

The Economic History of Roman Britain: the Olive Oil Contribution to the Debate

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Abstract

Archaeology provides the most important source for interpreting the ancient economy. The paper discusses the economics of olive oil consumption in Britain and the role of the army. The archaeological evidence, Dressel 20 amphorae are then studied, concluding, that the ancient economy mixed market and command economy features.

Resumo

A Arqueologia constitui a fonte mais importante para interpretar a economia antiga. O estudo discute a economia ligada ao consumo de azeite na Grã-Bretanha romana e o papel do exército. A evidência arqueológica é estudada na forma de ânforas Dressel 20, concluindo-se que a economia antiga apresentava características de mercado e política.

Introduction

Archaeology provides the most important source for interpreting the ancient past and it is considerably richer than the limited and finite written sources. A traditional approach has been to use historical texts simply to “confirm” archaeology and vice versa. In the last decades there has been a growing awareness that epistemological developments in the study of material culture is now crucial for a more critical approach to the ancient world.

Several archaeologists, however, consider that archaeology continues to play a dependent role

The unspoken assumption of the primacy of the ancient sources over the material evidence has been widely criticised.

One of the advantages that classical archaeology has over other branches of archaeology is precisely the abundance of written documents that can be used to substantiate, or challenge, deductions drawn from the comprehensive study of material culture. Fewer scholars than before espouse an uncritical acceptance of the writings of classical authors and the resulting inclination to interpret the archaeological record in traditional historical terms, in line with the ancient authors. Several archaeologists, however, consider that archaeology continues to play a dependent role, as material evidence has been used solely to illuminate and elucidate the textual record, proposing instead that the archaeological record can achieve independent status and can even be used to challenge standard interpretations of the textual record.

A variety of approaches towards the combined analysis of written and material evidence is advocated by different scholars. There are those who use the two sources of evidence to complement one another, others look for contradictions between material and written evidence, whilst in other cases the documentary evidence is used to

construct sets of expectations in relation to the material record. In this context, the first aim of this paper is to show how the archaeological evidence can be used for a better understanding of the role of the army in the Roman frontier, by means of an analysis of the consumption of olive oil in Britain.

A second goal is to argue that a contextual archaeological approach can prove useful in considering the organisation and characteristics of the Roman supply network. The image of the Roman army was shaped in modern times by the contemporary experience of imperialism, as a kind of model to be duplicated. This was particularly true in the British context in the late nineteenth and early twentieth centuries. British imperial administrators, politicians, and intellectuals drew a particular parallel between the imperial experiences of Britain and Rome. The Roman army and administration served as much as a model as an ideal to be adapted to the modern, industrial times. In a way, modern scholarship used modern concepts to understand ancient realities, an inescapable but possibly misleading analytic procedure.

Roman Britain is particularly suited for a study of the role of the army in the consumption of olive oil, this important *species annonaria*. Britain was a frontier province with a strong military presence; olive oil was not produced in the British mainland and was never used by native Britons. Furthermore, Britain produced in the last twenty years or so important archaeological evidence, namely amphora remains, as well as stamps and painted inscriptions.

The Economics of Olive Oil Consumption in Britain and the Army

The Romans went to Britain in order to establish a system which could enable a surplus of goods to be drained off to Rome

and the core of the Empire. The army was the basis of the state and the creation of a large standing army by Augustus was the secret weapon of the empire. The troops under arms were intended to suppress internal dissent more than external threats, Tacitus (Ann. 2, 36) referred to this open secret: *arcana imperii temptari* ("the secret mechanism of the government is attacked"). Auxiliary troops justified themselves by asserting that Roman rule brought benefits of peace and prosperity for those co-operating with imperial rule.

The army not only conquered Britain, but it was instrumental in organizing the whole province. The planned Roman towns appeared quickly and the standard explanation for this is the existence of nucleated settlements in pre-Roman Britain, particularly in the Southeast. The incorporated tribal élites transformed themselves into the *decuriones* of the *ciuitates*. This analytical model is grounded on a normative underlying principle and supposes that people are acculturated, that is, transform themselves from being Britons to becoming Romans. Native aristocracy did not need to be forced to become romanised, for emulation encouraged people to aspire to things Roman, thereby spreading Roman culture.

Acculturation as a sociological model has however been widely criticised. It implies that somehow people drop their own culture for another one, usually deemed as superior. British society was not homogeneous, nor was the Roman one, so that going from native to Roman is also a misleading concept for assuming homogeneity where there was heterogeneity in both British communities and the Roman society. Even native élites were divided, including factions whose statuses were differentially ascribed or achieved, and whose interests were contradictory, as Caesar (B.G. 6, 13) makes clear, when describing *equites* and *druides* in Gaul. The same applies to the Romans, as merchants, soldiers and officers, to mention just a few

groups, had different social positions in Britain. In the archaeological discourse, romanisation implies the existence of a distinguishable Roman material culture, to be adopted by natives but, again, there are many different and often contradictory items of the material culture associated, in different contexts, to Roman society. The use of the term 'romanisation' can thus be misleading.

