

SURVEY ARTICLE

'SALVATION FROM THE SEA':

AMPHORAE AND TRADE IN THE ROMAN WEST*

By JEREMY PATERSON

'Le salut, pour l'histoire économique de l'antiquité, ne peut venir que de la mer'—heady talk, but typical of its time.¹ It may well be that the decade of the '70s will come to be seen as the high summer of amphorae studies and it is, perhaps, no accident that such great claims have been made in a report on a wreck at Port-Vendres which is closely dated by the stamps on a remarkable series of ingots and also has an exceptional series of painted inscriptions on the amphorae of the cargo. Few wrecks have produced information of such quality.

I

The seeds were sown long ago, when Heinrich Dressel nearly gave the sight of his eyes ('hanc libri partem . . . oculorum meorum partem consumpsisse meliorem', *CIL* xv, p. 565) to the deciphering of the stamps and *tituli picti* on the amphorae from a ditch in the region of the Castro Pretorio at Rome and from Monte Testaccio, the remarkable dump of, principally, Spanish oil amphorae, which lay in the heart of Roman dockland.² Pompeii also produced large quantities of useful material.³ But interest in amphorae was intermittent in the next fifty to sixty years. The evidence from the Rhine frontier was of particular importance, but progress was found to be limited until more examples had been analysed from the areas in which most of these amphorae were produced, Italy and Spain.⁴ Very often reports from excavations were inadequate. The fact that some of the Roman camps which produced material were occupied for comparatively short periods of time provided some useful dating criteria for certain types of amphorae.⁵ Nevertheless a number of factors hampered the creation of a sophisticated typology. In particular, the majority of finds from land sites were fragmentary. Secondly, an amphora could have a very long life, even in primary use. Wine could be stored for many years. An amphora might then be reused for a variety of purposes.⁶ The deposit from the Castro Pretorio included amphorae with

* Versions of this paper were read to seminars in London and Cambridge. My thanks go to Fergus Millar, Joyce Reynolds, and Michael Crawford. I am particularly grateful for the help and encouragement of Michael Crawford during the writing of this article. I, as so many others, owe an immeasurable debt to Martin Frederiksen who first inspired and supervised my studies of the Roman wine trade.

The following abbreviations are used in the notes: *Recherches* = P. Baldacci et al., *Recherches sur les amphores romaines* (Collection de l'École française de Rome 10, 1972); *Méthodes Classiques* = *Méthodes classiques et méthodes formelles dans l'étude des amphores*—*Actes du colloque de Rome, 27–29 mai, 1974* (Collection de l'École française de Rome 32, 1977); *MAAR* 36 (1980) = J. H. D'Arms and E. C. Kopff, eds., *The Seaborne Commerce of Ancient Rome: Studies in Archaeology and History* (Memoirs of the American Academy in Rome 36, 1980); *Istituto Gramsci* = *Istituto Gramsci: Società romana e produzione schiavistica II (Merci, Mercati e Scambi del Mediterraneo)*, (1981).

¹ R. Étienne in D. Colls, R. Étienne, R. Lequément, B. Liou, and F. Mayet, 'L'Épave Port-Vendres II et le commerce de la Bétique à l'époque de Claude', *Archaeonautica* 1 (1977), 129.

² 'Di un deposito di anfore rinvenuto nel nuovo quartiere di Castro Pretorio', *Bollettino della Commissione Archeologica Comunale di Roma* 6 (1879), 36 ff. and 'Ricerche sul Monte Testaccio', *Annali*

dell'Istituto di Corrispondenza Archeologica 1878, 118 ff. The results of Dressel's work are published in *CIL* xv. On the history of the investigation of Monte Testaccio see now: E. Rodriguez Almeida, 'Notas de epigrafía anforaria del Monte Testaccio', *Recherches*, 108 ff.

³ A. Mau in *CIL* iv.

⁴ S. Loeschcke, 'Keramische Funde in Haltern', in *Ausgrabungen bei Haltern*, 101 ff. (Mitteilungen der Altertums-Kommission für Westfalen v, 1909), C. Albrecht, *Das Römerlager in Oberaden* (1938), O. Bohn, 'Die ältesten römischen Amphoren in Gallien', *Germania* 1923, 8 ff., and 'Amphorenschicksale', *Germania* 1925, 78 ff., A. Oxé, 'Die ältesten römischen Amphoren am Rhein und in Gallien', *Germania* 1924, 80 ff., O. Uenze, *Früh-römische Amphoren als Zeitmarken im Spätlatène* (1958). For Britain see the careful reports in C. F. C. Hawkes and M. R. Hull, *Camulodunum* (1947) and more recently D. P. S. Peacock, 'Roman Amphorae in pre-Roman Britain', in D. Hill and M. Jesson, eds., *The Iron Age and its hillforts* (University of Southampton Monographs Series 1, 1971), 161 ff.

⁵ E. Ettliger, 'Aspects of amphora typology—seen from the north', *Méthodes Classiques*.

⁶ For the reuse of amphorae see M. H. Callender, *Roman Amphorae* (1965), ch. 3 and M. Beltrán Lloris, *Anforas Romanas en España* (Monografías Arqueológicas (Anejos de 'Caesaraugusta') 8, 1970), ch. v.

