Producción y comercio del Aceite en la Antigüedad

3610

THE IMPORTATION OF OLIVE-OIL INTO IRON AGE AND ROMAN BRITAIN

by

D.F. Williams and D.P.S. Peacock

THE IMPORTATION OF OLIVE-OIL INTO IRON AGE AND ROMAN BRITAIN

D.F. Williams and D.P.S. Peacock

Introduction

In Britain, the study of Roman amphorae has remained unfashionable for far too long and it is only in the last decade that these vessels have been seriously evaluated. Much research effort has been directed towards the identification of different types, since in Britain this problem is more acute than in the Mediterranean homeland where amphorae are commonplace. Amphorae differ from the general run of Roman coarse wares in having a very large proportion of body compared with the featured parts such as rims, handles and bases, and hence a majority of finds comprise non-distinctive body sherds. In very large collections these can be ignored for the types present, and their quantities, will be indicated by featured sherds, but in small collections, disregarding body sherds will inevitably lead to a distortion of the quantitative picture and certain types might not be detected at all.

Unfortunately many earlier excavators retained only featured material, but in recent years total recovery has become the norm, thus affording an opportunity to assess, more realistically, the pattern of amphora importation into Britain. The task is not an easy one for the first step is accurate identification of forms from featureless fragments, which can be difficult. However, study of the fabric with the aid of the petrological microscope adds a new dimension and can lead to accurate resolution, for many amphora forms have characteristic fabrics (c.f. Peacock, 1977).

Over the past few years, the writers have been systematically identifying stratified and dated assemblages of amphorae from excavations and attempting to estimate quantities. This is approached by both counting and weighing sherds of identified types. It now appears that weighing is the most satisfactory method of quantifying amphora data, because some types, such as Dressel 20, tend to flake into innumerable small pieces. Also weight data can be readily converted to commodity equivalents if the average volume and weight of complete vessels is known.

Our project is a long term one, but sufficient has been done to present some preliminary data and to discuss their probable significance. Our paper is essentially a commentary on table 1 which summarises some of the more significant data on the three principal olive-oil bearing amphora found in Britain, Dressel 6, Dressel 20 and African cylindricals. In each case we have indicated dating evidence and quantities, expressed as a percentage of the total amphora assemblage.

The most striking point is the overwhelming importance of Baetican olive-oil, indicated by the presence of Dressel 20. We have two fragments of its earlier precursor, Oberaden 83, but Dressel 20 first appears in the first half of the first century AD where it comprises c. 30% of the assemblages. It continues to rise and peaks in the second century where it accounts for over 70% of many assemblages. We have few third century assemblages, but some have produced Dressel 20 and not all need to be rubbish survival. It is generally held that exportation of Baetican olive-oil to Britain virtually ceased after the battle of Lyons in A.D. 197 because of reprisals against supporters of Albinus (Étienne, 1949; Callender, 1965, 78).

Callender (1965, 56) modified this hypothesis and suggested that the battle of Lyons was a decisive factor in the replacement of Baetican wine with that from Aquitanian sources. Many British archaeologists have followed his lead, but there is no evidence that Dressel 20 contained wine nor do we have quantities of other amphorae that might have filled this role.

Commentary on table 1 (see also fig. 1)

The information presented in table 1 is an attempt to quantify the proportions of the three major olive-oil carrying amphora types which occur at thirty-three selected late Iron Age and Romano-British sites. Where possible, the data is presented in terms of percentages of both sherd counts and weights. The actual numbers of sherds and weight in grams have also been included (in parenthesis), to give an indication of the absolute quantities. Unfortunately, the nature of the information presented in table 1 varies to some extent. Amphora statistics for a number of sites have been culled from published excavation reports where sometimes only rim or handle sherds or stamps have been mentioned. However, in most cases the total assemblage has been examined and recorded by one or both of the writers. The method of quantification varies since in some cases facilities for weighing sherds were not available, but all our more recent work includes both number and weight data.

In the majority of cases, brief details of the stratification have been mentioned in the table, but for some sites this is lacking, either because the majority of material is unstratified, or because dating was not available in time for the completion of this paper. Nevertheless, figures are quoted for a wide range of Iron Age and Roman sites, such as coloniae, forts, towns,

villas, Iron Age oppida and small rural settlements. An attempt has also been made to include both inland and coastal sites, in case this seriously affected the distribution of a particular amphora type.