In this context, the Roman army was both homogeneous and heterogeneous, comprising people from different origins and background, soldiers and officers but controlled by a unified command. Olive oil supply must be understood in this frame, for the use of olive oil was not an option, as if soldiers and officers were using olive oil as a cultural choice. This was not the case, for the army was controlled directly by the state (Ulp. Dig. 3, 2, 2), even if units arranged their own supplies, as the archaeological evidence shows, but the procurement of supplies was determined by some general official principles. Olive oil contracts could be established with specific dealers or producers, but olive oil as a product was not a free and neutral option. The reference to sandals, socks and underpants in military records from Vindolanda shows that army units had freedom to buy or procure such items, whilst Dressel 20 amphorae from the same camp indicate that officers used a military supply network to bring in a somewhat imposed product, olive oil.

Acculturation as a sociological model has ... been widely criticised

The Army and the Economy

For several decades, debate about the Roman economy has concentrated on the role of the market in the ancient world. History is always grounded on present-day ex-

periences and it is thus understandable that a divide between modernists and primitivists is today as relevant as one hundred years ago. The economic role of the army is a good example of the intricacies of the Roman economy and archaeology has been playing a unique role in producing evidence from Britain. Letters from the military frontier

outpost, Vindolanda, have been excavated and published, several of them dealing with economic exchanges. Some letters are entirely concerned with business and financial matters relating to the scale and delivery of commodities, replete of entrepreneurial initiative. This evidence of the

operation of a cash economy points to a large scale and sophisticated financial dealings in the second century northern frontier of the Empire. Records of cash, commodities and economic transactions were kept scrupulously by the military personnel. The range of goods available to ordinary soldiers was considerable and the unit operated an internal cash-commodity market in which purchases were carefully recorded, so much so that entrepreneurs and merchants must have thrived on the opportunities offered by the presence of the army.

The needs of the army were supplied by a combination of imports from the rest of the Empire and exploitation of the *territorium* close to the army camps. As for the imports, they were not imports in the modern sense, they were "conveyed into" from other areas (cf. Caes., B.G. 4, 2, *uinum ad se importari*). Bowman suggests that the letters from Vindolanda undermine any notion of an economy dominated by primitive methods of barter and indicate that the needs of military personnel were not simply met by an official system of requisition or compulsory purchase. Even

in modern times, armies are political institutions, not primarily economic ones. The market aspects of the presence of the army in Britain are not explained by the market, for the military were there for political reasons. The Roman army as a whole was a key political player and the organisation of the supplies to the troops was controlled or at least supervised by the state. The supply of Spanish olive oil is a case in point. In Baetica, the rural economy of the Baetis Valley was based on the specialisation in oleoculture, from the time of Augustus at latest. The spread of olive oil producing estates from Seville to Corduba was followed by the standardisation of olive oil amphorae through the administrative control of the potters. Amphorae were produced in dozens of kilns with the same capacity and shape and from Claudius onwards stamps and controlling painted inscriptions are known thanks to archaeological research.

Prices for oil were probably guaranteed in advance, transport costs were defrayed, merchants were offered tax incentives for olive oil transportation. The bulk production and trade in Spanish olive oil was then stimulated and organised by a controlled political redistributive system. The army was the backbone of the Empire and it is no surprise that whole areas of the Roman world flourished due to army needs. This is not to deny that Spanish olive oil was widely traded, exchanged on the market all over the Empire, but market trade was a side-effect of strategic olive oil production and transportation. The official transportation of Spanish olive oil to the troops facilitated the trade in oil and in part explains the success of Baetican oil in the whole Roman world.

The Archaeological Evidence from Britain: Dressel 20 Amphorae

Olive oil produced in Baetica, in southern Spain, was exported in large globu-

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lar storage vessels, Dressel's Type 20. They are also classified as Peacock and William class 25, Beltrán V, Ostia I and Callender 2. These amphorae were produced from at least the AD 40s until the AD 260s. They bore stamps which referred to *tria nomina* (olive oil producers, olive oil owners) and *figlinae* (producing kilns), as well as painted inscriptions containing controlling data on the weight of the vessel and of the olive oil, *tria nomina* in the genitive (the merchant), the *conuentus* capital, among other information. During the first stage of their journey, amphora cargoes were loaded on to river barges. Once these arrived at Hispalis, they were transferred onto large seagoing ships for the second stage. The large seagoing ships were owned by wealthy families, who run the trade as *societates*. Merchants were the middlemen between the olive oil producers and their clients, private and state alike. They bought and sold contracts for the transportation of oil to different destinations, among them Britain.

