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Sea- and Riverborne Trade,  
Ports and Hinterlands,  
Ship Construction and Navigation  
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# The Mediterranean coarse ware pottery trade (3<sup>rd</sup> century BC-7<sup>th</sup> century AD)

Simonetta Menchelli

## Abstract

This paper focuses on the coarse ware pottery trade from the 3<sup>rd</sup> century BC to the 7<sup>th</sup> century AD. Some case studies are shown concerning local, regional and Mediterranean traffics and their political, economic and social relationships.

It is well known that Roman coarse ware pottery consists of all vessels used for preparing and cooking foods, for domestic purposes, for serving at table and preserving food in the pantries and cellars. In these vessels the functional aspects prevail over aesthetic ones. (For the definition of the term "coarse pottery" and the history of research see Olcese 1993 and Panella 1996).

In the specialized literature until recently ordinary merchandise was thought not to have been traded in the Roman period, except on a small scale. Nowadays this opinion is changing thanks to many archaeological and archaeometric studies and to the progress of underwater archaeology which has discovered a remarkable quantity of coarse pottery in several shipwrecks.

At present we know that coarse wares could be traded throughout the Mediterranean if endowed with good technical characteristics. These characteristics were necessary especially for kitchen ware, since the vessels had to be refractory in order to permit thorough cooking of the food. Particular clays were necessary also for the *mortaria*, as their big handles were difficult to form (Olcese 1993, 104). We shall see that high quality was necessary but not sufficient: specialized vessels could travel successfully on long distance exchanges only thanks to a combination of political and economic factors.

*Latium* and Campania - in the late Republican and in the first Imperial periods - and then North Africa up to the Late Roman period, produced and exported a great quantity of coarse pottery in a wide range; also Eastern Mediterranean wares travelled in the long distance trade.

These regions shipped a great deal of foodstuffs throughout the Mediterranean; exports were controlled (partly at least) by the State and the coarse pottery accompanied grain and amphorae in the holds of the ships.

As for coarse ware from Lazio and Campania, many specialized workshops have been identified in the Tiber valley, at Rome, in its outskirts and in the gulf of Naples (Olcese 1994; Di Giovanni 1996; Gasperetti 1996). At the moment it is very difficult to distinguish, either by morphological or by archaeometric standards the products of the many workshops working in this great area (Olcese 1996, 438-440). These ateliers produced high quality vessels, especially cooking ware (*caccabi*, *ollae*, *patinae*) and *mortaria* (Gianfrotta-Pomey 1981,

182). Their fabrics were characterized by volcanic inclusions, giving the vessels their excellent refractory quality for cooking food.

The export of coarse wares from Lazio and Campania reached its peak from the 2<sup>nd</sup> century B.C., up to the Augustan period, and this trade was strictly connected with the wine sea-routes directed towards regions undergoing Romanization.

The Mandrague de Giens shipwreck is a good illustration of this economic phenomenon. This ship sailed from Lazio, probably from Terracina about 60-50 B.C., and it was wrecked along the Gallic coasts near Tolone (Tchernia *et al.* 1978). Its cargo consisted of Dressel 1 amphorae; piles of black glazed and coarse vessels were set in the free spaces among them: proving that all merchandise was loaded at the same time. In total 891 fragmentary vessels have been salvaged; they were dishes, pans, pots, lids. Every form was manufactured in different size standards, confirming the "industrial" activity of these ateliers.

The remarkable presence of this pottery in the *castra* and colonies founded in the 2<sup>nd</sup> century B.C. confirms that its trade was closely connected with the process of Romanization.

We have also archaeometric and quantitative data concerning *Albintimilium* (see fig.2) and *Luna* (Ratti Squellati 1987, pp. 465-495)

The coarse ware from *Latium* and *Campania* was common in the Gallic *oppida*, together with the Tyrrhenian wine amphorae and the black glazed vessels, which constituted the wine service. In this case the presence of imported ware is an important cultural marker. It shows that the local elite wished to acquire various aspects of the Roman lifestyle, such as symposium and Roman cooking. For example, the success of the Italian red slipped pans in Gallia was due to the acquired habit of baking hardtacks and cakes, according to the Roman-Campanian style (Bats 1988, 202).

Along the same sea-routes, the quantities of imported coarse wares might change according both to the location (coastal or inland site, with or without river links etc.) and to the socio-economic context (rural or urban centre, production, consumption or redistribution site). In this

