

**REPORT ON THE AMPHORAS FROM ELMS FARM**

by

Paul R. Sealey

[Note: some editing has taken place, *e.g.* 'Heybridge' has been substituted for 'Elms Farm', where appropriate (see MA notation on paper copy) - 'kilos' changed to kg and ampersands eliminated]

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## RESEARCH OBJECTIVES, METHODOLOGY AND QUANTIFICATION

The project began with a rapid evaluation of the amphora sherd material by the writer in conjunction with C. R. Wallace. It emerged from this two day exercise that the assemblage most closely related that from Hengistbury Head (Dorset). As at Hengistbury Head, there was - for Britain - an exceptional number of Dressel 1 amphoras. Otherwise the material was dominated by Dressel 20, without the diversity and range of forms one might have expected of a major settlement on the coast.

The amphora assemblage had the potential therefore to shed light on the wine trade in Dressel 1 amphoras with pre-conquest Essex. The scale of the excavations and the number of wine amphoras of all forms available for study led one to hope that the quantification of the data might elucidate trends in the wine trade for the settlement throughout its history, trends moreover which might have a more than local significance. The amphoras were also studied for insights into the changing status and economic standing of the site throughout its history. Initial evaluation of many classes of artefactual material from Elms Farm suggested that the site had experienced a slide in its fortunes in the Roman period. It was anticipated that the amphoras could contribute to an understanding of the chronology and scale of this decline.

The most common amphora type was Dressel 20. Identification of the form was straightforward and there was seldom any need to use even a hand lens. With other categories of material, the hand-lens was indispensable; occasional use was also made of a binocular microscope. Quantification was by sherd count and sherd weight, to the nearest gramme. Anyone with experience of amphoras will know that rims represent only a tiny proportion of the complete vessel. There is no point therefore in quantifying amphora assemblages by estimated vessel equivalents (by which the surviving part of each rim is calculated as a percentage of the whole and the total for each category of amphora calculated by adding together the percentages for individual rims). The technique has hardly ever been used overseas and even in the United Kingdom (the only country where quantification by eves is regularly practised), it is standard practice to quantify amphoras by sherd count and weight.

Processing the 272kg of amphoras from Elms Farm was inevitably a lengthy process. When (apart from the ubiquitous and readily identified Dressel 20) a sherd could be identified for certain on the basis of its typology, it was removed to a fabric and form type series. In this way a reference collection was built up as the project progressed. As each context was processed, sherds from the same category of amphora were rebagged together and put with all other sherds of the same category (Dressel 1, Dressel 2-4, *salazones* and so forth). At the end of the exercise, all sherds from the same category were examined afresh to test the validity of the existing fabric divisions and identifications. This involved removing sherds from context bags and sorting through the material once more. The number of matching operations was immense and inevitably sherd groups congealed around what became minimum vessel number counts. Experience showed that recalcitrant body sherds could often be identified by linking them to sherds in the same fabric with diagnostic typological features. At Elms Farm the establishment of a minimum vessel count was looked upon as a calculation of the *lowest* number of complete amphoras the extant sherds could represent. It was not an estimate of the actual numbers present. The minimum vessel number count was worked out for each category of amphora, with the exception of Dressel 20 because the volume of material present made it impracticable.

It only remains to point out that there is an archive for the amphoras. Information on sherd counts and weights by fabric and by form from each context was compiled on context sheets. These

sheets recorded other information, such as the thickness of Dressel 20 sherds, the presence of burn marks and sherd condition. All this data exists in the site archive in disk format for the benefit of research in the future.

### SUMMARY AND CONCLUSIONS

The excavations produced 3966 amphora sherds from 1162 contexts weighing 272.836kg. The forms present are Dressel 1, Pascual 1, Dressel 2-4, Haltern 70, Dressel 20, *salazones* (Beltrán 1), Kapitän 2, and three Gaulish amphora types: Gauloise 3, 4 and 6. Where it was not possible to decide if a given sherd came from Dressel 1 or 2-4, the category Dressel 1 or 2-4 was used; likewise there is a category Pascual 1 or Dressel 2-4. Several common amphora types were not present at all, such as Rhodian amphoras of form *Cam* 184, carrot-shaped jars of form *Cam* 189 and Beltrán 2 *salazones*. Details of sherd counts and weights are given in Table 00 and the minimum vessel number counts (apart from Dressel 20) in Table 00. The incidence of amphora sherds by ceramic phase is given in Table 00 ([Archive only](#)). The date bands for the ceramic phases can be found in Table 00.

<i>form</i>	<i>sherd count</i>	<i>count percent</i>	<i>sherd weight</i>	<i>weight percent</i>
Dressel 1	1223	30.8 %	92889	34 %
Dressel 1 or 2-4	173	4.4 %	11771	4.3 %
Pascual 1	33	0.8 %	3736	1.4 %
Pascual 1 or 2-4	3	0.1 %	87	0 %
Dressel 2-4	237	6.0 %	8273	3.0 %
Gauloise 3	13	0.3 %	442	0.2 %
Gauloise 4	195	4.9 %	7185	2.6 %
Gauloise 6	1	0 %	118	0 %
Kapitän 2	2	0.1 %	199	0.1 %
Haltern 70	6	0.2 %	760	0.3 %
Dr 20	1764	44.5 %	133083	48.8 %
<i>Salazones</i>	119	3.0 %	7224	2.6 %
Stoppers	13	0.3 %	31	0 %
Unidentified	184	4.6 %	7038	2.6 %
Totals	3966		272836	

*Table 00. Summary of Amphora Forms by Sherd Count and Weight  
(weights are in grammes)*

<i>amphora type</i>	<i>minimum vessel number</i>
Dressel 1	44
Pascual 1	4

Pascual 1 or Dressel 2-4	1
Dressel 2-4	27
Dressel 1 or 2-4	3
Gauloise 3, 4 and 6	9
Kapitän 2	1
Haltern 70	2
<i>Salazones</i>	11

*Table 00. Minimum Vessel Number Counts for the Amphoras  
(excluding Dressel 20)*

The Dressel 1 amphoras at Elms Farm are the largest group excavated in Britain since 1945. Comparison with sites in Belgic Gaul on the basis of the number of amphoras per hectare shows that Dressel 1 was less common here than there. Most of the Dressel 1 at Elms Farm arrived at the very end of the lifetime of the form over a short period of time *c.*25-10BC. This is remarkable because exports of Dressel 1 to Gaul were in decline from *c.*40BC. But Elms Farm shows that exports of the form could remain locally significant in northern Europe until the advent of Gallo-Belgic wares *c.*15BC. This unexpected surge in wine imports suggests that special circumstances need to be invoked to account for the swift rise to prominence of the site. Elms Farm may have become important as a settlement involved in the export of British produce to the Roman world. The ultimate destination of these exports may have been the Roman armies based in Gallia Belgica and the Rhineland or beyond. The strain that these armies imposed on the local economies encouraged the army to seek supplies from further afield, including Britain. Eventually the adjustment of agrarian regimes in Gallia Belgica to the presence of a large standing army along the Rhine made it unnecessary to import produce from Britain; this may be connected with the apparent decline of the site in the Roman period.

More Dressel 1 amphoras have now been recovered from Essex than from any other county in England. A fresh look at the chronology of Dressel 1 in Britain does not allow us to link the start of wine imports among the Trinovantes with the treaty arrangements in 54BC with Caesar, although there might have been a diplomatic component to the significant quantities imported later under Augustus at sites like Elms Farm. Although nowhere in south-eastern England has Dressel 1 amphoras as early as those from Hengistbury Head, the popular view that the Gallic Wars saw a shift in the wine trade from central southern to south-eastern Britain is unjustified. The concentration of Dressel 1 in Essex throws into sharp relief their rarity in Suffolk, Norfolk and Cambridgeshire. This gap in their distribution marks out the territory of the Iceni and the distribution of Dressel 1 allows us to fix the position of a boundary between them and their southern neighbours, the Trinovantes.

Nowhere inland from Elms Farm has such a large concentration of Dressel 1. But it would be wrong therefore to see Heybridge as a port of entry for Italian wine for distribution inland. Imported wine was consumed on site. Seven early wine amphoras (Dressel 1 and Dressel 2-4) were retrieved from late Iron Age pyre-related contexts. The involvement of wine at funerals confirms consumption at Heybridge itself. An assemblage of Dressel 1 amphoras from one of these pyre-related features associated with a wealth of imported and native pottery shows that wine was drunk in Roman style, with a meal. Examination of the amphoras from the pyre-related features shows they had been exposed to intense heat. Stacking wine amphoras around pyres is only attested in northern Europe among the Treveri of the central Moselle and it was from there that the Heybridge community acquired the practice, giving an insight into links between a community in Britain and a specific canton of Gaul.

In the first half of the 1st century AD the volume of wine reaching the site fell dramatically. Over the period *c.*AD10-43 imports of wine fell by up to 25% of what they had been previously. We know this is nothing to do with a decline in site status because the quantities of other amphoras were maintained at existing levels or actually increased. This is part of a trend across Britain and Gaul and reflects the increased demand for wine in Italy from Augustus onwards. It finds further expression in the relative numbers of Dressel 1 and Dressel 2-4 shipwrecks, with nearly twice as many Dressel 1 shipwrecks as those with Dressel 2-4. As communities in Britain found Italian wine increasingly difficult to obtain, they turned to Catalonia in an effort to make up the deficit. Apart from Italy itself, Catalonia is the most important source of early wine amphoras at Elms Farm. Declining volumes of wine reaching Britain explain why the provision of wine at elite funerals became less generous after the end of Dressel 1. There are no rich graves from the first half of the 1st century AD with as many wine amphoras as the *c.*10BC Lexden tumulus.

After the Roman invasion, the tempo of amphora-borne trade slackened. The range of amphora types is limited and imports are dominated by the ubiquitous Dressel 20, the Baetican olive oil amphora. The absence of Beltrán 2 *salazones* suggests imports of amphoras were in decline from as early as *c.*AD75. Viewed from the perspective of its amphoras, the site became more parochial and less international in its outlook. It is conceivable that the disruption of the Iron Age trade patterns that had sustained Heybridge before the invasion contributed to its marginalisation. The end of amphora-borne imports is indicated by the only late Roman amphora from the site, a solitary Kapitän 2 from a late 4th century context.

## PART I. A REVIEW OF THE AMPHORA TYPES PRESENT

### Dressel 1

*Typology and Identification:* Dressel 1 amphoras at Elms Farm could be readily identified on the basis of their rims and handles (Figs 00-00 nos 1-28). The rims are collars with near-vertical steep sides, often with a dished outer face. Dressel 1 handles are straight (except where they bend through a right angle to join the neck) and oval in section; a few are more rounded, and even sub-circular sections are sometimes found. One has shallow grooves or corrugations (Fig.00 no.16), a rare feature but also found on Dressel 1 amphoras from the Jeune-Garde A shipwreck (Carrazé 1972, 78). Handle typology varies widely from vessel to vessel; this was helpful when the minimum number of vessels present was established, and as many handles as possible have been illustrated.

Identical handles are found on the inelegantly named mid-Roman Campanian amphoras of the 2nd to early 4th centuries AD. In at least one instance from Britain a handle of this rare type - from Yorkshire - has been mistaken for Dressel 1 (Arthur and Williams 1992, 254). T. S. Martin kindly tells me that Dr D. F. Williams has identified the form in Essex at Great Holts Farm in Boreham. Moreover a black sand fabric rim published from Heybridge as Dressel 2-4 can now be seen (on the basis of its typology) to be another mid-Roman Campanian vessel (Wickenden 1986, fig.26 no.30, 58). Technically therefore this new amphora type could be lurking at Elms Farm among the Dressel 1 handle sherds residual in later contexts, although the rarity of the type and the demonstrable prevalence there of Dressel 1 make it unlikely.

Sherds from the cylindrical body of Dressel 1 are much thicker than most other forms and this massive style of fabrication is a real help when body sherds have to be distinguished from other forms. One vessel reached the quite exceptional body wall thickness of 32mm. Body sherds were taken to be Dressel 1 if they were in excess of 20mm. An approach like this had to be adopted to give some consistent standard for distinguishing the form from its successor, Dressel 2-4. This is of course an arbitrary approach, as the larger Dressel 1 body sherds occasionally demonstrated. By some vagary of throwing, one vessel had a wall that ranged in thickness from 23.5mm down to as low as 15mm. That was exceptional, but other body sherds that fell below the 20mm threshold in some places (but which could be identified as Dressel 1 because the shoulders had oval handle stubs) were a reminder of the perils inherent in assigning body sherds to a specific form on this basis alone. Body sherds in Italian fabrics that fell in the range of 17.5 to 19.9mm thick were therefore placed in the Dressel 1 or 2-4 category, and only body sherds 17.4mm or less in thickness were assigned to Dressel 2-4. It also proved impossible to distinguish Dressel 1 neck sherds and spikes from Dressel 2-4.

There is a growing recognition that progress on the satisfactory sub-division of Dressel 1 depends on the publication of detailed measurements of selected features of each amphora. It is becoming increasingly common now (at least in French excavation reports) to give the diameter, height, thickness and angle of inclination of Dressel 1 rims. This practice is followed here (Table 00). Where the measurements were taken is explained by Fig.00. It may eventually prove useful as well to have measurements of the two axes of handle sections, and that data for Elms Farm is given in Table 00.

For the last fifteen years, there has been a lively debate on the classification of typological variants within the Dressel 1 family. There is still no satisfactory metrological scheme for defining sub-divisions of the form. In view of this, the writer has followed the example of Laubenheimer (1991, 36) in her report on the Dressel 1 amphoras from the 19th century excavations at Mont Beuvray and simply described the Elms Farm material as Dressel 1. Laubenheimer took this view because she felt that unless a specimen was complete it was pointless to try and allocate it to this or that variant. This is not to deny that we can see a typological development within Dressel 1, but no detailed scheme for Dressel 1 metrology has yet been developed to allow the allocation of excavated sherds to one or other of the traditional variants Dressel 1a, 1b and 1c on an objective (measurable) basis that enjoys widespread support in the scientific community. The current debate on Dressel 1 typology is outlined in the Appendix (pages 00-00).

<i>illustration</i>	<i>height</i>	<i>diameter</i>	<i>thickness</i>	<i>inclination</i>
Fig.00 no.1	36	165	33	73°
Fig.00 no.2	31.5	160	29.5	77°
Fig.00 no.3	61	193	26	93°
Fig.00 no.4	49	185	23	91°

Fig.00 no.5	61	169	23	96°
Fig.00 no.6	60	172	23	88.5°
Fig.00 no.7	64	156	34	83°
Fig.00 no.8	52	171	24	94°
Fig.00 no.9	58	168	13	96°
Fig.00 no.11	51	147	23	86°
Fig.00 no.13	64	174	24	99°
Fig.00 no.x	44	160	24	100°
Fig.00 no.y	84	180	24	84°

Table 00. Dressel 1 Rim Metrology at Elms Farm  
(dimensions in millimetres)

<i>illustration</i>	<i>long axis</i>	<i>short axis</i>
Fig.00 no.15	42	36
Fig.00 no.16	58	28
Fig.00 no.17	65	26
Fig.00 no.18	58.5	36
Fig.00 no.19	56	32
Fig.00 no.20	63	25
Fig.00 no.21	61	31
Fig.00 no.22	58.5	28
Fig.00 no.23	50.5	42
Fig.00 no.24	43.5	31
Fig.00 no.25	46	39
Fig.00 no.26	67	32
Fig.00 no.27	32	32
Fig.00 no.28	34	48
Fig.00 no.x	45	31.5
Fig.00 no.y	36	25

Table 00. Dressel 1 Handle Metrology at Elms Farm  
(dimensions in millimetres)

*Dressel 1 Stamp*: only one was found, on the base of a handle from context 21550 (Phase IIA). It reads...M (Fig.00 no.23). Most Dressel 1 stamps are found on the rim (Henon 1995, 178); the only ones regularly found on the handle are two letter stamps. Many are known and they form a coherent, if intriguing element in Dressel 1 epigraphy. Enough of the preceding letter of the Elms Farm stamp survives to show that it was B, C, D, O, P, Q or R. The only two letter stamp known to the writer ending with M preceded by one of the other letters listed above is the RM stamp, and one can be confident that the Elms Farm stamp is another example. Three sites in Gaul have produced the same stamp: Mont Beuvray (Saône-et-Loire) (three examples), Vertault (Côte-d'Or) and the *oppidum* of Saint-Vincent at Gaujac (Gard) (Laubenheimer 1991, 117, pl.30 no.147; Olmer 1999, fig.49). The earliest two letter stamps are apparently those on the lower ends of Dressel 1c handles on the c.125-75BC îlot Barthélémy shipwreck (Liou and Pomey 1985, fig.24 nos 16 and 20, 576). In the period c.75-50BC they appear on Dressel 1b. A concentration of finds



in the Cosa region (and their rarity in southern Italy) indicates production in southern Etruria. They do not seem to have been name stamps as such and may have played some part in the monitoring of kiln output (Olmer 1999, 81). Two letter stamps are present on other Dressel 1 amphoras from Britain.