A sample of several hundred Dressel 20 stamps from Britain will serve

our purpose of showing the role of the Roman army in shaping the consumption of olive oil in the province. The British sites are split in three areas: the Southeast (SE), where there was an early army presence and later large cities, Wales and Hadrian's Wall areas, both strongly associated to the frontier and the presence of Roman troops. The administrative organisation of the Baetis Valley in southern Spain was grounded on a territorial division of the province into four *conuentus iuridici*. We do not know exactly when these *conuentus* were established in Baetica but most authors agree that they were organised some time from the last years of Augustus up to Claudius. It is thus most probable that the first Dressel 20 stamps were already produced under the *conuentus* divisions framework. 378 stamps from our sample can be linked to known potteries in Baetica, as well as 187 dies. Potteries can be clustered around geographical areas inside each *conuentus* and it is also useful to compare the number of potteries in each cluster and *conuentus* and the number and percentage of stamps exported to Britain:

	Stamps	%	Dies	%	Potteries	%
Hispalis	259	68.5%	123	65.7%	38	49.3%
1-2	16	4.2%	7	3.7%	2	2.5%
3-12	96	25.3%	40	21.3%	10	12.9%
13-33	141	37.3%	72	38.5%	21	27.2%
34-37	6	1.5%	4	2.1%	4	3.8%
Astigi	86	22.7%	42	22.4%	13	16.8%
39;62-71	70	18.5%	33	17.6%	11	14.2%
72	16	4.2%	9	4.8%	1	1.2%
Corduba	33	8.7%	22	11.7%	26	33.7%
38;40-61	28	7.4%	20	10.6%	23	29.8%
74	5	1.3%	2	1.0%	1	1.2%
Total	378		187		77	

Hispalis and Astigi potteries exported more than expected and Corduba less than the number of its kilns would imply. Hispalis exported 1.38 times more than expected (68.5% from 49.3% potteries) and Astigi 1.35, whilst Corduba was able to export only 0.25 times its theoretical percentage of the market (8.7% from 33.7% potteries). The number of stamps per pottery is a clear sign of these imbalances:

Hispalis (259 stamps from 37 potteries) = 7
 Astigi (86 stamps from 12 potteries) = 7.1
 Corduba (33 stamps from 24 potteries) = 1.37

Potteries from Astigi and Hispalis were able to export five times more stamps than their Corduba counterparts. If we extend this study to the areas within each *conuentus* some features are noticeable:

Hispalis	7
1-2	8
3-12	9.6
13-33	6.7
34-37	1.7
Astigi	7.1
39;62-71	6.3
72	16
Corduba	1.37
38;40-61	1.21
74	5

The area around Celti (potteries 34-37) produced much less stamps than the average for Hispalis potteries and Pesebres (#72) produced much more than expected in Astigi. We do not have enough data from other areas of the Empire to compare with those from Britain, but the catalogue of stamps from Germany by Remesal¹ enables us to compare at least some producing regions:

	Germany		Britain	
	# of stamps	%	# of stamps	%
Hispalis	276	76.45%	237	77.19%
3-12	106	29.36%	96	31.27%
13-33	170	47.09%	141	45.92%
Astigi	85	23.09%	70	22.80%
39;62-71	85	23.54%	70	22.80%
Total	361		307	

Considering that some producing areas were excluded from the original data from Germany, it is astonishing how similar the percentage in the two consuming regions are. Their differences are always under 2%. No less striking is the comparison with the data from Northern Gaul collected by Baudoux².

Out of 502 stamps from Britain, it was possible to link to potteries in Baetica 378, or 75.29%, whilst from 259 stamps from North France 206, or 79.5%, were possible to be linked to producing potteries, roughly the same percentage. Overall the two areas show the following features:

¹ Remesal, J., *La annona militaris y la exportación del aceite bético a Germania* (Madrid, 1986).

² Baudoux, J., *Les amphores d'Alsace et de la Lorraine: contribution à l'histoire de l'économie provinciale sous l'Empire Romain* (Strasbourg 1990), PhD dissertation.