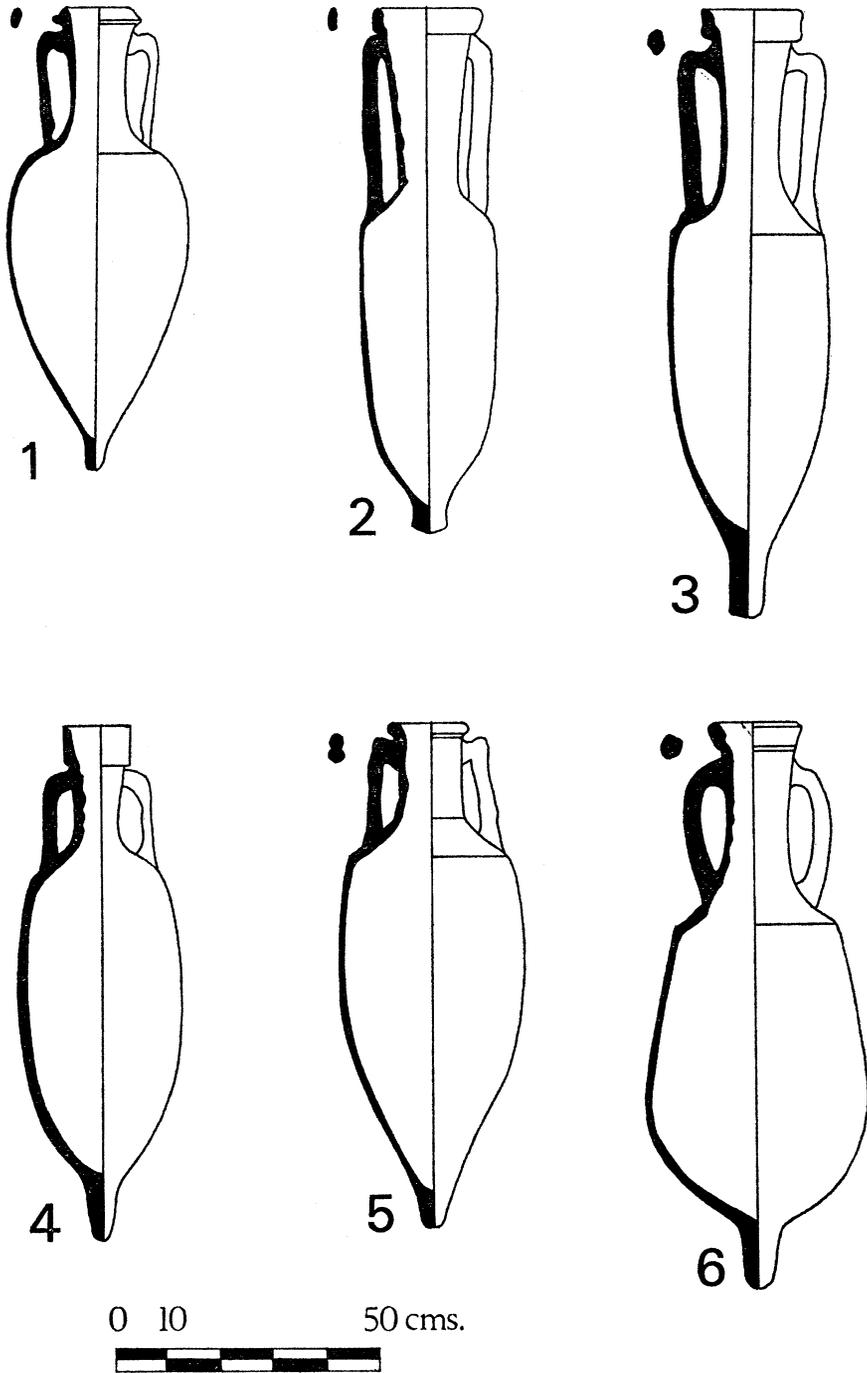


FIG. 1 TYPES OF AMPHORAE: 1. GRECO-ITALIOT; 2. GRAND CONGLOUÉ; 3. DRESSEL 1; 4. LAETANIAN; 5. DRESSEL 2-4; 6. DRESSEL 6.

consular dates in the *tituli picti* from, perhaps, 129 B.C. to A.D. 40 or 45. In A.D. 79 at Pompeii there were amphorae of the Mau XII type with consular dates from, perhaps, A.D. 43 to 75.⁷ It was inevitable that during this period interest should concentrate on the names which appeared on the stamps on the amphorae with little reference to the type of amphora.⁸ The culmination of this approach came curiously late with the appearance of M. H. Callender, *Roman Amphorae* (1965). Despite its publication date, this index of amphorae stamps was based upon material which had been collected up to 1950. Therefore, it entirely ignored the many finds from wrecks which were made in the 1950s. Further, Callender was exceptionally sceptical about typology: 'the variations in shape of the Roman amphora are so numerous as to defy attempts at classification in the conventional sense'.⁹ But his concentration on the stamps led to confusion and errors and readiness to assign similar stamps to the same producer, when the recognition that they appeared on clearly different types of amphora should have provided a warning.¹⁰

The transformation came with the development after the Second World War of the underwater investigation of wrecks.¹¹ At last it became possible to study large numbers of whole amphorae which belonged to a coherent cargo. It was singularly unfortunate that one of the first full studies of a major wreck and its cargo was vitiated by a vital misunderstanding and was the source of confusion and controversy which is only now being settled. The site at Grand Congloué, off Marseilles, presented considerable difficulties to the excavators.¹² To the end of his life F. Benoit maintained that the site represented a single, homogeneous wreck, despite the fact that the material recovered seemed to belong to a wide span in time. This meant that it was difficult to say anything with certainty about the amphorae of the Dressel 1 type with the stamp SES and frequently also a symbol (trident, star, leaf, etc.), which formed a part of the cargo. The SES stamp was soon found to be widely distributed in Gaul and Italy. Once it is recognized that the Grand Congloué site must represent more than one wreck, many of the difficulties of dating and identification disappear and there is little reason to doubt that SES is to be restored as Sestius. The greatest concentration of the SES stamps comes from Cosa in Etruria and from the hinterland around the town. The SES stamps represent the largest single group of amphorae from Cosa itself. When this is combined with the fact that P. Sestius is known to have owned a villa in the area in the first century B.C. then D. Manacorda seems to have been unduly pessimistic when, recently, he left the matter of the source of the production of the SES amphorae open. We lack only the kiln itself. There is every reason to suppose that these amphorae were produced on the estates of a Sestius near Cosa during the first half of the first century B.C.¹³

⁷ F. Zevi, 'Appunti sulle anfore romane', *Archeologia Classica* 18 (1966), 208 ff.

⁸ P. Remark, *De amphorarum inscriptionibus Latinis quaestiones selectae* (1912). It is an indication of the lack of interest in evolving a typology that the illustrative plate which was produced by Dressel for *CIL* xv was reproduced so frequently and dominated all discussion of amphorae types until the 1950s. Dressel's table of amphora shapes was never intended as a sophisticated typology, but merely to enable him in the text of *CIL* to note briefly the shape of amphora on which a particular stamp was found. He was, however, an acute observer. He was careful to distinguish type 6 according to his table and amphorae 'formae 6 similis'; it is now realized that these are different types of amphorae, see P. Baldacci, 'Alcuni aspetti dei commerci nei territori cisalpini' in *Atti del Centro Studi e Documentazione sull'Italia Romana* 1, 1967-8 (1969), 11 ff.

⁹ M. H. Callender, op. cit. (n. 6), 5.

¹⁰ See F. Zevi, review-discussion of Callender in *JRS* 57 (1967), 234 ff. and A. Tchernia, 'Les amphores romaines et l'histoire économique', *Journal des Savants* 1967, 216 ff.

¹¹ The difficult and time-consuming nature of the work means that there are still comparatively few full and detailed reports of whole wrecks. The majority of underwater sites still have been inade-

quately investigated and many thousands of the amphorae which have been found cannot be accurately assigned to a particular provenance. The progress of the identification and investigation of underwater sites can be followed in the pages of *Gallia*, *Rivista di Studi Liguri*, *CRIS Revista de la Mar*, *Cahiers d'archéologie subaquatique*, and the *International Journal of Nautical Archaeology and Underwater Exploration*.

¹² F. Benoit, *L'épave du Grand Congloué à Marseille*, *Gallia* Suppl. 14 (1961).

¹³ It is unnecessary to rehearse here the long bibliography on the Grand Congloué wreck and the SES stamps. A list of the major contributions is given by D. Manacorda, 'The *Ager Cosanus* and the production of the amphorae of Sestius: new evidence and a reassessment', *JRS* 68 (1978), 125, n. 11. Doubts about the date and interpretation of the Grand Congloué wreck and the SES amphorae were raised by E. Thevenot, 'Les importations vinaires en pays bourguignon avant le développement de la viticulture', *Revue archéologique de l'Est et du Centre-Est* 4 (1953), 234 ff. and 'La marque d'amphore "Sesti"', in *Revue archéologique de l'Est et du Centre-Est* 5 (1954), 234 ff., and by E. Lyding Will, 'Les amphores de Sestius', *Revue archéologique de l'Est et du Centre-Est* 7 (1956), 224 ff. Professor Will has continued the study of the amphorae from Cosa

Underwater archaeology provided the spur to the intense renewed interest in commercial amphorae. However, as the case of Grand Congloué and the SES stamps showed clearly, results of real significance cannot be obtained by the study of the finds from wrecks in isolation. The need became imperative to identify the areas of production of the various types of amphorae. This led to a more thorough investigation of long neglected collections of amphorae in museums and the stores of major sites. The result was a much better idea of the areas of origin of many of the most notable types of amphorae. A model of the sort of detective work which could be done was provided by A. Tchernia and F. Zevi in their study of the types of amphora from late Roman Byzacena.¹⁴ Similar careful study has identified the area of production of the so-called 'Albenga oil amphora', Lamboglia type 2, and other similar amphorae, as the characteristic containers for wine from the area of Apulia and possibly Calabria at the end of the second century B.C. and in the first half of the first century B.C.¹⁵ For Spain the monumental study of M. Beltrán Lloris has provided the basis for all future study.¹⁶ Again, careful study of possible kiln sites and of examples in museum collections has pinned down the areas of production of significant types of amphora. Most notable, perhaps, is the Spanish imitation, or rather adaptation of, the Dressel 1 type of amphora which was the characteristic carrier of Italian wine in bulk in the Late Republic.¹⁷ The Spanish type is widely dispersed over Catalonia, in particular the region of Laetania, which was noted in antiquity as a prolific producer of wine.¹⁸ The finds from kiln sites secure the identification.¹⁹ It appears that towards the end of the Republican period and on into the first century A.D., this area chose to produce an amphora which, though distinctive, was clearly based upon the most common of the Italian types of the period and that it continued to produce these, even after the Dressel 1 wine amphora had ceased to be made in Italy.