*Contents and Origin:* painted inscriptions show that Dressel 1 was a wine amphora; the contents of the form can be amplified by reference to the shipwreck evidence (Zevi 1966, 214; Sealey 1985, 23-5; Peacock and Williams 1986, 90). Discoveries of kilns, field surveys and painted inscriptions on the form show Dressel 1 was produced in western central Italy, in Campania, Latium and Etruria. Copies of Dressel 1 were made in southern Gaul, but there is no reason to think that their production and trade took place on any significant scale (Tyers 1996, 89 with refs).

*The Black Sand Fabric:* a problem that must be aired here is the source region for the familiar black sand fabric found in both Dressel 1 and Dressel 2-4, and indeed now the mid-Roman Campanian amphoras (Williams 1994, 218). The writer has also seen the fabric in one of the Dressel 21-22 amphoras from Colchester (Essex) (Symonds and Wade 1999, fig.3.2 no.36). At Elms Farm the fabric is well-represented in both Dressel 1 and 2-4. It was assigned to Pompeii because some of the amphoras in the fabric were stamped by L. Eumachius, a resident of the town. He also stamped tiles there (Tchernia and Zevi 1972, 37, 40). French scholars call the fabric the *Eumachi* paste. Working independently, Peacock (1977, 153) reached the same conclusion. He said that bricks in a black sand fabric were common at Pompeii and Herculaneum, but not present in other towns in the Italian volcanic tract (but my own experience of the brickwork at Pompeii and Herculaneum is that the black sand fabric is in fact rare there). Doubts have occasionally been raised about the *exclusive* attribution of the fabric to Pompeii and Herculaneum (Peña 1990, 655); the most serious are those of a French team (Hesnard *et al.* 1989, 36-49).

Hesnard and her colleagues undertook a programme of x-ray fluorescence to clarify the chemical composition of amphoras with a black sand fabric. The results showed that they could be divided into five groups. Fabrics 1-4 are quite different to Fabric 5 (the *Eumachi* group from Pompeii) and show that the production of black sand ceramics was not confined to the region of Vesuvius. These fabrics are called *faux-Eumachi* (counterfeit *Eumachi*) and are incorporated in a Group A. Fabric 5 is their Group B, the Pompeian *Eumachi* fabric. Tiles from Pompeii with Oscan and Latin stamps in a black sand fabric were analysed and the results showed that (with two exceptions) they belonged to Group B, the Pompeian fabric. Analyses of Dressel 2-4 amphoras stamped by L. Eumachius showed they also belonged to this group, the Pompeian fabric.

A number of Graeco-Italic and Dressel 1 amphoras in a black sand fabric were examined from six sites in Gaul and Spain, ranging in date from the 3rd to the 1st centuries BC. Only 45% of the black sand amphoras were the Pompeian Fabric 5, the remainder in the Group A fabrics 1-4 had come from elsewhere.

To begin with, the importance of the *faux-Eumachi* groups increased with the passing of time. In contexts dated c.250-175BC at two sites in Gaul and Spain, all the Graeco-Italic black sand fabric amphoras are Pompeian. The *faux-Eumachi* groups make their debut in the second half of the 2nd century BC and become more common than the Pompeian black sand fabric in the 1st century BC. They represent four different production centres; they must be Italian because Dressel 1 is an Italian form, but the precise whereabouts of any *ateliers* are unknown. Eventually the true *Eumachi* black sand fabric from the Vesuvius region came back into its own. All the black sand Dressel 2-4 from a large assemblage of late 2nd and early 3rd century AD amphoras from Saint-

Romain-en-Gal (Rhône) came from the Vesuvius region, showing that viticulture revived there after the eruption of AD79 (Desbat *et al.* 1990, 206, 212).

The implications of this research are unsettling, although it has been ignored in Britain and given only summary acknowledgement in European literature (Baudoux 1996, 33). There is a real possibility that at least half the black sand fabric amphoras reaching Britain are not from the Bay of Naples but from sources elsewhere in Italy. It would seem that these other source regions lie somewhere in southern Etruria or Latium (Peña 1990, 655).

*Date:* it is clear that the Dressel 1 amphoras at Elms Farm reached the site over a brief period at the very end of the history of the form (pages 00-00). In effect this means in the years immediately before *c.*10BC, from (let us say) *c.*25BC. But doubts have been raised about the validity of *c.*10BC as the terminal date of Dressel 1, and the topic may usefully be revisited here.

The reservations come from French scholars impressed by the sharp fall in Dressel 1 exports to Gaul from at least as early as *c.*40BC (Desbat 1998, 31, 33; Poux and Selles 1998, 214). But we must not lose sight of the painted inscriptions with 1st century BC consular dates on Dressel 1 amphoras from Rome (inscriptions of the preceding century are not considered here). They give the years 97BC (twice), 59 or 43BC, 34BC, 33BC, 25BC (twice), 19BC and 13BC (twice) (Zevi 1966, 213 with refs). To this series of consular dates should be added one of 90BC from the *oppidum* of Burriac in Catalonia (Miró 1986), and another of 25BC, from Carthage (Martin-Kilcher 1993, abb.11 no.1, 296 = C.I.L. vol.8 no.22640.4). In summary the entire series for the 1st century BC runs as follows:

97BC (twice)  
90BC  
59 or 43BC  
34BC  
33BC  
25BC (twice)  
19BC  
13BC (twice).

It is difficult to square these dates with an end for Dressel 1 before 13BC (Loughton 2000, 254). Desbat suggests the 13BC date may have been a re-used vessel, but there are *two* vessels with this date. Moreover the painted inscription on one of them explains that its wine was the vintage of 18BC, and that it was not decanted into its amphora until 20th May 13BC. One would hardly use an old pot for a matured and cherished wine like this, and the secondary use argument cannot apply here. A decline in Dressel 1 exports to Gaul should not be confused with the terminal date of the form, and *c.*10BC should be allowed to stand as the end date for Dressel 1 (Tchernia 1986, 126). The Elms Farm data should dispel any lingering doubts because it shows that exports of the form could remain locally significant in northern Europe until the advent of Gallo-Belgic wares *c.*15BC.

*Dressel 1 at Elms Farm:* the scale and importance of the trade in Dressel 1 at Heybridge is such that discussion has been reserved for a separate section (pages 00-00).

## **Pascual 1**

*Typology and Identification:* Catalan amphoras can be identified in the first instance on the basis of their two distinctive fabrics, a red (ARCAT) and a white (AWCAT) (page 00). Pascual 1 is a local copy of the Italian Dressel 1. A collar rim is common to both forms. With Pascual 1 it tends to be tall and vertical, or steeply inclined. The oval handles of Pascual 1 are likewise distinctive; sometimes a narrow groove runs down the outer face (Fig.00 nos 29-31). On a site like Elms Farm where Catalan Dressel 2-4 is also present, there is the problem of distinguishing body sherds of the two forms. It was decided to follow the same procedure for distinguishing Dressel 1 from Dressel 2-4. Vessels with body wall sherds thicker than 20mm were taken to be Pascual 1. Any body sherd less than 17.4mm was regarded as Dressel 2-4, and sherds in the range 17.5-19.9mm were treated as Pascual 1 or Dressel 2-4.

*Contents and Origin:* there are no painted inscriptions on the form specifying contents but it is widely and rightly assumed to have held the same wines that were bottled in Dressel 2-4 amphoras from Catalonia (Sealey 1985, 45-6 with refs). Since that was written more light on the contents of Catalan amphoras has come from a painted inscription on a Dressel 2-4 from the region specifying Aminean wine as the contents; it was a wine named after the parent grape variety, rather than the place of origin (Liou 1993, fig.2, 135 no.8). Kiln sites in the region leave no room for doubt about the origin of the form (Pascual Guasch 1977; Key and Jones 1982).

*Date:* one of the first examples comes from a context dated c.55-40BC in southern Gaul (Tchernia 1986, 143). Another specimen was found on the c.50BC Dramont A shipwreck (Parker 1992, 165-6). At first exports seem to have been modest, to judge by the Cybele sanctuary site at Lyons, where the form only accounted for 4% of the amphoras in a context dated c.40-20BC (Lemaître *et al.* 1998, 51 fig.8 nos 6-10; Desbat 1999 for more details of the site and its chronology). Production continued for some time after the end of Dressel 1 c.10BC. In Gaul the form is found associated with structures not built until Tiberius (Badoux 1996, 40), but its absence from sites in Britain founded after AD43 shows production had stopped by then. At present c.AD25 is the best estimate of its terminal date (Martin-Kilcher 1994, 335).

*Pascual 1 at Elms Farm:* there are a minimum of 4 Pascual 1 from the site. Imports started in Ceramic Phase 2, and peaked in the following Ceramic Phase 3. An increase in the number reaching the site after the end of Dressel 1 is implied, presumably to compensate for dwindling exports of wine from Italy as demand there rose under Augustus and his successors (pages 00-00). Three of the Elms Farm Pascual 1 are in the red, and one in the white fabric. Its presence at Heybridge gives definition to a strand in the Iron Age exchange networks of the Trinovantes that has hitherto lacked focus. An unstratified Catalan handle from the Sheepen site at Colchester is one example (Sealey 1985, 102). An old and meagrely documented find of a Pascual 1 handle from Thaxted (apparently associated with Dressel 1) is another (Rodwell 1977, 251; Williams 1981, 130). A third Pascual 1 is suspected from a 20mm thick Catalan body sherd in a late Iron Age pit at Slough House Farm, not far from Elms Farm itself (Horsley and Wallace 1998, 143). These Essex finds are the only Pascual 1 amphoras from the south-east; most examples from Britain come from central southern England (Fitzpatrick 1985, 320).

## **Dressel 2-4**

*Typology and Identification:* the handles are bifid (figure-of-eight) in section and unique to the form. Sometimes such handles are formed from two separate rods of clay which were luted together. These can come adrift but there will usually be a scar to indicate the presence of the second joining rod. On other handles the figure-of-eight section is formed by making a groove on one or both of the sides of an otherwise oval handle. Simple bead rims are not confined to Dressel

2-4 and are not in themselves therefore diagnostic of the form. Confusion with *Cam* 184 is possible but as there are no fabrics shared between both forms, familiarity with *Cam* 184 fabrics should lead to the isolation of Dressel 2-4 rims. The junction between the shoulder and body is always sharp and clearly defined, and sherds from that part of a Dressel 2-4 amphora should usually be recognised for what they are. Nine of the Dressel 2-4 from Elms Farm are illustrated (Fig.00 nos 32-41).

One of the reasons why Dressel 2-4 replaced Dressel 1 in Italy was its greater efficiency as a mode of trade packaging. The thick walls of Dressel 1 made it a heavy container and the potters who made its replacement form went to the other extreme, and produced a form with thin and fragile walls. The economic advantages are immediately obvious because Dressel 2-4 has a more favourable ratio of empty weight to filled weight (Hesnard 1977, 161-4; Tchernia 1986, 135). The cylindrical body form of Dressel 2-4 is much the same as Dressel 1 but the walls are significantly thinner. The thickness of Dressel 2-4 body sherds at Elms Farm is recorded on the context sheets. Looking at a random selection, one finds dimensions of 8, 8.5, 9.5, 10, 10.25, 11, 11.25, 11.5, 12, 12.75, 13, 14.25, 15.25, 15.5 and 17mm. This gives a flavour of the size of the sherds and the range of thicknesses present. The difference between the robust walls of Dressel 1 and the fragile Dressel 2-4 is striking. As with the identification of Dressel 1 sherds, a specific figure had to be selected as diagnostic to make sure that the recording was consistent. The writer decided to identify body wall sherds thinner than 17.4mm as Dressel 2-4. Vessels with wall sherds in the range 17.5 to 19.9mm thick were placed in an indeterminate Dressel 1 or 2-4 category, and anything in excess of 20mm was treated as Dressel 1 (page 00).

*Contents and Origin:* painted inscriptions on Dressel 2-4 show the form was a wine amphora (Zevi 1966, 215-16) but occasionally other contents are indicated (Sealey 1985, 46-7). A Dressel 2-4 from the King Harry Lane cemetery at Verulamium, Hertfordshire, had been bottled with olive oil (Evans 1989).

Dressel 2-4 amphoras were modelled on prototypes from the Greek island of Kos. Production in Italy and the western provinces was widespread; evidence for the manufacture of the form has been forthcoming from Gaul, western Switzerland, Baetica and Catalonia in Spain, and even Britain (Tyers 1996, 90 with refs). Progress is being made on the definition of provincial versions. The distinctive fabric of Catalan Dressel 2-4 allows the identification of one of the major suppliers of the form. The distinctive typology of specimens made at Fréjus (Var) and other sites in the south of France has allowed their recognition elsewhere, notably at London (Laubenheimer *et al.* 1991, figs 11-12, 250-2, 257-9; 1992). Fabric and typology also make it possible to recognise those Dressel 2-4 made in Britain at the Verulamium region potteries from Claudius (Symonds and Wade 1999, 162) until at least later in the 1st century AD (Castle 1978, 391).

*Date:* the form was made in Italy as early as the Madrague de Giens shipwreck of c.75-60BC (Hesnard 1977, 159, 162, 167 fig.4; Liou and Pomey 1985, 564 for the date of the wreck). Elsewhere in the West provincial versions are not found until Augustus. In the important amphora deposit from the House of the Porch at Ostia dated c.50-25BC, Dressel 1 amphoras outnumber Dressel 2-4 by 21 to 2 vessels (van der Werff 1986, 119) and it would seem that Dressel 2-4 was not widely produced in Italy until the last quarter of the 1st century BC. Production of the form in the peninsula lasted much longer than had previously been realised. Some potteries were still making the form there as late as the early 3rd century AD (Freed 1989). Export of Italian Dressel 2-4 that late has emerged from the study of two large dumps of these vessels from late 2nd to early 3rd century AD warehouses at Saint-Romain-en-Gal (Rhône) (Desbat *et al.* 1990). Indeed Italian

Dressel 2-4 seems to have outlasted all the other western versions of the form. But although the form had a long history, its *floruit* came in the last decades BC and in the 1st century AD.

*Dressel 2-4 at Elms Farm:* using sherd count and sherd weight for the incidence of Dressel 2-4 in the amphoras as a whole gives figures of only 6% and 3% respectively. Yet quantification by minimum vessel number count indicates the presence of at least 27 vessels. The generally lighter construction of the form compared to Dressel 1 and Dressel 20 in particular means Dressel 2-4 data expressed in terms of sherd count and sherd weight seriously under-represents their importance. This is an important comment on the quantification of amphora data.

Dressel 2-4 was present in Ceramic Phase 1 and imports continued until Ceramic Phase 5. None at all are recorded for the next ceramic phase and all subsequent sherds may well be residual. At first sight, the sherd count and sherd weight data suggest that imports of the form were at their height in Ceramic Phase 3 but this masks a far more interesting picture in which wine imports to the site actually declined dramatically in that period (pages 00-00).

Table 00 gives the allocation of minimum vessel numbers to the fabrics present. It shows that just over half are Italian (55.5%), and a third (29.6%) Catalan. The remaining 4 vessels in 4 different fabrics could not be assigned to a source. The 14 shipwrecks with Catalan Dressel 2-4 reviewed by Corsi-Sciallano and Liou all fall within a half century or so of each other down to Nero and point to a vigorous but short-lived economic current, one in which Heybridge participated. Exports of wine from Tarraconensis were in decline in the 2nd half of the 1st century AD (Corsi-Sciallano and Liou 1985, 171-2).

<i>fabric group</i>	<i>minimum vessel number</i>
AITAL (Italian)	8
AITAH (Italian)	2
ABSAN (Italian)	5
ARCAT and AWCAT (Catalan)	7
AWINA (unsourced)	1
AWINB (unsourced)	1
AWINC (unsourced)	1
AWINE (unsourced)	1

*Table 00. Minimum Vessel Number Count by Fabric for the Dressel 2-4 Amphoras*

### **Gauloise 3, 4 and 6**

*Typology and Identification:* the Gaulish amphoras discussed here are the extensive series with foot-ring bases defined by Laubenheimer (1985). Versions of Spanish and Italian amphoras made in Gaul are not present at Elms Farm. Seven of the 9 Gaulish amphoras from Elms Farm are Gauloise 4, the standard form (Fig.00 nos 43-6). It has short flexed handles, with a shallow central groove. Rims are round and thick; this and most other forms have a narrow flat base with foot-ring. Gaulish amphoras are relatively modest in size and thin-walled; sometimes body sherds of Gauloise 4 have horizontal fluting. As the body tapers from a broad shoulder towards a more or less narrow base, the configuration of larger body sherds can often help in the recognition of examples. Two of the Gaulish amphoras are Gauloise 3 and 6. The former was recognised at Elms

Farm from the rounded rim with moulded neck below (Fig.00 no.42); a similar rim is present at London (Davies *et al.* 1994, fig.12 no.33). Gauloise 6 has distinctive furrowed rim and is the only Gaulish amphora that occasionally has a flat (as opposed to foot-ring) base (Fig.00 nos 47-8).