Iron Age sites

It is clear that Dressel 20 amphorae are present in late Iron Age Britain prior to the Roman invasion of A.D. 43. They make up between a third and a half of the total amphora assemblage recovered from Iron Age sites in Hertfordshire such as Foxholes Farm, Gatesbury Track, Braughing (Henderson collection) and Skeleton Green. Dressel 20 is also attested to in potential pre-Roman levels at Owslebury, Hampshire, Hengistbury Head, Dorset, and Camulodunum. It has been suggested that early Dressel 20 material from the latter may be more numerous than the published report suggests (Parker, 1971, 371). The Dressel 20 distribution reflected by the pre-Roman sites listed in table 1 is, however, somewhat patchy. No early Dressel 20 sherds were discovered at Puckeridge, nor were they present in the early first century A.D. levels at Cleavel Point, Dorset, although first century Catalan wine amphorae of the form Dressel 1 - Pascual 1 were there in some numbers. The answer may lie either in some form of differential distribution or else both sites are too early to have received substantial quantities of Dressel 20 vessels.

The Augustan prototype of the later fully developed Dressel 20 form (Oberaden 83, Haltern 71), with a fairly upright rim and less of a squat bulbous body than the later development, has been recorded from pre-Roman levels at Prae Wood (Wheeler and Wheeler, 1963, fig. 13, no. 29) and at Gatesbury Track (Williams and Peacock, 1979, fig. 34, no. 4). Petrological thin

sections of both of these vessels revealed large inclusions of quartz, quartzite and felspar, as well as some quartz-mica-schist, sandstone, limestone and mica. Both the components and texture compare well with thin sections taken from standard Dressel 20 forms (Peacock, 1979, 72), which suggests that these Augustan types are correctly seen as precursors of Dressel 20, made in the Guadalquivir region of Baetica, between Seville and Cordoba (cf. Zevi, 1967). The important point is that importation of Baetican olive-oil into Iron Age Britain may have begun during the last decade of the first century B.C. and developed during the early years of the first century A.D.

Dressel form 6 is commonly believed to have carried the olive-oil of Istria in the early first century A.D. (Panella, 1970, 117; Buchi, 1971, 545-547). It is rare in Britain, but is present in pre-Roman layers at Gatesbury Track, Braughing (Henderson collection) and possibly Skeleton Green. Its scarcity is the significant point.

The later first century

After the Roman invasion of Britain, it is to be expected that supplies of olive-oil, one of the basic requirements of the Roman way of life, would be reaching the newly-won province on a regular basis. Table 1 confirms this, for Dressel 20 amphorae are very common in the second half of the first century A.D. on both military and civil sites. The Boudiccan destruction deposit at Colchester, must contain material dated to the years A.D. 43-60/61, and at least 15% of the amphorae are Dressel 20 (information from Paul Seeley). However, it is important to note that most of the remaining vessels are of the Dressel 2-4 wine amphorae from a variety of sources or Dressel 7-11, and not oil containers.

Excavations of the destruction deposit elsewhere in the Colonia at Colchester suggests that 'the Spanish globular types predominate (Dunnett, 1967, 49). During the second half of the first century A.D., Dressel 20 is also prominent at such widely dispersed military sites as Mumrills, Red House (Corbridge), Usk and the legionary fortresses of Gloucester and York. At York, for example, first century A.D. Dressel 20 sherds account for 9% of the stratified Dressel 20 material from the site (the bulk of the Dressel 20 sherds from York were unfortunately unstratified). In addition to military sites, Dressel 20 amphorae were also reaching the civilian market in large numbers, and the form is described as 'common' in levels dated A.D. 43-75 at the palace site of Fishbourne (Cunliffe, 1971, 206, Type 145).

The second century

The second century has long been thought of as the golden age for the exportation of Spanish amphora -borne products to the provinces of the western Roman Empire (Callender, 1965, 49; Loane, 1938, 20). The figures in table 1 adequately confirm this for Britain, since where second century A.D. levels can be isolated, Dressel 20 sherds are invariably numerous. They seem to reach their apogee in the second half of the century and it is abundantly clear that this globular type is the most important amphora imported into Britain of the period.

During this century the most important wine amphora is Pélichet 47, made in southern Gaul, but recently a kiln making this type has come to light at Crouzilles, Indre et Loire (information M.A. Ferdière). Other forms commonly found in second century deposits are Dressel 7-11, bearing fish products mainly from Baetica. They account for some 30% of the amphorae

from Gloucester during the first half of the second century A.D. (Peacock, 1972, 68), but this is exceptional and the figure is normally of the order of 10%. The picture of second century amphora imports to Roman Britain is, broadly speaking, one of Baetican olive-oil, Gaulish wine and Southern Spanish fish products. Other amphora types were, of course, reaching the province during this period, but our studies suggest them to be of little account.

