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ARCHEOLOGIA DELLA VITE E DEL VINO IN TOSCANA E NEL LAZIO

Dalle tecniche dell'indagine archeologica alle prospettive della biologia molecolare

a cura di
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All'Insegna del Giglio

In copertina: Scena di spremitura delle vinacce dallo *skyphos* della Collezione Forman, Museum of Fine Arts, Boston (disegno di J.-P. Brun) su paesaggio vitato in località Montarioso (SI) (foto di M. Giannace).

In allegato un cd-rom contenente materiale aggiuntivo
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Indice

From the late eighth century onwards, when the Etruscans were encountering Greeks and Phoenicians, evidence for wine consumption and transportation gradually becomes more visible in the archaeological record. By the end of the seventh century BC evidence for the large scale production and transport of wine becomes common (Gras 1985; Cristofani 1987, pp. 38-39). This generalized increase in the quantity and quality of the evidence for wine use in the later decades of the seventh century has previously been taken as evidence for the introduction of viticulture and wine production into Etruria replacing earlier Aegean and Phoenician imports (Cristofani 1987a, p. 38). Archaeological research is gradually revealing the prehistory and protohistory of wine in Italy (Delpino 2007; Forni 2007; Bartoloni 2007; and in this volume) and as this evidence accumulates, it is becoming more and more apparent that the introduction of the vine, and the first production of wine took place long before the Etruscan period (Delpino 1997). Consequently, it is no longer possible to maintain the traditional view that either the Greeks or Phoenicians introduced wine into Etruria for the first time. Research over the past twenty years has rejected this conclusion and the greater detail we now have for the protohistory of wine production and the Etruscan origin of some of the 'Tyrrhenian' wine amphoras now make it clearer than ever, as M. Cristofani hinted, that this leap in our evidence represents a phase of intensification in wine production rather than a genesis (Cristofani 1987a, pp. 39-40).

Cristofani noted that both oil and wine become liquids «*di più largo uso*» (more widely used) (Cristofani 1987a, p. 38): it is now becoming possible to go further and to suggest that it is not just a case of a wider use of wine, but a complete transformation in the modes of production, economic role and the social function of wine through the gradual transition from the Orientalizing to the Archaic period. There is a change in the scale and organization of viticulture, and Etruscan wine becomes a commodity exchanged and consumed across the western Mediterranean. This transformation did not take place in isolation but was part of a broader economic and social process that saw a shift from the earlier system of cereal and legume cultivation with stock-keeping to a more intensive form of agriculture that added arboriculture with vines and olives. Alongside this, social stratification increased and urban centres developed through Lazio and Southern Tuscany (Barker 1988, p. 781; Forni 1989; Perkins 1999, pp. 189-193; Cifani 2002; Riva 2010).

This contribution aims to trace some of the causes and implications of this economic transformation in the production and use of wine.

1. *Scale of production*

Unfortunately no Etruscan wine has survived the 2600 years since it was produced, the closest we have are amphora corks from the Grand Ribaud F shipwreck (Long *et alii* 2006), as a result, as is so often the case, archaeological conclusions must be based on the durable evidence related to wine, rather than the wine itself. First indications of the large scale of Etruscan wine production came in the 1970's with the discovery of shipwrecks in Languedoc, France, carrying cargoes of Etruscan wine amphoras (e.g. Joncheray 1976). At the same time sherds of Etruscan amphoras and drinking vessels were being identified on fortified settlements around the mouth of the river Rhône indicating that some of the people of that area were developing a taste for Etruscan wine and probably also the rituals of banqueting that went along with wine drinking at that time (Py, Py 1974). Subsequent

research has greatly increased our knowledge of Etruscan and other Archaic amphoras, the vessels that transported them and the contexts in which they have been found (Gras 1985; Cristofani 1985; Rizzo 1987; Gras 1989a; Gras 2000; Zifferero 2005; Gori 2006; Bats 2007).

This large scale wine production and trade developed from an extended period of apparently smaller scale production and more restricted use and importation of wine. In Etruria and Latium, evidence for wine drinking is found in elite burials from the late Iron Age in the form of drinking equipment, for example at Decima, to the south of Rome, in Tomb 15 (Colonna 1976, pp. 260-267; Bartoloni 2007; Delpino 2007; Delpino in this volume). Through the Orientalizing period, the equipment found in burials becomes more elaborate and the representation of the deceased as a member of a group of banqueters and wine consumers became a key feature of elite self-representation in death (Cristofani 1987b; Rathje 1990; Rathje 1995; Ciacci 2005). Finds of banqueting and wine drinking equipment in tombs, and more rarely in settlements, as at Ficana (Rathje 1983), are evidence for the importance of the ideology of elite inclusion in rituals involving wine consumption. Figural scenes of banqueting also provide evidence for the consumption and use of liquids, presumably including wine, in elite rituals (Rathje 1995; Rathje 2005; Rathje 2004-2007). One such scene from the Orientalizing period building at Murlo represents ritual activity that appears similar to that in the Neo-Assyrian palace of Ashurbanipal at Nimrud (Rathje 1995, p. 173; Matthäus 1999; Rathje 2004-2007, pp. 178-179, fig. 3). These represent male and female royalty, or aristocracy drinking and dining waited upon by servants and entertained by musicians. Such a linkage is illustrative of the shared elements of Orientalizing elite ideology related to feasting in the Mediterranean at this time. Although not unlikely, there is not yet evidence indicating that wine fulfilled a greater role in the elite households of Etruria, that might parallel the royal distribution of wine rations in the royal court of Nimrud in the eighth century (Kinnier Wilson 1972).

