Mancetter Cherry Tree Farm Mortaria Report by Rowan Ferguson

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The Mortaria

Introduction

Through detailed study of a large group of material and, in particular, careful quantification of this group it was hoped to gain new information about both the technical and stylistic aspects of mortarium production. Although, in the case of the ditch, contexts were only sampled (see excavation report for explanation of sampling strategy) there was no post-excavation selection of the pottery; all excavated material was processed. This is the only basis from which any reliable quantitative work can be done.

The pottery was processed and recorded on forms devised by Mrs Hartley and Paul Booth (see microfiche). Different approaches were adopted when dealing with unstratified material or that from topsoil from when stratified groups were under consideration:

- Stratified material was sorted into two fabrics with subdivisions based on intensity of firing. These 'fabrics' will be further discussed below and detailed descriptions appear in the microfiche. It was felt that the subdivision might provide useful information about the waster population of the site.

- After initial sorting into these fabrics the material was quantified in four different ways: by number of sherds, weight, minimum number of vessels (calculated by rim count) and by estimated vessel equivalents – EVES (also based on rims). Rim type and diameter, base diameter, vessel height, spout type, trituration type and details of stamps, where present, were also recorded.

- Topsoil groups and unstratified material were processed in a more cursory fashion because of the necessity of finding a relatively rapid method of dealing with the topsoil groups (which were recorded by grid squares) as these represented large quantities of material but ones from which the information which could be gained was of a limited nature. Nevertheless it was felt that the study of the topsoil might provide information over a wider area than the immediate vicinity of the kilns (the only parts of the site excavated in detail).

- The method adopted for this material consisted of using less detailed gradations of fabric (amalgamating the overfired 802 and the optimum fired 803 in Group 1 as these were the two most difficult to separate) and then sorting by rim type within fabric. Bases and body sherds were treated together, separately from the rim sherds. The only method of quantification used for this material was weight.

Although every effort has been made to use EVES as the means for calculation of the statistics provided in this report this was, of course, not possible when dealing with the topsoil material or when giving overall totals. The total quantity of pottery analysed from the two areas was just over one metric tonne (1120, 541kg) of which 89% came from MC83 and 46.6% (552, 251kg) from topsoil or unstratified contexts.

After detailed quantification of the material various hypotheses were tested against it with the aim of gaining maximum information about the technical skills of the potters, isolating any stylistic details peculiar to the products of these kilns and determining the chronology of the site.

1. Technology

Almost all the mortaria from both MC83 and MH83 were wheelmade. The only exceptions to this were the two very large handmade vessels which were built into the structure of Kiln 5 (vessel nos. 125 and 127). The trituration grits used in the mortaria made in these kilns were a mixture of re-fired pottery with some quartz (trituration types 2, 3, 4, 5 and 6. See pp above). There was no discernible variation between the two areas on this account. All the bases showed signs of having been removed from the wheel with a cheese-wire (vessel no. 118).

As mentioned above, the material was sorted and quantified by fabrics distinguished by intensity of firing. These are best explained in the following way:

Overfired	optimum firing	underfired	
802	803	804	(Group I)
801		805 and 806	(Group II)

The Group I fabrics (which dominate the assemblage – see Table A) are the typical white/buff Mancetter-Hartshill fabric. The Group II fabrics have been made in a clay which is not white-firing, producing a slight orange tint in Fabric 805 and a heavy grey exterior with a dark red core in the overfired Fabric 801. Fabric 806 is a slight oddity in that it presents a marbled appearance (vessel no.195) where a white-firing and an orange-firing clay have been imperfectly mixed together. The Group II fabrics represent only a very small proportion of the total (6.4%). I would suggest that this group does not indicate a deliberate policy of manufacturing mortaria which were not white but rather the accidental use of a clay which contained some iron. This may have been the result of some pedological phenomenon such as iron-panning which would alter the colour of the clay after firing (Cracknell, pers. comm.) but would not be apparent beforehand. It is likely that in its optimum fired state the Group II product was barely distinguishable from that of Group I. Certainly no examples have been distinguished in this collection.