The third century and later

There is no doubt that Dressel 20 was being imported into Britain during the third century, for two imperial amphora stamps have been found bearing the formula AVGGGNNN and dated to the period A.D. 209-211 (Callender 1962, 175-6). We have examined the stamped handle of this type from Cirencester and found it to conform with Dressel 20 in both form and microscopic fabric. Sites such as Jewry Wall Leicester, Kenchester, Exeter and York have produced quantities of Dressel 20 sherds without stamps. Some could be rubbish survival from the second century, but equally these finds could indicate a continuing trade in Spanish olive-oil, although a majority of vessels would have been unstamped.

However, during the third century A.D. cylindrical olive-oil amphorae of North Africa may have begun to appear in Britain (Peacock, 1977, 270-272), although there is little evidence of large-scale importation at this time. Certainly our quantitative evaluation of the British evidence would hardly lead us to conclude that North Africa overtook Spain as the major source of olive-oil in the second half of the third century A.D., which seems to be the case elsewhere (Panella, 1973, 619). Indeed,

in comparison with the very large quantity of Dressel 20 imported into Britain before this date, one is immediately struck by the comparatively small numbers of North African amphorae that have been identified on British sites. Apart from York, only a handful of North African amphora sherds have been recovered from Cirencester or Poundbury in addition to the eleven sites previously listed by Peacock (1977, 272). The North African material from York accounts for some 7% (16,667 gms) of the total amphorae examined, compared to 73% (161,817 gms) for Dressel 20 sherds.

Of course, African cylindrical amphorae were more efficient than Dressel 20, and would have carried a greater volume of oil for their weight. If we average the figures quoted by Zevi and Tchernia (1969, 177), Dressel 20 would have held 76.75 litres for a vessel weighing 35,107 grams, while African cylindricals would have held 62.7 litres for an empty weight of 17,825 grams. If we use these figures to convert the raw data from York to equivalents of oil, it appears that the quantity of Baetican oil consumed exceeded that from Africa by almost exactly six times. And yet, by British standards, York is an exceptionally rich site, perhaps because of a continuing military presence. Elsewhere finds are usually restricted to small groups or occasional isolated sherds.

It is difficult at present to say with confidence when supplies of Dressel 20 stopped reaching Britain. Dressel 20 sherds are found in some numbers after the generally accepted date for the demise of the Baetican industry of c. A.D. 260 (Zevi, 196 , 234) at both York and Poundbury. However, much, if not all of this material is almost certainly residual from earlier layers. In contrast, there is evidence that imports of

North African amphorae reached a peak during the late fourth and fifth centuries A.D. (Peacock, 1977, 272). Slightly later, at the end of the fifth or in the early sixth century, a range of Eastern Mediterranean amphorae are found on post-Roman sites in the west of Britain (Thomas, 1959), and one form (Thomas' Bii) may have been a container for olive-oil. Recent petrological work suggests an origin in either Cyprus or in Syria, which may have been the centre of a large olive-oil export trade at this time (Williams, 1982, 102; Liebeschuetz, 1972, 79-81). However, this is speculation and will remain so until further work has been carried out in the potential production regions. The quantity of these amphorae found in western Britain is very small (Thomas, 1981), and so even if the Bii did carry olive-oil, the trade with post-Roman Britain would have been slight.

Conclusions

To sum up, the quantitative evaluation of olive-oil amphorae on sites listed in table 1, shows that Dressel 20 was predominant from the early first century A.D. to perhaps the third century. Importation from Istria in the early first century, and later North Africa in the third century, was comparatively slight. The peak of the olive-oil trade was undoubtedly the second century A.D., but it is worth emphasising that substantial quantities of Baetican olive-oil were being shipped to the province before and perhaps after this period. There appears to be no evidence to suggest that there were separate supplies of Dressel 20 to the military on the one hand, or the civilian population on the other. The weight percentages of Dressel 20 sherds from towns such as Cirencester (73%), Worcester (72%) and Droitwich (77%), and rural settlements such as that near Kenchester (77%), is virtually identical to that obtained from

the legionary fortress at York (73%). This suggests that the army obtained its Dressel 20 amphorae from the system operating to supply the civilian market, most probably by means of entrepreneurial middlemen (cf. Breeze, 1977). Similarly, there appears to have been no significant concentration on coastal sites.