*Contents and origin:* painted inscriptions on Gaulish amphoras show the contents were wine. Resinated wines are indicated by the inscriptions mentioning *picat(um)*; sometimes they are specified as mature (*vetus*). Honey wine (*mulsum*) and the sweet wine called *passum* made from dried grapes (raisins) are both also attested by inscriptions; the latter amplifies a report in Pliny (*Naturalis Historia* 14.83-4) of the *passum* wine made in Gallia Narbonensis by the Vocontii. No less than fourteen inscriptions record *aminneum*, wine made from the *aminneum* grape. Matured Aminnean wine from Béziers is attested by the inscription *amin(neum) Baet(errense) vet(us)* (Liou 1987, 72-89, 104; 1991; Liou and Marichal 1978, 145-59, 175-7, 179-81). Inscriptions with the letters *mas* used to be interpreted confidently as Marseilles wine, *vinum Massiliense*. But a “quite extraordinary and mortifying” inscription on a Gaulish amphora reads *massicum* (all the letters are present, and there is no doubt about the reading). This was an Italian wine, from the *Mons Massicus* on the marches of Latium and Campania and its presence in a Gaulish pot calls for explanation. Bogus labels in the wine trade like Spanish Sauternes have been with us in living memory but rather than invoke the illicit borrowing of an *appellation* by provincials in antiquity, it would seem more likely that Italian wines could be exported to Gaul (perhaps in ships with *dolia* for the bulk transport of wine) and then bottled in local containers (Liou 1987, 74). If so, the implications are unsettling.

Gaulish amphoras are securely assigned to the southern province of Gallia Narbonensis on the basis of the many kiln sites reported; sporadic production took place further north (Laubenheimer 1985).

*Date:* there are only 3 painted inscriptions with consular dates on Gaulish amphoras. A Gauloise 7 made (and excavated) at Fréjus (Var) bears the date AD28 (Liou 1991). An unspecified Gaulish amphora from Fos-sur-Mer (Bouches-du-Rhône) was bottled with its contents in one of the years when Vespasian and Titus were consuls, possibly AD74. A Gauloise 4 from the same place bears another Flavian date, AD79 (Liou 1987, 70, 72, fig.9). The poverty of painted inscription dates has made our knowledge of the chronology of the various Gaulish amphoras reliant on excavated land finds, with all the attendant imprecision: the terminal date of Gauloise 4 is particularly difficult to establish. Anyhow it is clear that Gauloise 4 had emerged by the middle of the 1st century AD (Baudoux 1996, 56) and that it remained current until the 3rd century AD (Martin-Kilcher 1994, 361). Our understanding of the chronology of the two other (rare) Gaulish forms present at Elms Farm is woefully inadequate. It would seem that Gauloise 3 appears in the first half of the 1st century AD and that Gauloise 6 belongs to the same century (Laubenheimer 1985, 385-6). A very similar Gauloise 3 rim to ours from Elms Farm has been published from the major 2nd century AD workshop at Thésé-Pouillé (Loir-et-Cher) (Laubenheimer 1989, 114, fig.10 no.3).

*Gaulish Amphoras at Elms Farm:* Gauloise 4 and related types are among the more common amphoras from Roman Britain (Peacock 1978, 49) but at Elms Farm they make a poor showing, with a minimum of only 9 vessels. This is further evidence for the dwindling fortunes of the settlement after its auspicious start as a major importer of Mediterranean produce in the late Iron Age. Table 00 suggests that imports of Gaulish amphoras were flagging by Ceramic Phase 5. This is borne out by the dearth of material in the following Ceramic Phase 6. Later material (despite its quantity) may well be largely residual. It only remains to point out that Gauloise 3 and 6 do not feature in the table of amphora incidence by ceramic phase because they were present in none of the contexts selected for inclusion in that database.

Gauloise 4 was present in Ceramic Phase 3 contexts at Elms Farm. Consideration was given to the possibility that the sherds in question at Elms Farm were Iron Age arrivals, and that the form present was not in fact Gauloise 4. It weighed heavily with the writer that Gaulish amphora body sherds were present in small quantities at late Iron Age Silchester, but where the precise form could not be identified (Williams 2000, 221, 224; Fulford and Timby 2000, 295). Examination in detail of the contexts of the Ceramic Phase 3 Gaulish amphoras from Elms Farm showed them to lie at the end of the phase: there were no Iron Age imports of Gaulish wine at Elms Farm, and the identity of the sherds as Gauloise 4 is not in doubt. It is of course interesting that Gauloise 4 was present at Elms Farm as early as the middle of the 1st century AD, although one notes that the form was also present at London in pre-Boudican contexts of the fifties AD (Davies *et al.* 1994, 18). Elsewhere it apparently does not become securely established until the Flavians.

## **Kapitän 2** [New section inserted, received by email 15/10/02]

*Typology and Identification:* the form was identified at Elms Farm on the basis of a neck sherd with horizontal furrowing, and a handle with oval section rising from the upper end of the neck (Fig.00 no.73). It is clear from both sherds that the parent vessel was of only diminutive size, and that settled the identification. The type takes its name from some of the cargo amphoras on board the *c.*AD 215-30 Ognina A shipwreck at Syracuse (Kapitän 1972, 246, 248; Parker 1992, 292).

*Contents and Origins:* the contents of the type remain unknown, although the modest capacities of these jars suggest wine. Distribution of the form and its typology suggest an origin in the Aegean region (Riley 1979, 189-93; Parker 1992, fig.13). Fabric analysis shows that several different areas were involved in production of the form. The same analyses rule out an origin on Rhodes; a conclusion corroborated by field surveys on the island which failed to find the form at any of the amphora workshops located there (Empereur and Picon 1989, 233). A kiln has been reported from Ephesus on the Aegean coast of Asia Minor and there is circumstantial evidence that the contents included Maeonian wine from the adjacent province of Lydia. The price edict issued by Diocletian mentions Maeonian *caroenum*, a non-alcoholic syrup like *defrutum* and *sapa* made by boiling down grape must (Peña 1999, 84 citing *Edictum de Pretiis* 2.13).

*Date:* the form has been reported from late 2nd century AD contexts at Ostia and Rome, but not apparently elsewhere. The *floruit* of Kapitän 2 amphoras fell in the later 3rd and 4th centuries AD (Riley 1979, 190). Output declined in the 4th century; at Rome sherds of the form after *c.*AD 325 look residual, at least on the Palatine hill. Production seems not to have continued beyond the end of the century (Panella 1973, 596-7; Riley 1979, 190-1; Martin-Kilcher 1994, 440; Peña 1999, 84).

*Kapitän 2 at Elms Farm:* the type is represented by only two sherds (from the same vessel), in a context dated *c.*AD 360/70-400/450; the sherds need not be residual. Kapitän 2 is the only late Roman amphora type from Elms Farm and it marks the end of a trade in Mediterranean amphoras extending back over three hundred years. The type is uncommon in Britain, but with a concentration (if that is not too strong a word) on both sides of the Thames estuary (Tyers 1996, 102).

## **Haltern 70**

*Typology and Identification:* the distinctive fabric is shared with Dressel 20 (see below). Small body sherds of both forms are indistinguishable and there must be more Haltern 70 sherds

concealed in the data for Dressel 20. At Elms Farm only six sherds could definitely be identified as Haltern 70. They include a neck with the stub of a handle with exterior groove, and a length of flexed handle from a second vessel with the same style of groove (Fig.00 nos 49-50).

*Contents and Origin:* the contents of the form were *defrutum* and *sapa*, and olives preserved in *defrutum*. *Defrutum* and *sapa* were non-alcoholic syrups made from boiled grape must. Scholarship on the European mainland takes the view that these grape syrups had been fermented to make sweet wines, by analogy with modern *vin cuits*. On this view *defrutum* and *sapa* were wines; it is further suggested that other wines from Baetica were bottled in the form. *Defrutum* and *sapa* have been described as non-alcoholic syrups by Parker (Parker and Price 1981, 223; amplified by Sealey 1985, 62-3). They were very like the grape concentrates on sale in Britain in cans for those who make homemade wines. This finds little favour on the European mainland: the consensus there is that the contents of Haltern 70 were wine (van der Werff 1984, 380-1; 1990, 324 for a most informed and scholarly rejoinder to the Parker thesis). A signal exception is the clear statement in Martin-Kilcher (1994, 387). The writer remains unconvinced as well and still regards *defrutum* and *sapa* as non-alcoholic syrups, but acknowledges that this is a minority view.

The congruence of fabric with Dressel 20 shows that Haltern 70 came from the same regions of Baetica in Roman Spain (page 00). Copies of the form were made in the Rhône valley (Martin-Kilcher 1994, 391-2 with refs) and these copies reached Britain. Sometime ago the writer published what he took to be a Haltern 70 from the Sheepen site at Colchester (Sealey 1985, fig.8 no.71). But its fabric is fine with a rough-cast outer surface; the basal spike is not solid throughout but has a depression at the top. Dr S. Martin-Kilcher examined the vessel with me at the 1994 London amphora conference and pointed out that it was in fact a Gaulish vessel, and not Baetican. None of the Elms Farm Haltern 70 is Gaulish.

*Date:* the earliest Haltern 70 remains an unillustrated neck sherd from the c.75-60BC Madrague de Giens shipwreck (Tchernia 1980, 306; 1986, 142; Liou and Pomey 1985, 563). One wonders how a solitary Spanish amphora came to be onboard a vessel bound from Italy at this early date. There is a rim from a context dated c.40BC at Lyon (Lemaître *et al.* 1998, 50-1, fig.8 no.11). Although the *floruit* of the form did not range beyond Nero (Baudoux 1996, 46), it was still current under the Flavians (van der Werff 1984, 356, 368) and - much changed typologically - into the 2nd century (Martin-Kilcher 1994, 388). Late variants of the type from London are (to my eye at least) sufficiently far removed from the true Haltern 70 to merit classification as a separate form (Davies *et al.* 1994, 11) called by the writer *Ver.1908* amphoras, after a rim from Verulamium (Wilson 1984, fig.80 no.1908, 202).

*Haltern 70 at Elms Farm:* the 6 Haltern 70 sherds from Elms Farm represent a minimum of 2 vessels. The only sherds that feature in the ceramic phase scheme for the site are 2 from Ceramic Phase 5. Both the illustrated handles are unstratified. One feels that Haltern 70 must have reached Heybridge in the Iron Age but there is no evidence to prove that at Elms Farm. A more or less complete specimen found nearby in the 19th century at Bouchernes Farm may have come from a rich cremation grave (Wickenden 1986, fig.26 no.15, 55).

## **Dressel 20**

*Typology and Identification:* the most common amphora type in Britain is also the easiest to identify. The sandy buff fabric is unmistakable and shared only by Haltern 70 and a very few *salazon* amphoras (Davies *et al.* 1994, 14). The globular form of Dressel 20 allows the recognition of otherwise featureless body sherds. The flexed handles with their round sections are distinctive;



so too are the rims with their short and rounded profiles, eventually becoming angular towards the end of the life of the form. At Elms Farm it was decided to assign all sherds in this fabric to Dressel 20, unless there was unequivocal typological evidence to suggest otherwise. In practice this means that the only other type in this fabric definitely attested on the site (Haltern 70) is under-represented in the sherd count and sherd weight database. Only two (incomplete) stamps were recovered and three *ante-cocturam* graffiti (Fig.00 nos 59, 61-64).

*Contents and Origin:* Dressel 20 was used for the transport of olive oil. The form was produced in Baetica along the river Guadalquivir between Seville and Corduba, and along the lower reaches of its navigable tributaries (Martin-Kilcher 1987, 4 9-58; Carreras Monfort and Funari 1998, 5-12).

*Date:* the first sign of Dressel 20 in northern Europe comes from a fortified site on the right bank of the river Somme at La Chaussée-Tirancourt occupied c.50-15BC. A handle was recovered from a post-hole there; all the other amphoras were Dressel 1 (Fichtl 1995, 142, fig.17). Production of the form continued until the third quarter of the 3rd century AD when it evolved into the successor form, Dressel 23 (Carreras Monfort and Funari 1988, 13 with refs).

Dressel 20 rims can be dated on the basis of their typology by reference to the indispensable charts published by Martin-Kilcher (1987, Beilagen 1-2). Table 00 gives details of the dates of the illustrated rims from Elms Farm, along with the dates that can be assigned to them on the basis of these charts. Carreras Monfort and Keay (1996, 438) have questioned the validity of the Martin-Kilcher scheme on the basis of the Cala Culip D wreck, with its cargo of Dressel 20 amphoras that sank in the reign of Vespasian (Izquierdo Tugas 1989; Nieto Prieto 1989) but this exaggerates the typological range present among the rim forms and overlooks that the poorly fitting stoppers suggest at least some of the amphoras were old vessels that had been re-used.

<i>context</i>	<i>context date</i>	<i>rim date</i>	<i>illustration</i>
11716	unstratified	pre-Claudian	Fig.00 no.51
24137	Period II	pre-Claudian	Fig.00 no.52
13316	unstratified	AD50-110	Fig.00 no.53
15543	Period III	AD50-110	Fig.00 no.54
4899	Period III	AD50-110	Fig.00 no.55
4427	Period IV	AD70-150	Fig.00 no.56
3885	Period III	AD110-150	Fig.00 no.57
11608	unstratified	AD150-275	Fig.00 no.58

Table 00. The Dates of the Illustrated Dressel 20 Rims by Feature and Typology

*Dressel 20 at Elms Farm:* the form was the most common single amphora type at Elms Farm, accounting for 44.5% of the amphoras by sherd count and 48.8% by sherd weight. Amphora assemblages from Britain are usually dominated by the form. On military sites in northern Britain, the proportion of Dressel 20 sherds is positively overwhelming (Bidwell and Speak 1994, 214). Indeed after Dressel 1, Dressel 20 is the most common amphora type in the whole of the western Roman world. One knew the importance of Dressel 20 for Britain before the Elms Farm project got underway; as our site simply confirms what was already apparent, the point need not be laboured. The sheer quantity of Dressel 20 sherds from the site ruled out any possibility of attempting a minimum vessel number count.

Sherds of the form are present in Iron Age contexts at Elms Farm from Ceramic Phase 2 onwards. Two rims can be recognised as pre-Claudian arrivals on the basis of their typology, as can a small handle with oval section (Fig.00 nos 51-2, 60). Dressel 20 is uncommon on Iron Age sites in Britain (Williams and Peacock 1983, 266-7). From soon after the Roman invasion, Dressel 20 is the only amphora form reaching the site in any quantity. After *c.*AD125 the only amphoras reaching the site other than Dressel 20 are a few Gauloise 4 and a single Kapitän 2. Imports peaked in Ceramic Phase 6 [Reportwriter query gives a peak in CP8]. This is a pattern typical of Britain as a whole (Williams and Peacock 1983, 268), with the notable exception of London where there was a slackening of Dressel 20 imports under Hadrian and in the early Antonine period (Davies *et al.* 1994, 9). In the 2nd century at Elms Farm half a Dressel 20 amphora had been buried upside down in Pit 4582 (Fig.00 no.64). The vessel is assigned to that century on the basis of its small handles that approach the neck horizontally (Martin-Kilcher 1987, abb.28 no.4; Carreras Monfort and Funari 1998, fig.75).

An unresolved problem for Dressel 20 in Britain is the secure identification of its rare successor form, Dressel 23 (Carreras Monfort and Funari 1998, 13). It was certainly present at Heybridge because the body of a specimen found in 1875 at Bouchernes Farm and used as a cremation urn has already been published (Wickenden 1986, fig.26 no.19, 55). One noticed at Elms Farm that some of the Dressel 20 sherds from later contexts were conspicuous for their thin walls and generally smaller build. There were differences in the fabrics as well, with sherds having a tendency towards a finer paste with a red finish. In the absence of diagnostic typological features it is impossible to decide to what extent these sherds include a Dressel 23 component: for Britain the problem is easier to pose than to solve (Williams and Carreras Monfort 1995, 236-7).