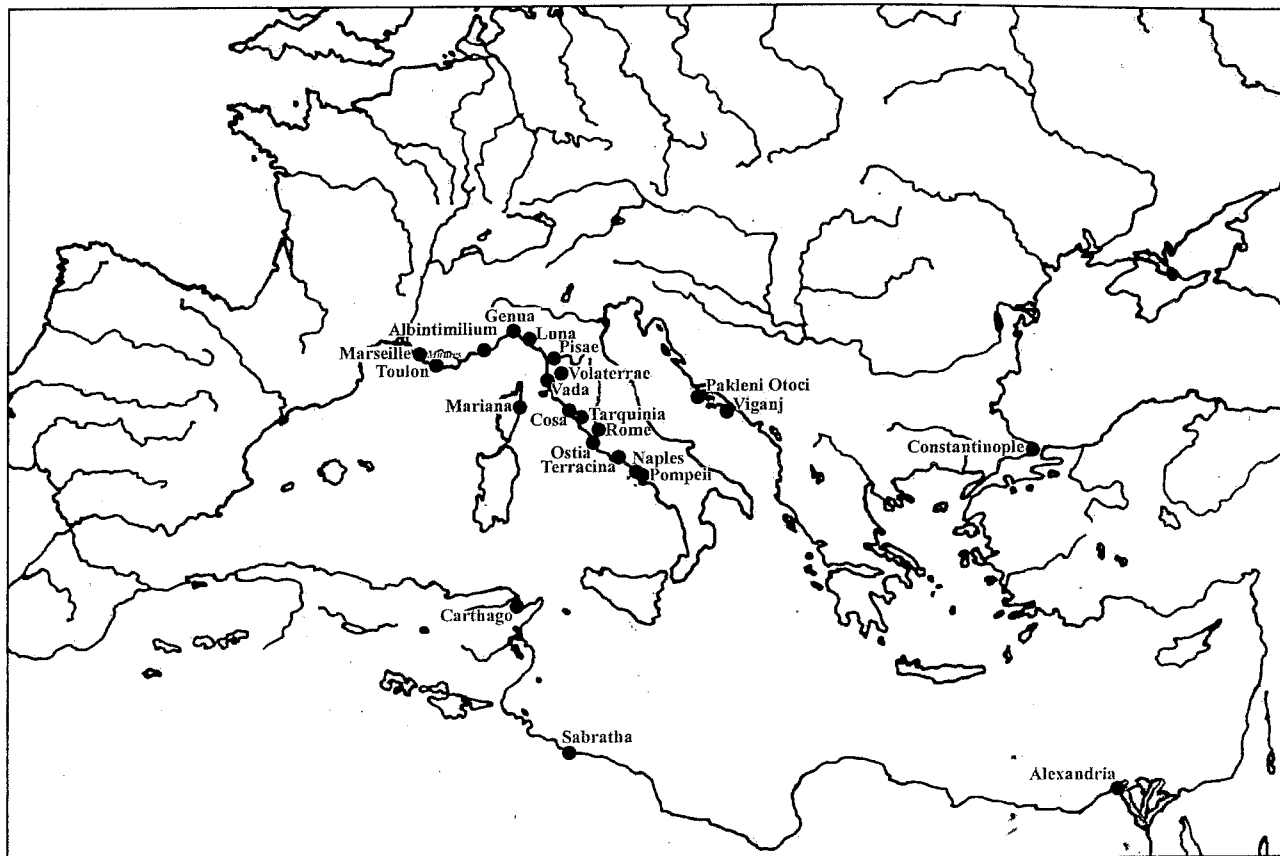


FIGURE 1.

respect the comparison between the Roma and Ostia contexts is very meaningful: the provenances of the imported coarse pottery show very different quantitative data (Pavolini 1996).

Another factor that influenced the success of the imported pottery was the presence of local specialized workshops. For example, at *Luna* the imported wares predominated from the foundation of the colony up to the 5<sup>th</sup> century A.D. (Rossignani, Bruno, Locatelli 2002), whereas at *Pisae*, whose pottery production is well known, the imports are less abundant, at least in the *domus* known at present (Pasquinucci-Storti 1989) (fig. 3,1). Obviously, in the 1<sup>st</sup> century A.D. at Pompeii the imported coarse ware was very unusual (less than 3%: Di Giovanni 1996, 72).

As regards the well-known North-African coarse ware, this pottery was plentifully distributed throughout the entire Roman world, especially in the Western Mediterranean coasts, from the 2<sup>nd</sup> to the 5<sup>th</sup> century A.D. (Reynolds 1995, 102-103).

It was mostly kitchen ware (casseroles, pans, dishes/lids) produced with characteristics which technically improved its cooking quality (e.g. blackened surfaces; grooves both in the inner wall and in the exterior bottom: for technical aspects see Schuring 1988). Other forms were *mortaria*, flanged bowls, and other bowls for various purposes.

This pottery travelled along with the other North African exports: grain, olive oil and *garum* amphorae, terra sigillata, lamps and marble. The commercial flows from North Africa were conditioned by the *annona*, and in particular by the grain supplies to Rome (Fulford 1987, 71; Lo Cascio 1990; Tomber 1993, 144). The foodstuff imports to Rome influenced the movement of goods in general, exerting what G.E. Rickman calls a gravitational pull on the main grain growing areas of the Mediterranean and on the organisation of shipping and other resources (Rickman 1980, 262-263; Lo Cascio 1991, 329; 349-351). State and private trade were closely intertwined: we know that the *navicularii* (financiers and shipowners) involved in the *Annona* trade let spare capacity on their ships for the cargos of other merchants (*mercatores*, *negotiatores*) (Rougé 1966, 245-294; Tomber 1993, 145). From the 3<sup>rd</sup> century onwards, *Navicularii* of Africa were exempted from the port charges on the goods they carried for their own trade (Warmington 1954, 61-62).