In figure 2 we have attempted to present our results for Dressel 20 graphically. It is difficult to represent our data accurately in this way, because of the problem of rubbish survival and also because different sites have often been phased in overlapping chronological units. Our graph is thus, to some extent, subjective, but our estimates rest on hard figures. The curve shows a relatively rapid increase in olive-oil importation up to the Roman invasion, followed by a slight levelling off up to the later second century, after which there is a rapid fall. There are few studies available for comparison, but Panella's (1973) work at Ostia reveals a very similar pattern (see also Riley, 1982, fig. 20). However, Pascual's (1980, fig. 4) quantitative examination of Mediterranean wrecks is particularly significant, for his work suggests an almost identical trend. It appears that the supply mechanisms to Britain were always in accord with those of the Mediterranean world, despite the very different routes and means of transport. However, it is particularly striking that the Roman Conquest of Britain is not revealed in the trend. The later Iron Age communities were supplied with their share of olive-oil as though they were already part of the empire. In sum, our studies demonstrate that as far as Baetican olive-oil was concerned, Britain was not a special case and its fortunes were linked to those of the Mediterranean world. Only in the later Roman period, when Africa became the dominant oil exporter to the west, did the

province fail to receive its due proportion.

In this paper we have not discussed the evidence for trade in Baetican fish products. However, it is worth noting that Dressel 7-11 amphorae in which they were carried are nearly always comparatively rare and seldom exceed 10% of an assemblage, although at Gloucester they reach 30%. It is difficult to detect trends at present, but the important point is that they are always very much in the minority when compared with Dressel 20. This comprises a major point of contrast with Pascual's wreck data, which suggests that in the Mediterranean, fish products could have been the major item of Baetican trade until c. A.D. 150-200 when oil took the lead (Pascual, 1980, fig. 5). The reason for this difference is hard to discern. It could relate to contrasting trade mechanisms or, more probably, to social and cultural differences between Britain and the Mediterranean lands. Alternatively, the problem may be a methodological one since Pascual's method would naturally tend to overestimate amphorae present in wrecks in small but persistent quantities. Our data accords with the accepted view that Baetican oil was more important than fish products.

Acknowledgements

This paper could not have been written without the co-operation of the following people who generously allowed the writers to examine pottery in their care, often in advance of their own publication: Professor Barry Cunliffe, Clive Partridge, Dr. John Collis, Peter Woodward, Chris Green, Dr. Kevin Greene, Mark Brisbane, Paul Seeley, Pauline Marney, Helen Rees, Janet Richardson, Dr. Brenda Heywood, Tony Brown, Roberta Tomber, Sara Greene, Jeffrey May and the late Dr. Gerald Dunning. Many of the unpublished amphora identifications were undertaken as part of the Department of the Environment Ceramic Petrology programme.

We are indebted to our colleague Dr. J.A. Riley for comments on a draft of this paper.

Bibliography

Breeze, D.J. The fort at Bearsden and the supply of pottery to the Roman army. In J. Dore and K. Greene (eds.), Roman Pottery Studies in Britain and Beyond, BAR, S30, 133-45.

Buchi, E., 1971. 'Banchi di anfore Romane e Verona. Note sui commerci Cisalpini', Il Territorio Veronese in eta Romana, Verona, 531-637.

Callender, M.H., 1949. 'Corbridge amphora stamps', Arch. Ael., 4th series, 26, 60-121.

Callender, M.H., 1962. 'Amphora stamp', in K.M. Richardson, 'Excavation in Parsonage Field, Watermoor Road, Cirencester 1959', Ant. J., 42, 175-176.

Callender, M.H., 1965. Roman Amphorae London .

Cunliffe, B.W., 1971. Excavations at Fishbourne, 1961-1969. Oxford .

Dunnett, B.R.K., 1967. 'Excavations on North Hill, Colchester', Arch. J., 123, 27-62.

Étienne, R., 1949. Les amphores du Testaccio au III^{e} siecle MEFR, 61, 150-81

Frere, S., 1972. Verulamium Excavations, Oxford.

Hanson, W.S., Daniels, C.M., Dore, J.N. and Gillam, J.P., 1979. 'The Agricolan supply base at Red House, Corbridge', Arch. Ael., 5th series, 7, 1-88.

Hawkes, C.F.C. and Hull, M.R., 1947. Camulodunum, Oxford.

Kenyon, K.M., 1948. Excavations at the Jewry Wall Site, Leicester. Oxford.

Liebeschuetz, J.H.W., 1972. Antioch: City and Imperial Administra in the Later Roman Empire. Oxford.

Loane, H.J., 1938. Industry and Commerce of the City of Rome. Baltimore.

Miller, S.N., 1922. The Roman Fort at Balmuildy. Glasgow.

Panella, C., 1970. 'Ostia, terme del nuotore, ambiente 1, strato v; le anfore', Ostia ii, 102-156.

Panella, C., 1973. 'Appunti su un gruppo di anfore della prima, Media e Tarda eta imperiale', Ostia iii, 460-633.

Parker, A.J., 1971. 'The evidence provided by underwater archaeology for Roman trade in the Western Mediterranean', in D.J. Blackman (ed.), Marine Archaeology: Colston Papers, 23, 361-381.