Exports of Baetican olive oil to Britain in Dressel 20 and Dressel 23 amphoras have been surveyed *in extenso* by Funari (1996) and Funari and Carreras Monfort (1998). Both have laid emphasis on the concentrations of Dressel 20 on military sites and the role of the state in provisioning garrisons with olive oil. Civilian and native Heybridge is a reminder that this was not the whole story of olive oil consumption in Roman Britain.

### **Salazones**

*Typology and Identification:* the rims are distinctive and should seldom cause confusion. At Elms Farm the most common single rim form is a wide flared trumpet-shaped mouth with a carefully moulded collar and a concave outer face; the lower edge is usually undercut (Fig.00 nos 65-71). The funnel-shaped rim is unusual; so too is a rounded and chunky rim with exterior groove (Fig.00 nos 67 and 70 respectively). Handles are flattened oval in section sometimes with an outer groove, tapering from top to bottom (Fig.00 no.72). Even sherds from the junction of neck and body can be diagnostic of form because the body often falls away from the neck without any shoulder feature at all. The construction generally is on the sturdy side: it is not unusual to find body wall sherds 20mm or more thick.

The only *salazon* form definitely attested at Elms Farm is Beltrán 1, which is essentially Dressel 7-11. There is no hint whatever of the later hooked rim of Beltrán 2a. *Salazon* studies nowadays try and relate vessels to specific Dressel form numbers for his types 7-11. At La Longarina, Hesnard (1980, 147) was even able to define two new types within the broad church of Beltrán 1. Results have been encouraging. When applied to the Elms Farm material one can recognise a Dressel 8 rim (Fig.00 no.69), and 2 Dressel 9 rims (Fig. 00 nos 68 and 71). The former has a sub-rectangular cordon at the base of the rim; the latter has a wide rim with a flared trumpet mouth

undercut at the collar base, and with a concave outer face. Confusion with other, very similar Beltrán 1 rims is possible; the main difference is that their collar rims are deeper and less emphatically flared than Dressel 9.

*Contents and Origin: salazones* (the word is Spanish, in French *salaisons*) is a generic term for amphoras bottled with high salt-content fish-sauces (*garum*, *muria* and *alec*) and salted-fish. The number of painted inscriptions with evidence for contents continues to grow and confirms the primacy of marine products as the contents of the form. This high survival rate of inscriptions may be connected with the poorly understood surface treatment of these Baetican amphoras where they carry the inscription. An interesting new perspective on these jars has come from Masada, where research has shown that Baetican fish-sauces were kosher (because they were made from fish with scales) and so could be enjoyed by king Herod without troubling his conscience (Cotton *et al.* 1996).

The Baetican origin of Beltrán 1 is clear; imitations of the form made elsewhere are of uncertain significance (Tyers 1996, 99 with refs). One of the main sources of supply to Britain was apparently the Cadiz region (Peacock 1974, 241-2). The large red iron ore particles diagnostic of Cadiz are certainly present among the Elms Farm material, but it proved impossible to quantify its incidence to my satisfaction. Even a large sherd might have only a solitary iron ore particle and so their absence from smaller sherds could not be taken as proof that the parent vessel was not a Cadiz product. Three of the illustrated rims have iron ore inclusions (Fig.00 nos 00-00).

*Date:* the earliest find of a Baetican *salazon* is the Dressel 9 from Clemency (Luxembourg). There a rim and body sherds were securely stratified with Dressel 1 amphoras in the north-east of the c.80-60BC funerary enclosure. The excavators were understandably surprised at its presence, but the vessel was not intrusive (Metzler *et al.* 1991, fig.61 no.1, 78). Dressel 9 was present in the c.40BC Horizon I at the sanctuary of Cybele in Lyon. In the later, c.40-20BC Horizon II Beltrán 1 and 3 *salazones* rise to 19.5%, by minimum vessel number count from the 6% of the preceding phase; to judge by the illustrated rims, Dressel 9 is again the dominant form (Lemaître *et al.* 1998, 50-51, fig.9). Martin-Kilcher (1994, 562-3) cites early *salazon* amphoras from contexts dated c.30BC at Geneva and Besançon.

Otherwise the most important evidence for the early export of *salazones* from Baetica is the c.50BC Titan shipwreck, with its cargo of Dressel 12 (Beltrán 3) amphoras (Tailliez 1961, figs 1 and 4, 185, 197; Parker 1992, 424-5), and the c.50-30BC wreck of Cap Béar C, where the bulk of the cargo was Dressel 1 + Pascual 1 + Dressel 12 (Parker 1992, 97-8). But Dressel 12 has not yet been reported from Britain and the earliest *salazones* here are invariably Dressel 9. This was emphasised by Peacock (1981, 202) in his study of the Skeleton Green, Hertfordshire, material, where two such rims were present. The form disappears after Augustus (Baudoux 1996, 70) and in Britain it will always be an Iron Age arrival, like Dressel 1. It was not present in the legionary fortress and *colonia* at Colchester, Essex (Symonds and Wade 1999).

Views differ on the terminal date of Beltrán 1. Panella (1973, 508) felt that Dressel forms 7-13 were too common in Flavian contexts at Ostia to be explained as residual material. A more conservative assessment comes from Martin-Kilcher (1994, 399) who was reluctant to envisage production of the form much beyond c.AD50. My own feeling is that Beltrán 1 was replaced by Beltrán 2 in the decades AD60-80, by - let us say - c.AD75 (Sealey 1985, 84). The last definite shipwreck with the form is Ses Salines, where the form shared the hold with Dressel 20 amphoras. Stamped lead ingots show the ship sank in the reign of Vespasian (Parker 1992, 378-9).

*Salazones at Elms Farm*: the minimum vessel number count of *salazones* at Elms Farm is 11. No less than 6 of these have rim sherds; all are illustrated. All of them are the early *salazon* form, Beltrán 1. Imports peaked under Augustus in Ceramic Phase 2. They continued until the Roman invasion, but Table 00 shows them falling away in Ceramic Phase 4. An early end to *salazones* at Elms Farm explains the absence of the later hooked rim form, Beltrán 2a.

## Amphora Stoppers

Sherds from 9 terracotta bungs were recovered at Elms Farm. The edges are generally thick and the profiles slightly dished. None was complete and the diameters had to be reconstructed from tiny portions of the edges. Only one had no original edge to give a diameter measurement. The diameters of the others are: 60, 70, 80 (2), 90, 120 (2) and 140mm. Mindful of the scale of the excavations, one might have expected more to have been discovered. Bungs like this were certainly used to seal Haltern 70 and Dressel 20 amphoras (Colls *et al.* 1977, 38-40); to judge by the fabric, others may have been used for Gaulish amphoras (Green 1980, 42).

## AMPHORAS FROM PYRE-DEBRIS PIT 15417

### *Identification and Quantification*

The pit produced 819 amphora sherds weighing 42.29kg representing a minimum of 3 Dressel 1 amphoras (Fig.00 nos 00-00). Fabrics AITAB, AITAC and AITAD are present. The mean sherd weight is 51.6g. Most of the sherds (94% by count, and 92.8% by weight) came from context 15416. Amphora sherds were also recovered from the adjacent deposit 15418 and the overlying fill, context 15490. Although no joins could be established between contexts, it is evident that all the sherds came from the same three vessels. As an empty Dressel 1b amphora weighs about 25kg (Peacock and Williams 1986, 52), only about half (56.3%) the sherds from the broken vessels were present in the pit. Details are given in Table 00.

	<i>sherd count</i>	<i>sherd weight</i>	<i>joining sherds</i>
Fabric (AITAB)	138	9994	36
Fabric (AITAC)	152	11391	62
Fabric (AITAD)	529	20905	28
totals	819	42290	126

*Table 00. Details of the Dressel 1 Amphoras from Pyre-debris pit 15417  
(weights are in grammes)*

[Figures from database are very slightly different, although totals match]

### *Sherd Condition*

The mean sherd weight for the amphoras from the pit is lower than for the amphoras from the site in general, 51.6g as opposed to 68.8g. Common sense suggests - and science confirms - that pottery assemblages with lower mean sherd weights may have had a more protracted history of damage and disturbance since breakage than pottery with higher mean sherd weights. Lower mean weights can also be consistent with movement further away from the original point of breakage

(Bradley and Fulford 1980). But apart from the spike described below, none of the amphora sherds are abraded (even the smallest) and the number of joining sherds shows we are not dealing with old and redeposited material: these amphoras were buried not long after breakage. It is interesting to note that the mean sherd weight of the broken Dressel 1 amphoras from the *pavé d'amphores* alongside the c.80-60BC Clemency grave (Luxembourg) was lower than that of amphoras from settlement contexts at the nearby Titelberg *oppidum*: they too had been deliberately smashed immediately after recovery from the pyre (Metzler *et al.* 1991, 79).

The only amphora with evidence of abrasion is the spike in fabric AITAB (Fig.00 no.00). Its end had been removed in antiquity and the surviving stub had evidently been worn and rounded. Some of the fractures (including that of a spike) on the amphoras from the late 1st century BC grave at Dorton (Buckinghamshire) had been smoothed by ground water after burial (Farley 1983, 290). But such a process cannot account for the abraded spike from pyre-debris pit 15417 because it has been restored from joining sherds that are otherwise unabraded: the abrasion of the spike clearly took place before the smashing (**breakage?**) of the sherds and their incorporation in the pit.

The condition of the amphora sherds is much altered from their original state. Fabric AITAB has abundant red pellets, but sherds in this fabric from pit 15417 have lost these inclusions from their *outer* surfaces to give sherds a pitted and vesicular appearance quite different from other finds of the fabric from the site. A handle sherd in fabric AITAD has the same pitted appearance where its smaller and less common red pellets have also been lost. Sherds in fabric AITAB from the pit are emphatically more powdery and crumbly than elsewhere on the site. Sherds in the other two fabrics from the pit have similar surfaces. Such is the surface friability of the amphora sherds from the pit that handling them soon generates a pile of coarse dust. One is left with the impression of amphoras damaged through thermal shock that led to differential expansion of inclusions and a resultant weakening of the surfaces. Indeed a few sherds have dark grey blotches that look like scorch marks. They are present on the inside of the fabric AITAD rim as well as the inside wall above the abraded spike (Fig.00 nos 00-00). Sherd shape among the pyre-debris pit amphoras is unusual. Many of the body sherds are rectangular or cuboid blocks of varying size, suggestive of heat fracture and quite unlike the irregular outlines normally encountered.

It is suggested elsewhere (page 00) that the pyre-debris pit vessels had been exposed to a heat source that led to their deformation and breakage, and that this heat source was a pyre. In the discussion of the amphora sherds from the Area W pyre-related features, the implications are explored and the conclusion reached is that the incorporation of amphoras in funerary pyres at Elms Farm demonstrates contact with the Treveri of the central Moselle (page 00).

It only remains to point out that some of the sherds have shiny black stains. They were found on inner and outer surfaces, and sometimes ran over sherd breaks. Typically these blotches are some 20mm across, with rounded edges. Exactly the same phenomenon was noticed on amphora sherds from the Lexden tumulus at Colchester. Scientific analysis showed the stains there to have formed naturally in the ground after burial of the vessels (Foster 1986, 124). This seems the most likely explanation of the pyre-debris pit stains, in which case they have no connection with the pyre postulated to account for the otherwise unusual condition of the material.

### *Discussion*

Pyre-debris pit 15417 is the largest single assemblage of amphora sherds from the site (20.7% by count, and 15.5% by weight), although it only represents 3 of the 44 Dressel 1 amphoras. It

demonstrates Dressel 1 arriving at Heybridge at the very end of the history of the form *c.*10BC, like so many of the other Dressel 1 amphoras from the site. One of the pyre-related features from Area W also had a Dressel 1 amphora in a late context, of the early 1st century AD. There is no insuperable chronological difficulty here because the amphora could have been bottled with vintage wine left to mature until the turn of the millennium.

There were 4 other wine amphoras from the Area W pyre-related features. These 7 amphoras, from pyre-debris pit 15417 and the Area W pyre-related features, are a significant proportion of those from the late Iron Age settlement. Their incorporation in funerary pyres on the site shows that wine was consumed at Heybridge and not simply imported to be moved inland. Although the transfer of some wine jars inland cannot be ruled out, the picture is not one of a port of entry for wine but of a coastal settlement whose access to seaborne traffic allowed imports of wine in some quantity (page 00).

A powerful hint as to how wine was actually consumed in Iron Age Britain is provided by the associated material in pit 15417. Although no animal bones survived, the presence of an imported mortarium, a Pompeian-red ware cooking dish, a central Gaulish flagon, as well as a wealth of imported and locally-copied platter and beaker forms (KPG5) show that we are dealing with the preparation and serving of food and drink. At Elms Farm the linkage with feasting shows that wine was drunk in the Roman style, at a banquet or dinner. The same picture emerges from rich graves in south-eastern Britain with their wine amphoras, silver cups, fire-dogs, cauldrons and suites of imported table crockery. Greek practice was quite different: among them, the drinking party or *symposium* took place after the meal (Dunbabin 1993, 129 fn.65, 140). This need not have been an inadvertent convergence of practice between widely separated cultures, but instead the conscious adoption of Roman *mores* by Britons with access to the fruits of Mediterranean civilisation. We know from Strabo (4.5.3) that princes from Britain had made dedications on the Capitol at Rome under Augustus. A grasp of Roman etiquette may have returned home with them (Creighton 2000, 214).

#### AMPHORAS FROM THE AREA W PYRE-RELATED FEATURES

Some of the late Iron Age pyre-related features from Area W included amphoras. The four in question are pyres 2201, 2490 and 2908, and pyre-related feature 2195. The amphoras from each are described in turn, with an indication of their condition; their significance is evaluated in the concluding discussion.

Pyre-related feature 2195 had a single neck sherd in fabric ABSAN weighing 51g. The neck has an external diameter of 160mm and is apparently Dressel 1 or 2-4. The surface is cracked and crazed to give it a thoroughly desiccated appearance. What is normally a red fabric has here been burnt a scorched light grey (10YR 7/2). Edges have a smooth finish much like that on abraded sherds.

Pyre site 2201 produced 34 Dressel 1 sherds in fabric AITAL weighing 1.51kg. The mean sherd weight is 44.4g. Handle, body and neck with shoulder sherds are present. Body sherds are 20mm thick. Identification of the form as Dressel 1 is clear from the straight handle with oval section, made up in part of joining sherds with breaks made in antiquity. Edges have a smooth finish much like that on abraded sherds. Surfaces are exceptionally powdery and soft, with much of the original surface gone.

Pyre site 2490 produced 46 Dressel 2-4 sherds weighing 2.207kg in fabric AITAL, from the same vessel. The mean sherd weight is 48g. Sherds from a handle, the body and neck are present. With one exception, the bifid (figure-of-eight) handle sherds have separated into their component rods. Body sherds range up to 17.5mm thick and have an external diameter of 320mm. One sherd has black staining on its inner and outer faces that runs across the break. Similar stains in the pyre-debris pit 15417 assemblage are thought to have been caused by soil action after burial of the sherds (page 00). Much of the original surface of sherds has been lost to give them a very powdery finish. Broken edges have a smooth finish much like that on abraded sherds.

Pyre site 2908 produced 50 sherds of fabric ARCAT Dressel 2-4 weighing 391g. The mean sherd weight is 7.82g. All of these small sherds are cracked and crazed; very little of the original surface survives. The red of these Catalan sherds has been burnt a light brown (7.5YR 7/6). In the process the sherds acquired a soft and crumbly appearance, quite different from their normal finish and more akin to burnt daub. Only the large white inclusions and golden mica flecks allowed the identification of the fabric. A grooved handle sherd settled the identification as Dressel 2-4.

### Discussion

Each of these four features has an assemblage of broken wine amphora sherds; only one amphora was present in each feature. The condition of the sherds can best be explained by exposure to intense heat, in this case from a funeral pyre. Not only have the sherds been damaged by heat, they have all subsequently (or possibly simultaneously) been broken into small sherds with a mean weight significantly lower than the site average for amphoras of 68.8g. The rounded edges of some of the sherds may have been caused by ground water after deposition (Farley 1983, 290).

When amphoras were placed in late Iron Age and early Roman cremation graves in Britain they are often intact, but always without their bungs (showing the contents had been consumed and the pots themselves placed in the grave empty). This is standard in classic 1st century BC Welwyn-type burials such as Welwyn Garden City, Hertfordshire (Stead 1967, 7-8). A less common rite is burial in the grave of portions of amphora, or even simply one or more sherds. The practice has only been reported from the *c.*AD1-60 King Harry Lane cemetery at Verulamium, Hertfordshire (Stead and Rigby 1989, graves 117, 206, 241, 272 and 447; Williams 1989a). Another rite is the inclusion of sherds from smashed amphoras in the elite burials at the Lexden tumulus (Foster 1986, 170; Williams 1986) and Stanway in Colchester, and at the Folly Lane burial at Verulamium (Williams 1999).

