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ARCHAIC AND LATE-ARCHAIC TRANSPORT AMPHORAE FROM THE ALBEGNA VALLEY (TUSCANY, ITALY): AN ARCHAEOMETRIC APPROACH*

Abstract: The Albegna Valley, located in the north-western territory of Vulci, has been identified as an important Etruscan agricultural district, specialised in Etruscan wine production. Surveys and excavations promoted in the areas facing Marsiliana d'Albegna and Doganella, highlighted important concentrations of transport amphorae and wasters, as well as structures for elaboration and storage of cultivated goods. These amphorae can be mainly divided between older types (A-ETR3A/B) and more recent ones (A-ETR3C). The present study focuses on the local transport amphorae, detecting the wine trade to the coasts of the Gulf of Lion, during the 6th century BC. An archaeometric investigation was carried out on 150 samples of amphorae coming from the two Etruscan centres, such as from other sites of the Albegna Valley, in order to compare them with Etruscan amphorae detected from the ports of *Lattara* and *Emporion*. The study was able to identify changes in amphorae production between the 6th and the first half of the 5th centuries BC, and to see how the production of wine from the Albegna area has been recorded in the ports of Celtic and Iberian coasts.
Keywords: Etruscan amphorae; Albegna Valley; Vulci; archaeometry; Archaic and Classic Age.

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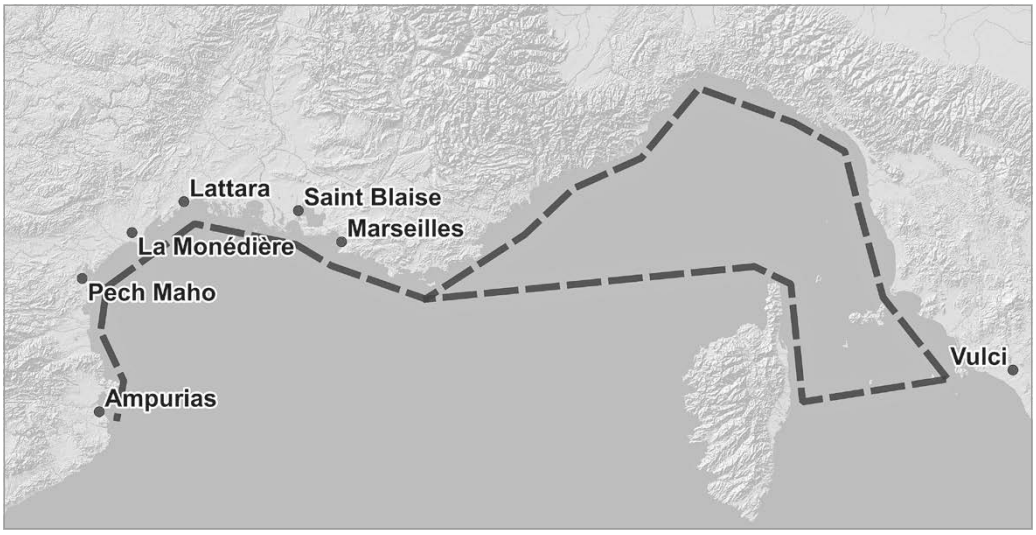


fig. 1. Possible maritime routes from Vulci to the Gulf of Lion, highlighting the important archaeological sites along the French coast.

Introduction

The existence of a systematic wine trade supplied by the Etruscans and directed towards the Gulf of Leon was accepted for decades by the scientific community. This trade is particularly noticeable by the massive bulk of transport amphorae departed from harbours located along the Vulci and Cerveteri shorelines, representing the majority of vessels dating to the first half of the 6th century BC. Due to their character of transport containers, most amphorae have been mainly recovered close to the French coasts, especially facing contemporary Provence and Languedoc, with an extension to Ampurias (ancient *Emporion*), along the Spanish coast (fig. 1).

In this framework, one of the most recurrent fabric was represented by a fine-medium to medium coarse grained pottery characterised by a strong orange colour, where traces of a thick white slip in the most protected parts of the amphora, i.e. between the rim and the neck or on the handles, were also frequently observed. Previous archaeological studies identified the Albegna Valley (northwestern territory of Vulci) as the district of possible origin for this fabric. The present work is a preliminary report for a more systematic investigation of the pottery fabrics in the Albegna Valley, and a first archaeometric comparison with Etruscan amphorae retrieved in some western Mediterranean ports (*Emporion* and *Lattara*).

C.F., S.R.M., A.Z.

1. Earlier work on Etruscan amphorae

The first classification of Etruscan amphorae was proposed by François and Michel Py, who described four main morphological groups and five different fabrics (Py &

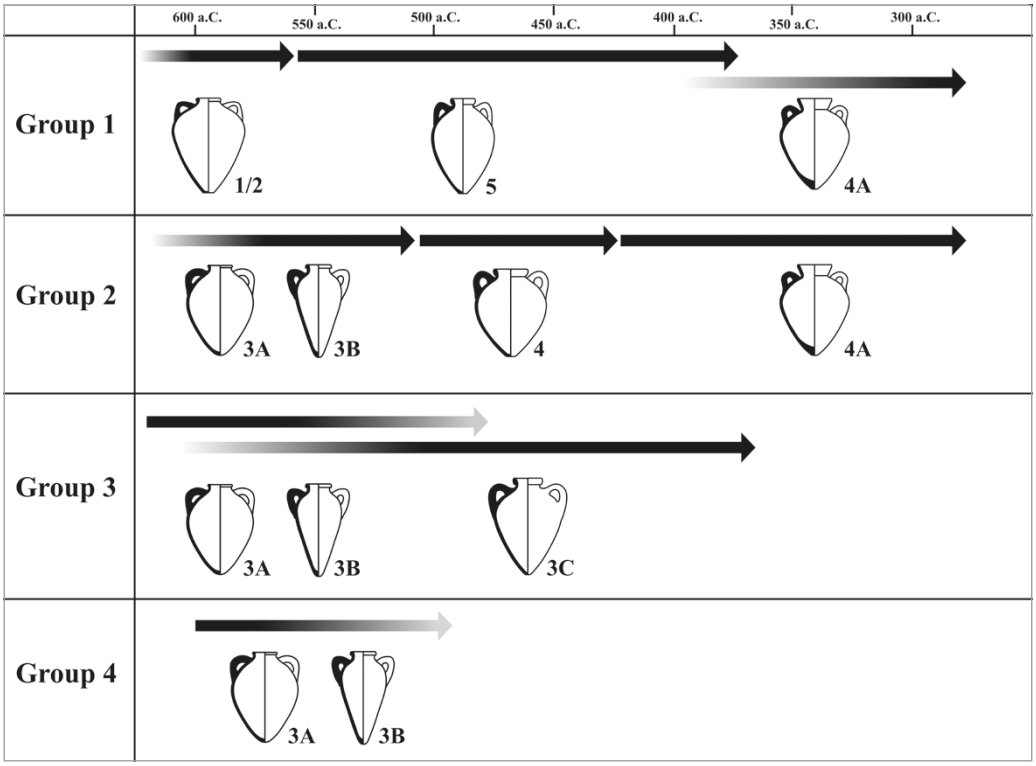


fig. 2. Etruscan amphorae types subdivided into groups, according to pastes and shapes (after Sourisseau, 1997 and Varenna, 2017).