Pascual Guasch R., 1980. La evolucion de las exportaciones beticas durante el Imperio. In J.M. Blazquez Martinez (ed.), Produccion y Comercio del Aceite en la Antigüedad, Madrid, 233-42.

Peacock, D.P.S., 1972. 'Roman amphorae from the 1968-71 excavations in Hurst, H. 'Excavations at Gloucester, 1968-1971: first interim report', Ant. J., 52, 68.

Peacock, D.P.S., 1977. 'Roman amphorae: typology, fabric and origins', Coll. de l'Ecole Francaise de Rome, 32, 261-278.

Peacock, D.P.S., 1979a. 'The amphorae', in C. Partridge, 'Excavations at Puckeridge and Braughing 1975-79', Herts. Arch., 7, 47-48.

Peacock, D.P.S., 1979b. 'Amphora identifications', in P. Bidwell, The Legionary Bath-House and Basilica and Forum at Exeter, Exeter, Table 10.

Peacock, D.P.S., 1981. 'The amphorae', in C. Partridge, Skeleton Green, London, 199-203.

Riley, J.A., 1982.The Coarse Pottery from Berenice, In J.A. Lloyd Excavations at Sidi Khrebish Benghazi (Berenice), Vol. 2, 91-466, Tripoli.

Thomas, A.C., 1959. 'Imported pottery in Dark Age Western Britain .Med. Arch., 3, 89-111.

Thomas, A.C., 1981. A Provisional List of Imported Pottery in Post-Roman Western Britain and Ireland, Redruth.

Wheeler, R.E.M. and T.V., 1936. Verulamium: A Belgic and Two Roman Cities, Oxford.

Williams, D.F., 1982. 'The petrology of certain Byzantine amphorae: some suggestions as to origins', Colloque Sur La Ceramique Antique de Carthage, Dossier 1 CEDAC, 99-108.

Williams, D.F. and Peacock, D.P.S., 1979. 'The amphorae', in C. Partridge, 'Excavations at Puckeridge and Braughing 1975-79', Herts. Arch., 113-116.

Zevi, F., 1967. 'Review of Callender, 1965', J.R.S., 57, 234-338.

Zevi, F. and Tchernia, A., 1969. Amphores de Byzacene au Bas-Empire, Ant. Africaines, 3, 173-214.

TABLE 1: Proportions of Dr. 20, Dr. 6 and African amphorae on selected sites

w. = weight in grams
c. = sherd count

Site	% of Total Amphorae: Dr. 20	Dr. 6	African	Stratification
Iron Age:				
1. Foxholes Farm, Herts (unpublished)	w. 64% (1,394) c. 67% (20)	–	–	No dating available, but probably early (Dr. 1 & Dr. 2–4 present)
2. Gatesbury Track, Herts (Williams & Peacock,1979)	w. 30% (2,902) c. 49% (96)	w. 2% (163) c. 1% (2)	–	30/25 B.C. – early 1st cent A.D.
3. Puckeridge, Herts (Peacock,1979a)	–	–	–	Predominantly pre-Conquest ?
4. Braughing, Herts (Henderson coll. unpublished)	w. 31% (8,338) c. 26% (87)	w. 2% (603) c. 6% (20)	–	Unstratified, but likely to be early – Dr. 1B accounts for over 50% of amphorae
5. Camulodunum (Hawkes & Hull,1947)	see across			Dr. 20 'attested as early as period 1' (A.D. 10–43) Dr. 20 'fragments from period III onwards (A.D. 43/44–48) were quite innumerable'
Iron Age/Early Roman:				
6. Skeleton Green, Herts (Peacock,1981)	w. 36% (8,308) –	w. 8% (1,800) –	–	A.D. 1–25 = 33% 25–45 = 27% 45–120 = 65% 120+ = 74% Dr. 20 % of amphorae
7. Owslebury, Hants (unpublished)	w. 91% (12,614) c. 89% (124)	–	–	No detailed dating available, but some layers pre-Roman
8. Hengistbury Head, Dorset (unpublished)	w. 51% (11,082) c. 52% (126)	–	–	No dating available, but some sherds likely to be early – assoc. with Dr. 1 – Pas. 1
9. Cleavel Point, Dorset (unpublished)	w. 3% (483) c. 2% (6)	–	–	Early 1st cent A.D. = nil 1st cent A.D. (inc. late 1st cent) = w. 29% (233) c. 18% (2) Dr. 20 % of amphorae

TABLE 1 (continued)

