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## Recording the loads at La Graufesenque?

by Geoffrey Dannell<sup>1</sup>

Catherine's interest in samian ware is well-known (see the list of her published works), as is her sense of fun, so this little contribution may amuse her, and pose questions, which will hopefully lead to lively debate. My relationship with Don has been less close, by nature of our differing interests, but his work on Roman lamps contains a direct artistic relationship to that on decorated samian ware. A number of the motifs in those with discus scenes are very close to ones found on South Gaulish ware, which suggests a common inspiration, or copying from one to another<sup>2</sup>.

The organisation of the kiln-loads at La Graufesenque reveals that the potters used a decimal system of counting, although one or two instances of vessel size employed the duodecimal system<sup>3</sup>. The majority of the so-called graffiti are badly broken, and incomplete. Nevertheless, there are many complete lines, which describe the name of the individual who is presumed to have entered the pots to the kiln, the shape of the vessel put in, its size and quantity. Thirty-six lines do not have a decimalised quantity, and of these all but a few are not counted in fives (Table 1)<sup>4</sup>. This suggests that the base unit was indeed five – after all the easiest non-mechanical counting unit, using the digits of the hand.

However, two of the lines (nos 1 and 27) concerned contain some thousands of vessels, and numerous others have hundreds. To count to five is easy, to separate piles of vessels into fives or tens is equally simple; however, to keep track of these quantities thereafter is more difficult, and it is likely that there were personnel available,

perhaps the scribes themselves, who could use the Roman calculator - the abacus.

Some years ago I worked with the samian ware from Exeter. Much was published (Dannell 1991), but sherds of little stratigraphic or intrinsic interest were not. The rubbings remained in my files. However, recently they emerged from their hiding place to be scanned for a project aimed at recording all decorated samian forms which have an ovolo extant. What I said when I saw the enlarged scan on the screen of the sherd under discussion is not printable; it was certainly a surprise!

What remains of the figure (Fig. 1, a) is not clear, but it looks similar to Jupiter, Hermet 122B (Hermet 1934; see also Oswald 1937, O. 8). It is not the same poinçon, because the angle of the bent left arm differs (Fig. 1, b). The face, although difficult to discern, seems to be that of a thick-set male with blunt features. Some hair is just visible on the back of the head. Drapery can be seen from the waist down. Unfortunately the upper torso is heavily smudged.

The details on the Exeter Drag. 37 are flattened; and it looks as though the mould was worn at the time that the bowl was cast, so other examples of the basic bowl should exist. Below a double-bordered ovolo, which ends in a trident tip tucked under the egg towards the left, is a male figure apparently holding a frame of some sort. Set into a cartouche towards the bottom is some writing, in Gaulish(?) lettering.

The ovolo (Fig. 2, a) was used in moulds associated with the names of a number of potters. There may have

<sup>1</sup> 28 Main Street, Woodnewton, Peterborough PE8 5EB.

<sup>2</sup> Compare with Bailey 1980, O60 & 61, Leda and the Swan (Q871, Q1304 & Q1359); O1489, a lion attacking a mule, (Q866); and with Bailey 1988, for a winged Jupiter shown from the Cala Culip wreck (Nieto & Puig 2001, Abb. 36), and the gladiator scene, O1020 & 1021 (Q1495).

<sup>3</sup> Marichal 1988, 92-3.

<sup>4</sup> The vessel list is interesting. Of the descriptions extant, six are of *mortari*, five of *pannas*, while there are single examples of the rare vessels, *imbratari*, *catini* and *fiscos*. Eleven are described as being *pedales*, and the majority of the rest have sizes or some qualifying adjective (see Lambert 2002, 114 for a discussion of *sattla*). These various qualifying adjectives suggest that one is really looking at more specialised or valuable vessels, manufactured in smaller quantities. The only mystery is the enigmatic line, written on the exterior of n° 99, with its 3925 vessels. Note that on Marichal's graffito 11 the number of *atrimitari* is 325 (1988, 131), whereas in his summary of "*chiffres remarquables*" (1988, 279) it is given as 450.