Py, 1974). Almost ten years later, Georges Marchand developed a further classification consisting of three major fabrics (A-C) and seven rim shapes (a-f), that show a diachronic development (Marchand, 1982). Two important works were then published in 1985: a paper by M. Py that considered most of the new French discoveries, and Michel Gras' monograph on the trading activities in the Tyrrhenian Sea, that subdivided Italian finds into five groups (EMA-EME) (Py, 1985; Gras, 1985).

At the end of the Nineties, Jean-Christophe Sourisseau proposed a new classification of Etruscan fabrics related to amphorae types in his doctoral thesis focused on some finds from Provence (Sourisseau, 1997). Seven different fabrics were identified by Sourisseau, then subdivided into four larger groups. Finally, another recent doctoral thesis by Alba Varenna, dealing with the Etruscan pottery from Ampurias, added some new information thanks to the support of a more in-depth archaeometric analysis (Varenna, 2017). The research confirmed the four main groups established by Sourisseau and identified the provenance of some of the fabrics.

The present paper adopts the latest classifications, i.e. the actual denomination of amphora shape types from the DICOCER Project, marked by the acronym "A-ETR" followed by the type (Py, 1993; Py *et al.*, 2002) (fig. 2). The classification proposed by Sourisseau and the indications by Varenna are also considered for the characterisation of the ceramic bodies and can be summarised as follows:

Group 1[1]: amphorae from Vulci, characterised by a grey colour, with shades ranging from yellow to orange, with abundant inclusions (black mica and quartz). These pastes are mainly found in types A-ETR 1/2 and 5, as well as in some A-ETR 4A amphorae.

Group 2: amphorae from Cerveteri with a dark red or brown surface, a clear recognisable black core and a white or cream-coloured slip. Inclusions of augite and quartz are clearly visible and abundant volcanic elements are also present. Amphora types A-ETR 3A-B, 4 and 4A were produced with these pastes.

Group 3: amphorae from the Albegna Valley, characterised by a strong orange colour, sometimes with a grey surface or core, and with a thick white slip. They may occasionally show a brown to brownish surface, which makes these pastes similar to Etruscan coarseware pottery. *Group 3* amphora mainly consists of types A-ETR 3A-B and 3C.

Group 4: amphorae from Pisa. Their colour varies from red-violet to orange, but their main feature is the presence of large argillite inclusions[2]. This group is mainly associated with amphora types A-ETR 3A-B, 3C and 4, though in smaller quantities than those classified into *Groups 2* and *3*.

S.R.M.

2. The archaeological background of the Albegna Valley

The Albegna Valley is located in southern Tuscany, between the valleys of the rivers Ombrone and Fiora. This district should be identified with the *ager Caletranus* remembered by Latin authors (Liv. 39, 55, 9; Plin. *Nat. Hist*. III, 52): the name **Caletra* should refer to an Etruscan *oppidum* on the left bank of the river Albegna, perhaps surviving the Roman conquest in 280 BC. The most relevant Etruscan sites, already settled in the Final Bronze Age and then abandoned by the communities, in order to populate the plateau of Vulci during the so-called proto-urban process in the Early Iron Age, happen to be reoccupied after the foundation of the metropolis and the establishment of its harbours. Medium size communities, led by aristocratic groups depending on Vulci, introduce in the area typical customs of the urban ways of life, from mid-8th century BC onwards. The most important sites of the Albegna Valley, inhabited again at the beginning of the Orientalizing period are Orbetello, Marsiliana d'Albegna and Saturnia; the sites of Ghiaccio Forte (a sanctuary in the Archaic Period, with cults devoted to *Selvans* and *Vei*) and Doganella flourish from the beginning of the 6th century BC onwards.

The large number of field surveys carried out in the last decades made the Albegna Valley one of the most well-known districts in southern Etruria. In this framework, the *Ager Cosanus-Valle dell'Albegna Project*, carried out in the Eighties (Perkins, 1999; Carandini & Cambi, 2002) and the ongoing *Marsiliana d'Albegna Project*, which

[1] To distinguish Sourisseau's paste groups from those in our study, the former are always written in italics.

[2] For a current study of the amphorae (and other pottery productions) from Pisa see Marucci, 2017; Rosselli *et al.*, 2023, pp. 234-236, fig. 8.8; Taccola, 2019, p. 168, nn. 361-362.

is performing further surveys, integrated with digging of specific categories of sites (Celuzza & Zifferero, 2022, with references), provided fundamental data for a more detailed picture of the development of the area during the Etruscan period.

Recent studies have highlighted this zone as the main vine-growing and wine-making district of Vulci, with a dedicated amphora manufacture for the exporting of goods (Zifferero, 2017). The nature of the ceramic bodies, initially associated with Sourisseau's *Group 3*, have been classified into types A-ETR 3A-B and 3C and are primarily located in the lower portion of the Valley, by two of its main sites: Marsiliana d'Albegna and Doganella.

Marsiliana consists of a medium size site (47 hectars), reoccupied by Vulci in the Late Iron Age (mid-8th century BC), probably to be identified with **Caletra*, a toponym to which the pre-Roman name of its territory alludes. In its suburban area (Sant'Antonio: T(opographical) U(nit) MAS 201), a consistent number of fragments related to type A-ETR 3A-B amphorae has been collected at surface from a secondary deposit, probably a contemporary dump derived from intense building activities recently practised in the nearby village Marsiliana (Zifferero *et al.*, 2009; Zifferero *et al.*, 2011, pp. 289-297; Zifferero, 2023).

Remains of kilns, deformations of sherds and traces of overfiring, as well as a quite good uniformity of the fabric were considered a good marker of the existence of a production context. The presence of other pottery fabrics suggests an original context between the end of 7th and the first half of 6th century BC. Following a macroscopic observation, the amphora sherds showed the presence of sand, carbonate and mica inclusions.

An important archaeological context dated by ceramics almost a century later (between the end of the 6th and the 5th century BC) emerged in the suburban area southeast of Marsiliana, on the TU MAS 161, commonly identified as *Casa delle Anfore*, due to the lot of containers discovered within the building (Zifferero *et al.*, 2019, pp. 88-90; Rojo Muñoz, 2021). This site returned A-ETR 3C amphorae where only sand and mica inclusions were visible. The *Casa delle Anfore* was not a production site, but a well-known stratigraphic context for comparing the pottery from the deposit at Sant'Antonio, where the stratigraphic information is lacking. Additional presence of A-ETR 3C amphora type, showing similar mineralogical features, were collected on late-Archaic buildings located on the hills surrounding the *Casa delle Anfore* (Zifferero *et al.*, 2011, p. 301).

The other main site with a large accumulation of amphora sherds is Doganella, on the right bank of the river Albegna, just 7 km west of Marsiliana. Located on a low and exceptionally extended plateau (about 240 ha, of which 120 covered with archaeological stuff), this center has been mainly identified by surveys carried out via the systematic collection of finds and just in minimal percentage through excavation. The research has drawn the profile of an urban site, based on a regular scheme of *insulae*, with both residential and productive functions (Perkins & Walker, 1990; Perkins, 1999; Ciampoltrini *et al.*, 2006).

Doganella became an essential component of the local agricultural organization by the mid-6th century BC. This is also confirmed by the contemporary foundation of the nearby port of Talamone, located inside a natural lagoon, i.e. the place where

the amphorae from the Albegna Valley likely departed towards the Gulf of Lion (Perkins, 1999, pp. 101-193; Perkins, 2012; Michelucci, 2008; Ciampoltrini, 2016)[3]. This site has given a wider variety of Etruscan amphorae types than Marsiliana, but mainly includes A-ETR 3A-B and C, with a large number of overfired fragments. They all belong to Sourisseau's *Group 3* and some of them contain visible sand inclusions. A recent proposal to recognize the site of Doganella as *Oinarèa* (literally "the place where the wine flows"), a *polis* in the Etruscan area quoted by the Ps. Aristoteles (*De mirab. auscult*. 94), further supported the classification of the Albegna Valley as a highly specialized agricultural area (Zifferero, 2019; Zifferero *et al.*, 2019, pp. 190-194).