Site	% of Total Amphorae			Stratification
	Dr. 20	Dr. 6	African	
Roman: villa & rural settlements				
10. Rough Ground Farm, Lechlade, Glouc (unpublished)	w. 68% (1,753) c. 54% (13)	-	-	No dating available
11. Fishbourne, Sussex (Cunliffe,1971)	see across	-	-	Dr. 20 'common in period 1' (A.D. 43-75).
12. Milton Keynes, Bucks (unpublished)	majority of amphorae	-	-	Unstratified
13. Kenchester (near), Glouc (unpublished)	w. 78% (41,501) c. 63% (195)	-	-	Pre-Roman = 1 sherd 1st cent A.D. = 1 sherd 2nd cent A.D. = 74% (25,961) 61% (121) 3rd cent A.D. = 92% (13,639) 82% (93) 4th cent A.D. = 54% (458) 31% (4) Dr. 20 % of amphorae
14. Dragonby, Lincs (unpublished)	w. 96% (70,399) c. 92% (406)	2 sherds	-	No good close dating - much residual
15. Poundbury, Dorset (unpublished)	w. 66% (9,803) c. 51% (88)	-	2% (237) 2% (58)	No detailed dating available, but Dr. 20 assoc. with late Roman cemetery

TABLE 1 (continued)

Site	% Of Total Amphorae			Stratification
	Dr. 20	Dr. 6	African	
Roman: Towns				
16. Colchester/Sheepen (info. P. Seeley)	21 out of 135 vessels = 15.5%	–	–	A.D. 43–60/61 Boudiccan destruction
17. Colchester (Dunnett,1967)	? 14 rims out of 20/25	–	–	A.D. 60/61 Boudiccan destruction – 'globular types predominate'
18. Gloucester (Peacock,1972)	see across	–	–	A.D. 1–100 = predominates 100–150 = 55% 150– early 3rd cent = 60% Dr. 20 % of amphorae
19. Droitwich, Worcs (unpublished)	w. 78% (17,330) c. 58% (140)	–	–	No dating available
20. Clausentum, Hants (unpublished)	w. 78% (28,275) c. 69% (155)	–	–	Amphorae as a whole dated second half of 1st cent A.D. – first half of 2nd cent A.D.
21. Jewry Wall, Leicester (Kenyon,1948)	17 out of 24 vessels = 71%	–	–	A.D. 100–150 = 3 vessels A.D. 150–200 = 7 '' A.D. 200–250 = 3 '' A.D. c. 350 = 4 '' Dr. 20
22. Worcester (unpublished)	w. 73% (20,199) c. 68% (200)	–	–	Much residual material. Dateable finds of Dr. 20 mostly fall into 2nd cent A.D.
23. Towcester, N'ants (unpublished)	Majority of amphorae	?	?	No dating available
24. Cirencester (unpublished)	w. 74% (162,395) c. 50% (634)	–	–	No dating available

TABLE 1 (continued)

Site	% of Total Amphorae			Stratification
	Dr. 20	Dr. 6	African	
Roman Towns (cont.)				
25. Verulamium (Frere,1972)	19 vessels out of 38 = 50%	–	–	A.D. 1–100 = 5 vessels 100–150 = 8 '' 150–200 = 2 '' residual = 4 ''
26. Exeter (Peacock,1979b)	see across	–	see across	

	Dr. 20	African
c. A.D. 80	7b/s + 1v	–
Late Ant.	3b/s	–
2nd cent	2b/s	–
Late Ant – 4th cent	3b/s	–
3rd cent	4b/s	–
A.D. 275–300	2b/s	–
A.D. 340+	1b/s	–
A.D. 371+	1b/s	10b/s
c. A.D.340–450	1b/s	4b/s
post-Roman	25b/s	13b/s

(b/s = bodysherd; v = vessel)