	North Gaul		Britain	
	# of stamps	%	# of stamps	%
Hispalis	145	70.38%	259	68.5%
Astigi	43	20.8%	86	22.7%
Corduba	18	8.7%	33	8.7%

Once again, the difference is always under 2%. These similarities could thus be explained by long term economic and administrative links between western military frontier areas and Baetica. There were differences over time in the British olive oil consumption but overall we must admit that there were some general features which continued over time and affected the whole western frontier market place, where the presence of Roman troops was most important. Most notably, the relative weakness of export-

ers from Corduba should not be explained by a weak olive oil production in the area. More than a third of all potteries were located there and 19.9% of olive oil producing estates were also in the *conuentus cordubensis*. It is more reasonable to suppose that they exported more actively to other markets and were less strongly linked to the military *annona* supply network.

Only 339 stamps out of 431 of our sample, or 78.65%, can be dated and at the same time linked to a producing pottery:

	PR-FL	FL	ANT	III
Britain (dated stamps)	16.4%	35.4%	29.2%	18.7%
Britain (dated and from known pottery stamps)	5.6%	39.5%	30.9%	23.8%

Early stamps are much more difficult to link to a producing pottery in Baetica. If we study the distribution of

percentage of stamps per period and *conuentus*, we may observe some features:

	Hispalis	Astigi	Corduba
Britain	68.5%	22.7%	8.7%
PR-FL	68.4%	21%	10.5%
FL	72%	14.7%	13.2%
ANT	80.3%	17.7%	1.8%
IIIc	48.1%	45.5%	6.3%

The three *conuentus* share of the British market varies a lot with the passage of time. Hispalis increases its share from the start up to late second century but wanes later, shrinking to only two thirds of its average (48.1%, or 70.2% of its average of 68.5%). Astigi decreases its share from the early to the Flavian Hadrianic period and then in-

creases it to a very high 45.5% at the third century (200% above the average). Corduba exported reasonably from the early to the Hadrianic period, then under the Antonines did almost not export, but recovered and reached 6.3% in the third century.

There are some differences relating to the three British consuming areas:

	Hispalis	Astigi	Corduba
SE	68.5%	20.1%	10.3%
PR-FL	68.4%	21%	10.5%
FL	73.4%	12.2%	14.2%
ANT	74%	24%	2%
IIIc	54.5%	34%	11.3%
Wales	85.7%	12.2%	2.0%
PR-FL	-	-	-
FL	86.6%	9%	4.5%
ANT	90%	10%	-
IIIc	71.4%	28.5%	-
H's Wall	60.2%	34.6%	5.1%
PR-FL	-	-	-
FL	43.7%	37.5%	18.5%
ANT	83.7%	13.5%	2.7%
IIIc	32.1%	67.8%	-

At first glance it is possible to observe striking differences in the patterns of the three importing areas. Corduba exports to the Southeast is above the average, being less frequent in the military north and very rare in Wales. Hispalis exports well above the average to Wales and much less to the north. Astigi is a good exporter to the sites in the north but less effective in relation to Wales. If we consider now the different time periods, it is clear that Hispalis maintained its share of the southeastern market up to the third century when it declined to 54.5%. Astigi decreased in the Flavian-Hadrianic period but then increased to an apex of more than a third of the market in the late period. Corduba shows a steep decline in the Antonine period followed by a clear recovery.

Wales has always been dominated by large imports from Hispalis and even in the third century it is importing much above the average: 71.4% is 148.4% the 48.1% British figure. Astigi is only modestly present in the Flavian to late Antonine periods and its increase

in the third century does not reach two thirds of the overall British average (28.5% in Wales, 45.5% in Britain). Corduba is present only in the Flavian-Hadrianic period.

The sites at the north of Britain, where the military presence was overwhelming, show a completely different picture. Hispalis' exports to the area are weak in the beginning; they reach a very high 83.7% level at the Antonine period and then decrease to less than a third of the local market in the late period. Astigi exports a lot in the Flavian-Hadrianic period, with more than a third of the stamps found there, declines to only 13.5% in the Antonine period but then reaches an apex of more than two thirds of all stamps (67.8%). Corduba exports a lot in the Flavian-Hadrianic period, declines drastically in the later second century and then finally disappears.

We should now study the same data from a different standpoint, considering the three *conuentus* separately. 235 dated stamps are from Hispalis:

Hispalis=235 stamps	SE		Wales		Hadrian's	
	#	%	#	%	Wall #	%
PR-FL	13	8.9%	-	-	-	-
FL	72	49.3%	19	45.2%	7	14.8%
ANT	37	25.3%	18	42.8%	31	65.9%
IIIc	24	16.4%	5	11.9%	9	19.1%
Total	146		42		47	

PER PERIOD:

PR-FL	100%	-	-
FL	73%	19%	7.1%
ANT	43%	20.9%	36%
IIIc	63.1%	13.1%	23.6%

Almost three quarters of Hispalis exports were arriving at the Southeast in the Flavian-Hadrianic period, 19% at Wales and only 7.1%, or one tenth of those reaching the Southeast, to the northern sites. During the Antonine period the percentage of exports to Wales is almost the same, but it

decreases in the Southeast, while it increases a lot in the North: the difference between these two areas are not big (43% to 36%). In the third century there is a new upsurge of amphorae going to the Southeast and a decline in the two other areas.

