from Crete and Cos were not of very high quality. Therefore, we may assume that the targets for Greek merchants were people from the lower social orders.

Fig. 3 shows the ratio of Greek wine amphoras in the whole amphora material found in various archaeological contexts in Rome. As we may see, Greek wines had a considerable share in all

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91 Plaut. Curc 78, Poen. 699, Rud. 588
92 Plin. HN XIV 81, Gal. Comp. Med. Loc. VII 2= Kuhn vol.13, p. 30-31
93 Mart. XIII 106
<sup>94</sup> Marangou 1995: 28
95 Plin. HN XIV 78-79, Ath. Deipn. I 59, 20-22
96 HN XIV 78, Deipn, I 47, 19-20, MATTHAIOU 1992-1998: 573
<sup>97</sup> Rhodian sweet variety, though of little probability, cannot be excluded.
98 Hor. Serm. II 4,29, Cato Agr. 24, 158, HN XIV 78-79
<sup>99</sup> Aul. Gel. XIII 5, 8-10
100 Verg. Georg. II 101-102
<sup>101</sup> Cato Agr. 24, 105
<sup>102</sup> Albore-Livadie 1985: 138-145, Boitani 1985: 23, Di Sandro 1981:11-12, Marangou 2000: 72, Slaska 1985: 19-
<sup>103</sup> ZEVI 1985: 119
<sup>104</sup> Caspio 2009: 487, fig. 35
<sup>105</sup> Rizzo 2003: 146-147, tab. 26b, 163-164, tab 27b and 27c
<sup>106</sup> TIMBY 2004: 385-387
^{107} Wilkins, Hill 2006: 178
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the goods imported to the eternal city, between 11 and 19%. Among the Aegean wines, which have a defined origin, beverages from Crete were most popular. Their ratio is from 5 to 11% of the all imported products. The second position was held by Rhodian wines, which in the period between 54 and 68 AD, were ahead of even Cretan. Cnidian and Coan drinks were considerably less significant. The best wine, according to literary sources, from Chios wine was represented only by one amphora from Flavian period.

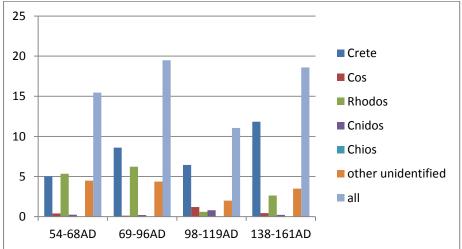


Fig. 3: Share of Greek wines in Roman economy from 54-161 AD (graph made by author of this article based on the statistics published by Rizzo)¹⁰⁸

Archaeological evidence shows that Greece exported to Rome beverages that were considered of lower quality by ancient authors. Cretan *passum*, the drink of poor people and one of the cheapest wines among all imported¹⁰⁹ was the most popular of all Aegean beverages. On the other hand, wines praised by poets and recommended by physicians (Chian, Lesbian and Thasian) are completely or almost insignificant in the archaeological material. Therefore, the image of the consumption of Greek wines in Roman Italy provided by archaeological evidence is utterly different from that painted by ancient authors.

Conclusion

As we have seen, our image of the consumption of Greek wines in Italy can vary depending on the category of sources we use. Sometimes different approaches give new, additional information, without denying those provided by other methods of study. As an example, we may evoke the historical analysis of ancient texts and linguistic etymology of the word *vinum*. Even archaeological investigation, though it provided some doubts, generally confirmed the traditional model of the keyrole of Greek colonists in implanting viticulture and winemaking in Italy. However, in some cases, the data obtained by various research fields may be completely revolutionary. Such was the case of genetic analysis of *vitis silvestris*, which proved almost with certitude that at least the habitants of the Tyrrhenian part of the Apennine peninsula were interested in vines long before contacts with the Greeks. Moreover, the botanical study of grape seeds indicated the presence of domesticated grapes in Italy as early as the Bronze Age. This evidence, although do not permit us to claim that wine was certainly made locally in this period, makes this hypothesis more probable. On the other hand, it certainly proves that the affirmation that the Greeks had everything to do with wine and vine on the Apennine peninsula is unjustified.

In the case of the consumption of Greek wines in Italy, studying ancient texts is useful in learning their characteristics, such as colour, taste, age, rank and other qualities. However, it may be misleading, as it concentrates our attention on high-quality beverages. It leads to a general conclusion that all Aegean beverages were renowned, and that Chian, Lesbian and Thasian were the most

¹⁰⁹ TCHERNIA 2011: 257-258

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¹⁰⁸Rizzo 2003: 146-147, tab. 26b, 163-165, tab 27b and 27c, 175, tab. 29, 180, tab. 30b

popular. Therefore, the conclusion based on the study of literary evidence would be that Greece was particularly famous for luxurious wines, praised by poets because of their taste and recommended by physicians due to their medical valours. This may lead us to think that the marketing target of Aegean merchants would be the Roman aristocracy. Moreover, literary sources do not provide any information about the quantities of Greek wines imported to Italy.

On the other hand, focusing only on archaeological evidence, we would say that Thasian and Lesbian wines were not drunk in Rome at all, as no amphoras deriving from these islands were attested in the Eternal City. Moreover, we would say that the consumption of imported beverages hardy existed in the republican period, because, for this time, the archaeological evidence is really scarce. It would seem obvious that the most popular Greek wine was Cretan, the second place would be reserved for Rhodian, while Coan, Cnidian and Chian could be seen as almost insignificant. Due to the fact that many amphoras were found at the *tabernae*, we would say that they were low or middle-quality beverages, as rich people do not frequent such places. The statistics would show the quantity of wines that Romans imported from Greece, but we would not have any information about their qualities. Only the combination of archaeological and literary evidence allows us to come close to ancient reality. It shows us Greek islands as exporters of either high and middle-class beverages. Thanks to interdisciplinary approach we learn both about characteristics of Greek wines and their share in wine trade between Tyrrhenian and Aegean basin.

It should be noticed that in studying the consumption of Greek wines in Italy other sources of information, as well as other scientific methods, could be applied. The most important is epigraphy¹¹⁰. Studying amphora stamps and painted inscriptions (so called *tituli picti* or *dipinti*) will surely provide new details regarding the characteristics of Greek wines, and, what is even more important, about people who were involved in their production and commerce. On the other hand, the DNA study of amphora residues could help to verify the information provided by texts, while experimental archaeology would be useful in recreate a real taste of Greek wines.

Summarising, the interdisciplinary approach is definitely useful and advantageous and should be applied more often. It is surely welcome in scientific research.

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¹¹⁰ That I am indeed going to use in my PhD research in future.

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