A more startling discovery, which has considerable implications for the question of typology, was the realization that Hispania Tarraconensis produced a kind of amphora which imitated the Greek amphorae of Cos. It has become clear that it was this style of amphora (usually described as Dressel 2-4, because these cover variations of the type) which replaced the large Dressel 1 amphorae as the principal carriers of wine from Latium

and for the most recent review of the debate and the evidence see E. Lyding Will, 'The Sestius Amphoras: a reappraisal', *Journal of Field Archaeology* 6 (1979), 339 ff. D. Manacorda has returned to the task of tying in the information about the amphorae with our knowledge of the owners of estates in the region of Cosa and the archaeological remains of the villas of the area: see D. Manacorda, 'Considerazioni sull'epigrafia della regione di Cosa', *Athenaeum* 57 (1979), 73 ff. and 'L'ager cosanus tra tarda repubblica e impero: forme di produzione e assetto della proprietà', *MAAR* 36 (1980), 173 ff. and now: D. Manacorda, 'Produzione agricola, produzione ceramica e proprietari nell'ager cosanus nel I A.C.' in *Istituto Gramsci*, 3 ff. The possibility that the Sestius who produced most of the SES amphorae was L. Sestius, father of P. Sestius, who owned property at Cosa (Cicero, *ad Att.* 15. 27. 1 and 15. 29. 1) is raised by J. H. D'Arms, 'Republican Senators' involvement in commerce in the late Republic: some Ciceronian evidence', *MAAR* 36 (1980), 83.

¹⁴ F. Zevi and A. Tchernia, 'Amphores de Byzacène au Bas-Empire', *Antiquités Africaines* 3, 173 ff.

¹⁵ On the Albenga amphora see Lamboglia 'La nave romana di Albenga', *Rivista di Studi Liguri* 18 (1952), 164 ff., figs. 22-23. On its origins in S.W. Italy see: F. Zevi, 'Anfore istriane a Ostia', *Atti e Memorie della Società Istriana di Storia Patria* 15 (1967), 21 ff.; P. Baldacci, art. cit. (n. 8) and 'Importazioni cisalpine e produzione apula', *Recherches*, 7 ff. On the, as yet, inadequate information about the kiln site at Apani near Brindisi see B. Sciarra, 'Un primo saggio di scavi', *Quaderno Museo "Francesco Ribezzo"* (1964), 39 ff., 'Alcuni bolli anforari brindisini', *Epigraphica* 28 (1966), 122 ff. and 'Ricerche in contrada Apani, agro di

Brindisi', *Recherches*, 29 ff. On the evidence that the amphora carried wine see: F. Formenti, A. Hesnard, A. Tchernia, 'Une amphore Lamboglia 2 contenant du vin dans l'épave de la Madrague de Giens', *Archaeonautica* 2 (1978). For the important stamp on Apulian amphorae of M. Tuccius L. F. Tro (mentina tribu) Galeo, whose inheritance Cicero took up (*ad Att.* 11. 12. 4), see: A. Tchernia, 'Les fouilles sous-marines du Planier (Bouches-du-Rhône)', *Comptes rendus de l'Académie des Inscriptions et Belles-Lettres* 1969, 292 ff.; id., 'Premiers résultats des fouilles de juin 1968 sur l'épave 3 du Planier', *Études Classiques* 3 (1968-70), 51 ff.; and the comments of J. H. D'Arms, *MAAR* 36 (1980), 79 ff.

¹⁶ M. Beltrán Lloris, op. cit. (n. 6).

¹⁷ The Laetanian wine amphora, Dressel 1 Pascual D as Beltrán Lloris labelled it, was recognized by R. Pascual Guasch, 'Centros de producción y difusión geográfica de un tipo de ánfora', *VII Congreso Nacional de Arqueología, Barcelona 1960* (1962), 334 ff. and 'Algunos aspectos del comercio antiguo según las "anforas"', *Comunicaciones a la I reunión de historia de la economía antigua de la península ibérica, Papeles del laboratorio de arqueología de Valencia* 5 (1968) and 'Las anforas de la Layetania', *Méthodes Classiques*, 47 ff. The evidence is drawn together and analysed by A. Tchernia, 'Les amphores vinaires de Tarraconaise et leur exportation au début de l'Empire', *Archivo Español de Arqueología* 44 (1971), 38 ff. and updated in 'L'Atelier d'amphores de Tivissa et la marque "SEX DOMITI"', *Mélanges J. Heurgon* (Collection de l'École française de Rome 27, 1971), 973 ff.

¹⁸ Pliny, *NH* 14. 71.

¹⁹ For the kiln of L. Volteilius, whose stamp appears on the Laetanian wine amphora, see R. Pascual Guasch in *Ampurias* 24 (1962), 298.

and Campania from the Augustan age to the time of Trajan. What was surprising was to find that Tarraconensis produced amphorae which were virtually indistinguishable from those being made at the same time in central Italy. Analysis of the clays was the only definite method for assigning the amphorae to their place of origin. It may be that Dressel 2-4 were being made in other areas as well.²⁰

Rather belatedly, interest turned to the search for kiln-sites. Most success came in Spain and France.²¹ However, in recent years the analysis of a number of kilns in Italy has transformed our understanding of the development of amphorae.²² Kilns have been located in the territory of Fundi (where the wines Caecubum and Fundanum were produced)²³ and of Sinuessa, on the edge of the Ager Falernus. Further north, the kiln at Albinia near Orbetello confirms what many had long expected, that the Dressel 1 type of amphorae, the characteristic Republican bulk wine carrier, was made in Etruria, not just in the wine producing areas of Campania and Latium.²⁴

What this work has revealed is that potteries in the same area produced over a long period of time the main types of amphora which were used in Western Italy and moved from the production of one type to another. In the third and second centuries B.C. such potteries would have produced the so-called Greco-Italic amphora, smaller in size than the Dressel 1, and often in the past assumed to be of Sicilian origin.²⁵ There is a sense in which it is legitimate to say that the Greco-Italics 'evolved' as a type into the larger Dressel 1 amphorae of the Late Republic. The kilns of the Ager Falernus and in Etruria produced both of the main types of Dressel 1 from the middle of the second century B.C. down until near the end of the first century B.C. It is increasingly clear that in the first half of the reign of Augustus, kilns ceased the production of Dressel 1 and went over to making the type Dressel 2-4, based on the amphorae of Cos.²⁶ This is a transition of a quite different kind from the gradual change from Greco-Italic to Dressel 1. The Dressel 2-4 amphorae are distinctive and, in no sense, a development of the Republican wine amphora. It is possible that for a time the potteries produced both types of amphorae together. However there is little or no reliable evidence to suggest a date before the middle of the first century B.C. for the introduction of the Dressel 2-4 amphora and there is every reason to suppose that the changeover was sudden and deliberate.²⁷ The Dressel 2-4 amphorae had a long life in the first century A.D., with types being produced in many different parts of the west, and then, in their turn, they disappear by the time of Trajan. It is far from clear what, if anything, replaced them.