Astigi shows a different pattern:

Astigi=69 stamps	SE		Wales		Hadrian's	
	#	%	#	%	Wall #	%
PR-FL	4	11.1%	-	-	-	-
FL	7	19.4%	2	33.3%	3	11.1%
ANT	10	27.7%	2	33.3%	5	18.5%
IIIc	15	41%	2	33.35	19	70.3%
Total	36		6		27	

PER PERIOD:

PR-FL	100%	-	-
FL	58.3%	16.6%	24.9%
ANT	58.8%	11.7%	29.4%
IIIc	41.6%	5.5%	52.7%

It is interesting to note that Astigi exports always increased in total number of stamps both to the Southeast and to the Northern sites (4,7,10,15 and 3,5,19 stamps). This means that, even if its share of the British market was not

always increasing, as other areas were also enhancing their exports, it was constantly sending more olive oil to the province.

Astigi exports to the three British areas per period:

	Total number of stamps from the three consuming areas	Increase in relation to the previous period (%)
PR-FL	4	-
FL	12	300%
ANT	17	141%
IIIc	36	211%
Total:	69	

If we consider the number of stamps in each period per year the same trend is also clear:

PR-FL	4	0.15
FL	12	0.17
ANT	17	0.31
IIIc	36	0.61

If we consider now the share of the British market, Astigi declined almost constantly in the Southeast up to 41.6% in the third century, and decreased also in Wales in a very stable way, from 16.6% to 5.5%. However, it exported always more to the northern British sites, sending a quarter, almost a third and more than half of the amphorae from Astigi to the Hadrian's Wall area from Flavian to third century periods. There are reasons thus to suppose that there were increasingly close ties linking northern Britain

and Astigi potteries, probably because Astigi producers were in close relationship with *annona* officials. Baudoux³ refers to the fact that the production from the area around Las Delicias in the third century was particularly linked to Northern Gaul, but it was only marginally present at Augst. There was thus a special link between these northern European areas and the Roman troops stationed there and specific producing areas in Baetica.

Corduba shows a completely different pattern:

Corduba=35 stamps	SE		Wales		Hadrian's Wall	
	#	%	#	%	#	%
PR-FL	2	6.6%	-	-	-	-
FL	20	66.6%	1	100%	3	75%
ANT	1	6.6%	-	-	1	25%
IIIC	7	23.3%	-	-	-	-
Total	30		1		4	

PER PERIOD:

PR-FL	100%	-	-
FL	83.3%	4.1% ¹	12.4%
ANT	50%	-	50%
IIIc	100%	-	-

³ Baudoux, J. *Les amphores d'Alsace et de la Lorraine: contribution à l'histoire de l'économie provinciale sous l'Empire Romain* (Strasbourg 1990), PhD dissertation.

Corduba stamps are very rare in Wales and not common at the northern sites, two military areas. Corduba exports to the Southeast increased up to an apex at the Flavian-Hadrianic period and then returned modestly only in the third century. It is possible to suppose that Corduba exporters were less successful than others, particularly in comparison with those from Astigi, to deal with military frontier markets. The concentration of wealth produced from the olive oil trade contributed to the construction of a major sanctuary complex at Munigua and the expansion undertaken at Italica, a city neighbouring Hispalis. Dur-

ing the Flavian period and the first half of the second century AD, these were physical manifestations of the wealth generated by olive oil trade.

Almost three fourths of all Dressel 20 from Britain studied here can be precisely dated (431 out of a total of 582 stamps, or 74.05%). The four chronological divisions were chosen considering the available data on the Dressel 20 stamps and they range from a short 26 year period (Pre-Flavian) to a long 68 year period (Flavian-Hadrianic), going through a mid to late second century period (54 years) and ending with the third century (59 years):

	PR-FL	FL	ANT	IIIc
Britain=431 stamps	71	153	126	81
%	16.4%	35.4%	29.2%	18.7%
SE=290 stamps	71	113	59	47
%	24.4%	38.9%	20.3%	16.2%
Wales=51 stamps	-	22	22	7
%	-	43.1%	43.1%	13.7%
Hadrian's Wall=90	-	18	45	27
%	-	19.9%	49.9%	29.9%