However, the use of wine as a prestige gift of patronage within the gentilitial groups is consistent with the 'princely' society of the Etruscan Orientalizing period as currently understood (Cristofani 1975; Colonna 2000). Wine as a gift also appears in a contemporary literary and iconographic context: an amphora of Etruscan shape features as a crafty gift and an element of *xenia* given by Odysseus to his host Polyphemus in a representation of the Homeric story on a «white-on-red» *pithos* presumably made in Cerveteri or Veii in 650-625 BC (Roma 1996, p. 174, 3.1; Colonna 2000, p. 60). Gift exchange between members of the elite (Mauss 1954) may account for some of the distribution of amphoras within Italy although it is also possible that wine imported into Italy would have been the subject of barter exchange, perhaps for raw materials.

Burial of objects in graves and representations related to banqueting ritual are evidence for elite ideology but constitute only indirect evidence for the production of wine. The elite nature of this early wine consumption, and presumed precious value of wine, suggests small scale wine consumption, supplied through either importation of wine or limited production within Etruria. There is some evidence for the importation of amphoras, particularly in Lazio, from the mid-eighth century onwards but the quantities involved seem very limited (Petacco 2003). This evidence for trade, or perhaps gift-exchange, has been associated with Phoenician traders in the Tyrrhenian and the pivotal role of Pithekoussai as a link between Etruria and the wider world (Ridgway 1992; Petacco 2003). These so-called 'Tyrrhenian' amphoras, that replicate the shapes of Phoenician amphoras, are assumed to have contained wine, although they could have contained other produce or liquids as well as wine. Production sites for the 'Tyrrhenian' amphora have not yet been identified although petrographic work on finds from Carthage suggest they were made in at least Carthage, Sardinia, Pithekoussai and Etruria from the late eighth to the mid-seventh century (Petacco 2003, pp. 46-47; Docter 2006).

We presently have very little information about the scale of this production or how it was organized. The evidence is perhaps consistent with household scale production (Nijboer 1998, pp. 238-246), but at the level of elite households, perhaps operating economies echoing Near Eastern palace or temple economies (Smith 2004, pp. 85-86), at a smaller scale. The reconstruction of such

economic structures is, for the present, hypothetical, but the amphora themselves are clear evidence for wine production and exchange in the early to mid-Orientalizing periods.

After *c*. 630 BC there is a qualitative and quantitative change in our evidence for the use, consumption and production of wine in Etruria. From this time there is a rapid growth in the quantity of evidence in the form of amphoras of distinctive Etruscan shapes that were produced in Etruria (Cristofani 1985; Gras 1985; Rizzo 1990; Petacco 2003, pp. 40-43). The amphoras, strictly, are evidence for the transportation of wine (and other produce), they are only indirect indicators for wine production and consumption, but they do imply a surplus wine production available for transport, and export at this time. It seems likely that emulation of elite use of wine in banqueting will have stimulated demand for wine, and therefore the demand for the associated utensils that included Greek types of drinking vessel (Bartoloni 2007, p. 153) and Phoenician style transport amphoras in Etruria.

The clear significance of the growth of amphora production in Etruria is that it implies a considerable increase in viticulture and wine production in Etruria and the transformation of wine from being an elite prestige good to becoming a traded commodity. This, in turn implies the development of a more market-oriented economy in Etruria, or at least one that operated with the expectation of established equivalent exchanges of one commodity for another (Bell 1991).

2. *The chaîne operatoire of wine production and consumption*

To understand the system of wine production it is necessary to reconstruct the essential connections between the land, the vineyard, the winery, the farm, settlement patterns, transport facilities and places of consumption of the wine. These essential stages form the *chaîne operatoire* (Martinón-Torres 1990) of wine production and consumption which link together the social, economic and cultural aspects of wine use. The evidence for this *chaîne operatoire* falls into several categories. Studies of land use and settlement patterns through field survey and excavation can provide information about the organization of the land and farms. Evidence for the equipment required for the production, storage, transport and ultimate consumption of wine comes from artefacts and their find spots from both surveys and excavations.

3. *Land to vineyard*

There is not yet evidence for any field systems that may have been used around the few Etruscan farm buildings that have been excavated although some general observations are possible. In the Albegna Valley, and other areas such as south Etruria, Etruscan farm sites are not particularly close to one another, suggesting that there was not a great pressure on the land and that intensive methods of cultivation, such as polyculture (*coltura promiscua*), may not have been essential to provide subsistence (Potter 1979, pp. 52-92; Carafa 2004; Perkins 2002; Perkins, Walker 2002).

