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Trade in Roman North African Cookwares

Introduction and Aims

The purpose of this paper is to demonstrate the widespread diffusion of Roman North African cookwares and their importance as evidence for economic and social exchange during the Roman Empire. Cookwares are essentially functional items, commonly found on most sites and usually made from local sources with limited distribution – this is still the case for many cookwares. The pervasiveness, however, of Roman North African cookwares in European excavations is now becoming more widely recognized and accepted as a special phenomenon. Despite this, these wares have still not received adequate attention or enough significant independent analysis and are all too frequently studied as a sub-section of other classes, such as coarsewares or finewares, making it difficult to fit them into the wider context of Roman trade and cultural networks. Other factors such as natural resources, processes of acculturation and transportation issues will also be raised to examine why these wares travelled so far and how North Africa fitted into the mechanisms of trade and exchange within the Roman world.

This investigation will begin by looking at the fabric, form and function of cookwares and how these various aspects affected their marketability. Following on, evidence from various sources will be used to map what we know about cookware production sites in the producing zone of North Africa – essentially modern-day Tunisia – and the distribution of these wares in three specific regions within the Roman Empire: the south of France, eastern Spain and sites around the River Tiber in Italy.

What is a Cookware?

Cookwares are defined as vessels for use over a fire or in an oven[1]. This is usually obvious from the forms, which often have sagging or rounded bases and show signs of burning or sooting from the hearth[2]. In other words, both form and function dictate their inclusion within this class. Further, the finishes on North African cookwares help distinguish them from coarse or finewares and many have either a slipped interior or exterior and blackened surface or rims[3] – the extent of which results as a consequence of stacking in the kiln[4]. The type series is based on form since there is not yet enough information on fabric to divide them by

[1] SLANE 1990, 72.
[2] FULFORD, PEACOCK 1984, 179.
[3] See for instance TORTORELLA 1981, 208–11; BONIFAY 2004, 211.
[4] IKÄHEIMO 2003, 194 and 270 fig. 17.

production centre or even zone. The categories include deep casseroles, shallow casseroles, shallow pans, lids, kettles, casseroles with handles, casseroles with knobs, calcitic handmade wares and braziers (fig. 1a–d).

Fabric, Form, and Function

Rather than jumping straight to a statistical analysis of where cookwares were distributed and the economic implications of these patterns, it is important to start by explaining the anatomy of these unique cookwares and to highlight the importance of studying fabric, form and function in gaining a full understanding of production processes, marketing strategies, transport issues, social and cultural interaction and ultimately what we can deduce from all of this about degrees of connectivity.

Fabric and Surface Treatment

Fabric analysis is the study of the ingredients of ceramics and is traditionally used to provenance pots. However, linking finds from the Mediterranean to specific production sites in North Africa is very problematic, due to the lack of excavated production sites and the homogenous nature of these wares; though it is sometimes possible with the use of a microscope and petrographic thin-sections to distinguish

Fig. 1a – Roman North African deep casserole and lid.

Fig. 1b – Roman North African shallow pan.

Fig. 1c – Roman North African brazier.

Fig. 1d – Roman North African kettle.

some areas geographically[5]. For instance central Tunisian products tend to have a more calcareous temper - seen as white or yellow bodies – compared to the generally lighter fabrics from the north (fig. 2)[6].

What makes a cookware effective is thermal shock resistance (that is, its ability to resist cracking) and the ability to retain heat efficiently and effectively[7]. The combination of mainly quartz in the ingredients, thin walls and high firing techniques meant North African vessels performed well in both these ways. In addition, many of the vessels used a slip on the interior or exterior. On the exterior this helped to increase their thermal shock resistance and on the interior (fig. 3) it reduced permeability and made them non-stick[8]. A recent study of cooking wares from Italy by Ikäheimo suggests that they were adding quartz to imitate Roman North African cookwares[9], highlighting their recognition as superior cooking vessels. Further, their technological make-up actually made them stronger than many other cooking vessels; in light of the fact that Peña has suggested that most cooking pots had a lifespan of less than one year, strength was a very marketable quality[10]. In other words, North African cookwares were the *Le Creusets* of the Roman Empire.

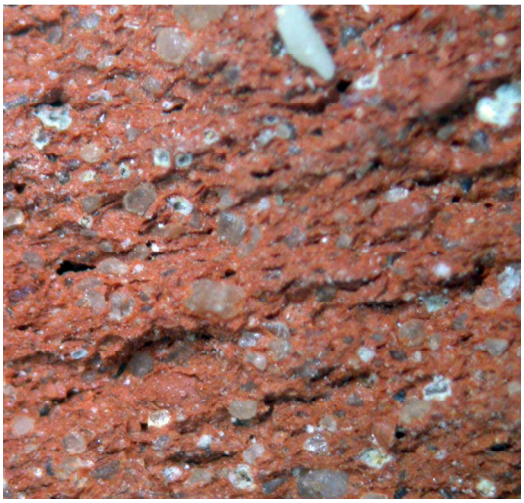

Fig. 2 – Central Tunisian cookware fabric from a Hayes 181 pan x 20.