Apart from the amphoras from pyre-debris pit 15417 at Elms Farm itself, no other assemblages of burnt amphoras have yet been identified in Iron Age Britain that are at all similar to the pyre-related features of Area W. One needs to look to the European mainland for comparanda.

At the rich *c.*80-60BC grave at Clemency, Luxembourg, the 30-40 Dressel 1 amphoras involved in the funeral included vessels that had been incorporated in the pyre. Two hundred and ninety-three Dressel 1 sherds weighing 13.5kg were retrieved from pyre contexts; 41% of them were burnt. These and other Dressel 1 sherds from within and outside the north-east corner of the funerary enclosure had been reddened by fire. Sherds from the same amphora could be burnt and unburnt, suggesting the amphoras had been leant upright against the pyre. After the pyre had burnt itself out, the amphoras were smashed and the sherds spread across the ground in a pavement-like structure, the *pavé d'amphores*. None of the ten Dressel 1 from the funerary chamber itself had been burnt (Metzler *et al.* 1991, 40, 46, 78-9). Dr F. Dövenner tells me that renewed excavations at

the nearby cemetery of Goeblingen-Nospelt in 1993 uncovered similar pyre debris and another *pavé d'amphores*. There too amphoras had been placed against the pyre and subsequently smashed (Metzler-Zens *et al.* 1999, 403).

Further light has been shed on burnt amphoras in a funerary context from Lamadelaine, a 1st century BC cemetery next to the Titelberg *oppidum* and not far from Clemency and Goeblingen-Nospelt (Metzler-Zens *et al.* 1999). Several of the graves contained placed deposits of large amphora sherds, some of which had been exposed to fire. The fills of many of the graves also contained abundant, but relatively small sherds of burnt Dressel 1 amphoras. The excavators concluded that Dressel 1 amphoras and other ceramics had been placed against the pyre and subsequently incorporated in graves.

All three sites lie within 20km of each other, in the central Moselle homeland of the Treveri. The rites described above have not been reported elsewhere in Gaul and it is here – amongst the Treveri – that the practice of placing amphoras on funeral pyres developed. It is found among them as early as the first half of the 1st century BC, and under Augustus this new component of funerary ritual reached Heybridge to give us an insight into links between a community in Britain and a specific canton of Gaul.

Eventually the exposure of amphoras to the intense heat generated by funeral pyres is found elsewhere in Britain, at conquest period Verulamium, Hertfordshire. A burnt Dressel 20 body sherd (but 'which may well be intrusive') was present in grave 447 at the King Harry Lane cemetery, dated *c.*AD40-60 (Stead and Rigby 1989, 386; Williams 1989a, 116). The evidence from the high-status *c.*AD55 funeral at Folly Lane is unambiguous. Many of the 1.428kg of Dressel 2-4 wine amphora sherds from the burial pit were burnt (Niblett 1999, 50-1; Williams 1999, 193).

## **PART II. DISCUSSION**

### **DRESSEL 1 AT ELMS FARM**

#### *The Scale of Wine Imports in Dressel 1 at Elms Farm*

The assemblage of 44 Dressel 1 amphoras from Elms Farm is the largest excavated in Britain since 1945. It is only approached in scale by another exceptional site, Hengistbury Head (Dorset). There 38 were retrieved in the excavations of 1967 and 1979-84 (Williams 1987, 271). Nor are the Elms Farm vessels the only Dressel 1 amphoras from Heybridge. Two more rims were found unstratified with a wealth of other material at Langford Junction in 1887; one is stamped PE twice (May 1930, 243-4 nos 37-8, pl.69 no.343; Peacock 1971, 184; Wickenden 1986, fig.26 nos 28-9, 58; Frere and Tomlin 1994, 15 no.2492.45). A third rim was kindly shown me by L. Rollo, from excavations at Heybridge Hall in 1997 by the Northamptonshire Archaeological Unit, just over a kilometre to the south-east. If we assume these 3 came from different vessels to the 44 reported here from Elms Farm, Heybridge has produced 47 Dressel 1 amphoras.

To assess the relative importance of Dressel 1 amphoras at selected sites in the Aisne valley of Picardy, Haselgrove (1996, 171-3) divided the area excavated by the minimum number of amphoras recovered. His results are given in Fig.00. The technique produced interesting results, and can usefully be extended to Elms Farm.



<i>site</i>	<i>area examined</i>	<i>amphoras</i>	<i>density per ha</i>
Berry-au-Bac	0.8ha	6	7.5
Beaurieux Period 2	0.5ha	5	10
Beaurieux Period 3	0.5ha	13	26
Condé	1.9ha	56	29.5
Villeneuve (ERA12)	0.6ha	41	68.3
Villeneuve (Debord)	1.2ha	129	108
Pommiers	0.04ha	11	299
Elms Farm	2.5ha	44	17.6
Elms Farm	9ha	44	4.9

*Table 00. Incidence of Dressel 1 at Elms Farm and Selected Sites in the Aisne Valley (After Haselgrove 1996, 171. For the two areas given for Elms Farm, see text)*

The main problem in comparing the Aisne valley survey with Elms Farm is the extensive area explored at Heybridge. Even on a minimalist estimate, the area examined at Elms Farm is far greater than any of the Aisne valley sites. But it is in fact difficult to give a valid figure for the area dug because of the different levels of investigation applied to different areas of the site in different years. The entire area made available for development was 29ha. Only a third of this was examined. The *total* area stripped, planned and sampled by excavation was some 9ha. But only some 2.5ha was systematically sampled. It is worth bearing in mind as well that Area W consisted of little more than field boundaries, with the occasional pyre-related feature. Taking these two figures of 9ha and 2.5ha, one gets Dressel 1 densities per hectare of 4.9 and 17.6 respectively for the 44 vessels recovered (the midway figure is 11.25 amphoras per hectare). Although this is a broadbrush approach, it is interesting that whichever figure one takes for Elms Farm the density of Dressel 1 per hectare lies at the lower end of the scale for the results from Picardy and confirms the impression that the numbers of Dressel 1 reaching Britain were far lower than in Belgic Gaul.

#### *The Chronology of Dressel 1 at Heybridge*

Pre-Roman contexts with Dressel 1 amphoras at Elms Farm *always* had grog-tempered wheel-thrown late Iron Age pottery of Aylesford-Swarling “Belgic” type. Sometimes the same contexts had sand-tempered pottery of middle Iron Age type, but only as a minor element. The earliest brooch regularly associated with grog-tempered pottery in graves in Britain is the *Knotenfibel*, which made its debut *c.*70/60BC (Fitzpatrick 1997, 96, 203-4) and that provides a start date for grog-tempered pottery in eastern England. But ceramic assemblages from settlement sites such as Heybridge itself (as opposed to graves) show that grog-tempered pottery did not displace earlier styles of pottery until later, in the last decades BC. One knew therefore that Dressel 1 made its appearance late in the 1st century BC at Elms Farm, but quite how late came as a surprise.

Table 00 gives details of the incidence of amphora sherd counts and weights for the ceramic phases of the site. It shows that only a single Dressel 1 sherd weighing 314g was present in Ceramic Phase 1. No less than 99.9% by sherd count and 99.5% by sherd weight of the Dressel 1 amphoras recorded in the ceramic phase database came from contexts later than *c.*15BC, with most in Ceramic Phase 2. To some extent the statistics have been distorted by the weight of Dressel 1 in the *c.*10BC-AD5 pyre-debris pit 15417, but that still leaves 11.428kg of Dressel 1 from Ceramic Phase 2. Although some of these will be residual from the preceding phase, the inescapable conclusion is that the Dressel 1 amphoras at Elms Farm reached the site over within a few years at the very end of the life of the form, let us say *c.*25-10BC. The clarity of the situation at Elms Farm leaves us in no doubt that there was a major shift in the wine trade in Dressel 1 away from the coast of central southern Britain to the south-east at some stage in the 1st century BC (Peacock 1971, 173-8; 1984, 37-9). At Hengistbury Head it was impossible to tell if the many Dressel 1 amphoras there represented a trickle of wine over a century or more, or a more concentrated trade within a shorter period (Williams 1989b, 144-5). As we have seen, the question can be answered for Elms Farm: the Dressel 1 amphoras represent a brief period of importation, on a scale moreover rarely found in Britain. What is all the more remarkable is that the numbers of Dressel 1 reaching Gaul were in marked decline from at least *c.*40BC (see below). This makes the Elms Farm phenomenon distinctly anomalous, and the topic is explored later (pages 00-00).

#### *The Decline in Dressel 1 Imports in Gaul*

Tchernia (1986, 140) regarded it as indisputable that Italian wine exports to Gaul and neighbouring regions were in decline from *c.*40-20BC. Subsequent work has amply vindicated his judgement. A comparison of early Augustan contexts from Lyon and Saint-Romain-en-Gal, Rhône, shows that a significant proportion of the Dressel 1 amphoras from the second half of the 1st century BC are residual and that imports of Dressel 1 fell away abruptly after *c.*40BC. Nor is the phenomenon confined to the region of Lyon. It is also reflected in the dearth of Dressel 1 shipwrecks from the second half of the 1st century BC (Hesnard 1990, 53; Desbat 1998, 31, 33; Lemaître *et al.* 1998, 59). Further north among the Carnutes, Dressel 1 imports were in retreat before the Gallic Wars, possibly from the eighties BC (Poux and Selles 1998, 221). The point need not be laboured, and the implications for Elms Farm are discussed below (pages 00-00).

#### *The Wine Trade, Political Geography and Diplomacy*

The assemblage of Dressel 1 amphoras from Elms Farm is remarkable, not just for its size but for its late date. Dwindling exports of Dressel 1 to Gaul from at least as early as *c.*40BC demand special circumstances to account for a group of such size, so late and at the very northern limits of the distribution of the form.

Developments in Gaul and the Rhineland under Augustus hold the answer (Cunliffe 1984, 4-16; Fulford 1991, 36 *pace* Millett 1990, 33). Preparations and planning for the Roman attack on Free Germany across the Rhine in 12BC may have been underway at least a decade earlier (Wells 1972, 95). The concentration of such an army imposed considerable strain on the resources of Gallia Belgica and the Rhineland. Supplying the frontier armies remained a taxing logistical problem until the agrarian regimes of Belgic Gaul and the Rhineland had adjusted themselves to the demand (Roymans 1996, 58-88). The scale of the problem can be gauged from the 8,400 to 21,000 tonnes of cereals it has been estimated the lower Rhine army consumed under Tiberius each year (*op. cit.*, 59). Demand for leather by the army was such that after 12BC, the Frisii beyond the Rhine were required to pay their annual tribute in hides (Tacitus *Annals* 4.72). So

monumental was the effort to provision Germanicus for his campaign across the Rhine in AD15 that Italy and the western provinces offered arms, horses and gold (*op. cit.*, 1.71). But a year later Germanicus found that the supply of horses from Gaul was exhausted (*ibid.*, 2.5). Clearly the economic burden of these great armies was immense and became a new and powerful factor in economic realignments in Gaul, the Rhineland and further afield.

The Roman army raised supplies as and where it could, even from beyond the frontiers. This may account for the punitive measures taken by M. Vinicius in 25BC against Germans who had massacred Roman traders beyond the frontiers (Dio Cassius 53.26.4). The celebrated list of British exports in Strabo (4.5.2) includes agricultural produce: grain, livestock and hides, as well as raw material such as iron. The foreign cereals that may have reached Silchester, Hampshire, in the late Iron Age from the Mediterranean need not impugn confidence in Strabo (Fulford and Timby 2000, 551). With the notable exceptions of the city of Rome and classical Athens, it was exceptional in antiquity for staple foodstuffs to be transported long distances to feed settlements on a regular basis. Most communities fed themselves; when they could not, they ran the risk of starving to death. Some of the exports listed by Strabo show that Britain had found herself drawn into the network of economic relations that led to the Roman garrisons across the channel. The rise to prominence of Heybridge under Augustus was linked to the shipping of British produce overseas to supply the Roman army: behind the archaeology of late Iron Age Elms Farm lies the hand of the Roman state. This major pre-Roman settlement at Heybridge was not the culmination of a site with a long history, it was a new foundation whose prosperity is explicable only by reference to specific circumstances in a wider geopolitical scene.

Whether or not this special status had a diplomatic dimension is another matter. In 54BC the Trinovantes of Essex became the clients of Caesar after they successfully appealed to him to save their kingdom and prince, Mandubracius, from continued aggression at the hands of the neighbouring warlord Cassivellaunus (Caesar *De Bello Gallico* 5.20-22). Peacock (1971, 175-8; 1984, 39 endorsed by Williams 1989b, 145) suggested the Dressel 1 amphoras in eastern counties were directly connected with this treaty relationship between the Trinovantes and Rome. Elms Farm invites a reconsideration of this.

A word of caution should be sounded at the outset about simple equations between wine amphoras and political affiliations. The coins of Vercingetorix depict a wine amphora, but this was the man who led the great revolt against Caesar in 52BC (Allen 1980, 75, pl.15 no.203). In Picardy, Dressel 1 was common among the Remi and the Suessiones before the Gallic Wars, yet the two states took quite different postures at the start of the conflict that followed. Italian wine reached Belgic Gaul through many intermediaries and those who drank it before the war may have had only the haziest conceptions (or none at all) of Italy and the Roman state (Haselgrove 1996, 174).

On the Peacock view (1971, 175-8) the treaty arrangements between Caesar and the Trinovantes in 54BC coincided with a drastic attenuation of wine imports to Hengistbury Head and neighbouring sites in central southern Britain after the revolt of the Veneti. Peacock (1984, 37-9) himself was the first to realise that developments in Dressel 1 chronology since 1971 made this articulation of the amphoras with the Gallic Wars untenable. Nevertheless the view persists that the middle of the 1st century BC saw a shift in the wine trade away from Hengistbury Head in particular, and the Dorset-Hampshire region in general, to south-eastern England, and that the Gallic Wars were the catalyst for this change (Millett 1990, 31; Cunliffe 1991, 438-9; 1995, 67; Tyers 1996, 50-1). A drastic reassessment of the chronology of the Hengistbury Head amphoras is long overdue. A comparison with an important group of Dressel 1 amphoras dated *c.*125-100BC from a cellar at Mont Beuvray (Olmer *et al.* 1995) shows that many of the Hengistbury Head

amphoras have typological features which are earlier still. Wine imports at Hengistbury started not in the 1st century BC but much earlier, in the previous century. The main period of importation in Dressel 1 there had ended early in the 1st century BC, long before the Gallic Wars. The change from Dressel 1a to 1b took place well before the mid 1st century BC, and so the Dressel 1 amphoras found in Kent, Essex, Hertfordshire and neighbouring counties cannot be taken to be exclusively post-Caesarian. Any lingering doubts that wine was reaching the south-east *before* Caesar have been dispelled by finds such as the Baldock Dressel 1 (Stead and Rigby 1986, 53, fig.21 no.1) and by an assemblage of typologically early Dressel 1 rims from Stansted airport, kindly shown me by C. J. Going. The Peacock thesis that the Dressel 1 amphoras in Essex and neighbouring counties are a tangible expression of the 54BC treaty arrangements – and that wine did not reach the south-east until then – has to be abandoned.

Nevertheless the distribution of Dressel 1 in the south-east does give an insight into political geography because it lends a sharper focus to the divide between the Iceni and the Trinovantes. As one moves north from Essex into East Anglia, Dressel 1 is rare. There were sherds from at least two vessels at Burgh, Suffolk (Martin 1988, 37) and one more from Stonea, Cambridgeshire, in the Fens (Jackson and Potter 1996, 43). Otherwise the form is never found on Icenian sites. Two vessels from south Cambridgeshire lie in marginal territory and one of them might even be a modern antiquarian import (Peacock 1971, 183 citing Fox 1923, 101; Hill *et al.* 1999, 265). The distribution map does not suggest a *gradual* reduction in wine imports as one moves north away from the lower Thames and Essex into East Anglia. Indeed the presence or absence of ‘early amphorae’ has been used to help locate the border between the Trinovantes and Iceni (Martin 1988, 68, fig.61). Evidently the Iceni closed their doors to Italian wine (and indeed other imports) in the late Iron Age, a policy to which they resolutely adhered until AD43 (Sealey 1979, 172-4).