The question must arise whether the replacement of one type of amphora by another and the disappearance of a type reflect a change in agricultural practice or have implications

²⁰ A. Tchernia, art. cit. (n. 17), 38 ff.; A. Tchernia and F. Zevi, 'Amphores vinaires de Campanie et de Tarraconaise à Ostie', *Recherches*, 25 ff. See in particular the articles by L. Fariñas del Cerro, F. de la Vega and A. Hesnard, by C. Panella and M. Fano, and by D. Peacock in *Méthodes Classiques*. For the suggestion that the region of Istria may also have been producing Dressel 2-4 type amphorae see C. Panella, 'Anfore' in *Ostia II, Studi Miscellanei* 16 (1970), 127 ff. Dressel 2-4 handles come from a kiln at Felling near Ugento in Apulia, see C. Pagliara in *Studi classici e orientali* 17 (1968), 227 ff.

²¹ M. Beltrán Lloris, op. cit. (n. 6) and 'Problemas de la morfología y del concepto histórico — geográfico que recubre la noción tipo', *Méthodes Classiques*, 97 ff.; D. Fernando de Almeida, G. Zbyszewski, O. da Veiga Ferreira, 'Descoberta de fornos lusitano — romanos na região da Marateca (Setúbal)', *O Archedlogo Português* 5 (1971), 155 ff.; A. Tchernia and J.-P. Villa, 'Note sur le matériel recueilli dans la fouille d'un atelier d'amphores à Velaux' in *Méthodes Classiques*, 231 ff.

²² G. C. Duncan, 'A Roman pottery near Sutri', *PBSR* 32 (1964), 38 ff.; D. P. S. Peacock, 'Recent discoveries of Roman amphora kilns in Italy', *Antiquaries Journal* 1977, 262 ff.; A. Hesnard, 'Note sur un atelier d'amphores Dr. 1 et 2-4 près de Terracine', *MEFRA* 89. 1 (1977), 157 ff.; A. Hesnard and C. Lemoine, 'Les amphores du

Cécube et du Falerne, prospections, typologie, analyses', *MEFRA* 93. 1 (1981), 243 ff.

²³ Pliny *NH* 14. 61, 65; 17. 31.

²⁴ D. P. S. Peacock, op. cit. (n. 22), 266 ff.

²⁵ For Greco-Italics from Sinuessa see A. Hesnard and C. Lemoine, op. cit. (n. 22) and W. Johannowsky, 'Problemi archeologici Campani', *Rendiconti della Accademia di Archeologia, Lettere e Belle Arti di Napoli* (1974), 3 ff.

²⁶ For kilns producing both Dressel 1 and Dressel 2-4 see articles cited in n. 22. The latest consular date on a Dressel 1 is 13 B.C. (*CIL* xv. 2, 4539 and 4575), see F. Zevi, *Archeologia Classica* 18 (1966), 208 ff., while the dates on known Dressel 2-4 are mainly in the first century A.D. (see Zevi, op. cit.); as Hesnard (*MEFRA* 93. 1 (1981), 259) points out, *CIL* iv, 3, 9313 and *NSc* 1933, 331, give a date of 35 B.C. for Dressel 2-4.

²⁷ A. Hesnard, *MEFRA* 89. 1 (1977), 161 n. 24 disposed of the supposed evidence for examples of Dressel 2-4 in second- and early-first-century B.C. contexts. The Augustan deposit of amphorae at La Longarina, Ostia, which contained some 181 wine amphorae and appears to have been a homogeneous deposit laid down at one time, has no example of Dressel 1, while there are several Dressel 2-4, see A. Hesnard, 'Un dépôt Augustéen d'amphores à La Longarina, Ostie', *MAAR* 36 (1980), 141 ff.

for the interpretation of the agrarian economy. It is probably right to be cautious.²⁸ On the other hand C. Panella claims that the appearance of Dressel 2-4 reflects an overall contraction in the exports of Italian wine.²⁹ It is true that on Spanish and Gallic sites Dressel 2-4 of Italian origin have nothing like the predominance which Dressel 1 Republican wine amphorae had. The change in type of amphora is, surely, merely coincidental in such a process. It was not until the first century A.D. that vineyards developed in Spain and in Gaul to the extent that the provinces became far less dependent on Italian imports. The disappearance of Dressel 2-4 at the beginning of the second century A.D. at the latest presents a much greater problem. Does it represent the end of the Mediterranean commerce in the goods which were carried in them? ³⁰ A. Tchernia has argued for the continuation of the production of Falernian wine in the second and third centuries A.D. and has suggested that we have not yet identified the type of carrier in which the wine was carried.³¹ However, the literary and epigraphic evidence on which this case is based is of uneven quality. Falernian wine is mentioned in the Price Edict of Diocletian, but presumably as a wine of the highest quality and not necessarily one that is exported in quantity. A reference in the Galen corpus is of exceptional interest.³² It mentions the fact that Falernian was widely exported and that, since the true wine of the area could not meet the demand, imitation wines with the same name were produced. Such an observation is not necessarily contemporary evidence from the end of the second century and the same remark could have been made a century earlier.³³ Panella in a useful review of the epigraphic and literary evidence about Falernian, rightly suggests that the scarcity of literary evidence and the lack of archaeological evidence point to a contraction in the trade in Falernian wine in the second and third centuries A.D.³⁴ Nevertheless the change, particularly from Dressel 1 to Dressel 2-4, remains a puzzle. To suggest that the change is simply a matter of fashion is to explain nothing and, as Hesnard points out, it is most improbable that the successful wines of Campania and Latium would want to 'disguise' themselves as Greek. In any case, the amphorae of Cos are not widespread in the Western Mediterranean at this time.³⁵

It now becomes possible to link the evidence from areas of production with the finds from wrecks to produce pictures of the pattern of trade in wine in the Western Mediterranean. As we have seen, this has been done most notably with the amphorae of Sestius, which have been found on five wrecks in the Western Mediterranean and on numerous sites in central and southern France and in great numbers at Cosa, their area of origin. This business on a grand scale may be connected with the apparent development of larger and more sophisticated estates in the *ager Cosanus* in the Late Republic.³⁶ A distribution very similar to that of the Sestius amphorae has been discovered for the group of stamps on

Dressel 1B amphorae, EVTA, DAM, OPEL, PILIP, and L. LÉNTV. P. [F] from the late Republican wreck at Santa Severa near Pyrgi.³⁷ These stamps are also found among those from another first-century wreck, Dramont A.³⁸ Examples are scattered, like those of Sestius, along the coast of Southern France and up the Rhone and Garonne. There are also stray finds of the stamps elsewhere in the Mediterranean, as far east as Crete. If the stamp

²⁸ As A. Hesnard, *MEFRA* 89, 1 (1977), 163, n. 34.

²⁹ C. Panella, 'La distribuzione e i mercati', *Istituto Gramsci*, 55 ff.

³⁰ As C. Panella, *op. cit.*, 65.

³¹ A. Tchernia, 'Quelques remarques sur le commerce du vin et les amphores', *MAAR* 36 (1980), 306 ff.

³² *De antidotis* (Kühn XIV, 77).

³³ Pliny, *NH* 14, 38.

³⁴ C. Panella, 'Retroterra, Porti e Mercati: L'Esempio dell'Ager Falernus', *MAAR* 36 (1980), 251 ff.