Additional kiln wasters areas have been identified in the lower Valley on both riverbanks (Zifferero, 2017, p. 316, nt. 8-9). Amphorae associated to Sourisseau's *Group 3* are prevalent throughout the entire Valley, including locations such as Podere Tartuchino in the upper region (Perkins & Attolini, 1992).

A.Z.

3. Brief remarks on local geology

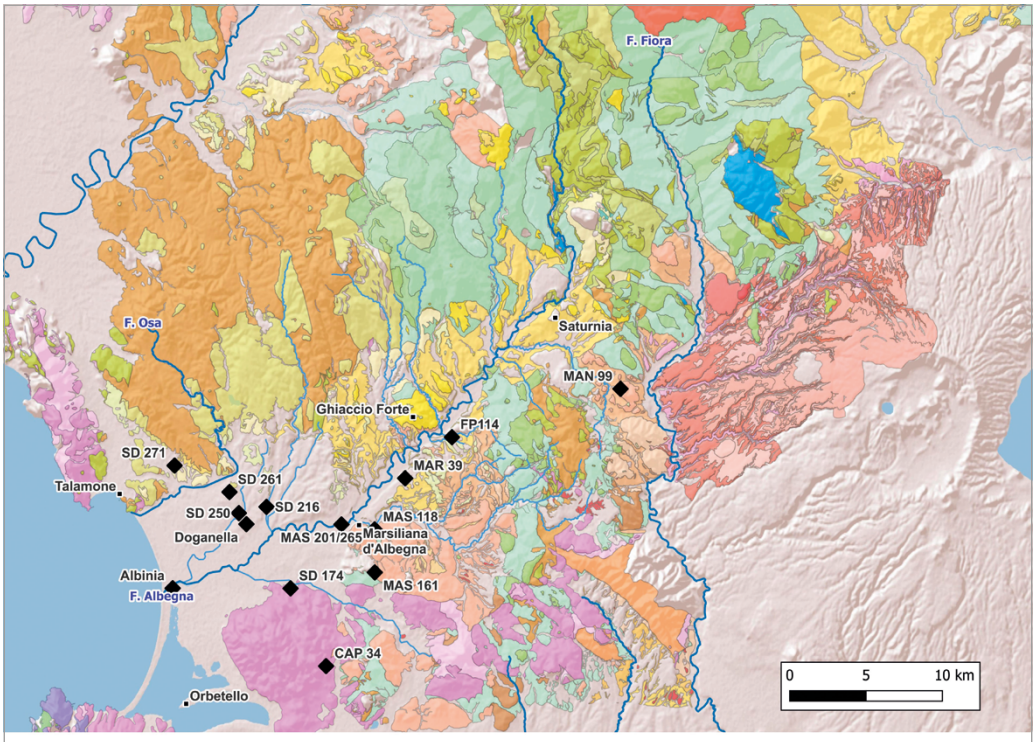
The Albegna basin has a mainly calcareous composition with travertine hills and limestone deposits (*calcare cavernoso*), as well as sandstone and siliceous schist. Terraced alluvial deposits, saline lake deposits (in the lower Valley), sands and conglomerates also belong to the most recent phases of basin formation. Due to its geological origin and composition, the Albegna Valley strongly differs from other areas in southern Etruria, where volcanic tuff predominates (fig. 3).

Nevertheless, on Poggio di Macchiabuia and Piani di Perazzeta, in Marsiliana d'Albegna and on the nearby areas of Spinicci, Vallerana and Guinzoni, some pyroclastic deposits, compatible with the eruption of the Volsini massif, were also found. Additional deposits of epiclastic magmatic rocks with a high content of volcanic material were even documented in Botro le Stiacciole (Manciano), while others, featured by fewer volcanic elements, were described near Lago Acquato. These materials have an alkali-potassium composition and include pumice lapilli, ash, and cinders (Reconditi & Santarelli, 2016; Van Berghem *et al.*, 1991, pp. 19, 59-60, 93-94).

Clays of Neogene and Quaternary phases are present throughout the Valley, including white and blue-grey silty clays. Their composition includes phyllosilicates, quartz, feldspar, and calcite. According to the current state of the art, they do not contain any of the volcanic elements described above. They are also particularly suitable for pottery due to the low lithostatic stress and moderate tectonic stress, which has prevented lithification (Gliozzo *et al.*, 2014).

S.R.M.

[3] Amphora production from Doganella and Marsiliana does not go further than 4th century BC. However, it is worth noting that wine amphorae were produced again in Albinia, at the mouth of the river Albegna, and that they will follow the same maritime route as the Etruscan ones (Vitali, 2007; Capelli *et al.*, 2013).



VILc - Argille e argille sabbiose lignitifere lacustri e fluvio-lacustri
VILa - Conglomerati e ciottolami poligenici
PLIs - Sabbie e arenarie gialle
FAA - Argille azzurre: Argille e argille siltose grigio-azzurre localmente fossilifere
PLIb - Conglomerati marini poligenici
MES - Depositi lacustri e lagunari post-evaporitici messiniani
ACN - Argille lignitifere
RAQ - Argille e argille sabbiose grigie
FOS - Argille con intercalazioni di arenarie e conglomerati: Argille del Torrente Fosci
SLE - Formazione del Torrente Sellate
FMN - Arenarie di Ponsano: Depositi marini del Miocene inf. - medio
APA - Argille a Palombini: Argilliti grigie e calcilutiti
SIL - Formazione di Sillano: Argilliti grigio-brune e calcilutiti
PTF - Pietraforte: Arenarie e siltiti quarzoso-feldspatiche e carbonatiche
AVR - Argille varicolori: Argille varicolori con calcari
ACC - Argille e Calcari di Canetolo: Argilliti e calcilutiti
AVM - Verrucano di Monte Argentario: Filladi quarzitico muscovitiche grigio chiare o grigio verdi, talora violacee
CCA - Calcare cavernoso: Calcari dolomitici e dolomie grigie brecciati e con struttura a 'cellette' e dolomie cariate (carniole)
CRP - Filladi, quarziti e metaconglomerati
MAC - Macigno: Arenarie quarzoso-feldspatico-micacee gradate, in strati di potenza variabile, con livelli piu' sottili di siltiti
STO1 - Scaglia Toscana: Membro delle Argilliti di Brolio
STO2 - Scaglia Toscana: Membro delle Marne del Sugame
STO3 - Scaglia Toscana: Membro delle Calcareniti di Montegrossi
STO4 - Scaglia Toscana: Membro delle Calcareniti di Dudda
VEU - Formazione della Verruca: Filladi quarzitico-muscovitiche grigio-chiare o grigio-verdi, talora violacee, con intercalazioni di metaconglomerati e filladi scure
EPI - Depositi vulcano-sedimentari di ambiente palustre: Depositi vulcano-sedimentari di ambiente palustre, costituiti da marne, limi e sabbie con elementi vulcanici e diatomitici
LUC - Lave, lapilli e ceneri del centro eruttivo di Poggio Lucio
PIT - Formazione di Pitigliano
PIN - Formazione di Poggio Pinzo
SOR - Formazione di Sorano
SOV - Formazione di Sovana: Flusso piroclastico moderatamente saldato a matrice giallo-arancio con pomici di colore variabile dal nero al giallo
FAR - Formazione di Farnese: Flusso piroclastico con matrice biancastra, abbondanti pomici bianche, non saldato
CAN - Formazione di Canino: Flusso piroclastico con matrice biancastra, gialla o rosata, con pomici di dimensioni metriche, abbondanti litici
PIR - Piroclastiti di colore variabile

fig. 3. Geological map of the Albegna Valley (Grosseto) (from the Geoscopio portal by the *Regione Toscana*) with location of the samples' TU and the main geologic deposits in the area: limestone (pink), polygenic maritime conglomerates (yellow), alluvial terraces (coral) and clays (green and pale yellow). The presence of volcanic materials (red) can be seen at Mount Amiata and in the Fiora basin.