Britain as a whole imported more Spanish olive oil in the Flavian-Hadrianic period thanks to the Roman expansion towards Wales and to the north of the province, as these two areas were settled later than the three main cities in the Southeast, London, Colchester and St. Albans. In these towns, the importation declined steadily until the third century, which

witnessed a decline in Dressel 20 importation in the three areas alike. Samples from London and St. Albans show their similar patterns (15% in London and 15.7% in St. Albans dated in the third century AD). If we compare the overall number of stamps with those of different brands or dies we will notice some minor differences:

	PR-FL	FL	ANT	IIIc
Britain=196 dies	26	67	71	32
%	13.2%	34.1%	36.2%	16.3%
SE=115 dies	26	42	30	17
%	22.6%	36.5%	26%	14.7%
Wales=33 dies	-	13	13	7
%	-	39.3%	39.3%	21.2%
Hadrian's Wall=48	-	12	28	8
%	-	24.9%	58.3%	16.6%

Comparing the two sets of data, it is a striking fact that almost the same percentage of dies can be dated (196 out of 260, or 75.38%) and in general the figures are quite similar. The main differences refer to the Antonine period, as a higher percentage of dies are datable in relation to the stamps and this can be explained by the fact that a larger number of Antonine dies are known, mostly thanks to the evidence from the Testaccio, at Rome. The same explanation applies to the opposite picture in the early period: pre-Flavian dies were not found until now at the Testaccio and the surface surveys in Baetica naturally produced more dies from later rather than earlier date. This explains also the differences among the three areas in relation to stamps and dies:

	Samps %	Dies %
SE	67.2%	59.2%
Wales	11.8%	16.5%
H's Wall	20.8%	24.1%

Another related feature is the number of stamps per die, much higher in the Southeast (2.4 stamps per die) than elsewhere (1.8 in the Hadrian's Wall region and 1.5 in Wales). This imbalance could be explained by the fact that a larger sample will probably produce more stamps per die but we should also suppose that, as the three cities in the Southeast were importing more amphorae, they received more olive oil jars with the same mark than elsewhere.

It has been traditionally thought that the golden age for the exportation of Spanish olive oil to the western provinces was the second century. It is difficult to dispute the importance of the second century importation but it is also clear that the Flavian-Hadrianic period adopted here, even though it includes 31 years of the late first century AD, did not produce the same amount of stamps per year as the early period:

	PR-FL	FL	ANT	IIIc
	26 years	68 years	54 years	59 years
Britain=431 stamps	71	153	126	81
%	16.4%	35.4%	29.2%	18.7%
Stamps per year (average:2.08)	2.7	2.25	2.33	1.37
% of stamps per year (average:0.48%)	0.63%	0.52%	0.54%	0.31%

There was thus a decrease of imports, even more remarkable if we take into account the fact that the number of sites, and, hence, pre-

sumably of consumers, increased at least up to the end of the second century. Considering the dies, there are some differences:

	PR-FL	FL	ANT	IIIc
Britain=196 dies	26	67	71	32
%	13.2%	34.1%	36.2%	16.3%
Dies per year (average:0.71)	1	0.98	1.31	0.54
% of dies per year (average: 0.48)	0.50%	0.50%	0.67%	0.27%

The Antonine period produced much more dies per year than the other periods, indicating that more suppliers were active at the same time at that time. The market was shared by a record 71 known producers and this was really an apogee, as the third century witnessed a steep decrease in the number of exporters (32 or only 0.54 per year). It is reasonable to suppose that the high number of Antonine dies found in Britain, as elsewhere, is at the root of the guess by Williams and Peacock⁴ that this epoch

represented the importation apex. It is now clear that the Spanish olive oil importation summit was just at the beginning of its importation into Roman Britain, when the presence of Roman troops was at its height. The sheer number of Baetican exporters increased up to a maximum attained in the Antonine period.

If we turn our attention to the three different British regions, it is possible to observe their different consumption patterns through time:

	PR-FL	FL	ANT	IIIc
SE (207 years)				
Stamps per year (average:1.40)	2.7	1.6	1.0	0.79
% of stamps per year (average:0.48%)	0.93%	0.57%	0.38%	0.27%
WALES (181 years)				
Stamps per year (average:0.27)	=	0.32	0.40	0.11
% of stamps per year (average:0.55%)	=	0.63%	0.79%	0.23%
HADRIAN'S WALL (181 years)				
Stamps per year (average: 0.49)	=	0.26	0.83	0.45
% of stamps per year (average: 0.55%)	=	0.29%	0.92%	0.50%

⁴Williams, D.E., and D.P.S. Peacock, 'The Importation of Olive Oil into Iron Age and Roman Britain', in M. Blázquez and J. Remesal (ed.), *Producción y comercio del aceite en la antigüedad* (Madrid 1983) 263-280.