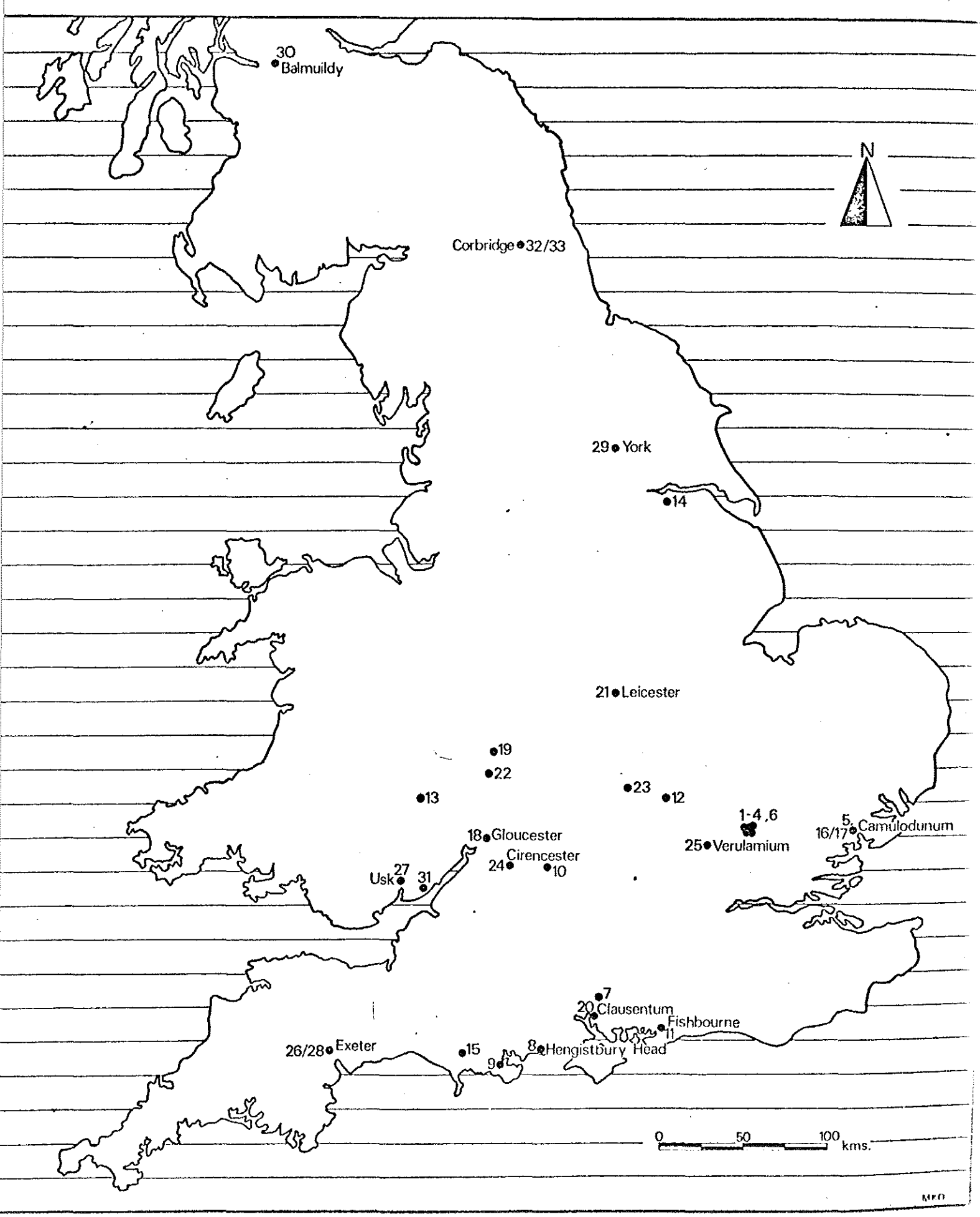
TABLE 1 (continued)