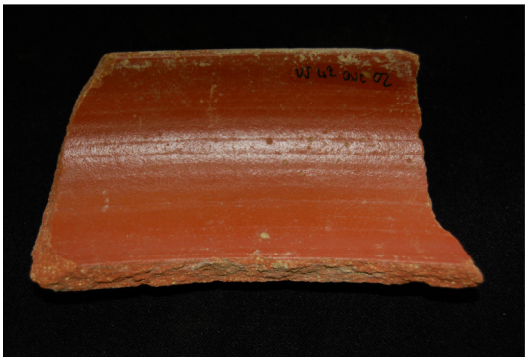

Fig. 3 – Interior slip on a Hayes 181 pan.

Another important consideration is that North African potters were able consistently to reproduce vessels of this quality because the geology of Tunisia produces quartz-rich clays. Further, the production technology that the Roman North Africans inherited from Punic potters[11] enabled them to make thin-walled vessels that could safely be fired at high temperatures, which made them stronger[12]. In fact the kiln design from Punic times through Roman times to today remains largely the same, underlining the effectiveness of their methods – what changed during the Roman era was simply the size and organization of the kilns and production centres, according to changing economic situations (see fig. 4a for an example of a Punic/Roman kiln and fig. 4b for a modern kiln)[13]. For instance the Roman kilns would have needed to be bigger to cope with the more intensive production of amphorae and this would in turn have required more fuel and greater organization[14]. To look at the wider picture, the success of cookwares may therefore have depended to a certain extent on the changing fortunes of the elites who controlled production, and so the tailing off of production in the later 5th century may indicate changes in the organization and scale of production brought about through the economic difficulties in the later Roman period, when we see evidence for smaller workshops and the replacement of wheel-thrown pots with handmade.

[5] See comments by PEACOCK 1984, 14; PEACOCK, TOMBER 1991, 292–3.
[6] IKÄHEIMO 2003, 35–6.
[7] See SCHIFFER 1990; SCHIFFER *ET AL.* 1994; TITE *ET AL.* 2001.
[8] See SCHIFFER *ET AL.* 1994, 204-209.
[9] IKÄHEIMO 2003, 394.
[10] PEÑA 2007, 57.
[11] SWIFT 2005, chapter 9.
[12] TITE *ET AL.* 2001.
[13] STIRLING 2006.
[14] IKÄHEIMO 2003, 198–9.

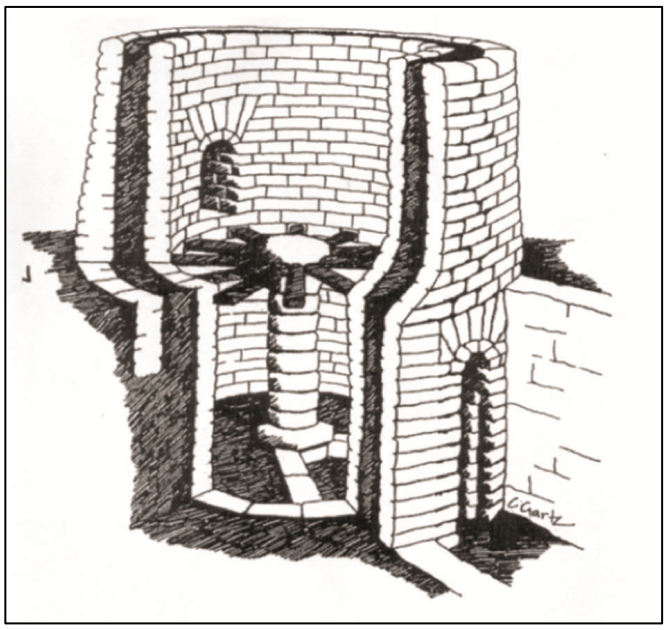

Fig. 4a – Roman kiln design from Leptiminus, central Tunisia (Jane Heinrichs, courtesy of Leptiminus Archaeological Project.)

Fig. 4b – Modern kiln from Moknine, central Tunisia.

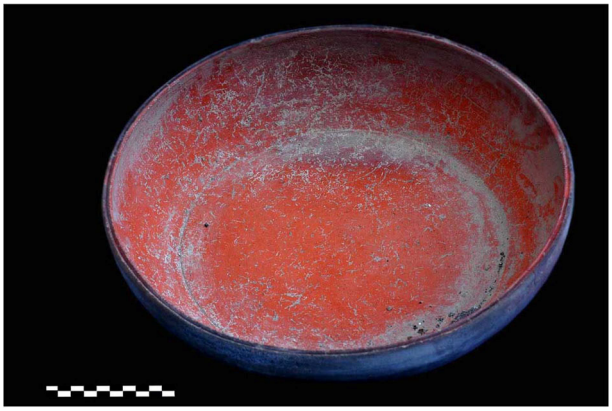

Fig. 5a – Form models: Pompeian Red pan of the 1st century AD (J.-P. Brun).

Fig. 5b – Form models: Roman North African Hayes 181 pan from the 2nd century AD.

Form

The forms, unlike the fabrics and methods of manufacturing, were based on shapes with native and Punic derivations combined with forms closely tied to those found outside North Africa, including Italic and Hellenistic cooking pots.[15] One example is the famous Italic Pompeian Red dish with its interior shiny slip, which is almost identical to the Roman North African Hayes 181. It is also possible to trace the transformation of some Punic casseroles into their Roman North African guises (see figs. 5a and 5b for comparisons).