The solid nature of the farm buildings at Podere Tartuchino (Attolini, Perkins 1992), for example, provides evidence for settled agriculture with permanent infrastructure, presumably built in the context of fixed land occupation, ownership and boundaries. Arboriculture, by its nature, creates a structured landscape that implies established land parcels and long-term land-use strategies since well-maintained vineyards are a long-term investment and a fixed asset. Although we may hypothesise defined land divisions it is difficult to extrapolate any particular system of landownership with any certainty. Fixed land-boundaries might indicate private property, or institutionalised regulation of property, but they cannot in themselves reveal whether the land was owned by farmers or the elites, or how the production was organised: share-cropped, tenanted or cultivated by servile labour.

We do not yet have the kind of direct evidence for Etruscan vineyards that there now is for the Greek and Roman periods (Brun 2003, pp. 25-34; Boissinot 2007; Pikoulas 2007; Santangeli Valenzani, Volpe 2007; see this volume). Although the Roman author Varro in his *De Re Rustica*

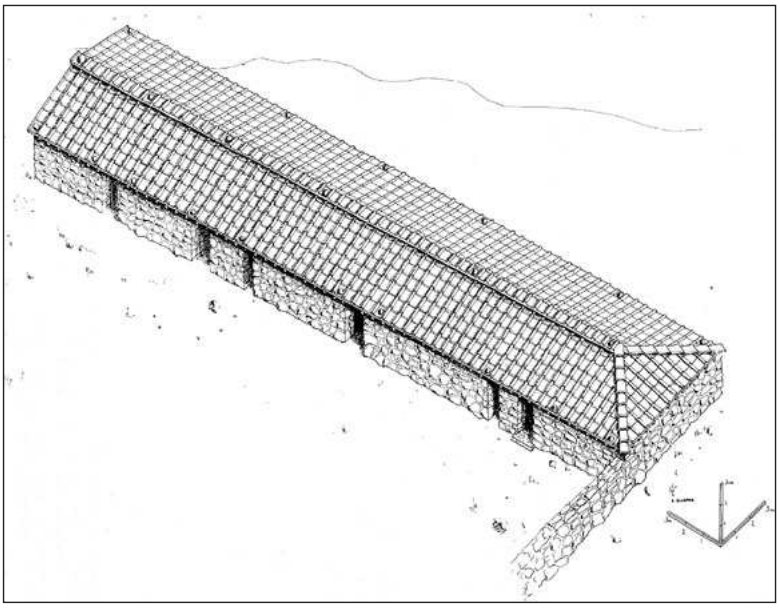

Fig. 1 – Etruscan farm at Podere Tartuchino (Semproniano, GR), phase II (c. 500-325?).

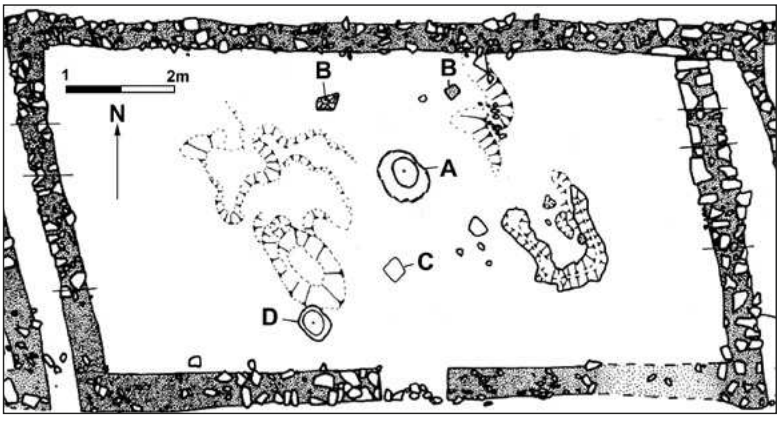

Fig. 2 – Podere Tartuchino (Semproniano, GR). Remains of the wine press. A large sunken jar, B stone footing, C post, D large jar.

(1, 7, 2) states that the ancestors did not lay out their fields as carefully as in his own time, this cannot be taken as strong evidence for Etruscan practices. The absence of evidence is most likely a result of a lack of research designed to recover such remains rather than a real non-survival of archaeological evidence for the arrangement of Etruscan vineyards. How vines were cultivated within Etruscan vineyards is not known: they may have been planted in rows or as bushes, but there is not yet any direct evidence for the methods of Etruscan vine planting, nor for any of the varieties cultivated. Later Greek and Roman literary sources relating to the early development of viticulture in Italy, studied by E. Sereni, emphasise the contrast between the 'Etruscan' un-pruned climbing-vine grown with supporting trees (*coltura promiscua*), and the 'Greek' bush-vine systems (*a palo secco*) for cultivating vines (Sereni 1962, pp. 15-18; Giannace 2005). However, the applicability of these sources to the seventh-sixth centuries and the former extent of these methods of cultivation in Etruria is still archaeologically unknown.