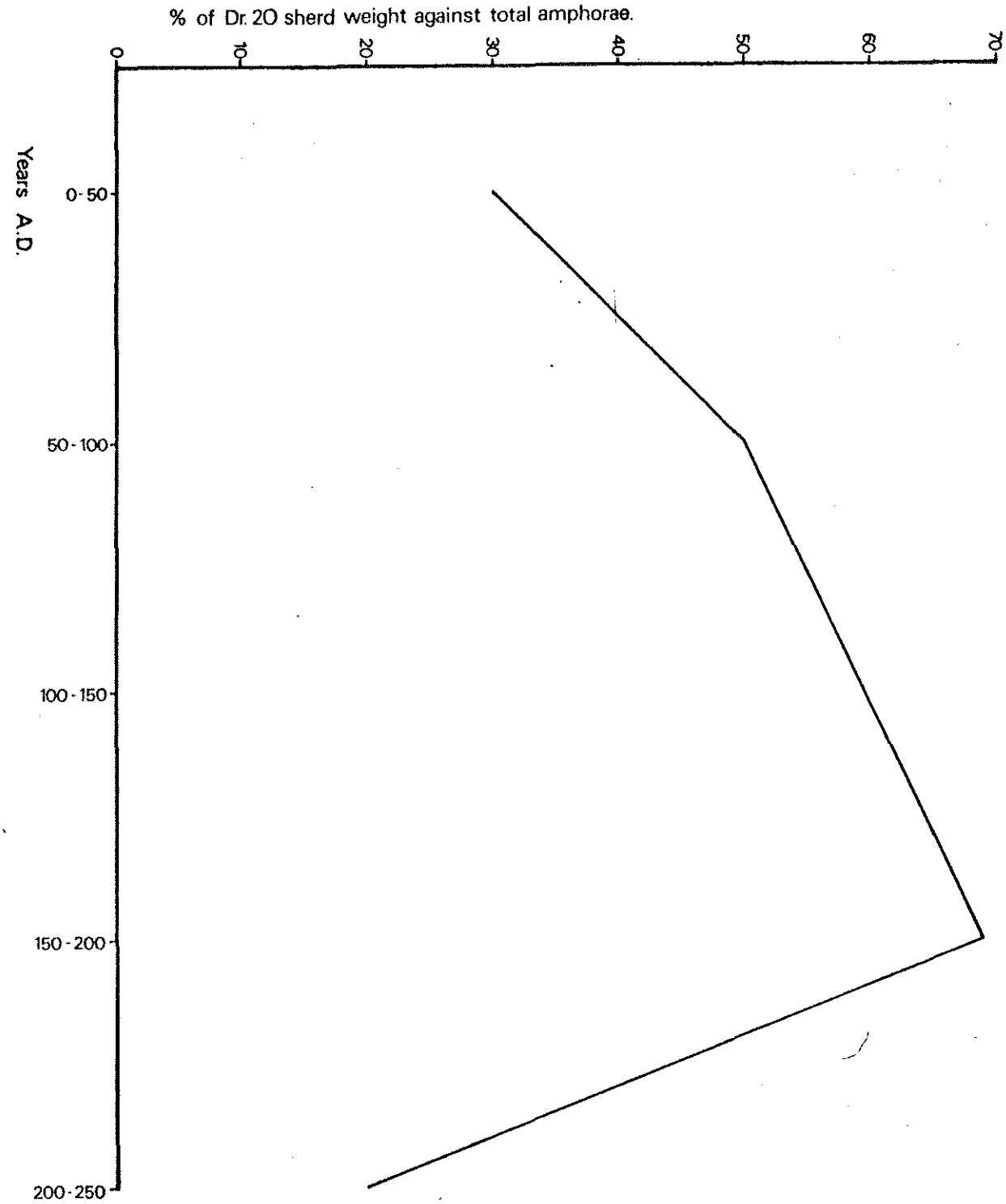
Site	% of Total Amphorae			Stratification
	Dr. 20	Dr. 6	African	
Roman: Military Sites				
27. Usk (unpublished)	w. - c. 80% (82)	-	-	Neronian-Flavian = c. 68% (28) Neronian-2nd cent = c. 83% (25) 2nd-3rd cent = c. 96% (29)
28. Exeter (Peacock, 1979b)	see across	-	-	c. A.D. 65 = 5b/s c. A.D. 75 = 1b/s + 1 vessel
29. York (unpublished)	w. 74% (161,817) c. 55% (578)	-	w. 8% (16,663) c. 11% (120) majority of stratified African amphorae in late levels	Unstratified Dr. 20 = w. 58% (94,488) c. 50% (294) 1st cent A.D. = w. 9% (6,310) c. 14% (40) 1st cent– 2nd cent = w. 58% (38,928) c. 56% (160) 2nd cent– 3rd cent = w. 16% (10,441) c. 13% (38) 1st cent– 3rd cent = w. 5% (3,381) c. 5% (14) 1st cent– 4th cent = w. 5% (3,369) c. 5% (15) 3rd cent– 4th cent = w. 2% (1,272) c. 1% (3) 4th cent– = w. 5% (3,628) c. 5% (14)

% of stratified Dr. 20 (no other amphorae included)

TABLE 1: (continued)

Site	% of Total Amphorae			Stratification
	Dr. 20	Dr. 6	African	
Roman: Military Sites (cont.)				
30. Balmuildy, Antonine Wall (Miller,1922)	Majority of amphorae seem to be Dr. 20			Second half of 2nd cent A.D.
31. Caerwent (unpublished)	- c. 46% (115)	-	- 2 sherds	No dating available
32. Corbridge (Callender,1949)	'Baetican (i.e. prediminantly Dr. 20) chief supplier'			Mainly 2nd cent stamps
33. Red House, Corbridge (Hanson et al,1979)	'large nos. of amphorae fragments' - only Dr. 20 mentioned			Agricolan


30
Balmuildy
N
Corbridge
32/33
29
York
14
21
Leicester
19
22
23
12
13
1-4,6
5
Camulodunum
16/17
18
Gloucester
25
Verulamium
Cirencester
24
10
Usk
27
31
7
20
Clausentum
Fishbourne
11
26/28
Exeter
15
8
Hengistbury Head
9
0
50
100
kms.


% of Dr. 20 sherd weight against total amphorae.
0
10
20
30
40
50
60
70
Years A.D.
0-50
50-100
100-150
150-200
200-250