Essex was the heartland of the Trinovantes and the weight of evidence for the wine trade in south-eastern England comes from that county. Even across the Thames in Kent, Dressel 1 amphoras are noticeably less common (Hull and Hawkes 1987, 202). Pollard (1991) lists only 7 sites, all in the east of the county, but with the major settlement at Canterbury producing a dozen or so. Distribution maps reveal the striking concentration among the Trinovantes, with an extension westward into what was (or became) Catuvellaunian territory (Fitzpatrick 1985, fig.4). More Dressel 1 amphoras have been found in Essex than in any other English county. To the 47 from Elms Farm and the rest of Heybridge can be added 50 or so from the Sheepen site at Colchester (Hawkes and Hull 1947, 251 form 181; Sealey 1985, 21, 104); there are now some 30 sites in Essex with Dressel 1 amphoras. Elms Farm conforms to a pattern found in Gaul, where sites prolific in Dressel 1 are found in regions where the form is common on neighbouring settlements, but in lesser quantities (Woolf 1993, 216).

This concentration of Dressel 1 in Essex also contrasts sharply with Gallia Belgica, where the form remains uncommon in northern regions outside the territories of the Suessiones, Treveri, Remi and Meldi (Metzler *et al.* 1991, fig.111). The density of sites in Essex with Dressel 1 (but not the number of amphoras retrieved) is thus only exceeded in Belgic Gaul by the concentrations in the Aisne valley and the central Moselle (Haselgrove 1996, 169). The distribution of Dressel 1 in temperate Europe is not simply a function of distance from the source regions in Italy (Woolf 1993, 216). The differential levels of research and recording dwelt on by Fitzpatrick (1987) cannot account for such variations, at least in Britain. Although we cannot invoke a diplomatic relationship with Rome to account for the *start* of wine imports among the Trinovantes, the many sites with the form in Essex (compared to other regions) – on the very edge of the northern distribution of the form – do hint at a rapprochement – direct or indirect – with the Roman world under Augustus. Much lies hidden in the tantalising references to diplomatic relationships between

Britons and Rome under Augustus and Tiberius (*Res Gestae* 32; Strabo 4.5.3; Dio Cassius 53.22.2 and 5; Tacitus *Annals* 2.24).

We may raise here the possibility that at least some of the Dressel 1 at Elms Farm arrived not as items of exchange, but for the use instead of a community of expatriate traders from the Roman world. Dannell (1979, 178) suggested this in connection with the number of early Dressel 1 amphoras in central southern Britain. Roman merchants were certainly prepared to brave the perils of residence in foreign parts. So much is clear for the Gaul described by Caesar (*De Bello Gallico* 7.3). Their presence at the Braughing complex, Hertfordshire, is evident from the distinctive archaeology of the site (Trow 1988, 158-9), not least the remarkable *Graecus* graffito (Partridge 1982). The alphabet and language is Latin but the word means *Greek* [man] or simply *Greek* (adjective). It is difficult to avoid the feeling that merchant venturers from the Roman world lie behind this and the other graffiti from pre-conquest Skeleton Green and Braughing. Such expatriates would not only have enjoyed wine themselves but would have known how to put it to good use among the Britons. For a later period the artful trader of the *Periplus Maris Erythraei* recommends wine as a present for an Indian king; elsewhere he describes its role in befriending the natives of east Africa (*Periplus Maris Erythraei* 17; 49). The whole topic of Roman wine in temperate free Europe could benefit from looking at the parallels to be drawn with the uses and abuses of alcohol by European settlers in north America in their dealings with native Americans (Brogan 1990, 51, 59, 612). The nasty incidents described by Brogan are not a far cry from remarks by Tacitus (*Germania* 23) or the low conduct of M. Licinius Crassus in 29BC, who wiped out the Bastarnae after getting their envoys drunk (Dio Cassius 51.24.2-4). Perhaps too at Heybridge there was a darker side to our wine amphoras: some of them may have had more to do with the manipulation of natives than with hospitality and feasting.

#### WINE CONSUMPTION AT HEYBRIDGE AFTER DRESSSEL 1

When production of Dressel 1 ceased *c.*10BC the major wine amphora in Italy and the West became Dressel 2-4, with a significant contribution from Pascual 1 until Tiberius. Dressel 2-4 was made in Italy from the time of the *c.*75-60BC Madrague de Giens shipwreck and there was a long period of overlap between the two forms, although it would seem that it was only towards the end of Dressel 1 that Dressel 2-4 became numerically significant (page 00). In Britain the clearest evidence for the overlap comes from two rich graves, at Dorton, Buckinghamshire, dated *c.*25-15BC, (Williams 1983), and the *c.*15-10BC Lexden tumulus, Essex (Williams 1986). Pascual 1 straddles the decades before and after the end of Dressel 1.

Table 00 gives details of the incidence of amphora sherd counts and weights for the ceramic phases of the site. It shows a dramatic slump in the quantities of wine amphora sherds from the start of Ceramic Phase 3. But that data inevitably exaggerates the fall in wine imports after the end of Dressel 1 because Dressel 2-4 is a lighter and thinner-walled vessel than Dressel 1. We can get a truer picture of what happened by looking at the minimum vessel number counts for the amphoras in question: 44 Dressel 1, 4 Pascual 1 and 27 Dressel 2-4. This is a useful corrective for the sherd count and sherd weight data, but still leaves little room for doubt that wine imports fell after the end of Dressel 1.

Another variable to be taken into consideration when quantifying the data from amphora assemblages is the different capacities of the wine amphoras. For a long time it was felt that the Dressel 1b had a capacity that oscillated within a narrow band around 26 litres. This made sense if

the intended capacity of the form had been the ancient fluid measure known as an *amphora* or *quadrantal* of 48 *sextarii* (equivalent to 26.25 litres). In fact measurements of 22 complete Dressel 1b amphoras have shown quite remarkable ranges in capacities (and indeed empty weights) from 21 to 28.5 litres, and the resultant mean of 23.2 litres is too low to allow a meaningful linkage with the *amphora* or *quadrantal* (Baudoin *et al.* 1994, 15-16). No comparable programme of measurement seems to have been undertaken for Dressel 2-4 amphoras and the mean figure for capacity used here is that of 27.6 litres given by the writer elsewhere (Sealey 1985, 10). On this evidence, the difference in capacities between Dressel 1 and Dressel 2-4 amounts to at least 4 litres, and some attempt should be made to integrate this when amphora data in sherd form from excavated sites is evaluated. In the Tables below it is assumed that Pascual 1 amphoras have the same capacity as Dressel 1 (because the Catalan vessel was a provincial copy of the Italian prototype).

It is far from clear how one can merge quantification by sherd count and sherd weight with the minimum vessel number count for a site. In this case the effort *should* be made because the decline in wine imports to Elms Farm in the three or four decades before the Roman invasion is a new insight into economic history, with an impact on the funerary practices of the time (page 00) and it would be helpful to be able to quantify the trend.

The absence of Dressel 2-4 in Ceramic Phase 6 suggests that imports of the form at Elms Farm had stopped by then. The form was present on the site from Ceramic Phases 1 to 5 inclusive and if we assume the 27 vessels reached Elms Farm at a consistent rate, we could assign 5.4 Dressel 2-4 amphoras to each ceramic phase. It might be objected that the incidence of Dressel 2-4 by sherd count and sherd weight was at its height in Ceramic Phase 3. But the quantity of Dressel 2-4 in that phase only accounts for 6.3% and 15% of the total Dressel 2-4 sherds by count and weight respectively, and the impression of a peak is misleading. We know that Dressel 1 was not imported after c.10BC and so all 44 vessels reached the site before then, in Ceramic Phases 1 and 2. Production of Pascual 1 ceased under Tiberius, in our Ceramic Phase 3. It first reached the site in Ceramic Phase 2. Only four vessels are represented, and the sherd count and sherd weight distribution suggests it would not be unreasonable to assign 1 of them to Ceramic Phase 2 and the remaining 3 to Ceramic Phase 3. Merging this data, we reach a hypothetical picture of wine imports in these three forms expressed in terms of vessel number (Table 00). It is assumed in Table 00 that the 44 Dressel 1 can be divided equally between Ceramic Phases 1 and 2.

<i>Ceramic Phase 1</i>	<i>Ceramic Phase 2</i>	<i>Ceramic Phase 3</i>	<i>Ceramic Phase 4</i>	<i>Ceramic Phase 5</i>
27.4 amphoras	28.4 amphoras	8.4 amphoras	5.4 amphoras	5.4 amphoras
659.4 litres	682.6 litres	218.5 litres	149 litres	149 litres

*Table 00. Hypothetical Levels of Dressel 1, Pascual 1 and Dressel 2-4 Imports and respective Hypothetical Volumes of Wine at Elms Farm by Ceramic Phase*

<i>Ceramic Phases 1-2</i>	<i>Ceramic Phases 3-5</i>
number of years: 70	number of years: 105
litres of wine: 1342	litres of wine: 516.5
annual wine imports in litres: 19.2	annual wine imports in litres: 4.9

*Table 00. Hypothetical Volumes of Wine Imports in Dressel 1, Pascual 1 and Dressel 2-4 at Elms Farm by Grouped Ceramic Phases and by Year*

These tables above show that the volume of wine reaching Heybridge in Pascual 1 and Dressel 2-4 from Ceramic Phases 3 to 5 fell to one quarter (25.5%) of the volume of wine that had reached the site in Dressel 1, Pascual 1 and Dressel 2-4 in Ceramic Phases 1-2. The dramatic scale of the decline encourages confidence in the general validity of the speculative essay in quantification outlined above. Moreover the sheer size of the sample of amphoras available for study at Elms Farm gives one every reason to believe that the numbers of Dressel 1, Pascual 1 and Dressel 2-4 amphoras are a reliable index of the relative importance of the three forms over time. The fall in imports will have been most keenly felt in the three or four decades before the Roman invasion of AD43, from some stage in Ceramic Phase 2 until the end of Ceramic Phase 3. After that the (modest) numbers of Gaulish amphoras reaching the site from the fifties AD will have done something to halt the fall in wine consumption, although earlier levels of imports would never be restored.

We know this slump in wine imports in the late Iron Age at Heybridge is not a reflection of declining site status because Table 00 shows that imports of *salazones* and Dressel 20 were sustained (*salazones*) or even increased (Dressel 20) over Ceramic Phases 2 and 3. This shows that the decline in wine imports was not a reflection of local tastes or circumstances, but an expression of a wider trend. The number of amphoras in Ceramic Phase 2 at Elms Farm is dominated by Dressel 1. As manufacture of the form had ceased by *c.*10BC, it follows that the decline in wine imports was already under way in Ceramic Phase 2 by (let us say) *c.*AD10 at latest. The end of Ceramic Phase 3 sees the Roman invasion and a manifest increase in wine imports for the country as a whole, with wine introduced by the army, the administration and immigrant civilians with Mediterranean tastes. Taking these factors into account, the decline in wine imports at Heybridge can be adjusted to give a picture for Britain as a whole such that we can propose that the period *c.*AD10-43 saw wine imports fall to three-quarters of what they had been previously.

Evidence to support this thesis is forthcoming from several sites, although the generally smaller sample size can make the trend less immediately obvious. Excavations at Foxholes Farm, Hertfordshire, produced at least 2 Dressel 1 rims, but only 1 Dressel 2-4 sherd (Peacock and Williams 1989). At Canterbury as well, Italian Dressel 2-4 were less common than Dressel 1 (Arthur 1986, 240-2). Communities on the Dorset coast were also apparently finding it difficult to obtain wine in Italian Dressel 2-4 in the first decades AD (Williams 2000, 220). A decline in the volume of Dressel 2-4 amphoras reaching Britain in the first half of the 1st century AD is also evident at Silchester (Table 00). The significant fact about the Silchester data is the decline in the weight of Dressel 2-4 sherds by a fifth (22%) in the period *c.*AD40-50/60, compared to the period *c.*15BC-AD40/50. It should also be borne in mind that some of these post-conquest Dressel 2-4 must be residual from the late Iron Age. The scale of residuality in the period AD40-50/60 is clear from the continuing presence of Dressel 1 sherds in some quantity. Moreover pottery from contexts dated *c.*AD40-50/60 amounts to no less than 40% of the total excavated (Fulford and Timby 2000, 297). The decline in Dressel 2-4 then cannot be explained away by the under-representation of contexts of that date and suggests instead that the site experienced a real dwindling of wine imports at the time of the Roman invasion. It is unlikely that the Gallic amphora sherds made up the shortfall because exports of Gaulish wine were only then getting underway. The Silchester data shows that some native civilian communities were still finding it difficult to secure access to wine after the Roman invasion, compared to previous levels of consumption.

	25-15BC	15BC-AD40/50	AD40-50/60
Dressel 1b	0	318	60

Dressel 1sp	119	848	1218
Dressel 2-4	977	1466	1137
Dressel 1 or 2-4	32	487	153
Pascual 1	0	52	4
Pascual 1 or Dr 2-4	0	176	568
Gallic	0	91	861

*Table 00. Wine Amphora Sherd Weights in Grammes from Early Contexts at Silchester  
(After Williams 2000)*

This insight from Elms Farm explains an otherwise puzzling feature of funerary archaeology in late Iron Age and early Roman Britain – why the quantities of wine consumed at elite funerals in Britain fell between the late 1st century BC and the mid 1st century AD. In the *c.*25-10BC Welwyn Garden City grave there were 5 Dressel 1 amphoras (Stead 1967, 7-8); the *c.*15-10BC Lexden tumulus had 6 Dressel 1 and 11 (possibly 13) Dressel 2-4 (Williams 1986, 131). Five more Dressel 1 were present in the Welwyn B grave (Smith 1912; Stead 1967, 8). In the following century this generosity recedes. At King Harry Lane, Hertfordshire, there are very few rich graves with amphoras in the *c.*AD1-60 cemetery, and none had more than one. Only 2 were forms one could describe as wine jars (*Cam* 184 and Dressel 2-4) and one of them – the Dressel 2-4 – was bottled not with wine, but olive oil (Williams 1989a; Evans 1989). At the Stanway funerary enclosures outside Colchester, Essex, the grave central to Enclosure 3 now dated *c.*AD35-45 had 2 Dressel 2-4; there was a third in the *c.*AD43-50 warrior burial (Crummy 1993, 494). The story of diminished wine imports is apparently also told by the contemporary grave at Mount Bures, Essex, dated *c.*AD40-65 (V.A. Rigby explained to me) by the stamp of the Gallo-Belgic potter, Benios (Stead and Rigby 1989, 129). The only certain wine amphora present was a Dressel 2-4 whose neck had been removed; there may have been a second in the grave. Identification of the 4 other amphoras is difficult. The careful sketches made by the Colchester artist, Josiah Parish (Smith 1852, 26-7), suggest a *salazon* form. They lie somewhere between forms Dressel 9 and Dressel 12, but production of both had stopped some decades before the invasion (Martin-Kilcher 1994, 399 for Dressel 12; page.00 for Dressel 9). Be that as it may, here we have a grave where wine amphoras are outnumbered by another type. Even in the high-status *c.*AD55 burial at Verulamium Folly Lane (Hertfordshire), only between 4-6 Italian Dressel 2-4 were present (Williams 1999, 193). The fall in the volume of wine consumed by mourners at high status native funerals in the first half of the 1st century AD can now be explained by Elms Farm because of the sharp fall in the number of wine amphoras reaching Britain in the three or four decades before the Roman invasion. Even in the early Roman period, local elites did not have access to wine on the same scale as their predecessors in the late 1st century BC.

The excavation of sites in Gaul shows a similar fall in wine imports under the Julio-Claudians. There the numbers of Dressel 1 amphoras reaching the country were in decline from at least several decades before the *c.*10BC terminal date of Dressel 1 (page 00). After Dressel 1 no assemblages of wine amphoras are found on a comparable scale to the huge accumulations of Dressel 1. Not only are there far fewer Dressel 2-4 than Dressel 1, the numbers of sites with Dressel 2-4 is far less than for Dressel 1 (Tchernia 1986, 136-7). This is particularly striking for Armorica: distribution maps for Dressel 1 and 2-4 from the region show that Dressel 1 sites easily outnumber Dressel 2-4 findspots (Galliou 1984, figs 11-12). Many other regional surveys and site reports dwell on how settlements prolific in Dressel 1 received little or any wine in successor forms. A survey of amphoras from the Aisne in late La Tène could find few other wine amphoras to put alongside the prodigious imports of Dressel 1 (Henon 1995, 179-81). At Roanne, Loire, Dressel 1 amphoras (which had been imported in quantity) were simply not replaced by other



types after the end of the form (Lavendhomme and Guichard 1997, 364). Even at major urban sites like Lyon and Saint-Romain-en-Gal, Rhône, Dressel 2-4 are rare in 1st century AD contexts (Desbat *et al.* 1990, 208). Other examples could be cited.