The three regions show completely different patterns. The three south-eastern cities declined their Dressel 20 imports very steadily, despite the fact that their population increased at least until the Severan period. It is thus clear that the presence of Roman troops was instrumental for olive oil consumption in the province. At the Antonine period, we have 2.7 times less stamps per year than at the early period, reaching 3.4 times less in the third century. Wales increased somewhat from Flavian to Antonine periods,

declining a lot in the third century (3.6 times less than at the Antonine apex and 2.9 times less than at the Flavian-Hadrianic period). The northern sites increased their importation at the Antonine period but the decline in the third century was much milder than elsewhere and indeed they imported 1.7 times more in the third century than in the Flavian-Hadrianic period.

Before trying to explain these different patterns, it is useful to consider the destinations of the imports per region and per period:

	PR-FL	FL	ANT	III
SE	100%	73.8%	46.8%	58%
WALES	-	14.2%	17.4%	8.6%
H'S WALL	-	11.7%	35.7%	33.3%

The Southeast consumed almost three fourths of all Dressel 20 importations in the Flavian-Hadrianic period and Wales imported more than the northern sites. In the Antonine period there is a decline in the share of the Southeast, an increase in the participation of Wales and a boom of importation in the North, increasing its share more than three times (3.05 times, from 11.7% to 35.7%). The third century witnessed a modest recovery in the Southeast importation levels, a

very small decline in the northern sites and a marked shrinking of Welsh imports, importing two times less (from 17.4% of the British market to only 8.6%). It is possible to suppose that the military character of the sites in the northern frontier is to explain a more steady importation of Spanish olive oil.

If we consider the percentage of dies per period we can note some remarkable differences in relation to the percentage of stamps:

	PF-FL	FL	ANT	IIIc
SE	100%	62.6%	42.2%	53.1%
WALES	-	19.4%	18.3%	21.8%
HADRIAN'S WALL	-	17.9%	39.4%	25%

The most noticeable difference refers to Wales, as the Welsh sites decreased the sheer number of amphora imports from Antonine to the third century but increased their share of the brands market in the same period. Wales imported only 8.6% of all third century stamps but its 21.8% share

of the dies indicate that the Welsh sites, even though importing less than before, were able to have access to a wide variety of exporters from Baetica.

Of a total of 431 stamps which can be precisely dated, 343 can also be assigned to a producing pottery in Baetica:

	PR-FL	FL	ANT	IIIc
Britain=431 stamps	71	153	126	81
%	16.4%	35.4%	29.2%	18.7%
Britain=343 stamps (from known potteries)	20	135	109	79
%	5.8%	39.3%	31.7%	23%

As it should be expected, early stamps are less often found in the surface surveys in the Guadalquivir valley and, as a result, it is more

difficult to link early stamps to known producing potteries in Baetica. The later the stamp, the easier to link it to a producing pottery:

	PR-FL	FL	ANT	IIIc
# of stamps	71	153	126	81
# of stamps from known potteries	20	135	109	79
ratio of the two figures	3.55	1.13	1.15	1.02

Flavian-Hadriatic and Antonine figures are so similar that they do not seem to change the overall trend. Elizabeth Lyding Will⁵ proposed that 'the oil industry developed in general from West to East along the Guadalquivir...as world demand for oil increased, olive groves farther and farther away from the mouth of the river provided oil, and kilns located farther from the sea filled the demand for export containers. If this is true, we should suppose that the early olive oil producers were established in and around Italica and Hispalis, areas particularly hit by floods. The destruction of early amphora kilns could explain at least partially the fact that early stamps are of-

ten impossible to link to any of the known potteries in the Guadalquivir valley. It is interesting to note that from Hispalis up to Canania, some sixty kilometres to the Northeast, there are only two out of 77 known potteries, or 2.59%, but there are twenty olive oil producing estates out of a total of 75, or 26.6%, in the same region⁶. Potteries were located at the banks of the Baetis river, being easily affected by floods, whilst the farmsteads were usually located in the hinterland and thus were more easily preserved in this area.

Considering now the dies, we should note that the features are not different from those relating to the stamps:

	PR-FL	FL	ANT	IIIc
Britain dies %	13.2%	34.1%	36.2%	16.3%
Britain dies from known potteries %	5.5%	37.2%	39.1%	18%
Ratio (number of dies/number of dies from known potteries)	2.8	1.11	1.12	1.10

⁵ E.L. Will, 'Exportation of Olive Oil from Baetica to the Eastern Mediterranean', in M. Blázquez and J. Remesal (edd.), *Producción y comercio del aceite en la antigüedad* (Madrid 1983).