Serial No.	Graffito	Item on Graffito	Potter	Vessel & Size	Number	Arabic	Notes	Vessels	Sizes
1		Item 5	Albanos	panias	(1)XXV	1025		pannas	
2	2	Item 4	Regenos	pe...	XXXV	35			pedales
3	3	Item 5	Cornutos	mortari S	CXXV	125		mortari	S
4	5	Item 5	Masuetos	mortari] pedalis	LV	55		mortari	pedales
5		Item 8		inbratari	CXV	115		imbratari	
6	7	Item 6	Verecundos	mort[ari peda[alis	CXXV	125		mortari	pedales
7	8	Item 2		...ped[	LV	55			pedales
8	11	Item 2	Mansue]tos	canastr[? Pedali	LV	55		canastr[	pedales
9		Item 9		]Atrami]ari	CCCXXV	325		atramitari	
10	16	Item 3	Uere]ecundos	mo] peda]	CV	105		mortari	pedales
11	19	Item 10	Felix	catili	LIII	53		catili	
12		Item 12	T]ritos	licu]ia	LXXXIV	84		licuia	
13	20	Item 3	Ue]recundos	mor]tari S	CCCLXXXV	385		mortari	S
14		Item 5	Masuetos	uinari]us	CCCXXV	325		vinari	
15		Item 6	Ue]recundos	.....pedalis	CLXV	165			pedales
16		Item 8	Ma]suetos	pannas S	DCCCLXV	865		pannas	S
17	22	Item 3		catilus?] pedalis	LV	55		catili	pedales
18	23	Item 4	Masuetos	mor?] pedalis	LV	55		mortari	pedales
19	24	Item 4		catili?] = =	CCCLXXV	375		catili	= =
20	25	Item 3		catinos = =	CLXXV	175		catini	= =
21		Item 7		uinaria	LXXV	75		vinari	
22	30	Item 3	Coppius	pannae sattla	XVII	17		pannas	sattla
23	32	Item 1	Teti]us	iscos pedalos	LV[	55+		f]iscos	pedales
24	58	Item 3	Qu]		..XXXVIII	...34			
25	60	Item 5		is	LXXV	75			
26	89	Item 13	Siluiinos]	catili	CDXLV	445		catili	
27	99	Item 11			IIII DCCCCXXV	3925	Exterior		
28	101	Item 1			...IV	...4			
29	110	Item 2			DC XII	612			
30		Item 3			XXX IIX	308			
31		Item 4			XXX IIII	304			
32	147	Item 1			V	5			
33	163	Item 4		]sattla	LX VIII	68			sattla
34	165	Item 5		]trientes	XXXV	35			trientales
35		Item 6		pannas S =	CXXV	125		pannas	S =
36		Item 7		pannas?] pedales	XXXIII	33		pannas	pedales

Table 1 — Vessels not counted in decimal values on the graffiti from La Graufesenque.

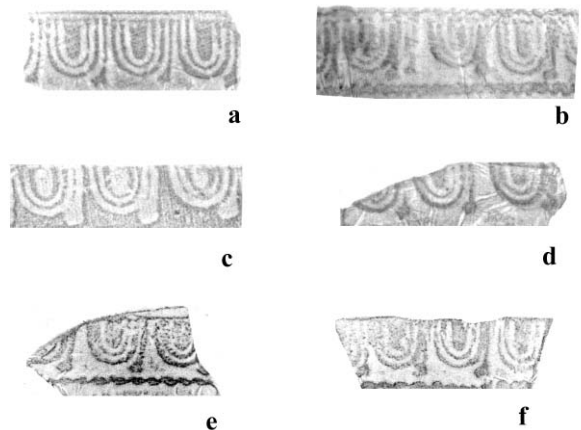
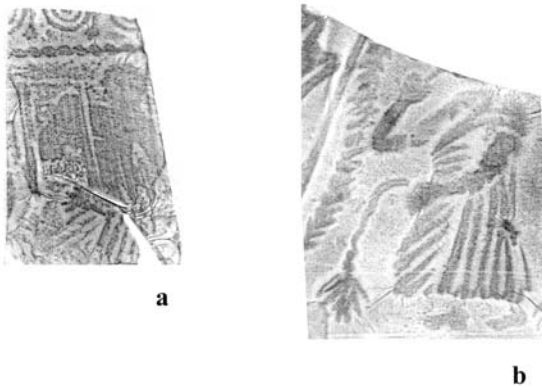


Fig. 1 — a...Exeter QS 365; b...Hermet 1934, pl. 69.7.