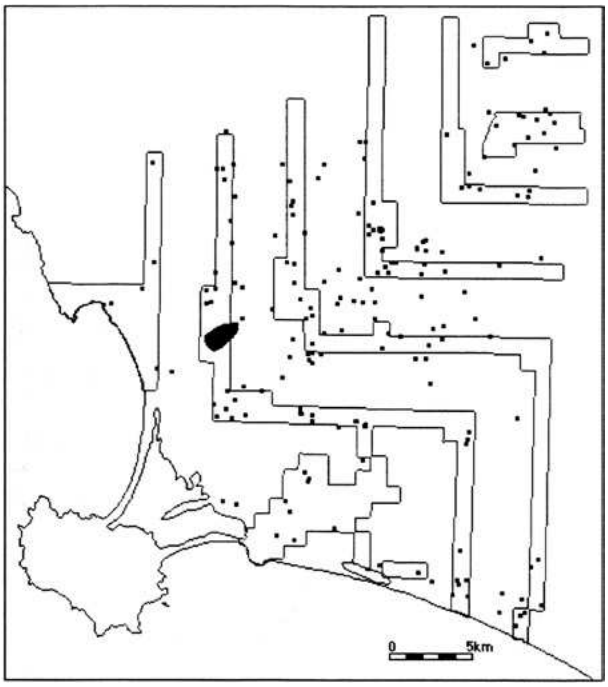

Fig. 3 – Albegna Valley. Find spots of large jars of the type used for fermenting and storing wine.

4. *Vineyard to winery*

In the Etruscan countryside the most visible archaeological evidence for agricultural production is fragments of large *pithoi* (*dolia*, *ziri*) that are commonly found by surface survey in artefact scatters consisting of tile, *pithos* sherds and pottery (Perkins 1999, pp. 146-151). These very large, ovoid jars appear in the later seventh century BC but certainly have Iron Age predecessors in the cremation burials of the Latial Iron Age, although on a generally much smaller scale. More distantly, in the Bronze Age Aegean palace economies large *pithoi* are also found, for example in Middle Minoan Knossos, some of which bear the graffito 'wine' (Boskamp 1996, p. 109; Christakis 1996; Christakis 2004).

These large, thick-walled ceramic vessels were used for the fermentation of wine: there is circumstantial evidence from the Etruscan farm excavated at Podere Tartuchino and literary evidence from the Roman period. However, their use for wine was not exclusive and lipid analyses from *pithoi* found at Poggio di Alto and Poggio di Macchiabuia, near Marsiliana, indicate that they were also used for fish products and perhaps olive oil (Camilli *et alii* 2008a, pp. 202-204).

The excavation at Podere Tartuchino, between Scansano and Semproniano in the upper Albegna valley *c*. 40km North-west of Vulci, uncovered remains that have been interpreted as a wine press, the earliest yet recovered in Italy (Attolini, Perkins 1992) (Figs. 1-2). Within the large central room of the farm the dominant feature was the *pithos*, large ceramic jar set into the floor in the centre of the room. Chemical analysis of the ceramic identified traces of lipids deriving from pine resin, suggesting it had been given an impermeable coating on the interior, a treatment recommended in antiquity for jars intended for wine storage (Cato, *De Re Rustica* II, 3; Brun 2003, pp. 68-69). Around this jar, forming a triangular arrangement, were two stone footings to the north and a large, probably structural, wooden post to the south. These together may have formed the base of a platform for pressing grapes by treading, with the jar below collecting the juice. Simple arrangements like

these for pressing grapes are represented on Attic black figure vases of the mid-sixth century BC (von Bothmer 1985, pp. 113-117, fig. 40a, 71 l, Pl. 1). A second *pithos* stood on the floor of the room to the West and could have been used as a fermentation or a storage vessel. Sherds of at least six other large *pithoi* were found in the in press-room at Podere Tartuchino. Together, if all were in use at the same time, these sherds suggest that over 1800 l of wine could have been produced in a season.

The key technology enabling this method of wine production was the ability to produce the large durable ceramic vessels capable of fermenting and storing the wine. Similar vessel could, of course, have been made of wood, but in Etruria the preferred technology appears to have been ceramic. In Etruria the capability to produce amphoras and *pithoi* (Gras 1989, p. 763) and other large articles in terracotta developed in the second half of the seventh century. This technological advance can also be seen in the appearance of terracotta roof tiles and revetments to clad roof structures of houses and temples (Winter 2009). Ancient Roman legends tell that advanced ceramic technology was brought to Etruria by Demaratus, an itinerant Bacchiad refugee from Corinth in Greece, but it is equally possible that the technology was developed in Etruria itself (Ridgway, Ridgway 1994). As so often in Etruria opinion is divided between those who prefer a Greek inspiration for Etruscan advancement (Winter 2002) and those who prefer an indigenous stimulus to progress (Riva 2010, pp. 69-71).