4. Samples and methodology

In order to investigate and characterise the local production of Albegna amphorae, a collection of 72 samples was analysed (fig. 3; tab. 1):

- 49 samples from the Albegna Valley of which: 11 from TU 161-*Casa delle Anfore* at Marsiliana (nn. 40-42, 63, 83-88, 92) and 1 non-Etruscan amphora (n. 43); 16 from TU 201 and 265-Sant'Antonio, at Marsiliana (nn. 28-30, 53-62, 75-77); 17 samples from various TUs from Doganella (nn. 44-52, 68-74, 106); 3 samples from TU 271 near Talamone (nn. 65-67); and 1 sample from TU 174 near the stream Radicata (n. 156);
- 15 samples of other materials from the Albegna Valley: 7 kiln wasters (nn. 26, 32-33, 78-79, 96, 157); 1 common ware pot (n. 64); 1 sample from an Etruscan *canopo* (n. 105) and 2 roof tiles from Doganella (nn. 98-99); 2 roof tiles from TU 161 (nn. 93-94); 2 Roman amphorae samples from the Albinia kilns (nn. 89, 97) (Vitali, 2007);
- 8 clay clumps: 6 from Marsiliana (nn. 31 e 34-38); 1 near Doganella (n. 39); and 1 near Manciano (n. 95).

In order to compare the results from this assemblage, 42 samples from the arrival ports of Ampurias[4] (38 fragments: nn. 118-155) and *Lattara*[5] (3 Etruscan amphorae nn. 102-104 and one Massalian amphora n. 101) were also investigated (tab. 2).

The mineralogical and structural investigation was performed on thin sections using a LEICA DMRX optical polarizing microscope to provide a detailed characterisation of both the matrix (homogeneity, color, iso-orientation and porosity) and the inclusions (composition, grain size, abundance, roundness, sorting) that are either naturally present or artificially added. The textural elements were estimated using suitable comparative charts (Montana, 2020).

A chemical analysis was carried out using a portable device (pXRF Bruker Tracer III SD) operating at 40 Kv, 12μA, and 120 seconds of air exposure. To minimize potential damage to the fragments, as well as the effects of contaminants and shape variations during the analysis, three acquisitions were performed on the surface of the fragments (Fornacelli *et al.*, 2021). The chemical data was then statistically analysed using Origin 2019 for data processing and PCA. Due to the diverse nature and origin of the samples, semi-quantitative net peak area values were chosen over calibrated values to account for this variability (Holmqvist, 2017, p. 368).

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[4] The authors are deeply indebted with Marta Santos Retolaza and her research team at MAC-Empúries, for the possibility to work inside the local archaeometric laboratory and for the access to all samples and data from the recent campaigns, published in Marzoli *et al.*, 2023.

[5] Michel Py gave the four wall samples to the University of Siena, in occasion of the Siennese mission to the Lattara site in 2009, led by Andrea Zifferero and authorized by the Soprintendenza Archeologica della Toscana. The samples have been signaled to the Soprintendenza and submitted to archaeometric analysis in the *Laboratorio dell'Unità di Ricerca Conservazione dei Beni Culturali e Archeometria* at the University of Siena.

N. sample	Topographic Unit	Provenience	Material	Petrographic group (MAS)
26	SD 261.1.2	Ager Cosanus	Waster	nd
28	MAS 201.Q 17Z	Marsiliana (Sant'Antonio)	Etruscan amphora	5A
29	MAS 201	Marsiliana (Sant'Antonio)	Etruscan amphora	1A
30	MAS 201.Q 18Z	Marsiliana (Sant'Antonio)	Etruscan amphora	1B
31	MAS 118.Q IV.1021	Marsiliana	Clay clump	1B
32	MAS 118.Q III.751	Marsiliana	Waster (roof tile)	nd
33	MAS 118.Q IV.1876	Marsiliana	Waster (roof tile)	nd
34	MAS 201.QN21	Marsiliana (Sant'Antonio)	Clay clump	nd
35	MAS 201.Q 17 T	Marsiliana (Sant'Antonio)	Clay clump	1B
36	MAS 201.Q 19 H	Marsiliana (Sant'Antonio)	Clay clump	1B
37	MAS 201.Q 19 F	Marsiliana (Sant'Antonio)	Clay clump	2B
38	MAS 201.Q 17 V	Marsiliana (Sant'Antonio)	Clay clump	2B
39	SD 216.1 .Fornaci	Ager Cosanus	Clay clump	2C
40	MAS 161.Saggio1.US1196	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
41	MAS 161.Saggio1.US1046-1196	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
42	MAS 161.Saggio1.US1046-1196	Marsiliana (CDA)	Etruscan amphora (A-ETR 3A)	8
43	MAS 161.Saggio1.US1046-1196	Marsiliana (CDA)	Amphora (Corinzian A-imitation)	5C
44	TAL 7	Doganella	Etruscan amphora (A-ETR 3C)	5B
45	TAL 33	Doganella	Etruscan amphora (A-ETR 3A/B)	5G
46	TAL 33	Doganella	Etruscan amphora (A-ETR 3A/B)	5C
47	TAL 33	Doganella	Etruscan amphora (A-ETR 3A/B)	5G
48	TAL 33	Doganella	Etruscan amphora (A-ETR 3C)	5A
49	SD 108 B	Doganella	Etruscan amphora (A-ETR 3B)	5B
50	SD 108 B	Doganella	Etruscan amphora (A-ETR 3A/B)	1B
51	SD 108 B	Doganella	Etruscan amphora (A-ETR 3C)	1B
52	SD 108 B	Doganella	Etruscan amphora (A-ETR 3C)	5B
53	MAS 201.Q 17?.n 75	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1A
54	MAS 201.Q 17V. n 116	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1B
55	MAS 201.Q 17 X.n 155	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1A
56	MAS 201. Q 17 S. n 73	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1B
57	MAS 201. Q 19 M. n 354	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1B
58	MAS 265. Q 2 W	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1B
59	MAS 265.Q 12D.n 70	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3B)	1B
60	MAS 265.Q 27 Q.n 108	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3B)	1B
61	MAS 265.Q 13 B	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3B)	5B
62	MAS 265.Q 18 H	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3B)	1B
63	MAS 161.Saggio1.US 1046	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
64	SD 271	Talamone	Coarseware	5A
65	SD 271	Talamone	Etruscan amphora (A-ETR 3A/B)	5B
66	SD 271	Talamone	Etruscan amphora (A-ETR 3A/B)	5B
67	SD 271	Talamone	Etruscan amphora (A-ETR 3A/B)	5D
68	SD 111	Doganella	Etruscan amphora (A-ETR 3C)	5B
69	SD 111	Doganella	Etruscan amphora (A-ETR 3C)	5A
70	SD 111	Doganella	Etruscan amphora (A-ETR 3A/B)	5B
71	SD 111	Doganella	Etruscan amphora (A-ETR 3C)	5B
72	SD 111	Doganella	Etruscan amphora (A-ETR 3C)	5C
73	TAL 7	Doganella	Etruscan amphora (A-ETR 3C)	5C
74	TAL 33	Doganella	Etruscan amphora (A-ETR 3C)	5G
75	MAS 201.Q 17 B.n 95	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1A
76	MAS 201.Q 21 C.n 344?	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1A
77	MAS 201.n 70	Marsiliana (Sant'Antonio)	Etruscan amphora (A-ETR 3A/B)	1A
78	FP114.1.2	Ager Cosanus	Waster	nd
79	FP114.5	Ager Cosanus	Waster	5F
83	MAS161. US23.n 196 (=85)	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
84	MAS161. US51. Q3. n 70	Marsiliana (CDA)	*Dolium*	5D
85	MAS161. US23.n 196 (=83)	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
86	MAS161.Ambiente B.US23.Q2.182	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5B
87	MAS161.US8.Q14. n 167	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5G
88	MAS161.US8.Q20.15A	Marsiliana (CDA)	Etruscan amphora (A-ETR 3C)	5A
89	Fornace Albinia	Albinia	Roman amphora	nd
92	MAS161.US1183	Marsiliana (CDA)	Etruscan amphora (A-ETR 3A/B)	8
93	MAS161.Saggio1.USS 1046-1196	Marsiliana (CDA)	Roof tile	5I
94	MAS161.Saggio1.USS 1046-1196	Marsiliana (CDA)	Roof tile	5I
95	MAN 99.1.1	Ager Cosanus	Clay clump	5A
96	MAN 99.1.1	Ager Cosanus	Waster (roof tile)	5E
97	Fornace Albinia	Albinia	Roman amphora	nd
98	SD 109	Doganella	Roof tile	5B
99	SD 109	Doganella	Roof tile	5C
105	TAL 7	Doganella	Etruscan *canopo*	nd
106	TAL 79.33	Doganella	Etruscan amphora (A-ETR 3B)	5G
156	SD 174	Ager Cosanus	Etruscan amphora (A-ETR 3C)	nd
157	SD 250.3.3	Ager Cosanus	Waster	5B