³⁵ A. Hesnard, *MEFRA* 89, 1 (1977), 162. F. Carrazé, 'L'épave "Grand Ribaud A", sondages et travaux préliminaires', *Cahiers d'Archéologie Sub-aquatique* 4 (1975), 38 n. 52 has an over-ingenious point that Pliny makes a number of allusions to the containers for wine from Campania including *NH* 14, 136 that the best wines of Campania were left out in 'cadi'. It is just remotely possible that 'cadi'

refers to Greek-style vessels, cf. Pliny, *NH* 14, 97: Julius Caesar distributed Falernian wine in 'amphorae', but the wine of Chios in 'cadi'. On the comparative scarcity of cargoes of Greek amphorae in the west in the Late Republic see R. Lequément and B. Liou in *Cahiers Ligures de préhistoire et d'archéologie* 24 (1975), 76 ff.

³⁶ D. Manacorda, 'Produzione agricola, produzione ceramica e proprietari nell'ager cosanus nel I a.C.', *Istituto Gramsci*, 34 and 'Ager Cosanus tra tarda repubblica e impero: forma di produzione e assetto della proprietà', *MAAR* 36 (1980), 173 ff.

³⁷ P. A. Gianfrotta, 'Archeologia sott'acqua: rinvenimenti sottomarini in Etruria meridionale', *Bollettino d'Arte*, Series VI, Vol. 10 (1981), 73 ff.

³⁸ Cl. Santamaria, 'Travaux et découvertes sur l'épave "A" du Cape Dramont à Saint-Raphael (Var)', *Actes du IIe Congrès international d'Archéologie sous-marine (Albenga, 1958)* (1961).

L. LENTV P. [F] is to be identified as L. Cornelius Lentulus Crus, then the amphorae may originate from his properties at Minturnae or in Campania, as Gianfrotta suggests.³⁹ A close link between an area of production and the cargo of a wrecked merchant ship can be established in the case of the Roman Republican wreck of the middle of the first century B.C. at Madrague de Giens (Var), east of Toulon. The wreck and its cargo have been the subject of an exemplary piece of research.⁴⁰ The Dressel 1 amphorae carried a number of stamps, most notably those of P. VĒVĒI P. F./PAP, often associated on the same amphora with a stamp of the name of a slave. The site of the potteries of P. Veveius Papus has been known for 150 years, although finds from it have never been adequately published. It lies on the right bank of the Canale Canneto at Fondi and A. Hesnard has confirmed that the site has the debris usually associated with a kiln.⁴¹ Another site in the area, at Monte San Biagio, also had examples of stamps which were found on the Madrague wreck.⁴² The ship was carrying a cargo of Caecuban wine.

The evidence of amphorae from wrecks confirms the overwhelming dominance of Italy, particularly Campania, Latium and Etruria, in the trade in goods, especially wine, in the Western Mediterranean from at least the middle of the second century B.C. down to Augustan times. This is a fact of enormous consequence for the understanding of the development of the agrarian economy of Italy. A survey of wrecks along the coast of Narbonnaise has revealed that out of some 103 definite wrecks over half belong to the second or first centuries B.C.⁴³ The great majority of these wrecks originated in Italy. Trade preceded and then accompanied the flag. Gaul became a ready market for Italian wine in particular. Gaul was slow to develop her own viticulture for geographical and sociological reasons, rather than some supposed ban on the growing of vines by the Romans.⁴⁴ The pattern of trade is of significance. Dressel 1 amphorae are found all along the southern coast of France and then up the Rhone, then across to the Garonne and other rivers for wider distribution in Gaul. It must be supposed that wine in the Dressel 1 amphorae which found its way to Britain, to be buried, for example, in the grave of a La Tène chieftain at Welwyn, had become a very valuable commodity.⁴⁵ The first destination for most of such wine would be the markets in the south of France and up the Rhone valley. It is unlikely that such wine was shipped straight to Britain. During the early empire the camps of the Rhine frontier must have been a major market for goods and had a distorting effect on the pattern of trade. Goods in amphorae were still channelled up the Rhone valley and then across to the Rhine for the military and civilian populations there. Amphorae found elsewhere in Gaul and in Britain are likely to represent the redistribution of the surplus from the centres on the Rhine. This phenomenon was noted by D. P. S. Peacock in a discussion of the Dressel 30 type of amphora, which was made in Southern Gaul during the first two centuries A.D. at least and carried wine.⁴⁶ The amphora is quite common on British sites; yet Peacock's distribution map shows clearly that it must have reached Britain via the Rhine frontier sites, rather than directly by sea or by the more economic Narbonne-Bordeaux route.

During the first century A.D. the dominance of Italian goods in the markets of the Western Mediterranean diminished. Spain and Gaul come into their own and sites produce

³⁹ See T. P. Wiseman, *New Men in the Roman Senate 139 B.C.-14 A.D.* (1971), 198 and I. Shatzman, *Senatorial Wealth and Roman Politics* (1975), 333 f.

⁴⁰ A. Tchernia, P. Pomey, A. Hesnard, etc., 'L'épave romaine de la Madrague de Giens', *Gallia Supp.* 34 (1978).

⁴¹ *Archivio del Camerlengato, Archivio di Stato di Roma* tit. iv, part II, fasc. 1524 (1831), communication of L. Mazzanti, an early report of the site. A find of 200 amphorae including numerous examples of the stamps of P. Veveius Papus was made in 1881 and published in *CIL* x. 8050. A. Hesnard, *MEFRA* 89. 1 (1977), 157 ff.

⁴² M. Della Corte, *N.Sc.* 1911, 348 f.

⁴³ R. Lequément and B. Liou, 'Les épaves de la côtes de Transalpine', *Cahiers Ligures de préhistoire*

et d'archéologie 24 (1975), 76 ff., confirming an observation made long ago by N. Lamboglia, 'La nave romana di Albenga', *REL* 18 (1952), 235 ff.

⁴⁴ See J. Paterson, 'Transalpinæ Gentes: Cicero, de republica 3. 16', *CQ* 28 (1978), 452 ff.

⁴⁵ I. M. Stead, 'A La Tène III Burial at Welwyn Garden City', *Archaeologia* 101 (1967), 1 ff.

⁴⁶ D. P. S. Peacock, 'The Rhine and the problem of Gaulish wine in Roman Britain' in J. du Plat Taylor and H. Cleere, eds., *Roman shipping and trade: Britain and the Rhine provinces* (CBA research report 24, 1978), 49 ff. For the Southern Gaulish origin see A. Tchernia and J.-P. Villa, art. cit. (n. 21) and on contents see C. Panella, 'Appunti su un gruppo di anfore della prima, media e tarda età imperiale', *Ostia III (Studi Miscellanei)* 21.

a greater variety of amphorae from different regions. In Italy imports took a larger share of the market.⁴⁷

Trade of goods in amphorae in Northern Italy, including the region of Istria and Picenum, had a rather different history from the areas to the West. The Po valley was more open to Greek imports coming up the Adriatic and, it now appears, to wine and oil from Apulia. P. Baldacci has done so much to clarify developments in this region.⁴⁸ The region produced the distinctive Dressel 6 amphora and the type of amphora which Dressel described as 'formae 6 similis' (Baldacci type III), which has a distribution very like that of Dressel 6 itself. Both were wine amphorae.⁴⁹ Herein lies a lesson. Once one of the areas of production of Baldacci type III had been located in Istria, it was natural to suppose that these amphorae were used for the transport of the oil for which Istria was noted.⁵⁰ Chilver supposed that the trade in N. Italian wines was essentially a luxury one.⁵¹ But this observation was based entirely on the evidence of Pliny who concentrates on the quality of the wines produced (indeed, only rarely does he ever mention quantity; see *NH* 14. 60, 62) and groups the wines of N. Italy under 'reliqua' (*NH* 14. 67). This probably reflects the use of a separate source for information about the wines of northern Italy. Further, Pliny's observations about the quality of wines should be used with circumspection, because they may derive from medical sources, rather than the assessments of connoisseurs.⁵² As with Apulia, the archaeological evidence of amphorae in North Italy reveals a trade which could scarcely be guessed at from literary sources.