Evidence from the remains of the *pithoi* found in the Albegna Valley survey area indicates that the production of jars was a highly specialized craft (Fig. 3). The ceramic body of many of the *pithoi* contains black augite, a mineral not found in the Albegna valley: it is a volcanic mineral only found to the south of Lake Bolsena and south of the river Fiora, in the Latial volcanic area. The presence of this mineral indicates that somehow the mineral was transported from its place of origin to the farms, where it was found in the ceramics. There seem to be three likely explanations this observation, either the mineral was a commodity traded because of its quality as an ingredient in the clay-mix required for large vessels; or *pithoi* were made at the places where the mineral was found and then the finished vessels were transported to the farms scattered through the countryside, a process requiring a reasonable transport infrastructure of roads and carts. A third possibility is that itinerant craftsmen (cf. Christakis 1996) travelled from farm to farm carrying the mineral with them as a raw material and made the *pithoi* on-site using their specialist skills to construct temporary kilns to complete the difficult firing of the vessels. At Podere Tartuchino the central *pithos* was actually too large to have passed through the door opening of the room in which it was used. This suggests the possibility that the *pithos* may have been installed even before the building was constructed, underlining the intention of the farm's builders to produce wine. Whichever explanation is favoured, wine production was clearly dependent upon specialist ceramic artisans, whether or not they were itinerant (Perkins 1999, pp. 184-186).

The advance in ceramic technology that enabled the production of *pithoi* enabled a rapid increase in the quantity of wine production and therefore an increased area of land dedicated to vineyards, and indeed a multiplication of the numbers of individual farms in the Etruscan landscape.

5. *Winery to farm*

Archaeological field survey aims to understand the broad picture of how landscapes were settled, but this picture is based upon the artefacts found in individual fields, for example the identification of a location as the site of a farm depends upon the interpretation of a scatter of stone and roof tile, turned up by the plough, as the site of a farm. Other artefacts found with the remains of building can then be studied in order to understand the activities that took place at each site. In the Albegna Valley, plotting the locations where *pithoi* were found on settlements provides an indication of the areas where wine may have been produced, although the *pithoi* may of course also have be used for other purposes such as storage of grain, oil, olives and other produce.

If we turn from the wine production equipment and try to investigate the agricultural regimes at the farms we need different forms of evidence. At the Podere Tartuchino excavation, in a marginal

location at above 500 m in the upper Albegna Valley the archaeological deposits were carefully sampled to recover preserved plant remains carbonized by exposure to fire. The findings, that included 1148 grape pips, an olive stone and 55 fragments of grain, derive from chance preservation of the plant material and so cannot be used to indicate the relative importance of different crops, but the range of material clearly indicates a mixed farming economy producing at least grapes, grain and olives. Unfortunately animal bones were not preserved at the site and so it is not possible to discuss which animals were kept there, but evidence from other Etruscan sites would suggest sheep, goats, pigs and cattle at least were reared alongside the exploitation of wild animals (Attolini, Perkins 1992).

6. *Farm to settlements*

The archaeological research in the Albegna Valley has mapped the ancient landscape, identifying the locations of settlements from all periods throughout the Valley (Carandini *et alii* 2002). In the Etruscan period, a hierarchy of settlements has been identified ranging from an Archaic city at Doganella, to smaller urban centres at Saturnia, Ghiaccio Forte (near Scansano), Orbetello and Fonteblanda (Talamone), to villages in isolated rural areas, to small farms scattered in the countryside (Perkins 1999).

The distribution of *pithoi* in the surfaces scatters found by field survey indicates that it was commonplace for agricultural produce, not only wine, to be both processed and stored at scattered rural settlements. The finds of *pithoi* on the scattered rural settlements suggest that wine was made in the Albegna Valley on most of the land below *c.*500 m that was neither in the flood plain, on steeper slopes, heavy soils nor waterless soils (Perkins 1999, pp. 44-50). However, *pithoi* have also been found in the larger settlements and the city at Doganella suggesting that wine production, and more generally storage of agricultural produce took place at all levels in the settlement hierarchy. This is an important observation because it indicates that wine production was nearly ubiquitous and not confined to elite settlements or territories surrounding urban centres.

The extensive survey work has revealed that Etruscan rural settlement extended across most of the land below *c.* 500 m by the end of the sixth century BC. The locations of the settlements demonstrate a high degree of organization: the nucleated settlements are focussed at strategic points in the landscape and evenly distributed at *c.*10 km intervals through the valley and rural settlements are scattered between them. This suggests that the settlement pattern may have been planned, or at least suggests a thorough knowledge of landscape at the time the farmsteads were established (Perkins 1999). Wine was produced within this structured settlement pattern raising the possibility that the settlement pattern was planned in a rational way to facilitate wine production, or at least that the agricultural regime had some determining effect on settlement location and distribution.

7. *Settlements – transport*

This increased capacity of wine production was intimately related to the capability to produce amphoras, to both store and transport wine. The development of amphora technology was therefore also a key development in the creation of a technological and physical infrastructure for producing wine. As has already been noted, the design of these Etruscan amphoras was adapted from types used in the Levant, Punic North Africa, and the Tyrrhenian area. It is more difficult to ascertain whether the shapes were adopted for wine containers along with any other technological advances. The practicalities of making and firing amphoras is not dissimilar to that used in Etruria for producing large jars (*olle*). Yet the emergence of a rather standardised repertoire of shapes (our familiar typologies based on morphology) suggests a highly organised, and standardised production process along with the operation of large kilns for firing the amphoras, and these in turn suggest something more than household related production.