Several shipwrecks containing African merchandise have been identified: one example is the Trincere shipwreck, near Tarquinia (Pontacolone-Incitti 1991) (Fig 3, 2).

In this ship 75.96% of the cargo consisted of kitchen wares and 10.58% of *mortaria* and bowls. The amphorae amounted to only 12.50%, but there is the suspicion that many items had been stolen before the excavations.

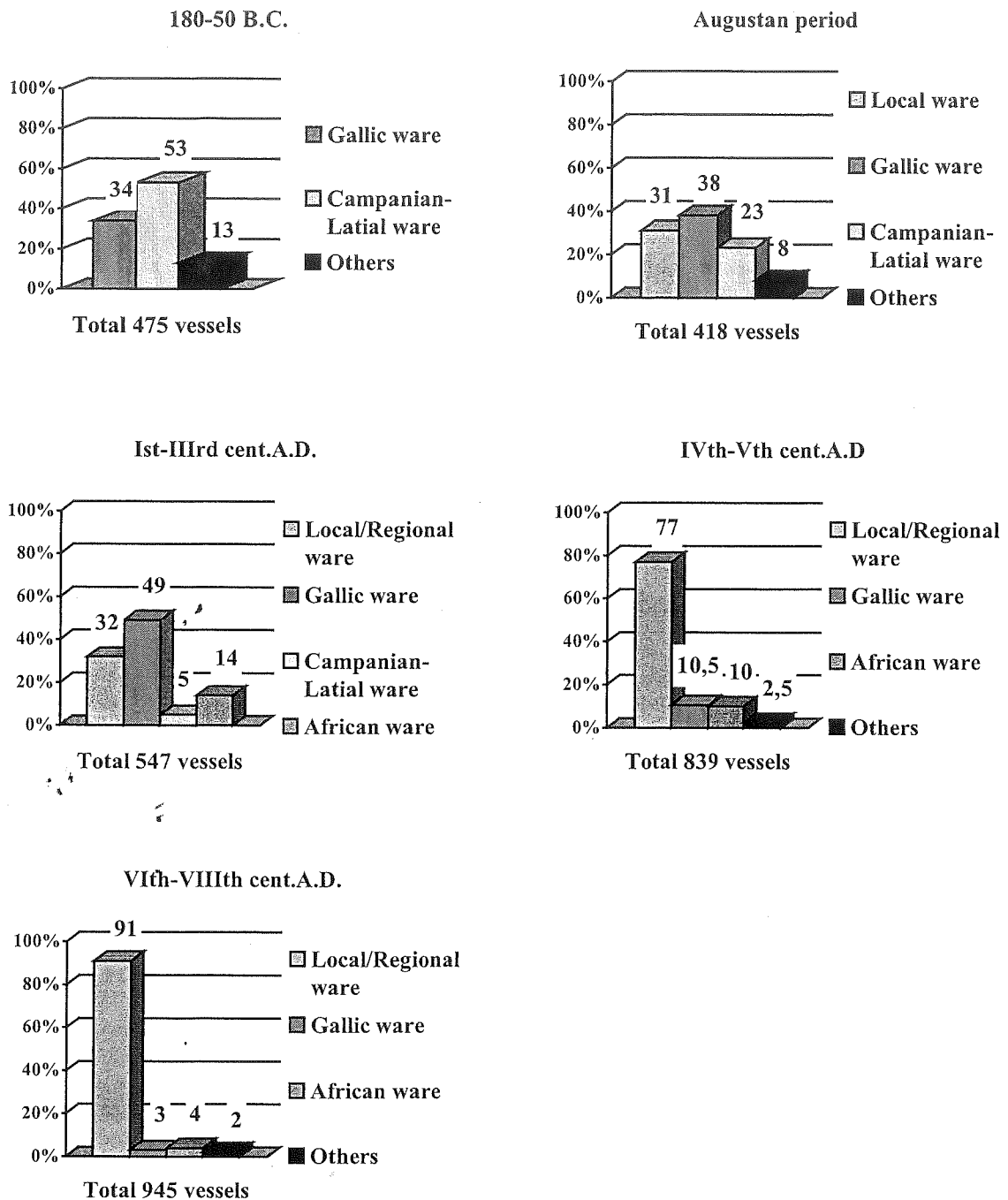


FIGURE 2. *ALBINTIMILIUM* (CASTRUM FOUNDED IN 180 B.C.)  
After G. Olcese, *Le ceramiche comuni di Albintimilium*, Firenze 1993

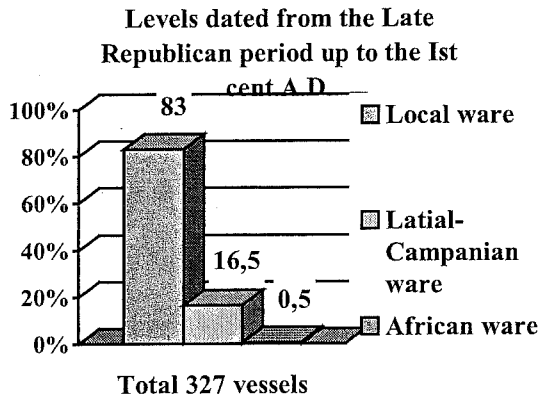
The location of the wreck north of Rome shows that ships loaded with African merchandise could sail independently of urban *Annona* business. North African coarse ware vessels were shipped along the main sea-routes Carthago-Rome but, as they were endowed with good technical characteristics, after being unloaded in the harbours, they could follow their own pattern of distribution and thus stimulate the demand still further.