The Dressel 6 and Baldacci type III amphorae seem to start in the first century B.C. and continue for much of the first century A.D. The most remarkable feature of the stamps is that they reveal a long list of prominent Romans who, from the time of Augustus, seem to have owned properties in the region. Augustus, in his youth, is said to have had a taste for Rhaetian wine (Suetonius, *DA* 77) and, if the Emperor's personal patronage later in his life changed to the wine of Setia, then the advocacy of north Italian wines was taken up by Livia, who favoured the wine of Pucinum (Pliny, *NH* 14. 60). During the Pannonian wars Augustus used to visit N. Italy to be near the front (Suetonius, *DA* 20, Josephus, *AJ* 16. 90). During the Augustan period a variety of notable individuals, some of local origin and others newcomers to the area, chose to invest in the region and their names appear on the stamps on amphorae from the area. Appius Claudius Pulcher, consul 38 B.C., may be an early representative.⁵³ M. Herennius Picens, suffect consul for A.D. 1, also appears.⁵⁴ L. Tarius Rufus, Augustus' admiral, was rewarded with the suffect consulship of 16 B.C. and with gifts which he invested, unwisely as it seems, in properties in Picenum.⁵⁵ Rufus' wife, Quinta, may have been the daughter of P. Rubrius Barbarus and this could provide a clue to the identity of the BARBARI stamp.⁵⁶ T. H. B. is one of the most frequent stamps on Dressel 6 amphorae.⁵⁷ It is probably to be identified with Titus Helvius Basila. His stamps are contemporaneous with the BARBARI stamps. An inscription, written in red, PHIL CLE VE, is found on Dressel 6 amphorae of both the T. H. B. and BARBARI series.⁵⁸ Amphorae, some with the T. H. B. stamp, others with the stamp BARBA, carry as a

⁴⁷ These are the tentative, but important, conclusions of C. Panella, 'La Distribuzione e i mercati' in *Istituto Gramsci*, 55 ff. (in particular the table on 68-9) based in part on the finds in the Terme del Nuotatore and the deposit at La Longarina, both at Ostia: C. Panella, 'Annotazioni in margine alle stratigrafie delle terme ostiensi del nuotatore', *Recherches*, 69 ff. and op. cit. (n. 46).

⁴⁸ P. Baldacci, art. cit. (n. 8), 'Alcuni aspetti'; 'Le principali correnti del commercio di anfore romane in Cisalpina dal III sec. a. C. al II d. C.', *I problemi della ceramica romana di Ravenna, della valle padana e dell'alto Adriatico* (Atti del convegno internazionale, Ravenna 10-12 maggio 1969) (1972), 103 ff.; 'Importazioni cisalpine e produzione apula', *Recherches*, 7 ff. See also: F. Zevi, art. cit. (n. 15), 21 ff.; E. Buchi, 'Banci di anfore romane a Verona, note sui commerci cisalpini', *Il Territorio Veronese in età romana* (1973), 531 ff. and 'Commerci delle

anfore istriane', *Aquileia Nostra* 45-46 (1974-5), 432 ff.

⁴⁹ *CIL* xv 4582, 4653.

⁵⁰ Pliny, *NH* 15. 8. A. Degrassi, 'Aquileia e l'Istria in età romana', *Studia aquileiesi offerti a G. Brusini* (1953), 51 ff. and 'L'esportazione di olio e olive istriane nell'età romana', *Atti e Memorie della Società Istriana*, n.s. 4 (1956), 104 ff.

⁵¹ G. Chilver, *Cisalpine Gaul* (1941), 140.

⁵² F. Münzer, *Beiträge zur Quellenkritik der Naturgeschichte des Plinius* (1897), 385 ff.

⁵³ *CIL* xi 6695. 77 a-c, III 12010. 4; F. Zevi, art. cit. (n. 15), 29; A. Oxé, *Germania* 8, 80 ff.

⁵⁴ M. Callender, op. cit. (n. 6), 183, no. 1101.

⁵⁵ Pliny, *NH* 18. 37; Dio 50. 14; *CIL* v. 8112. 78, III 12010. 30; *NSc* (1930), 439; (1967), 15.

⁵⁶ *CIL* xv 3408.

⁵⁷ M. Callender, op. cit., 258, no. 1717; *CIL* x 5056.

⁵⁸ *CIL* xv 4660 b-c.

titulus pictus the name M. Utan(eus) Hymen(aeus).⁵⁹ After the Augustan age one of the most notable characters to be associated with N. Italian amphorae is C. Laecanius Bassus, whose pottery at Pola made tiles, pipes and dolia in addition to amphorae.⁶⁰ His estates are known from a bridge inscription in the Tergeste region.⁶¹ The identification usually made is with the consul of A.D. 64, but his father, consul A.D. 40, is an equally probable candidate. Calvia Crispinilla, the notorious 'magistra libidinum Neronis' (Tacitus, *Hist.* 1. 73), is one of the few women to appear on amphorae stamps. She is associated with the stamp TRAVL both on amphorae and on a tile. This may be taken as her first husband, Sextus Traulus Montanus, the Roman knight, executed in A.D. 48 (Tacitus, *Annals* 11. 36).⁶² Soon after the end of the first century A.D. Dressel 6 amphorae had ceased to be made. No reason is obvious. Wine clearly continued to be produced in the area.⁶³

Such is the sort of picture which can now be built up thanks to the painstaking work of investigators in museum collections and with the evidence from wrecks which over the past thirty years has provided the main spur to research.⁶⁴

II

It is not just on the stamps of Dressel 6 amphorae that the names of members of the Roman aristocracy appear. Their presence has continually fascinated scholars. However, the information which can be obtained depends on the purpose of such stamps and on this important matter the discussion has been long, often fruitless and too narrowly based.⁶⁵ As recently as 1978, D. Manacorda was unprepared to commit himself on the significance of amphorae stamps.⁶⁶ J. D'Arms has been all too ready to assume that the appearance of senatorial names on amphorae is proof of such men's involvement in commerce.⁶⁷ The presence of one or more names stamped on an amphora, with perhaps another name impressed on the stopper of the amphora, and with further names and information about the

⁵⁹ *CIL* xv 4657 b, f-h.

⁶⁰ M. Callender, op. cit., 103, no. 365; Gnirs, *Jahrbuch für Altertumskunde* 4 (1910), 79.

⁶¹ *CIL* v 698.

⁶² *CIL* v 8112. 24, 25, 139; III 14371. 7; 12010. 7; xv 3381; v 8110. 207.

⁶³ For viticulture in the region of Aquileia, for example, see Herodian 8. 2. 3, Cassiodorus, *Var.* 12. 22. 1.