tab. 1. List of samples from the Albegna Valley.

N. sample	Topographic Unit	Provenience	Material	Petrographic group (MAS)
101	LAT 1	Lattara	Amphora (A-MAS)	7
102	LAT 2	Lattara	Etruscan amphora (A-ETR 3C)	5C
103	LAT 3	Lattara	Etruscan amphora (A-ETR 5)	5N
104	LAT 4	Lattara	Etruscan amphora (A-ETR 4)	5E
118	18-PT-EA-4017	Ampurias	Etruscan amphora	6
119	18-PT-EA-4017	Ampurias	Etruscan amphora	nd
120	18-PT-EA-4017	Ampurias	Etruscan amphora	5A
121	18-PT-EA-4017	Ampurias	Etruscan amphora	nd
122	18-PT-EA-4017	Ampurias	Etruscan amphora	5B
123	18-PT-EA-3011	Ampurias	Etruscan amphora	5F
124	18-PT-EA-3011	Ampurias	Etruscan amphora	6
125	18-PT-EA-3011	Ampurias	Etruscan amphora	6
126	18-PT-EA-4009	Ampurias	Etruscan amphora	5H
127	18-PT-EA-4009	Ampurias	Etruscan amphora	5I
128	18-PT-EA-4009	Ampurias	Etruscan amphora	nd
129	18-PT-EA-4009	Ampurias	Etruscan amphora	nd
130	18-PT-EA-4009	Ampurias	Etruscan amphora	5A
131	18-PT-EA-3197	Ampurias	Etruscan amphora	5E
132	18-PT-EA-3197	Ampurias	Etruscan amphora	nd
133	18-PT-EA-3197	Ampurias	Etruscan amphora	nd
134	18-PT-EA-3197	Ampurias	Etruscan amphora	5A
135	18-PT-EA-3171	Ampurias	Etruscan amphora	5D
136	18-PT-EA-3171	Ampurias	Etruscan amphora	5E
137	18-PT-EA-3082	Ampurias	Etruscan amphora	5B
138	18-PT-EA-3082	Ampurias	Etruscan amphora	nd
139	18-PT-EA-3082	Ampurias	Etruscan amphora	5B
140	18-PT-EA-4024	Ampurias	Etruscan amphora	5E
141	18-PT-EA-4024	Ampurias	Etruscan amphora	5A
142	18-PT-EA-4024	Ampurias	Etruscan amphora	5E
143	18-PT-EA-4024	Ampurias	Etruscan amphora	nd
144	18-PT-EA-4024	Ampurias	Etruscan amphora	nd
145	18-PT-EA-4024	Ampurias	Etruscan amphora	5B
146	18-PT-EA-4024	Ampurias	Etruscan amphora	nd
147	18-PT-EA-4024	Ampurias	Etruscan amphora	5G
148	18-PT-EA-4024	Ampurias	Etruscan amphora	5B
149	18-PT-EA-4024	Ampurias	Etruscan amphora	nd
150	18-PT-EA-3081	Ampurias	Etruscan amphora	6
151	18-PT-EA-3081	Ampurias	Etruscan amphora	5B
152	18-PT-EA-3081	Ampurias	Etruscan amphora	nd
153	18-PT-EA-3081	Ampurias	Etruscan amphora	nd
154	18-PT-EA-3081	Ampurias	Etruscan amphora	5E
155	18-PT-EA-3081	Ampurias	Etruscan amphora	5E

tab. 2. List of samples from *Lattara* and Ampurias (*Emporion*).

5. Results and discussion

Petrographic observations revealed distinct groups with specific textural and mineralogical characteristics (fig. 4). Reference materials from the Albegna area, as well as the geological contexts in Tuscany, Latium, and other Mediterranean regions, were also considered in order to provide first insights into the provenance of amphorae fragments and potential commercial routes to and from the Albegna Valley and Vulci. Based on petrological and textural features, five production areas were identified:

1. Albegna Valley (Groups MAS-1A/B): Two groups with different mineralogical features. Group 1A consists of well-sorted, medium to fine-grained Fe-rich ceramic bodies with quartz-feldspathic temper, including rock fragments, chlorite, opaque minerals, and rare olivine. Group 1B comprises fine-grained Ca-rich pastes with a calcareous temper and minor amounts of quartz, feldspars, and opaque minerals. Samples from both groups are mainly from Sant'Antonio and a nearby Roman period production center specialized in the manufacture of pottery and roof tiles (TU 118: Sanchirico & Zifferero, 2009).