Shipwrecks tell the same story of a reduction in the volume of wine traded after the end of Dressel 1. In his magisterial survey of the Roman wine trade, Tchernia (1986, 137) cited 44 Dressel 1 shipwrecks off the coast of France, against which he could range only 10 Dressel 2-4 shipwrecks. For the Mediterranean in its entirety, Parker (1992, 16-17) listed 124 Dressel 1 wrecks and only 64 for Dressel 2-4 (almost twice as many). This excursus into the archaeology of the wine trade in Gaul and the Mediterranean shows that the slide in wine imports in late Iron Age Britain is part of a general attenuation of the movement of Dressel 2-4 amphoras under the Julio-Claudians. But how are we to account for this? Suggestions that the Gauls in particular lost an appetite for wine after at least a hundred years of conspicuous consumption are as unconvincing as the prospect of Roman merchants relinquishing such a lucrative market without a struggle (Desbat 1998, 34). Two factors regularly feature in discussions of the problem: dolia and barrels, and it is to these that we should now turn.

A feature of Julio-Claudian shipping was the installation of dolia to the holds of ships for the bulk transport of wine. The practice might even have started earlier if the two dolia on board the c.100BC Cap Bénat B wreck with its cargo of Pompeian Dressel 1c were permanent fixtures in the hold, as opposed to shipboard equipment (Parker 1992, 98). Otherwise dolia shipwrecks are confined to the period between Augustus and Nero (Hesnard and Carre 1988, 151). Dolia are huge terracotta wine vats weighing as much as a tonne and holding up to 3,000 litres of wine. They were fitted with lids and are often lined with pitch or resin. As a rule, these dolia ships also carried a cargo of Dressel 2-4 amphoras. The dolia were not removed when the ship berthed; any wine was decanted into other containers such as amphoras or (perishable) skins and barrels. Overall the effect would have been to reduce the number of amphoras in circulation. But there are only 3 dolia shipwrecks off the south coast of France, and the volume of wine carried in them cannot make up the shortfall in wine reaching the region after the slump in Dressel 1 imports (Tchernia 1986, 138, 140).

Wooden barrels have also been advanced to account for the fall in the number of wine amphoras reported from Gaul after Dressel 1. No barrels were recovered from waterlogged contexts at Elms Farm itself, but the oak base of an early 1st century AD barrel was found at Chigborough Farm only 3km to the east (Isserlin 1998), although there is no reason to think it had been imported. The barrel was an invention of the Gauls themselves, in use from at least the Gallic Wars (Desbat 1991, 324 citing Caesar *De Bello Gallico* 8.42). They were traded in quantity from Augustus, to judge by the numbers recovered from the 60 or so wells in the 11-8/7BC Roman military base at Oberaden (Albrecht 1938, 19, tafeln 20 and 38; Kühlborn 1995, 118-19). Some Roman barrels do indeed seem to have been used for wine. A stave from Oberaden had tartrate residues; others have pitch or resin linings (Boon 1975, 55 with refs), although it should be remembered that one of the preferred woods (silver fir) for Roman barrels would have spoiled the drink (Wilmott 1982, 47). The difficulty with championing the barrel as the wine container responsible for the fall in wine amphoras in Gaul in the late 1st century BC and early 1st century AD is the source of the wine. It cannot have been Italian or Spanish wine that reached Gaul in dolia because there are not enough dolia shipwrecks. The emergence of Gaul as a major producer of wine did not take place until Gauloise 4 amphoras made an impact in the middle of the 1st century AD and it is difficult to envisage these developments having been preceded by a major trade in wine conducted in wooden barrels.

Moreover the barrel need not have been commodity specific to wine. The bung-holes and vent-holes found in them would have been equally appropriate for beer (Boon 1975, 55). Celtic beer (known as *cervesia*) was produced in quantity in the northern provinces. Scrutiny of one of the documents from the Vindolanda archive shows that the Roman garrison there was issued with more beer than wine (Bowman and Thomas 1983, 83-93). A linkage between at least some barrels and the beer trade does make sense because of the markedly northern distribution of Roman barrels. This is usually taken as reflection of the circumstances of their survival, as well linings in the cooler and damper conditions there. But the distribution of the branding irons used for stamping barrels as well as tools used by coopers themselves suggests they were produced in the same regions (Desbat 1991, 325, 327).

Barrels and dolia are in fact of only marginal relevance to the declining numbers of wine amphoras found in Gaul from the late 1st century BC. Developments in Italy were of greater importance. The root cause of the dwindling flow of wine to Gaul (and therefore Britain) was the growing demand for wine in the peninsula from the end of the Republic and the reign of Augustus. The topic has been explored at length by Purcell (1985, 9-15). Free distributions of wine to their clients by patrons fostered an appetite for the drink that had hitherto been latent. In Italy this led to the development of a wine bar culture where serving the drink in public became popular as never before. Colleges of the urban poor were established which provided meals and wine for members. The city of Rome in particular acquired a reputation for insobriety that it retained until late antiquity. One might add that the celebrations of wine and intoxication by the court poet Horace – most famously in the great ode addressed to Messalla Corvinus – lent an aesthetic endorsement to the vogue for wine (*Odes* 3.21, published in 23BC). Purcell showed how this burgeoning demand for wine in Italy created vineyards that were geared to the production of wine in quantity, rather than a smaller quality output. A shift took place in the location of the major vignobles. Previously they were to be found near the coast in a position to supply the lucrative overseas markets in Gaul and elsewhere: now they lay increasingly in inland regions with access to the greatest market of all, the city of Rome.

We can now understand the slide in exports of Italian amphora-borne wine to Gaul and neighbouring provinces: wine that might hitherto have been shipped overseas was staying in Italy. The Purcell model also accounts for the disparity in the numbers of Dressel 1 and Dressel 2-4 shipwrecks.

In Gaul and Britain demand for wine was increasingly met from Spain. At Elms Farm in Ceramic Phase 3, the sherd count and weight of Pascual 1 amphoras is three times what it had been in the preceding phase. Those communities on the Dorset coast that found it difficult to secure wine in Italian Dressel 2-4 in the first decades AD imported Catalan wine in Pascual 1 (Williams 2000, 220). At Maiden Castle, Dorset, there were 3 Italian Dressel 2-4 amphoras and 4 Pascual 1. Stratigraphy shows that although there was an overlap period between both forms, Pascual 1 continued to reach the site after the end of Dressel 2-4 imports (Williams 1991). There is something to be said for the view that Pascual 1 replaced Dressel 1 in parts of Gaul and Britain (Fitzpatrick 1985, 319). This should come as no surprise because as Dressel 1 exports to Gaul were in retreat, Gaul became the most important market for Pascual 1 amphoras (Comas Solà 1998, 228; Parker 1992, 19). The distribution of Pascual 1 stamped by M. Porcius in Gaul shows the journey from Catalonia to Britain was by way of Narbonne and out into Atlantic waters northwards from the Gironde (Tchernia 1986, 403). The trade in Catalan wine with Gaul survived the disappearance of Pascual 1: half of the shipwrecks with Catalan Dressel 2-4 are off the coast of France (Corsi-Sciallano and Liou 1985, 10) and it is clear that the main thrust of exports was still towards Gaul.

## AMPHORAS AND SITE STATUS AT HEYBRIDGE

In the Iron Age, Heybridge imported amphora-borne commodities on an exceptional scale for a site in Britain. The 44 Dressel 1 amphoras are the largest assemblage excavated in Britain since 1945. Wine also reached the site in Dressel 2-4 and Pascual 1 amphoras. *Salazones* arrived in Beltrán 1, and olive oil in Dressel 20 amphoras.

After the Roman invasion the picture changes, and quickly. Some of the more common forms current in early Roman contexts from the province are lacking. There are no Rhodian amphoras of form *Cam* 184 or carrot-shaped jars of form *Cam* 189. Nor is there any sign of the less common amphora types such as London 555 or Richborough 527. Indeed the only new arrivals are a few Gaulish vessels and – in late antiquity – Kapitän 2. The former is represented by a minimum of only 9 vessels, and the Kapitän 2 by a solitary vessel from a late 4th century context. After AD43 the only amphora type present in quantity is the ubiquitous Dressel 20, which dominates the scene almost to the exclusion of other types. The decline in the fortunes of Heybridge took place early in the Roman period, at least as assessed from the perspective of the amphoras. One says this because where the identity of the *salazon* amphoras can be established, the form is always the early Beltrán 1. The hook-rimmed successor form Beltrán 2a (so common in Britain) is nowhere to be seen. In terms of absolute chronology, this means that the settlement was failing to maintain its position as a major importer of Mediterranean amphora-borne commodities at least as early as c.AD75.

It was suggested earlier (pages 00-00) that the *floruit* of Elms Farm can be linked to the export of British produce to the mainland of Europe. The ultimate destination of many of these exports may have been the Roman armies based in Gallia Belgica, Free Germany or the Rhineland at a time when the local economies were struggling to support this new imposition. Eventually the agrarian regimes of Belgic Gaul adjusted to the challenge. When they did, the need for the army to draw supplies from Britain receded. The Roman invasion of Britain may have been the final factor in the disruption of the trade patterns that had brought Heybridge its brief but startling success. Another major late Iron Age settlement with international connections in the south-east that suffered a similar slide in its fortunes in the 1st century AD was Braughing, Hertfordshire. There, decline had set in by c.AD25 (Haselgrove 1988, 27). Its history may have been bound up with the same economic currents that at first sustained, and then deserted Heybridge.

### *Dressel 1 and the Role of Heybridge as a Port*

This is a convenient point to discuss the status of Heybridge as a port of entry for imported goods, with particular reference to Dressel 1. All three of the sites in Britain that have produced Dressel 1 in greatest numbers – Hengistbury Head, Heybridge and Sheepen at Colchester – lie on the coast, or (in the case of Sheepen) on a river only a few kilometres within reach of tidal waters. Occupation at Sheepen did not get underway until some fifteen years after the terminal date of the form. The Dressel 1 amphoras were old vessels that had survived through secondary use after their contents had been decanted (Sealey 1985, 101-8). The site cannot therefore tell us anything about where these amphoras had entered the country. But it is more understandable that Hengistbury Head and Heybridge should be thought of as ports. A survey of Iron Age settlements along the Blackwater estuary in the vicinity of Elms Farm shows an extensive network of sites with Roman imports, including amphoras (Wallace 1998).

Now a port need leave no archaeological trace of the commodities or containers that pass through it: amphoras are unloaded from a hold and move inland on wagons or pack animals or up waterways on river craft. The number of Dressel 1 amphoras from Heybridge and Hengistbury is far in excess of anything found on neighbouring sites inland and this must call into question their supposed role as ports or entrepôts for wine. The difficulty could be surmounted by postulating the transfer of wine from pottery jar to perishable container (barrel or leather bottle) for transport inland, but the presence of Dressel 1 far inland shows this did not happen. As in Gaul (Woolf 1993, 216), sites in Britain which are prolific in Dressel 1 cannot be accounted for as places from which wine was redistributed in different containers. Moreover at Elms Farm the distribution map of Dressel 1 across the site shows no major concentrations of sherds towards the river Blackwater where this activity might have taken place (Fig.00). The archaeology of Dressel 1 and other pre-conquest wine amphoras on the site shows instead how wine had woven its way into the fabric of the community there. The 7 wine amphoras (4 of which are Dressel 1) from pyre-debris pit 15417 and the Area W pyre-related features are a significant proportion of those from the late Iron Age settlement. Their incorporation in pyre-related features shows that wine was consumed at Heybridge and not simply imported in order to be moved inland.

Although there were great ports in antiquity with hinterlands such as Alexandria or Ostia, the relative costs of land, inland waterway and sea transport before the advent of railway encouraged the use of water transport wherever possible (Duncan Jones 1982, 366-9). For a county like Essex, with its deep estuaries and correspondingly long coastline (Allen and Sturdy 1980, 1), it is anachronistic to think that the cross-channel prehistoric wine trade was organised around the distribution of goods from a restricted number of ports. Instead craft with the flat keels of the kind portrayed on bronze coins of Cunobelinus (Muckleroy *et al.* 1978; McGrail 1990, 43-5) would have taken every advantage of the shallow waters of the indented Essex coast to unload and receive cargoes at will. Even in the late Roman period the distribution of African amphoras in Britain shows a markedly riverine and coastal distribution (Williams and Carreras Monfort 1995, 238-9). The same picture emerges from Armorica where most of the Dressel 1 amphoras come from on or near the coast (Galliou 1982, 18-19; 1984, fig.10).

Although a case can be made for Heybridge having played a part in the export of British produce overseas to the Roman world (page 00), the presence of wine amphoras in quantity there does not – paradoxically – mean that one should see Heybridge as a port of entry for Italian and provincial wine that was then moved inland for consumption elsewhere.

## APPENDIX: DRESSSEL 1 TYPOLOGY AND CHRONOLOGY

This appendix explains the reluctance of the writer to assign any of the Dressel 1 sherds (especially the rims) from Elms Farm to one or other of the traditional variants of the form, Dressel 1a, 1b or 1c (pages 00-00). For the last fifteen years there has been a lively debate on the typology of Dressel 1, about how to define and date variants of the form. Useful reviews of the state of play are available in Maza (1998) and Loughton (2000). But it is a debate that has not been followed in Britain, and for this reason it might be helpful to give some idea of current thinking on the Dressel 1 problem. The discussion has been largely confined to French archaeologists because Gaul was the major export market for Dressel 1, and the form is found in quantity on sites of 2nd and 1st century BC date there.

Dressel himself did not attempt any subdivision of his form 1. The furthest he went was to describe some vessels as *formae 1 similis*, rather than simply Dressel 1. The painted inscription dates on *formae 1 similis* do not fall in the second half of the 1st century BC and for this reason it was felt that they would have been on the earlier, Dressel 1a variant. One of them had a painted inscription date of 97BC (C.I.L. vol.15 no.4537). Its inscription has gone now but it proved possible to identify the vessel from its graffito (which Dressel had also published). Although the rim was missing, the amphora was a tall specimen with a long spike and has been described as Dressel 1b (Empereur and Hesnard 1987, 32; Tchernia 1986, 320 n.10). This was important because it showed that Dressel 1b appeared much earlier than had hitherto been suspected.

The familiar tripartite division of Dressel 1 into 1a, 1b and 1c was the work of Lamboglia (1955, 246-8); shortly afterwards his scheme was amended by Benoit (1957, 263-72). For the first time, measurements were used to help define the subdivisions proposed. It is these subdivisions that have remained with us until the present day, although different measurements have subsequently been put forward to define these variants. A summary of the measurements used by Lamboglia and Benoit is given in Table 00. Dressel 1c has not yet been recognised in Britain and for this reason it has been left out of the discussion that follows.

	<i>Dressel 1a</i>		<i>Dressel 1b</i>	
	Lamboglia	Benoit	Lamboglia	Benoit
capacity	± 20 litres	17-24 litres	± 26 litres	26-27 litres
total height		± 100cm		115-120cm
rim height		>4< 5.6cm		6-8cm

Table 00. *Dressel 1 Classification and Metrology in the Lamboglia and Benoit Schemes (After Tchernia 1986, 310)*

The deficiencies and shortcomings of the Lamboglia and Benoit classifications are manifest. Nor are both definitions identical. In practice capacities were seldom used to define variants because they required intact vessels and involved an inconvenient procedure. In the Benoit classification there is an embarrassing gap between amphoras that range in height between 100cm and 115cm. If one applied the definition rigorously, it would be impossible to accommodate Dressel 1 amphoras that fell within that height range. Likewise if one amalgamates the Lamboglia and Benoit schemes there is no way of incorporating Dressel 1 rims whose height falls between 5.6 and 6cm. Other problems soon emerged. In the very article in which he expounded his definitions, Benoit promptly flouted them and followed Lamboglia by including in Dressel 1b some amphoras from the Spargi shipwreck which were only 100cm high but which (according to him) had rims 6cm high (which in any case is inaccurate) (Tchernia 1986, 312).

Dressel 1 amphoras were in production for a century and a half, from *c.*150BC until *c.*10BC. They were made over wide areas of Etruria, Latium and Campania, and indeed a few other regions of the peninsula. A major problem facing typological analysis is to know whether or not typological differences relate to the chronology of the form in general, or to different production regions. Poverty of information from production sites in Italy has aggravated the problem. Although kiln sites are known, little in the way of dated and stratified data is available (Olmer *et al.* 1995, 301). Shipwrecks provide the most important information on Dressel 1 typology, but one of the most important lessons they teach is the contemporaneous existence of several different types. Twenty or so shipwrecks provide the foundations of Dressel 1 typology but we have less than a hundred complete profiles, generally published at a very reduced scale (Guichard 1997, 133). Unfortunately few Dressel 1 wrecks can be dated at all closely (Tchernia 1990, 295; Parker 1992,

32-3). Sites on land (terrestrial sites) with Dressel 1 show an even greater typological diversity than shipwrecks. This even applies to short-lived sites such as the c.80-60BC funerary deposit at Clemency (Metzler *et al.* 1991, 46-50). To some extent this reflects different sources of supply, but a still more important factor is the question of rubbish survival on settlement sites. This means in practice that the dates at which Dressel 1b becomes dominant in assemblages from Gaul is always much later than the chronology for the transition derived from shipwrecks. Painted inscriptions with consular dates on Dressel 1 are invaluable. For many years the important series from Rome stood alone but the occasional new discovery continues to provide vital information, such as the two Dressel 1 rims from Rodez (Aveyron) with painted inscription dates of 127 and 108BC (Gruat 1993). It is unfortunate that so few consular dates are on complete vessels. The ideal documentation for clarifying Dressel 1 typology would be a series of closely dated shipwrecks that had sunk at intervals of ten years covering the entire history of the form. But such a documentation does not exist and one is obliged instead to weave together the various strands of evidence outlined above.