The choice of form may have been dictated by several considerations, of varying importance according to differing cultural, political and economic situations: a) market appeal, for instance the conscious copying of Italicforms to appeal to a wider export audience; b) cooking style, for instance shallow pans with sagging bottoms were designed for use on braziers which are widespread in both Italy and North Africa; c) cooking techniques, for instance

[15] MICHEL BONIFAY, personal communication.

the use of dry sauces versus wet sauces tended to be characteristic of different culinary traditions, based largely on climate, with people in hotter environments preferring dry dishes and those in colder environments preferring the warming qualities of a more liquid stew[16]; d) transportation issues, for instance casseroles with handles and more jar-like forms including kettles are rarely found outside the production zone of North Africa, but for many of the casseroles and pans without handles which are widely traded outside the region, size ranges suggest the use of stacking techniques, both in the kiln and for ease of packing[17].

Function

The new Italic forms in combination with Punic production technology suggest it was the native North African population who were producing these forms as a result of their inclusion within the Roman Empire, rather than Romans. However, the advent of Roman rule and the trade that came with this would have brought with it new cultural traditions and products which may even had led to some changes in North African eating habits. A good example of this is the adoption of the Hayes 181 shallow pan form in North Africa, which clearly emerged out of the Italic Pompeian Red tradition. One of the very few literary references we have to cooking in the Roman period is from Apicius' *De re coquinaria* where in several recipes he calls for the use of the '*cumana*'[18], which is undoubtedly the Pompeian Red dish produced in the area around Cuma. Given the large-scale production and use of this pan shape in North Africa, and its considerable export around the Mediterranean, it is not unreasonable to suggest that cooking habits throughout the Roman Empire were also becoming more global in nature.

Changes in size are also an indication of function diversity and a move to larger dishes in the Late Roman period in North African finewares is paralleled in the cookware repertoire, suggestive of more communal eating habits, perhaps influenced by the spread of Christianity, but also typical of military contexts – a military site in Valencia, Spain seems to favour open, large pans[19].

Mapping Cookwares

Mapping North African cookwares instantly gives us a picture of how widespread their distribution was around the empire and how far it reached from its point of production. The physical landscape also affected trade routes – financially as much as practically. It is important always to bear in mind with distribution maps that they simply represent the state of our knowledge and not true values.

Production zone

The cookware production zone of Roman North Africa basically encompasses *Africa Proconsularis*, essentially modern-day Tunisia (fig. 6). There are very few excavated kilns here, but combined with evidence of kiln and potters' waste we have a rough idea about areas of production and how the sites might have been organized. Michel Bonifay has grouped the cookwares into A, B and C categories with A signifying northern Tunisian production, B signifying central Tunisian production and C relating to specific finishes with the areas of production as yet unknown[20]. Cookwares are mostly associated with production of amphorae.

[16] Experimental techniques have shown that a stew cooked on a brazier is considerably drier than one cooked on a hearth, and dry deep pans such as the Roman North African Hayes 197 were better suited to this type of cooking.See CROOM 2001, 44–5.
[17] *Supra* N. 4.
[18] PEÑA 2007, 57 for ref to Apicius 3.2.5, 5.1.3, 5.2.2, 6.9.13, 7.5.6, 9.8.1; for demonstration of Apicius' *Pullum frontonianum* see www.yumblog.co.uk in Roman section.
[19] I LACOMBA, MESQUIDA 2008.
[20] BONIFAY 2004, 66–7.

Production of these wares for export seems to have started around the middle of the 1st century AD (though production itself probably began earlier), with early examples found in Italy and Spain[21], and continued with a peak around the 3rd century, then tailed off with exports stopping around the 5th century[22] – though production continues in North Africa itself with a noticeable predominance of handmade wares, suggestive of a change in the organization of production.

Fig. 6 – Africa Proconsularis: known and possible cookware production sites in the Roman period (modified from BONIFAY 2004).

Diffusion

Where did they go? Just about everywhere. A distribution map of North African cookware finds in the Mediterranean, at peak production in the 3rd to 4th centuries, demonstrates that the market was mainly in the west, and is thought to have been driven by the movement of primary goods such as grain, olive oil and wine (fig. 7). It is generally believed that oil and wine were more often traded with cookwares than grain, which is corroborated by the fact that their production does not follow the same start or fall-off points as African Red Slip wares (ARS) that tend to be associated with grain exports[23]. This last important point demonstrates that cookwares and ARS had different economic trajectories, which highlights the complexity of Roman trade networks.

Transportation

How did they get around the Mediterranean? Studies of shipping and sailing have received much more attention recently and we can now start to see how these issues affected distribution and connectivity[24]: for instance some routes were more dangerous than others and excavations on many Mediterranean islands, such as Malta and Pantelleria, demonstrate their use as waypoints and entrepots, evidence of which can be seen in cookware finds[25]. Also, from sea to river to road the costs increased, with road transport being by far the most expensive and difficult[26]. The loads consequently became smaller the further inland you travelled as the economic rewards were reduced. The following regional studies look at patterns of diffusion, paying particular attention to what happens at coastal sites and on river and road routes. As a final point, however, it

[21] See AGUAROD-OTAL 1991, 239; DYSON 1976, 115–138.
[22] IKÄHEIMO 2003, 16–17.
[23] BONIFAY 2004, 477–479.
[24] See BOETTO 2006; POMEY 1997.
[25] Very little material has been published to date from Malta but it is well known that North African cookwares arrived there (NICK VELLA, personal communication); QUERCIA 2006 for Pantellerian cooking ware in Malta.
[26] REYNOLDS 1995, 106.