It was hoped that such attention to how the vessel had been fired might yield some information on how well the Mancetter-Hartshill potter was able to control the temperature of their kilns. Groups such as vessel nos. demonstrate that it was possible for some mortaria to become partly very soft and under-fired and partly very hard and over-fired although not to the point of warping. Obviously temperature could vary dramatically within a very small area (although perhaps only for a short time). On the whole, though, it would seem likely that the Mancetter-Hartshill potters were quite skilled in controlling their firings and unlikely that vessels such as no. , which was severely warped, could have shared the same firing as the powdery and crumbly Fabric 804. In no instances were pots fired to the point of vitrification although the grog trituration frequently began to vitrify and in one case had flooded over the vessel it was part of (no.). Some sherds were found with 'glaze' spots on them, presumably a result of vitrified trituration dripping out of vessels during firing. Unfortunately thermal expansion testing of some of the pottery which would have shown the original firing temperature of sherds fired at over 700ºC - 950ºC was not thought to be economic (Bayley, pers.comm.). It is probable anyway that only Fabrics 801 and 802 would have come into the category which can be tested by this method.

Study of the fabric composition of the seven major mortarium groups from the site, in an attempt to see whether any of these groups appeared similar, produced interesting results (see Fig A). Perhaps the most striking similarity was that observed between Kilns 5 and 8. There was no reason to infer

from the stratigraphy that either kiln had been deliberately backfilled so that the assemblages found in them are likely to be the remains of the last few firings. It seems that both were kept fairly clear of waste during their lifetimes. The products of the two kilns were almost mutually exclusive (see Table C); the flanged mortaria in Kiln 8 could easily have been contamination from Area 17 which was cut by the kiln. The kiln itself yielded only hammerheaded vessels otherwise. This separation of the two kiln's products is echoed by the topsoil distributions of most of the hammerheaded types. Certainly Kiln 8 presents every sign of being later than the bulk of the activity in this area (see further discussion below). The similarity in composition of the two assemblages may indicate continuity of firing practises and a close control over the firing producing a broadly similar waster population each time.

Another two assemblages which can be seen from Fig. A to be related are those from Kiln 3 and Area 17. The bulk of the material from Kiln 3 came from the stokehole (3/5) and it would appear that it had been raked out after firing. It may well be that Area 17 represents similar raking out of Kiln 13, to which it is adjacent. In these two cases we are looking at deliberate waster dumps which seemed to consist largely of underfired material and pots which had been fired to the right hardness but had cracked or broken during or after firing. The firing or firings which had produced these wasters had evidently been similar in nature although, as in the case of Kilns 5 and 8, not contemporary (Kiln 13 was probably in operation during the period cAD170-230 while the 3/5 deposit was full of stamps of Bruscius, Iunius and Ruicco, dating it to cAD130-170). This may be seen as a further indication of the continuity of technology in the kilns despite variety in their internal arrangements (see stratigraphic report).

The deposits in the different parts of the ditch: Ditch 9 and Ditch 14 could be seen to have similar proportions of Fabric 803 but otherwise there was a bias of underfired material in 14 and the reverse in 9. It seems likely that a series of different siltings and dumps were involved in each arm of the ditch and that the dumps in each area were discrete and represented material from different firings.

The composition of the Kiln 13 assemblage seems to have no affinities with any of the other groups from the site, perhaps because it had been extensively disturbed after disuse by features 15 and 20 in Roman times and had suffered plough damage during the Medieval period.

By study of the four kiln assemblages which contained sufficiently large groups, and the two major areas of dumping, it was hoped to test the hypothesis that the Mancetter-Hartshill potters were able to maintain quite a close control over their firings, producing a similar waster population each time. With the small sample before us it was only possible to say that this hypothesis was supported by the evidence of Kilns 5 and 8 where kilns had apparently been cleared out and not re-used. Kilns 5 and 8 further suggested that the same firing technology was in use at different periods (a possible time span of about 50 years). The similar dumps from Kilns 3 and 13 may also have demonstrated that similar accidents took place despite the period of at least 20 years separating these two dumps.