It has been recognised for some years now that the way forward involves precise measurements of the various components of a Dressel 1 amphora. Total height and capacity are included, although these statistics are only available for complete vessels (not all of which of course come from shipwrecks). The length of the basal spike (measured from the lowest point of the body interior to the tip of the spike) should also be taken. One would also like to see measurements of the long and short axes of the handle sections. Most attention has been paid to rims because this is the one part of the vessel that is regularly illustrated. The diameter and height of the rim, its maximum thickness and the angle of inclination are all taken into account. Where these measurements are taken is shown by Fig.00. Integrating this data, it is possible to produce ratios for such combinations as the mouth diameter and rim height, the rim height and the angle of inclination, and the rim height and maximum thickness. All three systems are in current use but it is not immediately obvious how one can evaluate their validity as reliable indices of typological development over time.

The problems of Dressel 1 typology and classification can be examined by taking as a case study the recent attempt by Guichard (1997, 134-5) to define variants within Dressel 1. Integrated with this critique of Guichard are the data from a late 2nd century BC group of Dressel 1 from Mont Beuvray (Olmer *et al.* 1995), if only to show how vulnerable comprehensive classificatory schemes can be to new evidence.

Guichard gives precise measurements for his definitions of Dressel 1 and its parent form, the Graeco-Italic amphora. In his scheme, Graeco-Italic amphoras have an overall height less than 90cm, and the rim is less than 3cm high with an angle of inclination less than 65°. He acknowledges that it is difficult to fix precisely where the Graeco-Italic stops and Dressel 1 begins, but he gives the latter an overall height of 90-105cm, with rims 3-6cm high and with an angle of inclination of 50-95° (but values higher than 5cm and 85° are very rare). Dressel 1b has an overall height greater than 110cm. Rims are higher than 4.5cm with an angle of inclination greater than 75°, and the diameter is in excess of 15cm. A summary is given in Table 00.

	<i>height</i>	<i>rim diameter</i>	<i>rim height</i>	<i>rim angle</i>
Graeco-Italic	< 90cm		< 3cm	< 65°
Dressel 1a	90-105cm		3-6cm	50-95°
Dressel 1b	> 110cm	> 15cm	> 4.5cm	> 75°
Dressel 1c	> 110cm	< 15cm	> 4.5cm	> 75°

Table 00. Dressel 1 Classification and Metrology  
(After Guichard 1997, 134-5)

One of the reservations one has about the Guichard scheme (like so much French work on the problem) is the tacit determination to devise a scheme of classification that will come to the rescue of the traditional tripartite division of Dressel 1 into 1a, 1b and 1c. It might have been better to have started from scratch. A disappointment in the Guichard system is lack of rim diameters for Graeco-Italic and Dressel 1a amphoras. It might also have helped to include measurements of components such as the basal spike and the handle axes. For the archaeologist working with fragmentary material from terrestrial sites, the Guichard scheme is of limited use because the measurements given have such a degree of overlap. Table 00 shows there is a 5cm gap between Dressel 1a and 1b in their overall height but which Guichard defended on the grounds that Dressel 1 amphoras in the 105-110cm range are rare enough to be discounted.

At this point we may bring in the amphora dump from Cellar 130 at Mont Beuvray (Olmer *et al.* 1995). It consisted of some seventy amphoras uncontaminated by residual material, described as Dressel 1a and dated *c.*125-100BC. Sherd sizes were large and it is clear that the vessels had been dumped in the cellar not long after breakage. Detailed measurements are given. Here we need only be concerned with the overall height, which ranged between 104 and 111cm (with an average of 108cm). The heights of the vessels from this large assemblage of amphoras from Mont Beuvray is patently at odds with the Guichard scheme for Dressel 1a and shows only too clearly the difficulties of reducing Dressel 1 classification to the objective constraints of a measured system. And if we accept the Cellar 130 vessels as Dressel 1a, the minimum height of the 1b variant must be increased to more than 111cm.

The situation is exasperating because in general terms the typological evolution of Dressel 1 from its Graeco-Italic parent *c.*150BC until the end of the form *c.*10BC is clear enough. The form begins in Dressel 1a as a taller and more slender version of the Graeco-Italic, with the same triangular rim. Within a few years the rim develops the vertical or near-vertical collar rim with a straight or slightly dished outer surface. A widespread and dangerous misconception in Britain is that the collar rim is confined to the later 1b form. At this stage rims are shorter, rather than taller. Basal spikes are short and often terminate in an expanded knob. From *c.*100BC the 1a develops into the 1b, a taller vessel with a sharper angle between the shoulder and the body. Developed Dressel 1b amphoras can be as much as 115cm tall and there is a slight increase in capacity over the 1a. Sometimes the Dressel 1b has a neck narrower at the shoulder than the mouth. The collar rim is standard now and sometimes reaches as much as 8cm in height. Basal spikes are longer, often with splayed ends. It is important to bear in mind that there is not a simple linear progression from Dressel 1a to 1b. There is a long period of overlap of some forty years from the 97BC Dressel 1b from Rome (see above) to the *c.*75-60BC shipwreck of Madrague de Giens, where Dressel 1a is a tiny minority in a cargo of Dressel 1b (Tchernia *et al.* 1978; Liou and Pomey 1985, 563-4). None of the shipwrecks with Dressel 1 that sank in the second half of the 1st century BC have the 1a variant and Dressel 1b was evidently in the ascendant by then (Metzler *et al.* 1991, 85).

Confusion over the precise definition of Dressel 1a and 1b accounts for the various dates given for the displacement of the former by the later in French excavation reports. Tchernia (1986, 320) estimated that by the fifties BC the Dressel 1b variant begins to outnumber 1a regularly in excavated assemblages and noted that henceforth the incidence of the two variants is generally reversed. This is at variance with the data from a large amphora deposit in the ditches of La Sarra at Lyon, dated *c.*60-40BC on the basis of their coarse pottery. No less than 113 Dressel 1 rims are

present: 40% are described as Dressel 1b, and 58% as Dressel 1a (Mandy 1989). Likewise in a post-Caesarian deposit at Alesia, Dressel 1a is said to be more common than 1b (van der Werff 1986, 100-1). On the other hand, it has been claimed for the Auvergne that Dressel 1b had displaced 1a in the period *c.*80-60BC (Loughton 2000, 254).

It is difficult enough to agree about how to allocate complete Dressel 1 amphoras to the 1a or 1b categories. With sherd material, the problems are greater still. Looking at the niceties of Dressel 1 classification through detailed analyses of the metrology of rims or complete amphoras, it is all too easy to wonder with Tchernia (1986, 320) whether or not these are simply academic exercises. Although one can use typological criteria to gain some idea of where any given assemblage belongs in the Dressel 1 sequence, the fact is that there is a muddle at the core of Dressel 1 typology. In the circumstances the writer felt it unwise to allocate any of the Dressel 1 amphoras from Elms Farm to one or other of the traditional variants of the type. It is difficult to see what this would have achieved anyway because the stratified contexts on the site show that the assemblage published here belongs to the very end of the history of the form. Dressel 1 amphoras are one of the most important archaeological documents for ancient trade and one must hope that future work can resolve the difficulties sketched in this appendix. Britain cannot make a useful contribution to the debate because we do not have enough complete Dressel 1 amphoras to serve as a useful database for research. It is encouraging that French scholarship has taken the problem so seriously, and it is from Gaul that we must hope for a solution.

List of Illustrated Amphoras  
*arranged in order of illustration*

Fig.00 no.1 Dressel 1 rim. Fabric (AITAL). Context 4000. Unstratified cleaning layer

Fig.00 no.2 Dressel 1 rim. Fabric (AITAH). Context 4832. Period II

Fig.00 no.3 Dressel 1 rim. Fabric (AITAL). Pit 7650 (Context 7664). Period II

Fig.00 no.4 Dressel 1 rim. Fabric (AITAL). Context 9723. Unstratified

Fig.00 no.5 Dressel 1 rim. Fabric (AITAL). Pit 10552 (Context 10636). Period II

Fig.00 no.6 Dressel 1 rim. Fabric (AITAL). Pit 11221 (Context 11220). Period II

Fig.00 no.7 Dressel 1. Fabric (AITAL). Feature 13521 (Context 13408). Period III

Fig.00 no.8 Dressel 1 rim. Fabric (AITAL). Pit 14649 (Context 14651). Period II

Fig.00 no.9 Dressel 1 rim. Fabric (AITAL). Pit 14994 (Context 14995). Period IV

Fig.00 no.10 Dressel 1 rim. Fabric (AITAL). Context 16021. Period II

Fig.00 no.11 Dressel 1 rim. Fabric (AITAL). Context 3830. Unstratified

Fig.00 no.12 Dressel 1 rim. Fabric (AITAL). Context 10846. Period II



- Fig.00 no.13 Dressel 1rim. Fabric (AITAB). Pit 11745 (Context 11487). Period II
- Fig.00 no.14 Dressel 1rim. Fabric (AITAF). Ditch 9249 (Context 9247). Period II
- Fig.00 no.15 Dressel 1handle. Fabric (AITAH). Context 17346. Period II
- Fig.00 no.16 Dressel 1handle. Fabric (AITAL). Pit 8586 (Context 8587). Period II
- Fig.00 no.17 Dressel 1handle. Fabric (AITAL). Context 7151. Period II
- Fig.00 no.18 Dressel 1handle. Fabric (AITAL). Context 9013. Period II
- Fig.00 no.19 Dressel 1handle. Fabric (AITAL). Pit 10062 (Context 10061). Period V
- Fig.00 no.20 Dressel 1handle. Fabric (AITAL). Context 10919. Period II
- Fig.00 no.21 Dressel 1handle. Fabric (AITAL). Context 13289. Unstratified cleaning layer
- Fig.00 no.22 Dressel 1handle. Fabric (AITAL). Context 13891. Period III
- Fig.00 no.23 Dressel 1 handle stamped ...M. Fabric (AITAL). Context 21550. Period II
- Fig.00 no.24 Dressel 1 handle. Fabric (AITAL). Context 22078. Period II
- Fig.00 no.25 Dressel 1handle. Fabric (AITAL). Pit 23399 (Context 23362). Period II
- Fig.00 no.26 Dressel 1 handle. Fabric (AITAG). Pit 9158 (Context 9153). Period II
- Fig.00 no.27 Dressel 1handle. Fabric (AITAH). Context 9659. Unstratified
- Fig.00 no.28 Dressel 1handle. Fabric (AITAI). Pit 11745 (Context 11408). Period II
- Fig.00 no.29 Pascual 1rim. Fabric (ARCAT). Context 8638. Period VI
- Fig.00 no.30 Pascual 1 handle. Fabric (ARCAT). Pit 11324 (Context 11323). Period II
- Fig.00 no.31 Pascual 1handle. Fabric (ARCAT). Pit 20481 (Context 20329). Period II
- Fig.00 no.32 Dressel 2-4 rim. Fabric (AITAL). Pit 8271 (Context 8271). Period II
- Fig.00 no.33 Dressel 2-4 shoulder. Fabric (AITAL). Context 8697. Period IV
- Fig.00 no.34 Dressel 2-4 shoulder. Fabric (AITAL). Context 14235. Periods II-III
- Fig.00 no.35 Dressel 2-4 shoulder. Fabric (AITAL). Pit 15968 (Context 15969). Period II
- Fig.00 no.36 Dressel 2-4 shoulder. Fabric (ABSAN). Context 17346. Period II
- Fig.00 no.37 Catalan Dressel 2-4 rim. Fabric (ARCAT). Context 13576. Period III

- Fig.00 no.38 Dressel 2-4 neck. Fabric (AWINA). Context 7311. Period II
- Fig.00 no.39 Dressel 2-4 handle. Fabric (AWINB). Context 7714. Period III
- Fig.00 no.40 Dressel 2-4 rim. Fabric (AWINC). Ditch 8696 (Context 8840). Period II
- Fig.00 no.41 Dressel 2-4 handle. Fabric (AWINC). Pit 11167 (Context 11153). Period II
- Fig.00 no.42 Gauloise 3 rim. Context 6418. Period IV
- Fig.00 no.43 Gauloise 4 rim. Context 4014. Period IV
- Fig.00 no.44 Gauloise 4 rim. Context 5543. Periods V-VI
- Fig.00 no.45 Gauloise 4 base. Context 4009. Period III
- Fig.00 no.46 Gauloise 4 handle. Pit 8966 (Context 8967). Period V
- Fig.00 no.47 Gauloise 6 rim. Context 5693. Period III
- Fig.00 no.48 Gauloise 6 base. Context 5494. Period III
- Fig.00 no.49 Haltern 70 handle. Context 5603. Unstratified cleaning layer
- Fig.00 no.50 Haltern 70 handle. Context 3999. Unstratified
- Fig.00 no.51 pre-Claudian Dressel 20 rim. Ditch 11718 (Context 11716). Period II
- Fig.00 no.52. pre-Claudian Dressel 20 rim. Pit 24134 (Context 24137). Period II
- Fig.00 no.53 Dressel 20 rim. Context 13316. Unstratified cleaning layer
- Fig.00 no.54 Dressel 20 rim. Pit 15993 (Context 15543). Periods II-III
- Fig.00 no.55 Dressel 20 rim. Context 4899. Period III
- Fig.00 no.56 Dressel 20 rim. Pit 4487 (Context 4427). Period IV
- Fig.00 no.57 Dressel 20 rim. Context 3885. Unstratified
- Fig.00 no.58 Dressel 20 rim. Context 11608. Unstratified cleaning layer
- Fig.00 no.59 Dressel 20 body sherd with *ante-cocturam* graffito. Context 6047. Period IV
- Fig.00 no.60 pre-Claudian Dressel 20 handle. Pit 20069 (Context 20134). Period II
- Fig.00 no.61 Dressel 20 handle with *ante-cocturam* graffito. Context 5662. Unstratified cleaning layer
- Fig.00 no.62 Dressel 20 handle with incomplete stamp. Pit 23024 (Context 23030). Period III

- Fig.00 no.63 Dressel 20 handle with incomplete stamp. Context 11000. Unstratified
- Fig.00 no.64 Half a Dressel 20 buried upside down. Before firing, the graffito X had been scratched alongside the bottom of one of the handles. Pit 4582. 2nd century AD.
- Fig.00 no.65 Beltrán 1 rim. Pit 4130 (Context 4113). Period II
- Fig.00 no.66 Beltrán 1 rim. Pit 4517 (Context 4433). Period II
- Fig.00 no.67 Beltrán 1 rim. Context 7151. Period II
- Fig.00 no.68 Beltrán 1 rim. Pit 9750 (Context 9796). Period III
- Fig.00 no.69 Beltrán 1 (Dressel 8) rim. Pit 23399 (Context 23326). Period II
- Fig.00 no.70 Beltrán 1 (Dressel 9) rim. Pit 11730 (Context 11727). Period II
- Fig.00 no.71 Beltrán 1 (Dressel 9) rim. Pit 24134 (Context 24137). Period II
- Fig.00 no.72 Beltrán 1 handle. Pit 8019 (Context 8021). Period II
- Fig.00 no.73 Kapitän 2 neck and handle. Well 5806 (Context 5768). Period V
- Fig.00 no.74 spindle whorl made from an Italian amphora in Fabric (AITAL). Context 13553. Period II

#### List of Illustrated Amphoras from the Event Pit

- Fig.00 no.00 Dressel 1 Fabric (AITAC). Pit 15417 c.10BC-AD5 [*this is the shorter of the two illustrated rims from the context, Archive No.3573*]
- Fig.00 no.00 Dressel 1. Fabric (AITAD). Pit 15417 c.10BC-AD5 [*this is the taller of the two illustrated rims from the context, Archive No.3572*]
- Fig.00 no.00 Dressel 1 base. Fabric (AITAB). Pit 15417 c.10BC-AD5
- Fig.00 no.00 Dressel 1 handle. Fabric (AITAB). Pit 15417 c.10BC-AD5

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