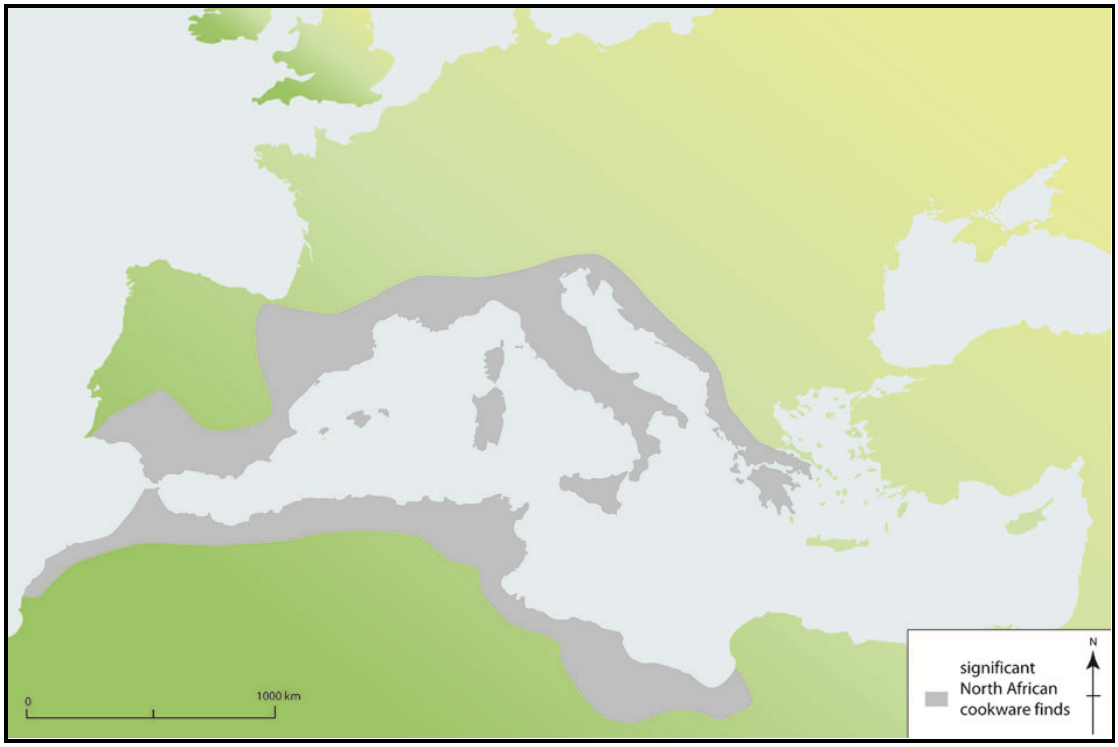

Fig. 7 – Distribution map of Roman North African cookwares around the Mediterranean in the 3rd to 4th centuries.

is significant that despite the cost of transport, these relatively low-cost products travelled very widely around the Mediterranean and could compete with local prices, which can only be a reflection of the volume of trade in other goods with which the cookwares were associated.

Use of regional studies

Sample distribution maps of Roman North African cookwares in regions in France, Spain and Italy have been put together using published material to demonstrate transportation trends. However, they also show that the picture is not as simple as saying that distribution tailed off the further inland you travelled: for instance, areas of political or agricultural importance, even if they were not well connected by sea or river, were made 'connectable' via road, and this had an interesting knock-on effect for sites near them, which were receiving imported goods though they may not have had direct access to a major road.

One of the difficulties inherent in a synthetic study of this type is examining differences and similarities across countries and regions when the published information is not in fact directly comparable. By necessity the three regions chosen use different statistical approaches, but each can usefully be employed to ask different questions and broad comparisons of their conclusions can be attempted.

The Var Region, Provence, South of France

The distribution map of the Var region, France, has been put together using an extensive study of the region published in 1999 that looked at the finds from 1952 sites (fig. 8)[27]. This shows occurrences of Roman North African cookwares and major site types, which highlight questions about location and transportation as well as the kinds of places that are getting these wares. In terms of numbers, 293 out of the 1952 sites have Roman North African ceramics and of those 293, 38 or 13% have Roman North African

[27] BRUN 1999.