It is obvious that the MH potters were aiming at a standardised product as far as texture and hardness was concerned so my next hypothesis was that they were also aiming to produce vessels of a standard size. I suspect this is a claim which few would dispute but my real interest lay in how successful the potters were in achieving this aim. To test this cumulative frequency graphs as used by Orton (Orton 1970) were drawn: Figs B and C. Figure B shows the cumulative frequencies of flanged mortaria of different types (calculated in EVEs). It can be seen immediately that all of these types were made in a very similar range of sizes and the median diameter for most types lay between 20-21cms. The only types which did not conform to this median were A. 04, A. 07 and A. 15 which were probably statistically unreliable because of the low number of EVEs in each case and type A. 08. This last rim type shows a much more even distribution amongst different sizes (see Fig D which represents the data as a histogram) which would seem to suggest more demand for a range of sizes at the time this rim type was in use or less skill on the part of the potter. Despite this more even spread of sizes amongst A. 08 rim types it would seem that the size which all the potters were aiming at with all the

flanged rim types was 21cms with a % error from this size. Certainly 75% of all flanged rimmed vessels (apart from those with type A. 08 rims) were between 19-23cms. In the case of the A. 08 vessels 60% of the vessels lay within this range. The picture is much less clear for the collared and hammerhead vessels, largely because not enough of the vessels were present to be statistically reliable.

Having assessed the technological skill of the potters from two different angles: firstly their control over the firing process and secondly their skill at producing vessels to a standard size it remains to use the waste material present to attempt some assessment of how long the site was in use. It is evident from the rim types and the potters' stamps that in MC and MH we were looking at two discrete areas of production. MH was in operation at some time (probably two periods) over a seventy year period (c AD100-170 with the main periods of activity in the years between c AD130-170). The MC kilns did not come into use until the end of the second century and the date for their production is suggested by Mrs Hartley as being in the range cAD170-230 (Hartley, pers.comm.)

Unfortunately we have no means of assessing accurately what the waster rate might have been, nor the average size of a kiln load. Then there are further problems with deciding how frequently the kilns were likely to have been fired and what the length of the working season for the Mancetter-Hartshill potters was. Furthermore we only have quantities of EVES for the stratified material. In order to include the unstratified material in the calculations, we must assume that this represented the same proportion relative to the stratified pottery amongst the vessels which survived as it did in the waster population (see Orton 1970 for a discussion of this sort of assumption).

With all the unknowns discussed above any suggestions must be of a very tentative nature, however it is felt that such figures, with all their drawbacks, are useful in order to provoke thought and discussion and to provide some sort of timescale against which to consider the products of the kilns. Therefore the following assumptions were made:

waster rate.....10%

kiln load.....50 pots

firing rate.....one every 7 days

These assumptions mean that the waste material excavated would have been produced over a period of 22 months. With an assumed season of 6 months this leads to a total of 3.6 years, or about 1.2 years per kiln. As the material which was excavated represented a sample of about 50% of what could be seen to be there, my final rough working figure was a period of about two and a half years activity for each kiln, supposing each to have been in use for an equal length of time. Notwithstanding the problems of this type of calculation this suggests a remarkably short period of time for the generation of this quantity of waste.

Comment [WH1]: Change to about 75%

The suggested waster rate, although it cannot be verified, is very close to the sort of proportions found in experimental firings (Bryant 1971; Booth pers. comm.) allowing for the fact that the Mancetter-Hartshill potters would have been more skilled in both the construction and firing of their kilns than the experimenters. Similarly, the suggested kiln load is based on information from experimental firings (*op. cit*) and the size of the kilns and pots in question. Ethnographic parallels as well as experimental work provide a reasonable backing for all the assumptions made in these calculations so that I feel that the suggested length of time for the operation of the kilns at MC is worthy of consideration when the production methods and technology of the Roman pottery industry is under discussion.

After this study of the potters themselves and their techniques we move on to the products of their workshops:

2. Style

A glance at Figure E shows that the most important rim types from both areas were A 02 and A 04 on MH and A 08, A 10 – A 13 inc., A 15, C 01, C 03, C 04, C 07, D 09, D 12, E 01, E 05 and E 08 on MC. The most important of all these were A 08 and A 11. Type A 08 is particularly important in the Group II fabrics. All of these mortaria were being made in approximately the same sizes with a mean diameter of 21cms, a base diameter of between 8-13cms and a height of 7-12cms.

These rim types can be split into four groups:

(i) Rim types A 02 and A 04 which were being manufactured in the MH kilns, notably Kiln 3, by potters such as Iunius, Bruscius and Ruicco etc (see Table 0). These potters date to the period c AD 130-170. This group also includes some vessels from around the time c AD100-130 stamped by Vitalis IV and Septuminus who were probably using kilns (such as Kiln 4) which were otherwise largely used for the manufacture of coarse wares. Where this group occurred on MC it was residual.