⁶⁴ The literature on individual finds is vast. It is hoped that the works cited in the notes above will open the way for the newcomer into the subject. Particular attention has been paid to the amphorae associated with Italian wine. There has also been a concentration on the Western Mediterranean. Much work still needs to be done on Italy's exports to the East. See J. A. Riley, 'Italy and the Eastern Mediterranean in the Hellenistic and Early Roman Periods: the evidence of coarse pottery' in G. Barker and R. Hodges, eds., *Archaeology and Italian Society* (BAR International Series 102, 1981), 69 ff. The amphorae of other areas can reveal similar information about the economy of their regions. The most notable example of this, of course, is the large spheroid oil amphora of Baetica, Dressel 20, on which see G. E. Bonsor, *The Archaeological Expedition along the Guadalquivir, 1889-1901* (1931); R. Étienne, 'Les amphores du Testaccio au IIIe siècle', *MEFRA* 1949, 151 ff.; A. Tchernia, 'Amphores et marques d'amphores de Bétique à Pompéi et à Stabies', *MEFRA* 1964, 419 ff.; A. Tchernia, art. cit. (n. 10), 216 ff.; M. Beltrán Lloris, op. cit. (n. 6); E. Rodríguez Almeida, 'Novedades de epigrafía anfarraria del Monte Testaccio', *Recherches*, 107 ff.; A. Guénoche and A. Tchernia, 'Un modèle descriptif des amphores Dr. 20', *Méthodes Classiques*. In particular see now the excellent discussion of the Dressel 20 amphorae from the Claudian wreck at Port-Vendres: D. Colls, R. Étienne et al., 'L'épave Port-Vendres III et le commerce de la Bétique à l'époque de Claude', *Archaeonautica* 1 (1977). The

finds from this wreck make possible a new interpretation of the *tituli picti* on the oil amphorae. Most notably the ship was also carrying amphorae of the type known as 'Haltern 70'. *Tituli picti* from this wreck now reveal that this was used for carrying wine. The wine of Southern Spain can now be shown to have been widely exported at the same time as the oil of the region. For those who wish to have an introduction to the various types of amphorae with illustrations, there are: M. Beltrán Lloris, op. cit. (n. 6), and also his *Cerámica Romana, Tipología y Clasificación (Zaragoza)*. The main types of amphorae are illustrated with only brief commentary by J.-P. Joncheray, *Nouvelle Classification des Amphores* (second edition, 1976). An excellent introduction to the interpretation of evidence from wrecks is to be found in A. J. Parker, 'The evidence provided by underwater archaeology for Roman trade in the Western Mediterranean', in D. J. Blackman, ed., *Marine Archaeology* (Colston Papers 23, 1971), 361 ff. He provides a fruitful line of research by trying to tie in literary evidence about the produce of an area and the amphorae from the area, for which see also A. J. Parker, 'Lusitanian amphorae' in *Méthodes Classiques*. For petrological analysis of amphorae see many of the contributions to *Méthodes Classiques*, and for techniques for determining the contents of amphorae see M. C. Rothschild-Boros, 'The Determination of Amphora Contents', in G. Barker and R. Hodges, op. cit., 79 ff.

⁶⁵ F. Benoit, 'Typologie et épigraphie amphorique', *Rivista di Studi Liguri* 23, 1-2 (1957), 279 ff. and op. cit. (n. 12), 56 ff.; J. Heurgon, 'Les Lassi Pompeiens', *PdP* 1952, 113.

⁶⁶ D. Manacorda, *JRS* 68 (1978), 126.

⁶⁷ J. H. D'Arms, 'Republican senators' involvement in commerce in the late Republic: some Ciceronian evidence', *MAAR* 36 (1980), 77 ff. and *Commerce and Social Standing in Ancient Rome* (1981), Chapter 2.

contents painted on the side, can only be understood in the light of the general conditions for the production of amphorae and for the marketing of the goods which they carried. Further it is often forgotten that many amphorae carry no stamps at all.

The simplest and most probable hypothesis is that the stamps represent the owners of the *figlina* which made the amphorae or the slaves or freed *officinatores* who worked for them. The intimate connection between amphorae and the production of bricks and tiles has frequently been demonstrated.⁶⁸ It is only in the second century A.D. and later that brick and tile stamps become particularly informative. In the first century the stamps are usually just names, or abbreviations, very similar to the stamps on amphorae. If an owner of an estate had a useful source of clay, then he would not hesitate to exploit it.⁶⁹ The owner of the pottery might well use the amphorae produced there to transport the wine and oil from his own estate.⁷⁰ However, it should not be assumed that this is the usual method. The amphorae could, of course, be sold to others.⁷¹ The works of the agricultural writers and legal sources (which had a particular interest in the sale of wine because it contained a number of difficulties) suggest that most large-scale landowners did not get involved directly in the marketing of their agricultural produce, but left this largely to *negotiatores* who might become involved as early as the picking of the grapes for wine.⁷²

There are very few amphorae mentioned in Cato's *de agri cultura*, for the good reason that his estates had no need for large numbers. In chapters 146 and 147, he gives the terms of sale for olives and grapes on the vine; and in 148, the conditions of sale for wine in dolia after it has been made by the estate-owner's own work force. The *negotiator* is expected to bring his own amphorae to transport the wine.

The process of fermentation and maturing raised particular problems in the sale of wine.⁷³ Hence Cato, *de ag. cult.* 148 gives us a contract for the sale of wine in dolia, but there is no comparable contract for the sale of olive oil, because the problems of maturing and storage do not arise. In the contract there are two stages.⁷⁴ The first is the *gustatio*, the tasting of the wine, normally within three days of the agreement to purchase.⁷⁵ The second is the process of accepting the wine, which in Cato is closely associated with measuring out the wine from the dolia ('si non ante acceperit, dominus vinum admetietur'). The wine had to be 'accepted' before the first of January following the vintage. This date is explicable, because some thirty days are assumed for the initial process of fermentation to be completed after which the dolia could be sealed (Cato, *de ag. cult.* 26). After this, storage is allowed on the estate until the next vintage. The jurists are rather clearer in their description of current practice. They closely associate the measuring out of the wine with the end of the period of storage, which may certainly have lasted until the new vintage.⁷⁶ The underlying assumption in all this is one which is not confined to the

⁶⁸ T. Helen, *The Organisation of Roman Brick Production in the First and Second Centuries A.D.* (Annales Academiae Scientiarum Fennicae. Dissertationes Humanarum Litterarum, 1975) and P. Setala, *Private Domini in Roman Brick Stamps of the Empire* (Annales Academiae Scientiarum Fennicae. Dissertationes Humanarum Litterarum 10, 1977).

⁶⁹ *Dig.* 33. 7. 25: 'quidam cum in fundo figlinas haberet, figulorum opera maiore parte anni ad opus rusticum utebatur'; *Dig.* 8. 3. 6: 'veluti si figlinas haberet, in quibus ea vasa fierent, quibus fructus eius fundi exportarentur (sicut in quibusdam fit, ut amphoris vinum evehatur aut ut dolia fient)'.
⁷⁰ See previous note.

⁷¹ See *Dig.* 19. 1. 6. 4: 'si vas aliquod mihi venderis et dixeris certam mensuram capere vel certum pondus habere, ex empto tecum agam si minus praestes'.

⁷² For sale on the vine: Pliny, *NH* 14. 48 f.; Pliny, *Ep.* 8. 2. 1. I do not wish to deny that goods, such as wine, could get to the consumer by a great variety of means. Varro, *RR* 1. 2. 23: 'ut etiam, si ager secundum viam et opportunus viatoribus locus, aedificandae tabernae deversoriae'; this is just the kind of building found at Boscoreale near Pompeii, see J. Carrington, *JRS* 21 (1931), 122, no. 28. Some wine would never get to the market at all

but go to the owner's town house for his own use: see the amphorae at the House of the Vettii at Pompeii, some of which carried *tituli picti* detailing from which dolium the wine came and from which estate.

⁷³ F. de Zulueta, *The Roman Law of Sale* (1945); R. Yaron, 'The sale of wine' in D. Daube, ed., *Studies in The Roman Law of Sale dedicated to the memory of F. de Zulueta* (1959).