The field survey identified amphoras kilns only in the city at Doganella in the lower Albegna Valley (Perkins, Walker 1990). This strongly suggests that the production of the amphoras for trans-

porting the wine was organized in the urban centre. More recent work has also identified evidence for amphora production on the south bank of the Albegna at Sant'Antonio, near Marsiliana, only 5 km east of Doganella, these amphora are very similar typologically and petrologically to those made at Doganella (Camilli *et alii* 2008a; Zifferero *et alii* 2009). This provides evidence that production was not entirely centralised at the city. The relationship between this evidence for production and the newly discovered focus of settlement in the hills around Marsiliana is not yet clear (Camilli *et alii* 2006; Camilli *et alii* 2008a, pp. 352-359; Camilli *et alii* 2008b). The kilns at Doganella have not yet been excavated, but the amphoras are consistently oxidised suggesting the use of an updraft kiln. The presence of over-fired and deformed amphora wasters at Doganella illustrates the difficulties of controlling the pyrotechnology, and this is in contrast to the relative absence of coarseware wasters (here and elsewhere in Etruria) which were typically fired on the lower technology and lower temperature clamp kilns.

Finding *pithoi* at the farms suggests that the wine was produced in the farms whereas the amphoras were largely produced in the city. Wine may have been transported to the city in skins and then bottled in the amphoras. Alternatively, empty amphoras could have been carried from the city to the farms where they were filled with wine. It is also possible that grapes were transported to the city where the wine was made and bottled in amphoras. In either of these scenarios the find spots of the amphoras indicates transportation occurred between the city and rural settlements. Of course each of these mechanisms could have operated in different areas at the same time. Yet the fact remains that the amphoras are found on both the urban and rural sites, suggesting that the wine was consumed in both the country and the city as well as being exported. The distribution of the amphora provides further evidence for the integration of the wine production and the settlement pattern. The production of the amphoras at the city at Doganella suggests that the city centralized the wine production and prepared it for export by bottling and transporting the full amphoras, to the nearby port at Fonteblanda (near Talamonaccio) for export. The shortest route would have been overland although transport by river, coastal lagoons and watercourses is also a possibility. Various strands of evidence suggest that the complex of sites at Fonteblanda, Bengodi and Talamonaccio acted as an *emporion* for the city at Doganella (Perkins 1999, p. 22).

The adoption of amphora making technology, or adaptation of existing technologies to produce wine amphoras, was an essential part of the *chaîne operatoire* since it made possible the transport of the agricultural produce and therefore the redistribution of the surplus production, both within and beyond the Albegna Valley.

8. *Transport to trade*

Doganella is the only place in Etruria where there is precise and incontrovertible evidence for the production of transport amphora, although it Vulci, Tarquinia and Pisa are other locations where fieldwork might locate the production places of known types of amphoras. It has not yet been possible to prove that the amphoras produced at Doganella are the same as those found in Languedoc, but it has been suggested that they, and associated other ceramics, are similar to amphoras found on shipwrecks at Antibes and Bon Porté (Ciampoltrini, Firmati 2003-2004).

The fabric known as Type B, found at Pech Maho and elsewhere in Languedoc (Gailledrat, Solier 2004, 2.2.2) is similar to the fabric made at Doganella and it seems highly likely that some, at least, of the type B fabric amphoras were exported from the Albegna Valley. The best preserved amphoras from a shipwreck, some still with their corks, and packed together with vine-shoots, were found in 1999 in the Grand Ribaud F shipwreck near Giens (Var) (Long *et alii* 2002) and the clay and minerals used to make these amphoras from the Grand Ribaud F shipwreck are similar to those used in the area of Cerveteri in southern Lazio (Fabric A: Gailledrat, Solier 2004, 2.2.2), the site of ancient Etruscan city of Caere. But here the trail runs cold, since although other amphora thought to have been made at Caere have been found in tombs or shipwrecks, there is, as yet, no firm evidence for where, near Caere, the amphora were made and how their production was organized. It may be

that the wine production was centralized in the city of Caere as at Doganella but there is not yet any evidence for this possibility. It is likely that Vulci was also an important production centre (Fabric C: Gailledrat, Solier 2004, 2.2.2) but the minimal evidence for transport amphoras from Tarquinia suggest it may have been a less important wine production centre (Bruni 2005).

The ceramic technology to produce containers capable of transporting wine was a prerequisite for the exportation of wine to areas such as southern France, which at that time were not planted with vineyards. This capacity to trade in wine presumably stimulated further investment of resources into the countryside to enable the further spread of vineyards, settlements and ceramic infrastructure through the areas of Etruria suitable for vine growing. It seems reasonable to imagine the development of export oriented vineyards whose produce was destined for exchange with neighbouring areas of the Mediterranean and particularly the Golfe du Lions.

9. *Trade to consumption*

Etruscan wine will have been consumed in those areas where Etruscan amphoras have been found in terrestrial contexts, with the caveat that they were also used for other liquids and foods such as olives, pitch and fish products (Bound 1991, pp. 203-210; Camilli *et alii* 2008a, pp. 202-204). By this measure the wine was consumed within Etruria and much of the western basin of the Mediterranean with a particular emphasis in the Golfe du Lions. There is also evidence for wine use in the form of amphoras or storage jars deposited with the grave goods in tombs in Etruria (Rizzo 1990). These finds testify to the importance of bulk ownership of wine to the elite and constitute an expression of the customary accumulation of wealth in Etruscan tombs. This is not the place for a detailed consideration of the find spots of Etruscan amphoras in the Western Mediterranean (see Gori 2006), but future work associating production places with points of consumption will considerably increase our understanding of the articulation of Etruscan trade.