Many Italian and provincial workshops imitated African

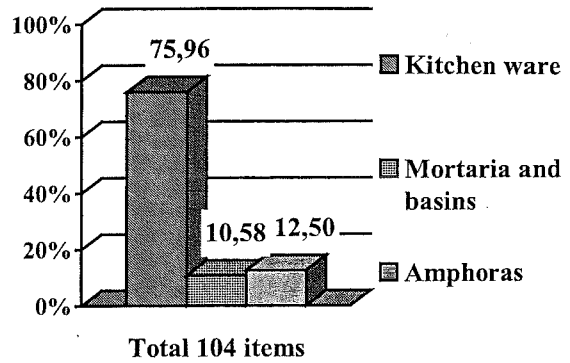
ware (in general see Fontana 1995): this is further evidence that these vessels commanded a certain value in the markets of the Roman world.

Obviously, African imports were abundant particularly in the redistribution centres: in the *horrea* excavated at *Vada Volaterrana*, the harbour serving both *Volaterrae* and a rich hinterland, African coarse pottery amounted to 30.70% (fig. 3,3), whereas at *Albintimilium* it was a maximum of 14% in the 1<sup>st</sup>-3<sup>rd</sup> century levels (fig. 2). At

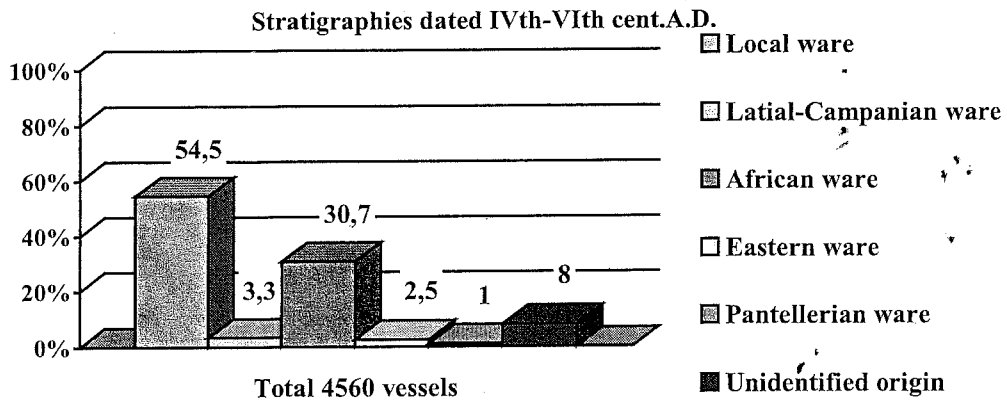
1) *PISAE. ARCIVESCOVADO DOMUS*  
After M. Pasquinucci - S. Storti, 1989.



2) *TRINCERE SHIPWRECK*  
After L. Pontacolone - M. Incitti 1991, pp.543-570



3) *VADA VOLATERRANA. HORREA.*  
After M. Pasquinucci - S. Menchelli (Editors), *Vada Volaterrana. I. Gli Horrea. Stratigrafie, Strutture, Materiali*, forthcoming.



4-5) *OSTIA. TERME DEL NUOTATORE. AREA NE.*  
After L. Anselmino - C.M. Coletti - M.L. Ferrantini - C. Panella, 1986, pp. 45-81.

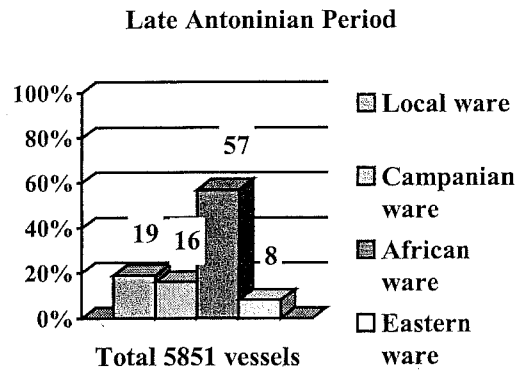
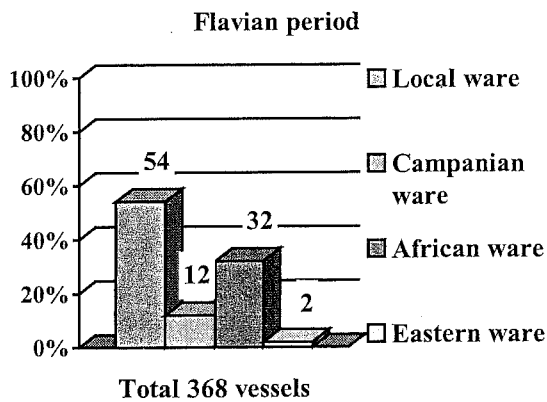


FIGURE 3.