Fig. 2 — a...Clear example of the ovolo type from a Drag. 30 (La Graufesenque, unmarked); b...Memor ovolo; c...Secundinus i ovolo; d...Tetlo ovolo; e...Primus iv ovolo; f...Mo]mmo] ovolo.

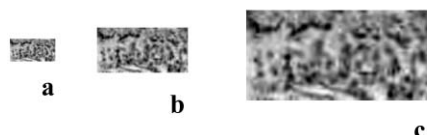


Fig. 3 — Cartouche: a...at 1:1; b...at 2:1; c...at 4:1.

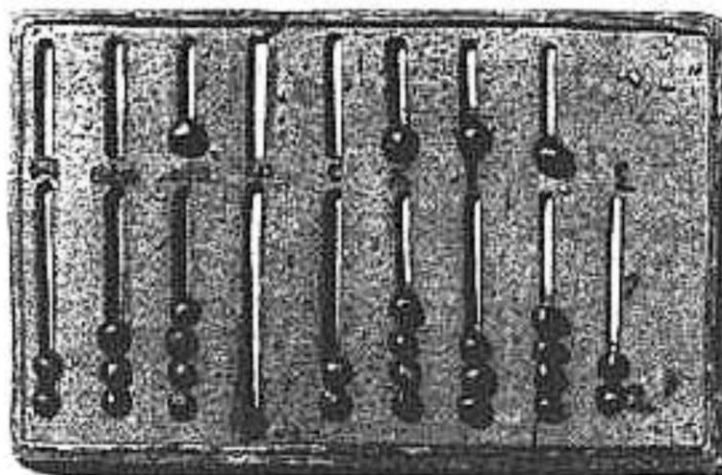


Fig. 4 — Roman hand-abacus in bronze.

been more than one version, or just one that became degraded with time. It appears with the signatures of Memor<sup>5</sup> (Fig. 2, b), Secundinus i<sup>6</sup> (Fig. 2, c), and Tetlo<sup>7</sup> (Fig. 2, d) from La Graufesenque, and Primus iv<sup>8</sup> (Fig. 2, e) of the Lot Valley group. A mould-stamp of Mo[mmo]<sup>9</sup> (Fig. 2, f) of La Graufesenque is also known to be associated with it.

A sizeable rectangular frame has been superimposed over the figure's right arm, which can still be seen underneath. This is in the form of a 'cartoon' addition to the demoulded vessel, scribed while the clay remained soft, and before the slip was applied. The frame is clearly of wood, with the short sides extending over the upright, which carries the tenon to the joint. The uprights are carefully depicted, carved with lineal mouldings. The frame is supported by the figure's left hand, the fingers being clearly shown. The object concerned can be seen through, it is not solid. It is unlikely to be a lyre, those are carefully depicted on other poinçons. First, it is the wrong shape, and Oswald shows clearly that the correct shape was known at La Graufesenque<sup>10</sup>. Other frames like those for windows, or for making bricks or tiles are possible, but the decoration on the uprights suggests that this object was crafted, rather than one of solely utilitarian value.

However, it is what is on the frame, or board, which is intriguing. Just below the elbow of the right arm is a patch

of what appears to be roughness, but on magnified inspection, is a small, depressed series of letters (Fig. 3, a-c). This means that they were also inscribed onto the bowl after it was demoulded, otherwise, they would have been written into the mould, and would appear raised in retrograde on the bowl. There are probably five or six characters beginning with something that looks like a B and ending with a fairly clear U. The third letter may be a D. All of these letter forms are shown by Marichal<sup>11</sup>. Unfortunately, the vowel which should be the second letter is not clear, an A is possible but far from certain.