This outline of the *chaîne operatoire* of wine production and its interrelation with settlement patterns and technology constitutes the necessary background to the processes of trade that led to the distribution of Etruscan amphora that has been recovered from the western Mediterranean. To work towards an understanding of Etruscan wine it is necessary to attempt to connect the *chaîne operatoire* with theories of ancient trade.

10. *Etruscan wine: the emergence of a pre-monetary commercial economy?*

The academic consensus is reluctant to attribute too many 'modern' features to Etruscan trade (Gras 2000) and many scholars would question the notion of an *Etruscan* economy or the appropriateness of associating it with the term commercial. Generally, a description without ethnic connotations such as 'Tyrrhenian exchange network' is more useful since it allows for interactions of Etruscans, Greeks, Latins, Romans and Gauls in a complex network of socially embedded transactions of goods and services that operated in the Western Mediterranean in the first Millennium BC. However, within that broader context the perspective taken by this chapter focuses on the complex viticultural infrastructure in Etruria and perhaps identifies a set of circumstances, so far unique in the ancient Mediterranean, that enabled the emergence of a distinctive pattern of production and trade in wine. It is tempting to take a modernist perspective and explore the extent to which this might be considered as a commercial development.

In Italy the early phase of wine consumption and production, up to the later seventh century, has been discussed in terms of its small scale and the exchange of wine fits well with the concept of gift-exchange. Face-to-face gift exchange between individuals known to one another is documented in both ethnographic studies and literary descriptions for example Homeric *xenia*. Essentially, the exchange is part of a social ritual and is based upon the expectation of future reciprocity rather than monetary value or commercial gain (Cristofani 1975; Bell 1991, pp. 155-157; Gras 2000).

Conventionally, gift exchange is considered to have persisted in a primitive Etruscan economy until 530-500 BC when the arrival of Greek coinage (Cristofani 1975, p. 151) initiated a slow process of monetization and Etruscan coinage does not appear to have developed until the fifth-fourth centuries (Vecchi 2004-2007).

Aspects of the functioning of the Archaic pre-monetary economy as it develops from an economy based on gift exchange towards a monetized economy have been studied by A. Nijboer focussing on development of pottery and metalworking crafts from household to workshop production and the emergence of commodities (Nijboer 1998). Nijboer identifies the beginnings of commercial exchange between 650 and 600 in the context of economic development and exchange facilitated by *emporia* (Nijboer 1998, pp. 243-244). Nijboer's work represents one of the few relatively modernist studies of the early Italian economy. In general primitivist / substantivist views of the Etruscan economy prevail over modernist / formalist views and this reflects the general trend in studies of the ancient economy in the latter decades of the 20th century. The ideas of Karl Polanyi have been very influential in this debate with a polarization between 'primitive' non-capitalist economies operating reciprocity and redistribution and 'modern' capitalist economies operating with market exchange (summarised by Smith 2004, p. 75), the Etruscan economy being closer to the 'primitive'. Polanyi's views do not allow for the possibility of non-capitalist commercial exchange that might have existed outside the terms of the polarized primitivist / substantivist debate (Smith 2004, p. 75).

An alternative viewpoint from economic anthropology, places emphasis upon the development of commercial activity as an aspect of social complexity in the early state and as a result of political action or personal agency (Smith 2004, pp. 75-78). Such a view fits well with the growing knowledge of the Etruscan economy: the scale and nature of exchange could be considered commercial but non-capitalist and its relationships to the developing Etruscan state and ordered settlement can be understood as aspects of social complexity. A driving force in the Etruscan economy could be identified with the role of the Etruscan elite as part of the hierarchical society of the developing Etruscan city-state.

It remains to explore whether the evidence for Etruscan wine production and exchange can fit this model of non-capitalist commercial exchange. The Etruscan economy shares little with a modern capitalist economy although it may be possible to identify some elements of capitalism: the Etruscan means of production may well have been privately owned by individual Etruscan *gentes* or even individual members of the elite. Some Etruscan economic activity may have been motivated by profit, perhaps as much for social capital as monetary profit, but there is no evidence for a wage economy. The primitive interpretation of the Etruscan economy interprets these 'capitalist' elements as aspects of reciprocity through gift-exchange and redistribution of resources as a means of legitimization of the elite. Yet in the context of a complex society such as the Etruscans, the boundaries between reciprocity and commercial exchange can be come unclear. For gift exchange to function there is ultimately an expectation that the gift will be reciprocated in some way and that the reciprocation will balance the gift. The quality and quantity of the social interaction facilitated by the gift, rather than the substantial exchange, may thus be reified as a form of commodity so reducing the differences between gift exchange and commodity exchange at an abstract level (Bell 1991).