Ostia in the Late Antonine period the African pottery even amounted to 57% of the cooking ware (Anselmino et Al., 1986) (fig. 3,5).

As far as the Eastern coarse pottery is concerned, this was another ware whose distribution was connected with the *Annona* trade, in particular with the grain sea-route Alessandria-Roma. A direct route was probably taken from Rome to Alexandria, whereas the journey to Rome was an indirect one: from Cyprus, to the southern coasts of Asia Minor and then westwards to Crete, Sicily and the west coast of Italy (Rickman 1980, 266). Besides grain, Eastern regions exported to the West precious wines. From the 4<sup>th</sup> century onwards, Constantinople's demand for consumer goods drove the agricultural and manufacturing production in the Eastern regions. The Late Roman amphorae 1-7 provide evidence of the distribution of Eastern wine throughout the whole Mediterranean basin (Panella 1993).

Eastern coarse wares were produced in several workshops in Asia Minor, in Attica and Crete. They were widely distributed along the Mediterranean coasts from the 2<sup>nd</sup> century A.D., but its quantity is not comparable to the Campanian-Latinal and African wares: also in the 4<sup>th</sup> and 5<sup>th</sup> century contexts its percentages do not reflect the remarkable presence of Eastern amphorae (Reynolds 1995, 103).

At Ostia the Eastern fabrics amounted to 2% in the Flavian period and 8% in the late Antonine period (fig. 3, 4); at *Vada Volaterrana* they were at 2.5%. The items included cooking and table wares (pans, pots with wide sloping rim, casseroles); in the table ware the most common form was the trefoil-mouthed pitcher, produced in morphologic and dimensional variants by several Aegean workshops (in particular in Attica and Crete) in the 1<sup>st</sup>-4<sup>th</sup> centuries A.D. (Coletti-Pavolini 1996). This form reached the Western Mediterranean coasts as far as Marseille (Pasqualini 1998, 297, forms 16 and 17).

Several of these pitchers appear to be manufactured in the same fabrics of thin walled jugs, in particular of jugs Ricci I/122, characterized by ridged ribbons: it is clear that they both were part of the same table service (Coletti-Pavolini 1996, 400; Menchelli-Pasquinucci 2000, 376).

The great variety of fabrics suggests that these pitchers could have been used also as cooking vessels (perhaps as boilers), as well as table ware. Because of their abundant presence at Ostia, it has been thought that they might also be carriage vessels, which added the worth of the content (most probably precious wine) to the technical quality of the table vessels (Coletti-Pavolini 1996, 400).

Local factors conditioned the markets receptivity: at Ostia, besides the pitchers, the Eastern pots and casseroles are well represented, at *Vada Volaterrana*, instead, this cooking ware was not successful, evidently it

could not face up to the competition of local and African coarse pottery; at Napoli, in the Carminiello ai Mannesi context, Eastern table ware was absent, in favour of many imported Eastern kitchen vessels and amphorae (Arthur 1994, 218).

In two shipwrecks identified along the Croatian coasts (Pakleni Otoci = Isole Infernali and S. Ivana Cape, near Viganj in the Pelješac Channel) only coarse and thin walled vessels appear to be found. The forms (casseroles, pots, pans, trefoil-mouthed pitchers, jugs with ridged ribbons) are peculiar to the Eastern workshops (Ilakovac 1968; Istenic 1988).

At the moment we do not know whether they can be considered as evidence of imports from eastern regions or from the Italian Adriatic coasts, as some Apulian workshops imitated Eastern forms (Leone-Turchiano 2002). It is very likely that these vessels travelled together with grain, since amphorae have not been found. Anyway the Eastern coarse pottery both in original and in imitated forms appear to have a significant presence along the Adriatic sea-routes.

Till now we have focused on those regions which exported huge quantities of goods, including coarse pottery as secondary or tertiary cargos. In these cases the distance travelled by coarse wares depends on the value of the primary cargo, on the frequency of its exports and on a special "political" orders at the final destination (Fulford-Peacock 1984, 256-257; Reynolds 1995, 128).

The case of the Pantellerian cooking ware is clearly different as it was produced by a small island which did not export foodstuff. However, especially in the late Roman period, it had great commercial success along the African coast from Carthage to Sabratha, on the main sea-routes from Carthage to Marseille and along the Iberian coasts. This ware is black, sometimes varying to reddish buff inside; the surfaces are smooth and sometimes show evidence of light burnishing (Fulford-Peacock 1984). It appears to have been made mostly by hand, but the turntable was also used (Santoro 2000, 561). The forms were designed for efficient stacking during transport: the most successful vessels were bowls, handled bowls, and casseroles. As regards mineralogical aspects, this ware is clearly characterized because it contains inclusions originating in peralkaline volcanic terrains which are very rare in the Mediterranean basin, but well known on Pantelleria.

This coarse pottery was particularly proof against thermic shocks and, of course, it had an intrinsic value. According to Peacock the Pantellerian ware production was driven by urgent need: the island was not suited to farming (Ovid called Pantelleria *sterilis*: Fasti, III, 567) and the inhabitants were able to acquire the necessary foodstuffs by means of trading the specialized vessels (Peacock 1982, 79-80).