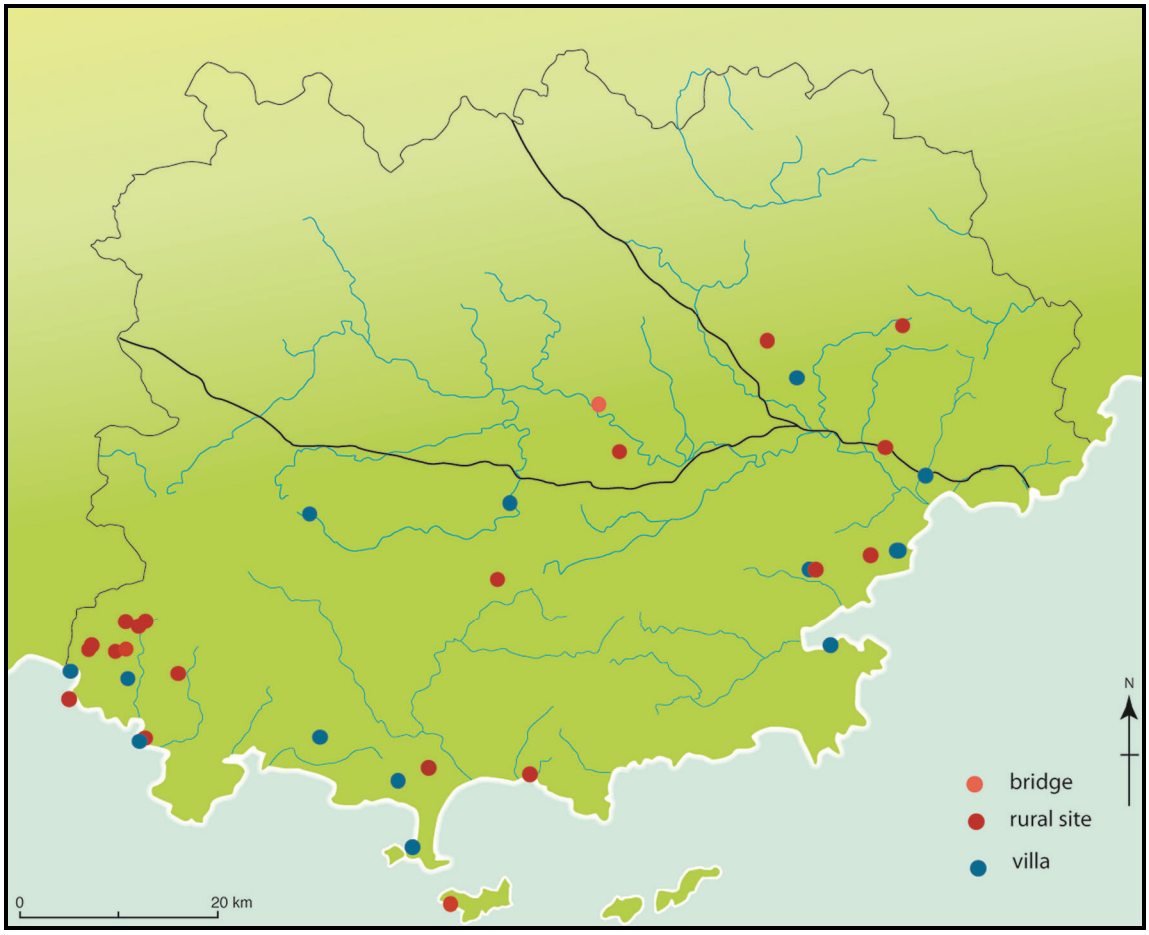

Fig. 8 – Distribution of Roman North African cookwares in the Var region, Provence, south of France.

cookwares, 135 or 46% Roman North African amphorae and 242 or 82% ARS. Of the 38 cookware sites, 14 or 37% are villas, and 20 or 53% rural sites, and 8 of the cookware sites, about 20%, have presses. Also of importance to note is the dominance of Roman North African cookwares compared to other imported cookwares: there are 20 instances of Pompeian Red, 2 instances of Italian cookwares and just one of Aegean. Of the 38 sites with cookwares, 17, nearly half, are found with both Roman North African amphorae and ARS.

In assessing this information the first point to make is that it is not surprising to find these wares on villa sites – about one-third – where you would expect a certain amount of traffic in consumer goods, likewise the sites with presses. And secondly, 21, or just over half of the sites are on or near the coast, with the remaining sites, without exception, placed near major roads or rivers, underlining the fact that transportation issues were key to the diffusion of these wares. Much as I like the idea that people travelled for miles on foot to purchase these superb cooking pots, I don't think that was happening.

Tarraconensis, Spain

The distribution map of Tarraconensis, in Spain[28], shows the diffusion of Roman North African cookwares by relative quantity of the occurrence of different types and usefully demonstrates the phenomenon of form limitations outside important areas or those connected to rivers or roads (see fig. 9). Of the four coastal sites, the number of different forms totals 28, 20, 17 and 12, with the latter being in fact the

[28] AGUAROD, OTAL 1991.