Once an exchange is separated from a face to face social interaction the function of the exchange becomes more commercial than social as a commodity changes hands. A vine grower might render grapes to the social elite as a gift, but in a depersonalised exchange, for example between a member of the elite and a wine consumer in Gaul, the wine has become a commodity and the exchange is less a gift and more a commercial exchange. After first contacts, the intensive exchange between Etruria and societies in the Golfe du Lion may be seen, given its scale, as commercial exchange for slaves and metals (Nash-Briggs 2003) rather than a ritualised social interaction. The evidence from Gaul suggests that wine has emerged as a commercial commodity by the end of the seventh century, developing from surplus agricultural produce to a specialised production that was exchanged first as a gift then as a commercial commodity (Hart 1982, p. 40; Nijboer 1989, p. 43).

A fundamental prerequisite for the widespread production and exchange of wine as a commodity, as suggested by the scale of the evidence of amphoras, is a relatively developed economy with strong agricultural production, transport infrastructure, market structures and trading contacts. The required level of technological skill and social complexity to organize this scale of wine production and exchange may have taken more than a century and a half to develop – the time between the appearance in Italy of the Tyrrhenian amphoras and the distribution of Etruscan amphoras in Gaul. Similar levels of complexity in the organisation of the production of roof terracottas is now emerging from Rome (Winter *et alii* 2009) and these underline the level of organisational and technological sophistication necessary to provide the basis of large scale wine production. Quite apart from the actual know-how, a relatively developed economy would have been required that could support trade in either large ceramics or raw materials for making ceramics or indeed to support the mobility of specialist craftsmen (Perkins 1999, pp. 184-186).

This form of economic development would seem to be stretching the limits of gift exchange and moving towards requiring a more market oriented form of exchange dependent upon investment in infrastructure and the rational expectation of long term future surpluses for commercial exchange to repay the investment of resources. Corinna Riva makes the point that Orientalising elites appropriated technological advances – such as terracotta manufacture – to enhance their status (Riva 2010, p. 71), but the deployment of the technology on the scale indicated by the distribution of *pithoi* and amphoras in the Albegna Valley, and no doubt matched further south around Vulci and Caere (Enei 2001; Zifferero 2005, pp. 111-112), is indicative of a different, larger, scale of economic activity. Rather than the technology being restricted and controlled by an elite, it is being deployed through political action or personal agency to provide the infrastructure to generate an exchangeable agricultural surplus. This appears to be a rather modern sounding application of new technology to derive commercial advantage, and quite unlike traditional conceptions of the pre-monetary workings of the archaic economy.

This discussion of the commoditisation and commercialization of wine has been focused on Etruria, but the process was dependent upon Etruria's Mediterranean context and perhaps also the history of Etruscan contacts with other peoples of the Mediterranean. Even before the transformation to large scale wine production, the 'Tyrrhenian' amphoras provide an example of how different areas of the Mediterranean were already highly inter-connected between the mid eighth and mid seventh centuries, through exchange of agricultural produce mediated by Euboeans or Phoenicians (Gras 1985). Michel Gras noted that adoption of this form of 'Tyrrhenian' wine amphora for transporting Etruscan wine was not casual but was dependent on their generalised identity as wine containers and the fact that their adoption by Etruscans signified a relationship with the areas where the amphora type originated (Petacco 2003, p. 37). However, going beyond the adoption of a specific type of Phoenician amphora, it also seems possible that the Etruscans adopted the Phoenician idea of deliberately producing a surplus of wine, through planning intensive agricultural settlements, and then exchanging the surplus with peoples in distant parts of the Mediterranean where it was scarce. In short, intensifying production for commercial purposes. Effectively the Etruscans developed from being recipients of wine to being producers. In turn the Etruscans used the same model to supply wine to the coastal communities of Gaul and Catalonia from the last quarter of the seventh century and through the sixth, where there was an un-met demand. This general model may be attractive, but detailed evidence, beyond the amphora types is difficult to pin-down. Although the origins of the amphora shape lie in the Levant and modes of production and exchange may have been adopted alongside the amphora types, currently, we do not have sufficient evidence to identify how the technology and practice was transferred. Euboeans may have carried the models to Etruria from the hub of Pithekoussai. Alternatively, Phoenician colonisation of Sardinia or North Africa, specifically Carthage, may have provided a 'colonial' model where settlers may have implanted a rural economy, with roots in the Levant, geared to surplus production, and this may have directly influenced the planning of Etruscan settlement patterns. Another possibility is that models rooted in the Neo-As-

syrian Empire and aimed at generating surplus to pay imperial tribute may have been carried from the Phoenician homeland and taken root in the 'Princely' proto-urban centres of Etruria, and have been adapted to generate an agricultural surplus for the maintenance of the Etruscan aristocracies. Of course all these *lux ex oriente* models, with their extensive Bronze Age and biblical precedents, can be countered by a model whereby indigenous Etruscan agricultural development yielded a surplus of wine and the Etruscans then turned to their Mediterranean connections and adopted the most suitable form of material culture, 'Phoenician' amphoras, that enabled the mobilization of the surplus wine. Either model would present a complex Etruscan society taking advantage of its Mediterranean context to develop widespread viticulture and participate in the exchange of wine with its Mediterranean neighbours.

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