(ii) Rim types A 08, A 10-13 inc and A 15. Production of these rim types during the period c AD 170-230 centred around A 11 and A 08 but the other types were obviously made concomitantly. Where this material occurred on MH it was probably intrusive. It may be that some of the potters working on MH moved to the MC area towards the end of their production period and began producing the types in this group as several have been found with stamps of Iunius and Ruicco. The rim type A 07, which occurs in small quantities on both MH and MC may represent a transitional type. Certainly some variations of this rim form have affinities with the earlier group of rims (which includes A 02 and A 04). It is found stamped by Ruicco, Iunius and Cattanus which also tends to support this theory. This type may have been made in an, as yet, undiscovered kiln in the vicinity of the MH and MC kilns as it does not occur in large quantities nor seem to be associated with a particular kiln. It is therefore probably intrusive in assemblages from both areas.

(iii) Types C 01, C 03, C 04 and C 07 seem to have been made in the same kilns contemporaneously with the group (ii) rim types. This dates them to the period cAD170-230.

(iv) Types D 09, D 12, E 01, E 05 and E 08 were associated exclusively with Kiln 8 on MC (see Table C) and belonged to the latest production period in the two areas which probably began sometime after cAD200. The production of D 12 seems to have been the main occupation of these potters and it was the only one of the group to appear in any quantity. Any vessels from this group were undoubtedly intrusive where they occurred on MH. These rim types were those most commonly found with red-painted decoration.

A fifth group of material was also present. This consisted of the rim types which appeared in very small quantities and did not seem to be associated with any of the kilns either in the deposits in the kilns themselves or from the topsoil distributions. These rims should be regarded as intrusive both in MC and MH and were probably manufactured by kilns outside these areas. These intrusive rim types were as follows: A 07, A 09, A 14, A 19, B 04, C 05, C 06, C 08, D 03, D 04, D 11, D 14, E 02. This seems to suggest that the other kilns in this area were producing pottery over a period of at least 50 years. The earliest of these intrusive rim types was type A 07 which, as discussed in section (ii) above, represents a bridge between the hook-rimmed mortaria of the first half of the second century and later types. It was being produced around c AD170. Vessels such as those with rim types A 14 and A 17 may have been made as early as cAD170 but continued

right through the period until after AD230. The collared vessels, types C 05, C 06 and C 08 were probably contemporary with them while the hammerhead types D 03, D 04, D 11, D 14 and E 02 and the wall-sided B 04 began around c AD200 and continued well beyond c AD230.

It is clear that the kilns in the MC area and other unexcavated kilns in the vicinity were critical for the development of the hammerhead mortarium which dominated the later third and fourth century production at Mancetter-Hartshill. These hammerhead forms developed out of the collared mortaria manufactured in the MC kilns. The clumsy rims of the two large handmade vessels built into the structure of Kiln 5 are versions of collared and hammerheaded forms. Comparisons with rim types such as A 18 (see illustrated vessel no.) show how close the collared rims could be to the hook-rimmed types. There was even some overlap of spout types, (vessel no.) and an example found during fieldwalking the rest of the immediate area (Jones, 1987). The classic spout type associated with all hook-rimmed mortaria was rapidly rejected in favour of the simple technique of slicing the top bead of the collared rim and folding it back, e.g. illustrated vessel no. 40. The slicing appears to have been performed with a cheesewire. This technique must have represented a much quicker method of forming the spout than the application of extra clay and moulding of the lips. It would also have eliminated one of the weak points of the vessel, as we see from the waster material that the applied spout lips frequently broke away from the rim if they were not applied adequately. The spout type found on hammerheaded mortaria represents the final stage of the evolution of a fast and efficient method of forming a spout: the thumb finger depression (see no.91: no.152 from Kiln 8 has a double depression).

It is difficult to know how effective these vestigial spouts would have been. It may be that the decline of the elaborate but functional spout found on vessels with hooked rims was a result of a change in cooking practices or perhaps the greater availability of metal containers for liquid foodstuffs.

Unfortunately there was insufficient data to associate any individual potters with specific rim, spout or trituration types. Table D shows that stamps of Iunius and Ruicco were found on the widest range of rim types. This may represent a genuine diversity on the part of the potters as only ten stamps of Iunius were found and fourteen of Ruicco but the twenty-one stamps of Bruscius were found on a range of only three rim types. All the potters used the earlier A 02 and A 04 rim types apart from the illiterate potter no.3 (vessel no.).

Proposed pattern of waste disposal MC83