Evidence of this traffic is provided by the shipwreck (or most likely a lost cargo or a discharge) identified near the Scauri harbour, in the southwestern area of the island. About 700 Pantellerian vessels have been salvaged; they appear to have been produced expressly for export (Santoro 2002).

The privileged trade with the territories of Sicily and Carthago favoured the entry of this pottery into the main sea-routes. The most remarkable quantities of finds are just in these regions and in southern Italy (Reynolds 1995, fig.166). Further north the Pantellerian ware was distributed in small quantities: R. Tomber presents the trade of these vases as an example of peripatetic shipping, that is, small quantities of pottery unloaded harbour after harbour along the Western Mediterranean coasts (Tomber 1993, 148). At *Vada Volaterrana*, for example, the Pantellerian was only 1% (fig. 3, 3).

Besides these wares, that were successful in long distance exchange, we also know of coarse pottery of good technical quality that was involved in small and medium scale trading.

Now we shall focus on the case studies of Provençal micaceous pottery and North Etruscan gabbriic ware.

The Provençal pottery is a black handmade cooking ware; its fabric is rich in micaceous inclusions; the exterior surfaces were pocked in order to make the vessels both lighter and more fire-proof at the same time (Olcese 1993). The forms were pots, pans and bowls (Olcese 1993, fig. 18); they were produced in a region not particularly renowned for agricultural surplus, that is in the Maures Massif area and in the Argens Valley. From the 2<sup>nd</sup> century B.C. up to the 4<sup>th</sup> century A.D. it was capillarily distributed along the coastal sites between the Rhone and Western Liguria: at *Albintimilium* it was found in high quantities (fig. 2).

The Roches d'Aurelle (Var) shipwreck gives evidence of the trade mechanisms of the Provençal coarse pottery. This small ship has been completely excavated: it has been estimated to be loaded with 160 *tegulae*; from 100 to 150 imbrices; 50 wine amphorae Gauloises 5; 850 micaceous vessels (R. Lequément - B. Liou, 1975, pp.76 ss.; A. Pollino et al., 1987, 25-49).

This presence in the same cargo of different goods coming from the same region was due to wholesale dealers, who bought goods from various ateliers and retailed them along the coasts. In this small scale cabotage trade great quantities of coarse pottery could not reach sites too far away from the production centres.

Another case study we would like to focus on is the gabbriic North Etruscan coarse pottery. It was produced in many workshops identified in the Fine and Cecina river valleys, belonging to *ager Pisanus* and *Volaterranus*. The most frequent forms were pots and pans (Cherubini-Del

Rio 1997; Menchelli 2003B c.s.).

The kitchen ware was of good technical quality thanks to the gabbros which can absorb heat and release it slowly, thus permitting a careful even cooking.

These vessels were manufactured from the Hellenistic period up to the Late Roman. A great quantity of this pottery has been found in the *Vada Volaterrana horrea*, which is in a redistribution context; it indicates the wide circulation of this pottery in the local markets and beyond. Archaeometric analyses prove that the gabbriic kitchen ware was traded along the coastal strip between *Luna* and *ager Cosanus*. As regards the table ware, north Etruscan forms, in particular jugs, have been identified at Mariana in Corsica (Menchelli-Picchi 2001).

It is possible that the diffusion of the North Etruscan coarse pottery overlapped with the distribution of the bricks and tiles stamped by Pisan-Volterranean *gentes* (*Rasini*, *Caecinae*, *Venuleii Aproniani*, *Nonii*). These bricks and tiles were distributed along the Tyrrhenian coast from *Lunae* to central Etruria, and in the islands of Elba, Sardinia and Corsica (Menchelli 2003A c.s.). While other North Etruscan goods, such as terra sigillata and wine amphorae, were widespread throughout the Mediterranean (Menchelli *et al.* 2001; Pasquinucci-Del Rio-Menchelli 1998), the local coarse pottery was less successful.

At this time we do not know whether North Etruscan brick and tiles and coarse pottery were loaded in the ships along with terra sigillata and wine amphorae or (as in the Provençal case) their distribution was organized by small ships specialized in cabotage trading along a limited coastal strip. It is very likely that both situations occurred, nevertheless North Etruscan coarse pottery was unable to exceed the boundaries of small/middle scale trading. This was probably due to the competition of the Campanian-Latial and African wares, which, as we saw, were widely distributed along the Tyrrhenian coasts.

After reviewing these case studies we can conclude that from the 3<sup>rd</sup> century B.C. up to the Late Roman period the coarse pottery trade was not at all rare, and was accompanied by various economic aspects.

The highest success was guaranteed by the accompanying factor of high technical quality and political and economic elements (e.g. export of foodstuffs to Rome or regions undergoing Romanization, military supply, etc.). The main sea-routes connected with *annona* and those of the cabotage trading were intertwined (Tomber 1993, 144); coarse pottery was distributed by both the great *navicularii* of long distance trade and by petty merchants and hawkers through local markets and fairs.