⁶ Fernández, M.C., 'Fábricas de aceite en el campo hispano-romano', in J.M. Blázquez and J. Remesal (edd.), *Producción y comercio del aceite en la antigüedad* (Madrid 1983) 569-600.

Considering the three different British areas, the data show some noticeable features:

	Stamps %	Dies %	Stamps from known potteries %	Dies %
SE	67.7%	59.2%	62%	52.1%
Wales	11.8%	16.5%	14.2%	20.4%
H.'Wall	20.8%	24.1%	23.6%	27.3%

As a result of the presence of early stamps in the Southeast, most of them still difficult to link to potteries in Baetica, Southeast percentages of stamps and dies from known kilns are smaller than they

should otherwise be. The opposite effect heightens the percentages of later Welsh and Northern sites, military areas.

If we consider each period, the picture is not much different:

	PR-FL	FL	ANT	IIIc
All dated stamps				
SE	100%	73.8%	46.8%	58%
Wales	-	14.3%	17.4%	8.6%
H.'s Wall	-	11.7%	35.7%	33.3%
Stamps from known potteries				
SE	100%	71.8%	47.7%	55.6%
Wales	-	16.2%	18.3%	8.8%
H.'s Wall	-	11.8%	33.9%	35.4%

London is the only site in Britain which produced enough contextually dated

stamps to consider their distribution in time periods:

	PR-FL	FL	ANT	IIIc
# of stamps	13	11	2	6
%	40.6%	34.37%	6.2%	18.7%

These data mean that accurate dating was much easier in relation to the early period and this fact also helps to explain the high number of early stamps which were possible to date. At Avenches, one of the few sites with enough Dressel 20 stamps to enable a comparison, 32 stamps were contextually dated in the first cen-

tury and only 12 in the second (a ratio of 2.6 to 1). If we try to compare Britain with another large area of the Empire, probably the best case is Northern Gaul. Juliette Baudoux collected 245 Dressel 20 datable stamps from the Northeast of France and we can compare her data with those published here:

	PR-FL	FL	ANT	III
Britain	71	153	126	81
%	16.4%	35.4%	29.2%	18.7%
NE				
France	12	100	97	36
%	4.9%	40.8%	39.5%	14.7%

The differences in the Flavian-Hadrianic and Antonine periods in the two areas are explained, at least partially, by the fact that Baudoux uses a different chronological framework (Flavian-Trajanic = 40.8%; Mid-second century = 28.5%; second half of the second century = 11%). Therefore, it is most interesting to note the importance of early stamps in Britain in contrast to what happens in Northeast France. Recently, Peter Marsden and B. West⁷ proposed that there was a decline in urban population in Britain in the second and third centuries. Even though we cannot be sure about that, it is clear that there has been a substantial military presence which encouraged associated civilian settlement by AD 60/61 in the Southeast. The army was thus essential to explain the importance of the early Spanish olive oil imports.

Concluding Remarks

The archaeological evidence from Britain suggest that Spanish olive oil was distributed through a supply system mingling official channels and private enterprise. Traditional literary sources were simply not concerned with olive oil consumption by different social strata in the periphery of the empire and the archaeological evidence is thus unique and irreplaceable. Furthermore, modern analytical discourses grounded on ancient literary prejudices can be challenged by independent new, archaeological evidence. Dressel 20 stamps serves this purpose quite well. The highly

specialised military system of supply was not a simple and direct response to market demand. The free market was intertwined with political redistribution, most probably through the *praefectura annonae* at Rome but also at the level of military units establishing contracts with single producing areas.

A post-processual, contextual archaeological approach is useful for understanding in a critical way the use of olive oil in Britain. Power relationships, expressed in terms of concepts such as domination and resistance, inequality, the colonisers and the colonised and so on, have been a central focus of archaeological research over the last decade. The active role which the material world plays in discourses of power and identity is clear in the case of olive oil in Britain. People's identity and position in the world were linked to olive oil in different ways.

Olive oil was a potent symbol of a dominant power, particularly as it was part of a military supply network. Olive oil was used for cultural reasons. In Britain, it probably meant first and foremost a symbol of voluntary or otherwise adherence to the Roman empire. The Roman army played a pivotal role in this respect, as its supply network helped to expand Roman values and mores. For soldiers from northern lands and for native Britons, the use of olive oil was first and foremost a statement of allegiance.

The army was thus essential to explain the importance of the early Spanish olive oil imports

⁷ Marsden, P., and B. West, 'Population Change in Roman London', *Britannia* 28 (1992)133-140.

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