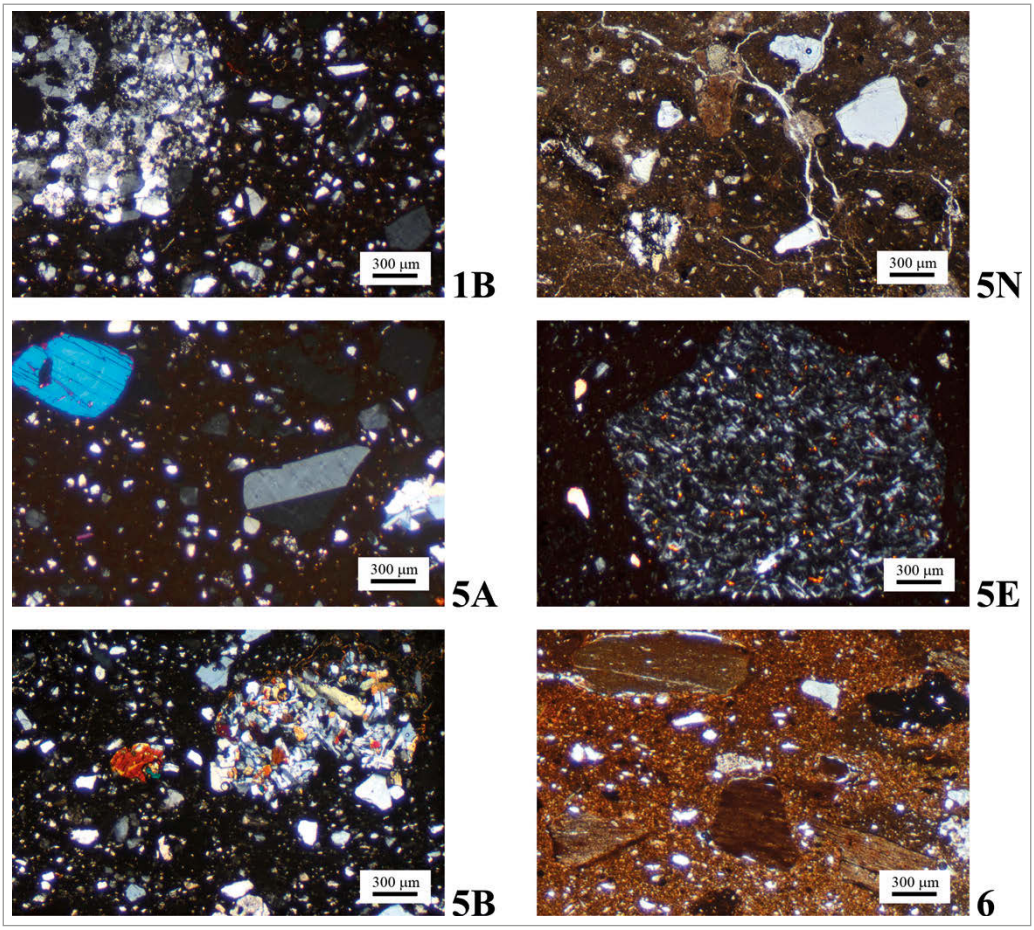

fig. 4. Microphotographs of selected samples from the fabric groups identified following the petrographic investigation (2.5x, crossed-nicols).

2. Vulsini Component (Groups MAS-5A/B/C): Medium-grained Fe-rich pastes with significant feldspathic and volcanic inclusions (e.g. rock fragments, volcanic glass, and pyroxenes xenoliths). These samples come from Doganella and the late-Archaic *Casa delle Anfore* at Marsiliana d'Albegna, as well as Ampurias and *Lattara*. It can be associated with Sourisseau's *Group 3*. Two samples from Manciano (nn. 95 and 96) also showed similar textural and mineralogical features.
3. Cerveteri (Group MAS-5E): Medium-grained Fe-rich pastes with large amounts of feldspars and volcanic inclusions, including ignimbrite and basalt fragments. These samples are exclusively from the ports of reception. It can be associated with Sourisseau's *Group 2*.
4. Tarquinia (Group MAS-5N): Medium-grained Ca-rich pastes with bioclastic inclusions, secondary calcite, volcanic glass, and tuff fragments. Only one fragment from *Lattara* is represented in this group. From a macroscopic observation the samples could be associated with Sourisseau's *Group 1*. The attribution of, at

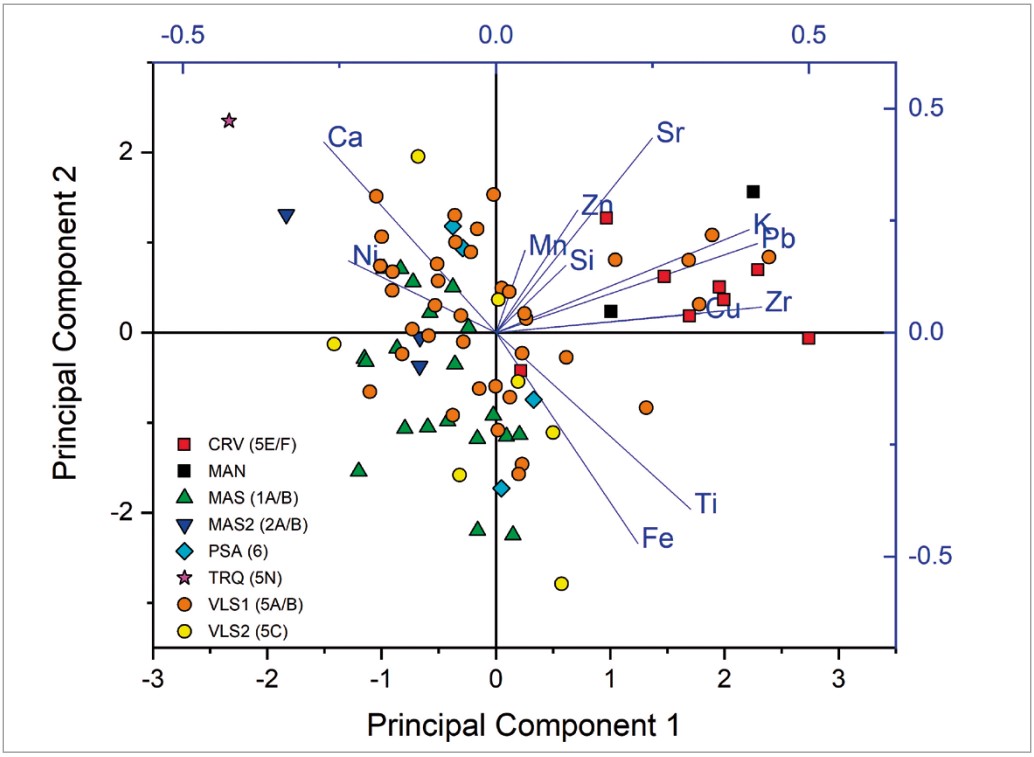

fig. 5. PCA biplot. The samples were represented according to provenance indications obtained following the petrographic investigation. Cerveteri (CRV), Marsiliana d'Albegna (MAS1 and MAS 2), Pisa (PSA), Tarquinia (TRQ), Vulci (VLS). Two additional samples found in Manciano (MAN) were also considered.

least, some of the A-ETR 5 amphorae to Tarquinia had been already supposed by Alessandro Corretti (Corretti & Vaggioli, 2003, p. 358, n. 26) and further studies are thus mandatory to confirm the existence of a local production in the area.

5. Pisa (Group MAS-6): fine-grained Ca-rich pastes with quartz-feldspathic inclusions and a large amount of argillite fragments. This group is represented by four samples from Ampurias. The productions correspond to Sourisseau's *Group 4*.

The statistical analysis of the chemical dataset has considered the natural logarithmic distribution of 12 elements (Ca, Cu, Fe, K, Mn, Ni, Pb, Si, Ti, Sn, Zr, and Zn), in order to minimize the effects due to differences in weight associated with the major, minor, and trace elements (Fornacelli *et al.*, 2021). Four principal components, which describe 79.24% of the dataset variability, have been analyzed (fig. 5).