⁷⁴ *Dig.* 18. 1. 34. 5: 'Alia causa est degustandi, alia metiendi, gustus enim ad hoc proficit, ut improbare liceat, mensura vero non eo proficit, ut aut plus aut minus veneat, sed ut appareat, quantum ematur'.

⁷⁵ See Albertario, 'Contratti agrari nel de Agri Cultura di Catone', *Studi di Diritto Romano* 6 (1953), 273 ff.; J.-H. Michel, 'L'influence de la lex venditionis sur les règles du contrat de vente', *RIDA* (ser. 3) 13 (1966), 325 ff.

⁷⁶ *Dig.* 18. 6. 1. 1: 18. 6. 4. 2. This period of storage raised problems for the jurists, given the prevalent opinion that the proper completion of a sale was the transference of the goods involved from the seller to the buyer: see the problem discussed in *Dig.* 41. 1. 7 and Gaius, *Inst.* 2. 79, 'proinde si ex uvis meis vinum . . . feceris, quaeritur utrum meum sit id vinum'; see also *Dig.* 41. 2. 51, and 33. 7. 27. 3.

sale of wine—that it is the buyer's duty to remove the goods, not the seller's to send them.⁷⁷ Furthermore, the jurists are virtually silent on the question of whether the cost of the amphora is to be included in the price of the sale of wine.⁷⁸ The most obvious reason for the silence is that it is assumed, when dealing with the wholesale purchase of wine, that the buyer, the *negotiator*, brought his own amphorae with him. It is worth emphasizing that the great majority of passages in the jurists, which deal with the sale of wine either explicitly or by implication, refer to sale by a landowner of his wine, mostly in *dolia*, although occasionally already in amphorae, to a *negotiator*. It was this stage in the marketing process which raised legal problems, rather than the retail sale of wine.

It is to be expected that the legal sources should reflect the interests and practices of the well-off who had most recourse to law. In this case the jurists clearly confirm the practices which have already been discerned in our other sources. It follows that in discussing the presence of the names of the senatorial aristocracy on stamps on amphorae, there is no need to consider the thorny evidence concerning the ban on senators owning ships or being involved in trade.⁷⁹ That is not at issue. The stamps are evidence for ownership of the pottery which produced the amphorae. Exploitation of a resource on one's land was a perfectly respectable activity. Given the prevalence of the system of marketing which is dominant in our sources, we cannot legitimately infer that the amphorae were necessarily carrying the products of the estate of the person named on the stamp. Still less is it likely that the person was involved in any way in the shipping and sale of the goods carried in the amphorae.

A number of stoppers for the necks of amphorae have survived and occasionally names appear on them. Such names are most likely those of the *negotiator*. Information about the contents of the amphora and perhaps the origin of the goods most likely was painted on the body. Unfortunately the conditions are against the widespread survival of such *tituli picti*.

III

The standardization of amphorae is remarkable; yet so is the fact that within cargoes there can be several minor variations of amphorae of the same type.⁸⁰ This phenomenon has been acutely analysed in the report on the Madrague wrecks, where the amphorae seem clearly to fall within three distinct groups.⁸¹ The fact that the amphorae of Italy generally grow in size from the Greco-Italiot amphorae of the third and second centuries B.C. to the Dressel 1 amphorae of the first century B.C. may be reflected in the changeover from the term 'quadrantal' to the common use of 'amphora' as a measure of cubic capacity.⁸² The conformity of amphorae to a limited number of types is presumably a matter of convenience for traders. It has been suggested that the predominance of Dressel 1 represents the unity of the economic world in late Republican Italy and the hegemony of its system of production based on the villa.⁸³ While this recognizes the phenomenon, it hardly explains how standardization was brought about.

The parties to a sale were at liberty to use any measures which were mutually agreeable.⁸⁴ Cato, *de ag. cult.* 154 has a convenient device for measuring a *culleus* of wine

⁷⁷ *Dig.* 19. 1. 9: 'si is, qui lapides ex fundo emerit, tollere eos nolit, ex vendito agi cum eo potest'. For wine see *Dig.* 18. 6. 1. 4.

⁷⁸ R. Yaron, *op. cit.* (n. 73), 77, although see the interesting discussion in *Dig.* 33. 6. 15: 'illud verum esse puto, cui vinum cum vasis legatum erit, ei amphoras cados, in quibus vina diffusa servamus, legatos esse: vinum enim in amphoras et cados diffundimus, ut in his sit, donec usus causa probetur, et scilicet id vendimus cum his amphoris et cadis: in dolia autem alia mente coicimus, scilicet ut ex his postea vel in amphoras et cados diffundamus vel sine ipsis doliis veneat'.

⁷⁹ For the *plebiscitum Claudianum* and the later restriction in the *Lex Julia de repetundis*, see now J. H. D'Arms, *Commerce and Social Standing in Ancient Rome* (1981), 31 ff.

⁸⁰ As, for example, at the Madrague wreck (see below) and Dramont 'A' (see n. 38). For a convenient collection of ancient literary sources concerning amphorae see W. Hilgers, *Lateinische Gefässnamen* (*Bonner Jahrbucher Beiheft* 31, 1969). For attempts to regularize the methods for constructing typologies of amphorae see the articles in *Méthodes Classiques*.

⁸¹ A. Tchernia, *op. cit.* (n. 40), 33 ff.

⁸² F. Hultsch, *Metrologorum scriptorum reliquiae* (1866), II. 71: 'quadrantal, quod nunc (second century A.D.) plerique amphoram vocant'. However the technical term 'quadrantal' continues to be used (*CIL* xv. 4619, 4850; VIII 12574).

⁸³ D. Manacorda, in *Istituto Gramsci*, 24.

⁸⁴ *Dig.* 18. 1. 71: 'quibus mensuris aut pretiis negotiatores vina compararent, in contrahentium potestate esse'.

during a sale. In the contract for the sale of wine in dolia (*de ag. cult.* 148) a *culleus* is defined as 41 *urnae*. If the vendor is expecting to sell simply by capacity, then this makes little sense. A *culleus* normally consists of 40 *urnae*. Why the extra one? The likely solution is that wine was most conveniently sold by weight. The amphora was weighed empty, then filled and weighed again, and a simple formula could transform the result into an expression of capacity.⁸⁵ The extra *urna* is a modest 2½ per cent margin for error in what was recognized to be an approximation. For practical purposes it could cover the vendor against claims of giving short measure.

If wine was measured in this way, an amphora would only need to meet rather approximate standards of capacity. However, it would be greatly to the convenience of all parties, if amphorae could be assumed reasonably to have a definite general capacity. This could explain why amphorae types tended to get bigger through the Republic. What still remains a total mystery is the choice of a limited number of shapes for such carriers or the reasons why some types disappear. There is nothing in the West to give us an insight into the workings of a pottery comparable to the recently published pottery leases from Oxyrhynchus.⁸⁶

The study of amphorae and their stamps, particularly in the last decade, has deepened our knowledge of the trade in agricultural goods in the Roman West. However, the evidence which amphorae provide can only be properly assessed against the background of what we know about the system of marketing from literary, epigraphic, and the still under-utilized legal sources.

University of Newcastle upon Tyne

⁸⁵ For wine measures expressed in terms of weight see the Lex Silia de ponderibus publicis (*FIRA* 1.79): 'uti quadrantali vini LXXX pondo siet'; *Carmen de ponderibus* (Hultsch, *Met. scr.*, no. 120; 1, 91 ff.) in

which a formula is given for the approximate weight relation between identical capacities of wine, oil, and honey.

⁸⁶ H. Cockle, *JRS* 71 (1981), 87 ff.