Pottery, and coarse pottery in particular, was secondary or tertiary cargo in the hold, but this does not diminish a certain intrinsic value of the coarse ware. Above all,



commercial success depended on the pottery's technical characteristics: packing vessels in the holds full of foodstuffs reduced carriage prices, but pottery had to possess a minimum of technical qualities, in order to be bought. No Iberian coarse pottery was involved in middle/long-distance exchanges, despite the enormous export of metals and Dressel 20 and Dressel 7-13 amphorae from Spain during the early Empire (Fulford-Peacock 1984, p. 256). Evidently this ware did not possess the characteristics necessary to survive long distance exchanges.

Other wares were exported on a regional and extra regional scale: high quality was necessary but not sufficient: specialized vessels had to be supported by political and economic factors to travel successfully on the long distance exchanges.

In conclusion, even if conditioned by various elements, the coarse ware pottery trade appears not to have been completely parasitic: it gained a certain autonomy and retained its own economic value.

## References

- Anselmino, L. *et al.* 1986, L. Anselmino, C.M. Coletti, M.L. Ferrantini, C. Panella, *Ostia. Terme del Nuotatore*, in *Società Romana e Impero Tardoantico*, III, A. Giardina ed., Roma-Bari, 45-81.
- Arthur, P. 1994, *Ceramica comune tardo-antica ed alto-medievale*, in Il  $\epsilon$  Complesso Archeologico di Carminiello ai Mannesi, Napoli (Scavi 1983-1984), P. Arthur ed., Lecce, pp. 181-220.
- Bats, M. 1988 *Vaisselle et alimentation à Olbia de Provence (v. 350 -v. 50 a. C.)*, Paris.
- Bats, M. (editor) 1996, *Les céramiques communes de Campanie et de Narbonnaise (I<sup>er</sup> siècle av. J.C.-II<sup>nd</sup> siècle apres J.C.)*, Napoli.
- Cherubini, L., Del Rio, A. 1997, *Officine di età romana nell'Etruria settentrionale costiera: impianti, produzioni, attrezzature*, RCRFActa 35 1997, 133-141.
- Coletti, M.C. and Pavolini, M. 1966, *Ceramica comune da Ostia*, in Bats 1996 editor, 391-419.
- Di Giovanni, V. 1996, *Produzione e consumo di ceramica da cucina nella Campania romana (II a.C.-II d.C.)*, in Bats 1996, pp. 65-103.
- Fontana, S. 1998, *Le imitazioni della sigillata africana e le ceramiche da mensa italiche tardo-antiche*. In Colloquio in onore di J.W. Hayes, *Ceramica in Italia: VI-VII secolo*, Sagui, L. editor, Firenze, All'Insegna del Giglio, pp. 83-100.
- Fulford, M. 1987 *Economic interdependence among urban communities of the Roman Mediterranean*, *World Archaeology* 19,1, 58-75.
- Fulford, M.G. and Peacock, D.P. S. 1984, *Excavation at Carthage: the British Mission*, I, 2, Sheffield, pp. 157-159.
- Gasperetti, G. 1996, *Produzione e consumo della ceramica comune da mensa e dispensa nella Campania romana*. In Bats 1996, pp. 19-63.
- Gianfrotta, P.A., and Pomey, P. 1981, *Archeologia subacquea*, Roma 1981.
- Ilakovac, B. 1968, *Keramika iz antičkog broda potonulog Kod Paklenih Otoka*, *Diadora* 4, 1968, pp.183-202.
- Istanič, J. 1988, *Kuhinjsko posuđe egejskih tipova na nalazištu Rodik-Nekropola pod Jezerom*, *Diadora* 10, pp.99-110).
- Leone, D. and Turchiano, M. 2002., *L'Apulia e le rotte commerciali di eta' tardo-antica attraverso le testimonianze archeologiche*, *L'Africa Romana*, XIV Convegno Internazionale di Studi, 857-890.
- Lequement, R. and Liou, B. 1975, *Les epaves de la cote de Transalpine*, in *Cahiers Ligures de Prehistoire and Archaeologie*, XXIV, 1975, pp.76 ss.
- Lo Cascio, E. 1990, *L'organizzazione annonaria*, in S. Settis, *Civiltà dei Romani*, Milano 1990, 229-248.
- Lo Cascio E., 1991, *Forme dell'economia imperiale*. In *Storia di Roma II*, 2. Torino 1991, 313-365.
- Menchelli, S. 2003A, c.s. *Il commercio marittimo dei laterizi: alcune considerazioni per le rotte alto-tirreniche*, in *Atti Convegno Archeologia Subacquea*, Castiglione Cello 2001, in stampa.
- Menchelli, S. 2003B, c.s., *Per un catalogo delle ceramiche comuni nell'Etruria settentrionale costiera*, RCRFActa 38, in stampa.
- Menchelli, S. *et al.* 2001, S. Menchelli, C. Capelli, A. Del Rio, M. Pasquinucci, M. Picon, and V. Thiron Merle, *Ateliers de céramiques sigillées de l'Etrurie septentrionale maritime: données archéologiques et archéométriques*, RCRFActa 37, Lione 2001, pp. 89-105.
- Menchelli, S. and Pasquinucci, M. 2000, *Ceramiche orientali nell'Etruria settentrionale costiera (II sec. a.C.-VI sec. d.C.)*, RCRFActa 36, pp. 371-378.
- Menchelli, S. and Picchi, G. 2001, *Ceramiche nord-Etrusche di eta' romana in Corsica*, in *Congrès Environnement et Identité en Méditerranée*, Actes du Congrès Corte 2000, Biguglia 2001, pp. 129-135.
- Olcese, G. 1993, *Le ceramiche comuni di Albintimilium*, Firenze.
- Olcese, G. 1994, *La produzione ceramica a Roma in epoca repubblicana e nella prima eta' imperiale: notizie preliminari sulle analisi di laboratorio*, in *Ceramica Romana e Archeometria: lo stato degli studi*, a cura di G. Olcese, Firenze 1994, pp. 237-246.
- Olcese, G. 1996, *Ceramiche comuni di origine tirrenica centro-meridionale tra il II sec. a.C. e il I sec. d.C.: problemi aperti. L'evidenza dei reperti di Albintimilium*, in Bats 1996, pp. 421-445.
- Panella, C. 1993, "Merci e scambi nel Mediterraneo tardoantico", *Storia di Roma*, III, 2, (Torino), 613-697.
- Panella, C. 1996, *Lo studio delle ceramiche comuni di eta' romana: qualche riflessione*, in Bats (editor), pp. 9-15.
- Pasqualini, M. 1998, *Les céramiques communes en basse Provence (I<sup>er</sup>-III<sup>e</sup> s.). Essai de classification*. In *Fouilles à Marseille. Les mobiliers (I<sup>er</sup>-VII<sup>e</sup> s.ap. J.-*