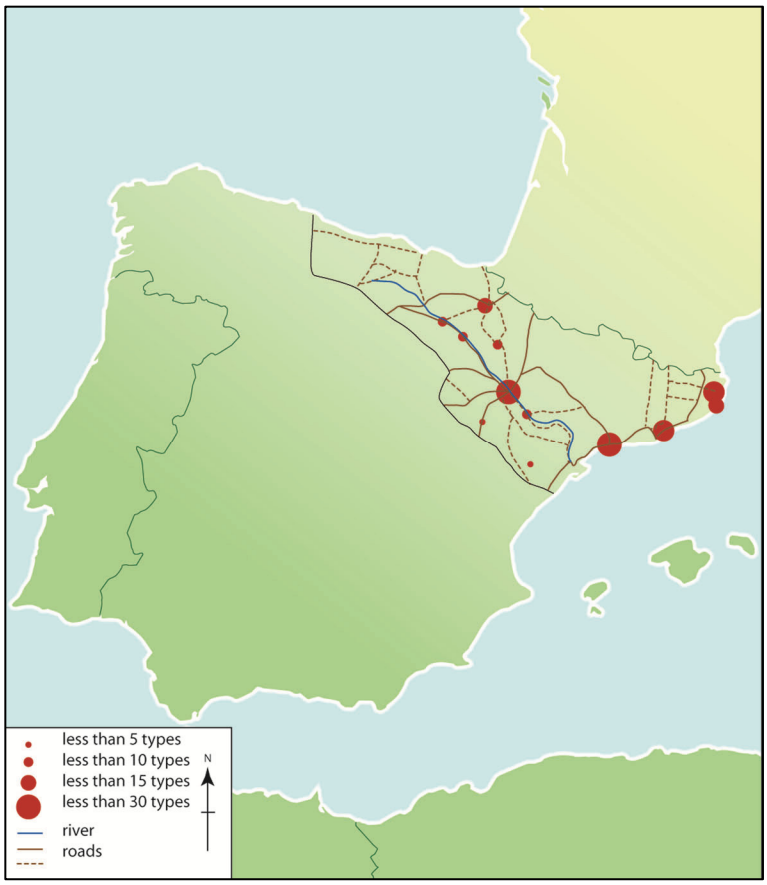

Fig. 9 – Distribution of Roman North African cookwares in Tarraconensis.

only location which is not a port.Those near rivers total 9, 8, 8 and 23, and this last figure of 23 belongs to the important Roman town of Caesaraugusta (fig. 9, large central spot), which, interestingly, is both on the main river route and on a principal road network. The sites inland number 8, 2, 4 and 12 different form types, and again, this last site, Pompaelo (see fig. 9, top right spot), although not on the main river route, is on the road network and is named as one of the more important towns in the region.

Tiber river and beyond, Italy

The four sites in mainland Italy have been chosen as they offer comparable assemblages from sites located further and further away from sea-borne trading networks, but mainly along the Tiber river route, all dated from the 4th to 5th centuries[29]. The first site, Casone del Sale, is located at Ostia, the Roman sea port at the mouth of the River Tiber[30]. The second is under the church of San Stefano Rotondo in Rome[31], a city that had ample harbour facilities to receive goods coming from Ostia. The site of Lugnano in Teverina is a villa on the slopes of the Tiber valley about 100 km from Rome[32], where river ports are known. The final site, Chianciano Terms[33], is in southern Tuscany and was beyond the limits of the Tiber and did not have easy access to riverine trade.

The first map (fig. 10) demonstrates the importance of studying cookware distribution in general, since they form a significant proportion of all pottery finds, for example 13% of all pottery at Rome. The second map (fig. 11) demonstrates the importance of Roman North African trade in general through the movement of North African amphorae, representing 44% of all amphorae at Ostia, 70% at Rome and 66% at Lugnano, suggesting that imported commodities were moved in substantial quantities from the port and along river routes, but when riverine transport peters out, as at Chianciano, there is a huge drop-off in the diffusion of imported goods, with only 9% of the amphorae being North African.

The final map (fig. 12) indicates that at Ostia and Rome, Roman North African cookwares dominated the market for imported cookwares, with a 41% and 37% share of the market respectively, but when you move inland Roman North African cookwares actually cease altogether. This is presumably due largely to transportation difficulties, but given that Roman North African amphorae travelled beyond Rome, it might be suggested that there were cultural factors at work here as well, with people away from the influences of

[29] MARTIN 2005, for summary of trade patterns at all sites.
[30] MARTIN 1993.
[31] MARTIN 1991.
[32] SOREN 1999.
[33] SOREN, OLIVAS 1999.