Four main groups have been identified:

- Group PCA-1: represented by potassium (K) and heavy elements (such as Cu, Pb, and Zr), possibly associated with feldspathic pastes with a relevant contribution from mixed sulphides (Tolfa or Vulsini Mounts). The group consists of samples that have been assigned to Cerveteri (Group MAS-5E) and part of the Vulsini Mounts (Group MAS-5A/B: samples nn. 90, 120, 137, 151).

- Group PCA-2: chemically correlated to Fe and Ti and represented by high-Fe pastes in which the mineralogical phase has mainly a quartz-feldspathic nature. This group consists of samples from Marsiliana (Groups MAS-1A/B), as well as some fragments attributed to the Vulsini Mounts area (Group MAS-5C and part of samples from Groups MAS-5A/B). Two of the samples associated with the Pisa territory are also present.
- Group PCA-3: represented by Ca and Ni and associated to more calcareous pastes. The group mainly consists of samples petrographically associated with the Vulci area, together with few samples from Marsiliana and Pisa.
- Group PCA-4: pastes with high calcium levels. The group includes a sample (n. 103) presumably from Tarquinia.

C.F., S.R.M.

6. Conclusions and future perspectives

The analyses carried out on the selection of ceramics offered in this paper have given some valuable information about the diachronic evolution of wine production at the Albegna Valley and its exportation to the ports in the Gulf of Lion.

The petrographic investigation allowed identifying well-defined clusters and a first classification between volcanic and non-volcanic pastes was possible. The differences between the samples from Sant'Antonio (Groups MAS-1A/B), whose mineralogical composition is coherent with the local geology, and the ones from Doganella and *Casa delle Anfore* (Groups MAS-5A/B) suggest a change in production and/or supplying areas or, at least, clay basins. The volcanic nature of the Groups MAS-5A/B indicates the exploitation of materials strongly related to the Vulsini district. Nevertheless, the sporadic epiclastic magmatic deposits located along the course of the stream Elsa (a tributary of the river Albegna) and consisting of materials derived from the eruption of the Vulsini district (Van Berghem *et al.*, 1991, pp. 19; 59-60; 93-94) must also be considered, as well as the zones near Mount Amiata or river Fiora. A further and more in depth investigation of the volcanic inclusions via traditional techniques (such as SEM-EDS and XRD) are thus mandatory for a more precise identification of the supplying areas.

This change in the production can be referred with the general reorganization that the Valley undergoes from the middle of the 6th century BC and the (re)foundation of Doganella and Talamone (Ciampoltrini, 2016, p. 36). In the arriving ports the production from Groups MAS-5A/B is almost exclusive[6], indicating that the main wine trade of the territory must gravitate, from the second quarter of the 6th century BC onwards, towards Doganella and its port.

A similar process might be seen in the petrographic differences between the A-ETR 3A-B and A-ETR 4 from Cerveteri. The number of samples from Sourisseau's *Group* 2

[6] Some examples of Group MAS-5C have been found, as well as some samples that represent at the moment outliers, different from the rest.

included in this work is not enough to give it an interpretation, but other productions from Cerveteri such as *bucchero* seem to undergo variations around the last decades of the 6th century BC (Ceccarelli, 2019, p. 387, with references), when the amphorae types from this site change.

The other two Groups, MAS-5N (Tarquinia) and MAS-6 (Pisa), are not well represented in the present assemblage. However, chemical differences in the samples from Pisa might indicate a production in different *ateliers*, and not only a difference in the treatment of the clay.

Despite the combined use of petrographic and chemical analysis allowed a preliminary clustering of the samples, further investigations are however mandatory for a more detailed study of all the repertory.

Even with the heterogeneity of the ceramic material and the limits of portable XRF devices in detecting light elements, the present study allowed identifying different Etruscan transport amphorae production areas and stressed significant variation registered at the ports in comparison to the local environment. To fully describe these groups and identify the source of their clays, however, more research using reference materials from regional Etruscan industries and additional examination employing techniques such as ICP-OES for clays and SEM-EDS for the inert fraction, should be carried out. These methods would increase the availability of more reliable information for detecting ancient trade routes, enhancing our understanding of their evolution over time and the consequences they induced in different areas.

C.F., S.R.M., A.Z.

References

Capelli, C., Cabella, R., & Piazza, M. (2013). Albinia o non Albinia? Analisi in microscopia ottica su anfore Dressel 1 rinvenute in Francia meridionale. In F. Olmer (dir.), *Itinéraires des vins romains en Gaule IIIe-Ier siècles avant J.-C. Confrontation de faciès (Lattes 2007)* (pp. 479-484). Publication de l'UMR 5140 du CNRS.

Carandini, A., & Cambi, F. (a cura di) (2002). *Paesaggi d'Etruria. Valle dell'Albegna, Valle d'Oro, Valle del Chiarone, Valle del Tafone. Progetto di ricerca italo-britannico seguito allo scavo di Settefinestre*. Edizioni di storia e letteratura.

Ceccarelli, L. (2019). Analisi archeometriche e statistiche per la caratterizzazione di produzioni di bucchero. *Archeologia e Calcolatori, 30*, 387-404. https://doi.org/10.19282/ac.30.2019.22

Celuzza, M., & Zifferero, A. (2022). *Materiali per Marsiliana d'Albegna I. Dagli Etruschi a Tommaso Corsini.* Effigi Edizioni.

Ciampoltrini, G. (2016). *Il porto del vino etrusco. L'insediamento arcaico di Fonteblanda.* I Segni dell'Auser.

Ciampoltrini, G., Cosci, M. & Spataro C. (2006). La cerchia della città etrusca di Doganella (Orbetello). Un contributo dalla fotografia aerea. *Archeologia Aerea*, *2*, 153-166.

Corretti, A., & Vaggioli, M.A. (2003). L'età arcaica. Materiali da via Sant'Apollonia (scavi del 1994). In M. Tangheroni (a cura di), *Pisa e il Mediterraneo. Uomini, merci, idee dagli Etruschi ai Medici* (pp. 350-362). Skira.

Fornacelli, C., Volpi, V., Ponta, E., Russo, L., Briano, A., Donati, A., Giamello, M., Bianchi G. (2021). Grouping Ceramic Variability with pXRF for Pottery Trade and Trends in Early Medieval Southern Tuscany. Preliminary Results from the Vetricella Case Study (Grosseto, Italy). *Applied Sciences, 11* (*24)*, 11859. https://doi.org/10.3390/app112411859

Gliozzo, E., Iacoviello, F., & Foresi, L.M. (2014). Geosources for ceramic production: The clays from the Neogene-Quaternary Albegna Basin (southern Tuscany). *Applied Clay Science, 91-92*, 105-116. https://doi.org/10.1016/j.clay.2014.01.012

Gras, M. (1985). *Trafics tyrrhéniens archaïques.* École française de Rome. https://doi.org/10.3406/befar.1985.1236

Holmqvist, E. (2017). Handheld Portable Energy-Dispersive X-ray Fluorescence Spectrometry (pXRF). In A.W. Hunt (ed.), *The Oxford Handbook of Archaeological Ceramic Analysis* (pp. 363-381). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199681532.013.41

Long, L., Pomey, P., & Sourisseau, J.-C. (2002). *Les Étrusques en mer: épaves d'Antibes à Marseille.* Edisud.

Marchand, G. (1982). Essai de classification typologique des amphores étrusques. La Monédière, Bessan (Hérault). *Documents d'Archéologie Méridionale, 5*, 145-158. https://doi.org/10.3406/dam.1982.917

Marucci, F. (2017). *La ceramica d'impasto ad argilloscisti a Pisa e nell'Agro Pisano.* Giorgio Bretschneider.