- C.). *Études Massaliètes* 5, 1998, 293-308.
- Pasquinucci, M., Del Rio, A. and Menchelli, S. 1998, *Produzioni di vino nell'Etruria settentrionale costiera in età romana*, 2<sup>on</sup> Colloqui Interacional d'Arqueologia Romana, El vi a l'Antiguitat, Badalona, pp. 357-363.
- Pasquinucci, M. and Storti, S., *Pisa antica. Scavi nel giardino dell' Arcivescovado*, Pontedera 1989.
- Pasquinucci, M. et al. 1998, M. Pasquinucci, D.Alessi, S.Bianchini, A.Del Rio and S.Menchelli, *Circolazioni di merci africane nel Tirreno settentrionale (I-VII sec. d.C.)*, *L'Africa Romana* 12, 1998, 1401-1421.
- Pavolini, C. 1966, *Mercato ostiense e mercato romano: alcuni contesti ceramici a confronto*. In "Roman Ostia Revisited", Edited by A. Gallina Zevi and A. Claridge, Roma, pp. 223-242.
- Peacock, D.P.S. 1982, *Pottery in the Roman World, an Ethnoarchaeological Approach*, London 1982
- Pollino, A. et al. 1987 *L'épave des Roches d'Aurelle*, in *Cahiers d'Archéologie Subaquatique*, 6, 1987, pp. 25-49.
- Pontacolone, L. and Incitti, M. 1991, *Un relitto con carico di merci africane di età imperiale alle Trincere (Tarquinia)*, *Africa Romana* VIII, 1991, pp. 543-570.
- Ratti Squellati, G. 1987, *Produzioni locali e materiali d'importazione nella ceramica di uso comune*, *Quaderni Centro Lunense* 12, pp. 465-495.
- Reynolds, P. 1995, *Trade in the Western Mediterranean, AD 400-700: the ceramic evidence*, BAR Int. Ser. 604 (Oxford).
- Rickman, G., 1980, *The Grain Trade under the Roman Empire*, *MAAR* 36, pp. 261-275.
- Rossignani, M.P., Bruno, B. and Locatelli, D. 2002, *Insedimenti ed economia nell' area di Portus Lunae nella prima metà del II secolo A.C.*, *L' Africa Romana* 12, 2002, 753-765.
- Rougé, J. 1966, *Recherches sur l'organisation du commerce maritime en Méditerranée sous l'empire romain*, Paris.
- Santoro, S. 2000, "*Pantellerian Ware*": *il Progetto di Ricerca (1998-2000)*, *RCRFActa* 36, 2000, pp. 561-566.
- Santoro, S. 2002, *Pantellerian Ware: produzione di ceramica da cucina di Pantelleria diffusa in tutto il Mediterraneo occidentale*, in *L'Africa Romana*, XIV Convegno Internazionale di Studi.
- Schuring, J. M. 1988, *Terra sigillata africana from the San Sisto Vecchio in Rome*, *Bullettin Antieke Beschaving*, 63, pp. 1-68.
- Tchernia, A. et al. 1978, *L'épave romaine de la Madrague de Giens (Var)*, *Gallia*, suppl. 34, Paris.
- Tomber, R. 1993, *Quantitative approaches to the investigation of long-distance exchange*, *JRA*, 142-166.
- Warmington, B.H. 1954, *The North African provinces from Diocletian to the Vandal conquest*, Cambridge.