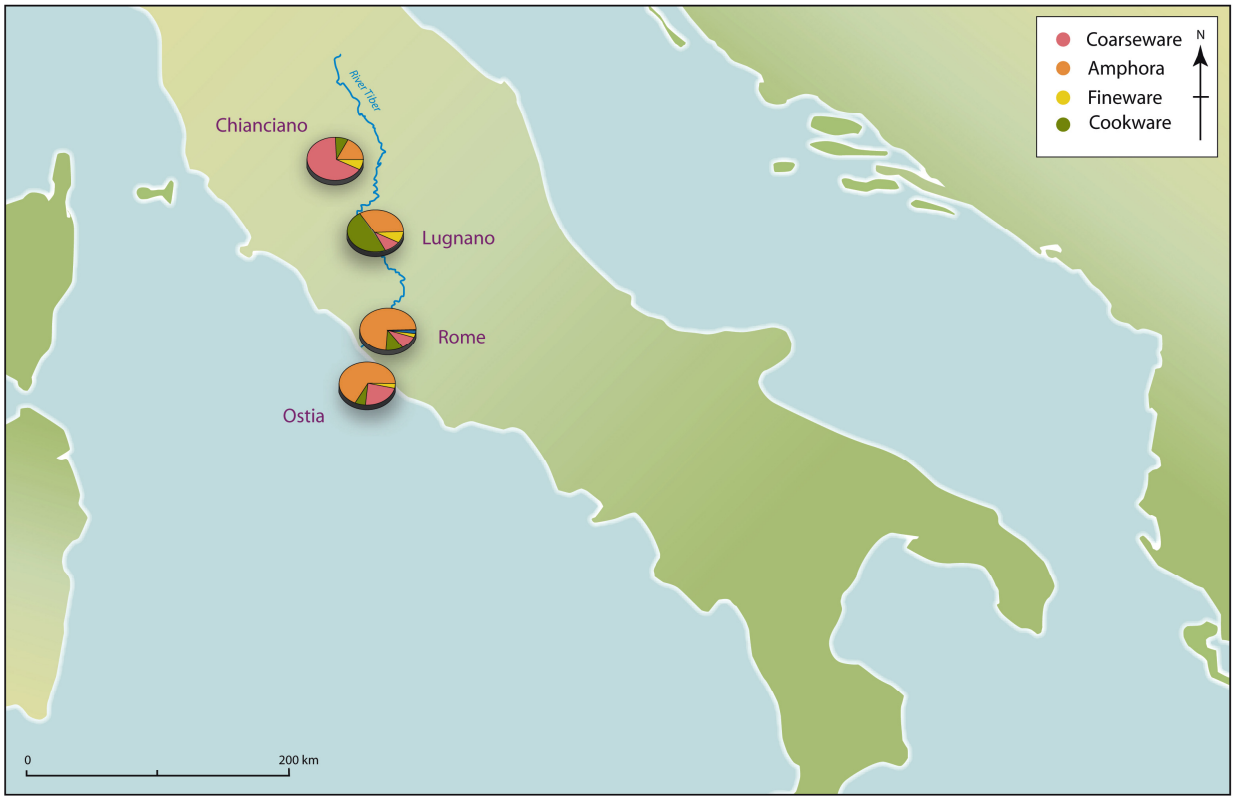

Fig. 10 – Distribution map comparing quantities of amphorae, finewares, coarsewares and cookwares up the Tiber and beyond, Italy.

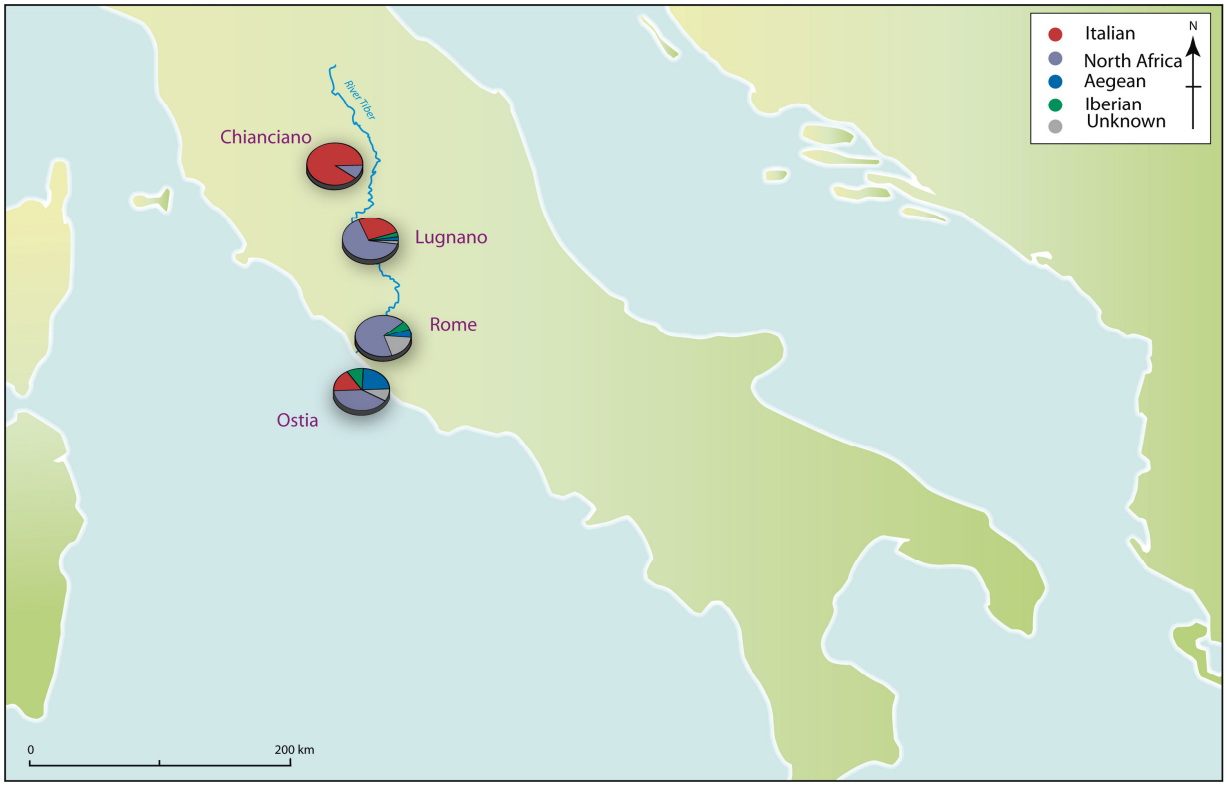

Fig. 11 – Distribution map comparing quantities of amphorae up the Tiber and beyond, Italy.