Marzoli, D., Baños Gómez, D., Bouzas Sabater, M., Brückner, H., Castanyer Masoliver, P., Hernández Pastor, E., Julià Brugués, R., Puig Griessenberger, A.M., Santos Retolaza, M., Tremoleda Trilla, J. (2023). Excavaciones arqueológicas en la ciudad griega de Emporion (2018-2021) y el proyecto Groundcheck «Ampurias' Future – Learning from the Past. Sea Level Development and Climate Change from 5500 BC until AD 2100»: Informe preliminar. *Madrider Mitteilungen*, *63*, 188-310. https://doi.org/10.34780/6985-3kj6

Michelucci, M. (2008). La cinta muraria e la distruzione dell'abitato etrusco di Doganella. In *La città murata in Etruria. Atti del XXV Convegno di Studi Etruschi e Italici* (pp. 91-106). Fabrizio Serra Editore.

Montana, G. (2020). Ceramic raw materials: how to recognize them and locate the supply basins. Mineralogy, petrography. *Archaeological and Anthropological Sciences*, *12, 175*. https://doi.org/10.1007/s12520-020-01130-1

Perkins, P. (1999). *Etruscan Settlement, Society and Material Culture in Central Coastal Etruria.* BAR Publishing.

Perkins, P. (2012). Production and commercialization of Etruscan wine in the Albegna Valley. In A. Ciacci, P. Rendini & A. Zifferero (a cura di), *Archeologia della Vite e del Vino in Toscana e nel Lazio. Dalle tecniche dell'indagine archeologica alle prospettive della biologia molecolare* (pp. 413-426). All'Insegna del Giglio.

Perkins, P., & Attolini, I. (1992). An Etruscan farm at Podere Tartuchino. *Papers of the British School at Rome, 60*, 71-134. https://doi.org/10.1017/S0068246200009806

Perkins, P., & Walker, L. (1990). Survey of an Etruscan City at Doganella, in the Albegna valley. *Papers of the British School at Rome, 58*, 1-153. https://doi.org/10.1017/S0068246200011624

Py, F., & Py, M. (1974). Les amphores étrusques de Vaunage et de Villevieille (Gard). *Mélanges de l'École française de Rome, 86* (1), 141-254. https://doi.org/10.3406/mefr.1974.965

Py, M. (1985). Les amphores étrusques de Gaule méridionale. In *Il commercio etrusco arcaico. Atti dell' incontro di studio (5-7 dicembre 1983)* (pp. 73-94). Consiglio Nazionale delle Ricerche.

Py, M. (dir.). (1993). Dictionnaire des céramiques antiques (VIIème s. av. n.è.-VIème s. de n.è.) en Méditerranée nord-occidentale (Provence, Languedoc, Ampurdan). *Lattara*, *6*.

Py, M., Adroher Auroux, A.M., & Sanchez, C. (2002). Corpus des céramiques de l'Âge du Fer de Lattes (fouilles 1963-1999). *Lattara*, *14*.

Reconditi, G., & Santarelli, E. (2016). Le pietre di Marsiliana. In M. Celuzza, M. Milletti, E. Rossi, & A. Zifferero (a cura di), *Marsiliana d'Albegna. Dagli Etruschi a Tommaso Corsini* (pp. 78-79). ARA Edizioni.

Rojo Muñoz, S. (2021). La ceramica da un *silos* di stoccaggio nella Casa delle Anfore a Marsiliana d'Albegna (Manciano, GR). In A. Bellotti, L. Luppino, M. Messineo & M. Scarcella (a cura di), *Spring Archaeology. Atti del Convegno (Siena 2020)* (pp. 212-229). Archaeopress.

Rosselli, L., De Mizio, C., Galdieri, A. N., & Riccomini, M. V. (2023). La frequentazione etrusca tra l'età arcaica e l'età ellenistica. In S. Minozzi, E. Paribeni, & C. Rizzitelli (a cura di), *Pisa villanoviana: la necropoli di via Marche* (pp. 217-240). Pisa University Press.

Sanchirico, C., & Zifferero, A. (2009). Una fornace con produzione di votivi a Marsiliana d'Albegna (Manciano): osservazioni preliminari. In P. Rendini (a cura di), *Le vie del sacro. Culti e depositi votivi nella valle dell'Albegna* (pp. 95-110). Nuova Immagine.

Sourisseau, J.-C. (1997). *Recherches sur les amphores de Provence et de la basse vallée du Rhône aux époques archaïque et classique (fin VIIème-début VIème s. av. J.-C.).* PhD diss. Université de Provence.

Taccola, E. (2019). *Uno sguardo su Pisa ellenistica da piazza del Duomo. Lo scavo del saggio D 1985-1988.* Archaeopress.

Van Berghem, J.W., Meijvogel, T., & Windmeijer, P.N. (1991). *La valle dell'Albegna. Pedologia e valutazione del territorio.* Marsilio Editori.

Varenna, A. (2017). *La presencia de producciones etruscas en el extremo nordeste de la península ibérica: estudio arqueológico.* PhD diss. Universitat de Girona. http://hdl.handle.net/10803/404351

Vitali, D. (a cura di). (2007). *Le fornaci e le anfore di Albinia: primi dati su produzioni e scambi dalla costa tirrenica al mondo gallico: atti del seminario internazionale (Ravenna 2006).* Università di Bologna.

Zifferero, A. (2017). Le attività artigianali nel territorio vulcente: la Valle dell'Albegna e Marsiliana. *Scienze dell'Antichità, 23* (2), 311-329.

Zifferero, A. (2019). Orbetello nella geografia etrusca della valle dell'Albegna: idee, criticità e proposte per l'identificazione di *Oinaréa*. In M. Cardosa (a cura di), *Le antiche mura "etrusche" di Orbetello*. (pp. 71-95). Effigi Edizioni.

Zifferero, A. (2023). Una fornace di anfore da trasporto Py 3B a Marsiliana d'Albegna. In M. Pasquinucci, & A. Facella (a cura di), *Porti antichi e retroterra produttivi. Strutture, rotte, merci*. (pp. 161-169). Pisa University Press.

Zifferero, A., Pieragnoli, G., Sanchirico, C., & Tofani, G. (2009). Un sito artigianale con anfore da trasporto tipo Py 3B a Marsiliana d'Albegna (Manciano, GR). *Officina Etruscologia, 1*, 101-128.

Zifferero, A., Pecci, A., Pepi, A., Sanchirico, C., Santoro, E. (2011). Marsiliana d'Albegna. Nuovi dati dall'area suburbana. In G. Facchin, & M. Milletti (a cura di). *Materiali per Populonia 10* (pp. 289-320). Edizioni ETS.

Zifferero, A., De Angelis, C., & Pacifici, M. (2019). Osservazioni sulle origini di Marsiliana d'Albegna (Manciano, GR) e nuove ricerche nell'area suburbana. *Bollettino di Archeologia on line*, *10* (1-2), 67-94.

Zifferero, A., De Angelis, C., & Pacifici, M. (2022). Il centro di Marsiliana tra l'età del Bronzo e l'età arcaica: i saggi sul Poggio del Castello e l'area suburbana. In M. Celuzza, & A. Zifferero, *Materiali per Marsiliana d'Albegna 1. Dagli Etruschi a Tommaso Corsini* (pp. 185-212). Effigi Edizioni.