So what appears to be represented is a man carrying a frame-like object, with a tag, which may identify either the object or more likely the name of the person. Given the fact that these scribings are freehand additions, it might reasonably be presumed that they form a vernacular joke or comment. There is one object which would fit the situation - that of an abacus being used to record batches of pots as they were entered to the kiln. It seems that small receipts inscribed on clay were issued for each batch<sup>12</sup>.

The Roman hand-abacus is well known (Fig. 4). It is rectangular, having its long side at the top, unlike the shape shown on the current example. However, it seems intrinsically unlikely that the hand version would have been used amidst the dust and dirt surrounding a kiln. It would have been more suitable for the market-place, for

<sup>5</sup> See Atkinson 1914, Pl XIV.74 (there wrongly read as Sasmomos) on Drag. 37.

<sup>6</sup> La Graufesenque (Depôt de Fouilles, G 65-72), mould, on Drag. 37.

<sup>7</sup> La Graufesenque (Depôt de Fouilles, 88 V66 2), on Drag. 37.

<sup>8</sup> Camelon 1975, (1E & Site A HM X 5/10 /103\ ) on Drag. 37; my thanks to Brenda Dickinson for this rubbing.

<sup>9</sup> Die n° 11a, Museum of London (formerly London Museum) L 6205), on Drag. 37; again thanks to Brenda Dickinson; compare with Knorr 1919, Taf. 59A.

<sup>10</sup> For example, O. 73-87.

<sup>11</sup> Marichal 1988, 21-46. R. Tomlin (pers. comm. for which many thanks) commented, 'I can see the β and the δ, but that the form of the latter is the way we envisage it today, rather than how it would have been written in the 1<sup>st</sup> century. It is tempting to think of a BODVO- name, but no, I don't really have any ideas'. However, see Marichal 1988, 28 n°7 for a comparable delta letter type.

<sup>12</sup> Babelon & Blanchet 1895, 645, n° 1925; there is another good example in the collections of the Museo Nazionale in Rome.

<sup>13</sup> See the delightful relief from the Musée du Louvre in Bonner 1977, fig. 13.

commercial transactions, or the school house<sup>13</sup>. Early versions of the abacus (literally ‘a table’, probably a sand table, but later inscribed on marble), are known in Greek contexts<sup>14</sup>, and these, unlike the hand abacus, have the short side at the top<sup>15</sup>.

The methodology for using the abacus is carefully explained by Mabel Lay (1957)<sup>16</sup>. She questions whether it was used principally for multiplication, or rather for simple addition. Her discussion of the quinary-decimal abacus (1957, 281) is clearly relevant to the quantification at La Graufesenque.

The exactitude with which the potters recorded their firings seems to indicate that this record-keeping was an essential part of the commercial activity associated with the kiln. Since the quantification is given together with the size and type of vessel fired, it is a reasonable conclusion that the sums relate to either the filling of the kiln, or commercial orders, or both.

Increasing knowledge of the vocabulary used repetitiously in graffiti from different kiln sites, suggests that for samian at least, there was one known both in the potteries and by those who ordered<sup>17</sup>. Perhaps this reflects the original influence of the army in stating its requirements<sup>18</sup>.

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<sup>14</sup> See Daremberg & Saglio 1877, Tome 1 A-B, 1-3, fig. 3.

<sup>15</sup> *Ibid.*

<sup>16</sup> Lay 1957 deals principally with Greek flat-table and pebble types, but she points out that the modern oriental abacus is short-topped (277) and notes particularly the calculation shown on a Greek abacus (278) where the room for addition would seem to favour a short-topped model.

<sup>17</sup> See Bohn 1927 for Blickweiler, Johnston 1985 for Arezzo, & S. Menchelli (pers. comm. at the Pegasus conference, 2004) for Pisa.

<sup>18</sup> See Wild 2003, 42-3 for descriptive terms used for military requisitions of textiles in Egypt. The army, from wherever it bought, and however many intermediaries were involved, would have wanted to know exactly what it was getting.