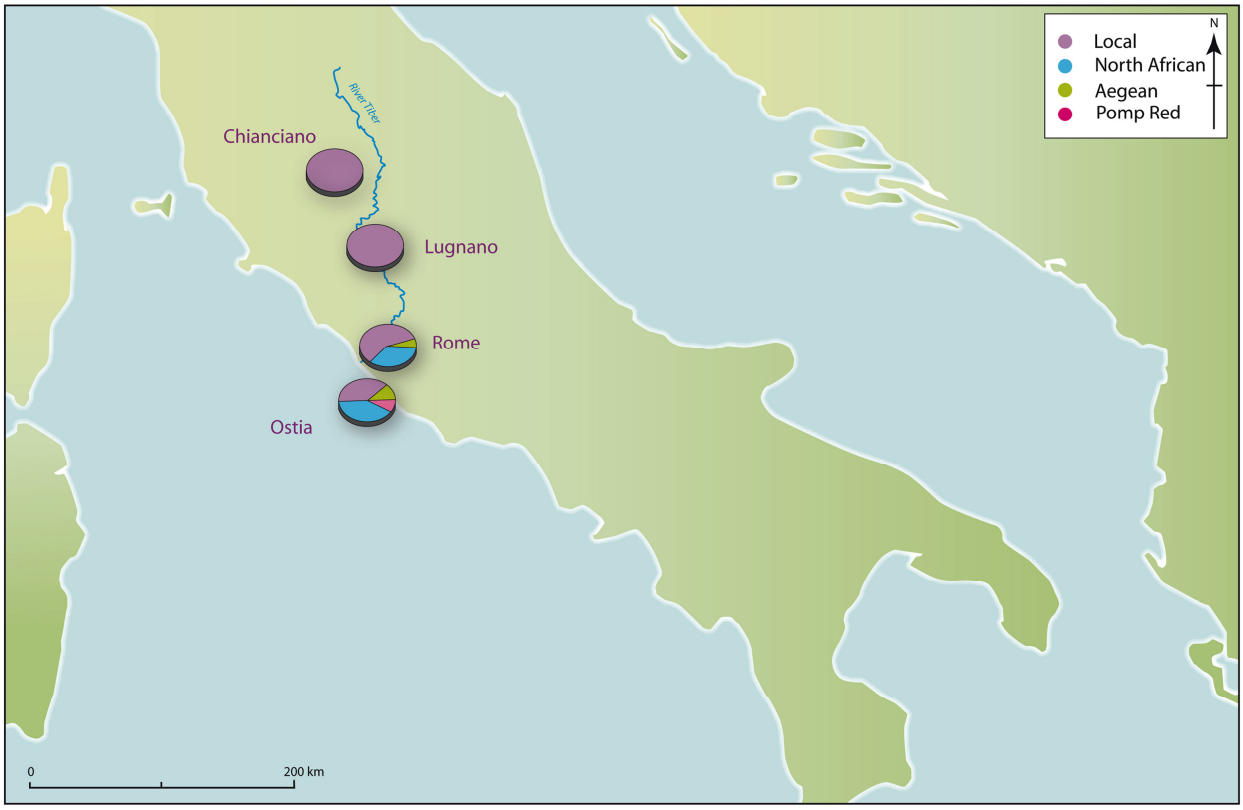

Fig. 12 – Distribution map comparing quantities of cookwares up the Tiber and beyond, Italy.

Rome who preferring to use their local suppliers, possibly for reasons of price, loyalty or differences in form that related better to local culinary traditions. A further important point is that the assemblage from Ostia, despite being relatively close to Rome, has an unusually high volume of Roman North African products, with the cookwares being more or less equal in total to the number of local cookwares, demonstrating that port assemblages are different in nature to those of cities: as both ports and entrepots these types of settlement may have lived off incoming goods more than those from their own region, and probably had a more multicultural population of merchants and sailors with different economic wants and needs.

The distribution maps of Roman North African cookwares have demonstrated that trade and exchange are limited mainly to ports and coastal regions and those near riverine transport. Further, the disproportionate number of imports in harbour cities compared even to coastal cities shows that these are special places perhaps with international merchant communities who got all their products from trade, and that by acting as entrepots many of the wares received in these ports never actually penetrate much further inland. Away from the coast it is the well-connected locations that receive imports, however, those with agricultural, and therefore trading, importance such as villas were also a magnet for imported wares, as primary goods such as olive oil, wine and grain were exchanged for other consumer items including ceramics. This is in contrast with rural areas that were not well connected, where it would have been necessary to produce items such as cooking pots locally. This study also shows that Roman North African cookwares are not consistently found with either Roman North African amphorae or ARS, suggesting that they were piggy-backing different products en route. Further research in this area, including the production site information in Tunisia and more analysis of assemblage compositions around the Mediterranean, is necessary to clarify this point.

Conclusions

This sample study of Roman North African cookware distribution has demonstrated that cookwares can, and should be, used to look at questions concerning economic and cultural exchange in the Roman Empire, with results from the distribution maps suggesting that the scale and sophistication of trade around the Empire was significant. Studies of form and 'shape geographies' show degrees of connectivity through the evolution of those forms and how they were developed with transportation in mind[34]; studies of fabrics demonstrate how make-up and technology were key to their superior quality and presumably contributed to their success in the marketplace; and function gives us a taste of the broad cultural interconnectivity that bound the Empire. Just as Italian and Gaulish terra sigillata symbolized the essence of sophisticated Roman culture, perhaps Roman North African cookwares represented the ultimate Roman *batterie de cuisine*.

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[34] SWIFT 2005, vol 1 chapter 12 for concept of shape geographies.

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