The Iron and Copper-Alloy Slag Assemblage

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Iron Slag

Due to funding limitations it should be made clear that none of the ferrous and copper alloy slag found on the site was looked at or catalogued by specialists. The slag was recorded by fragment number in each context by the Heritage Lottery volunteers, who were not qualified to identify the exact nature of the slag fragments. With some initial research and guidance an attempt was made (for the MF Zone iron slag only) to identify four different types of slag according to the heaviness or lightness or the surface appearance. So for the MF Zone iron slag, the assemblage was divided into four potential slag types and for the MF zone only the weight of the fragments was also recorded. However, as already stressed, these identifications were not done by slag specialists or metallurgists, so they are observations only. See the MF, MFNA, and MFP Slag Spreadsheets for the full list of slag found in each trench.

As with many artefact types the MF Zone produced the largest quantity of iron slag fragments. The total weight for this zone was 17,454gms and the total number of fragments was 911. As illustrated in Figure 1, the largest concentrations of iron slag were in Trench 34 (4,438gms); Trench 18 (2,934gms); Trench 14 (1,920gms); Trench 2 (1,522gms); Trench 15 (1,165gms); and Trench 36 (1,074gms).

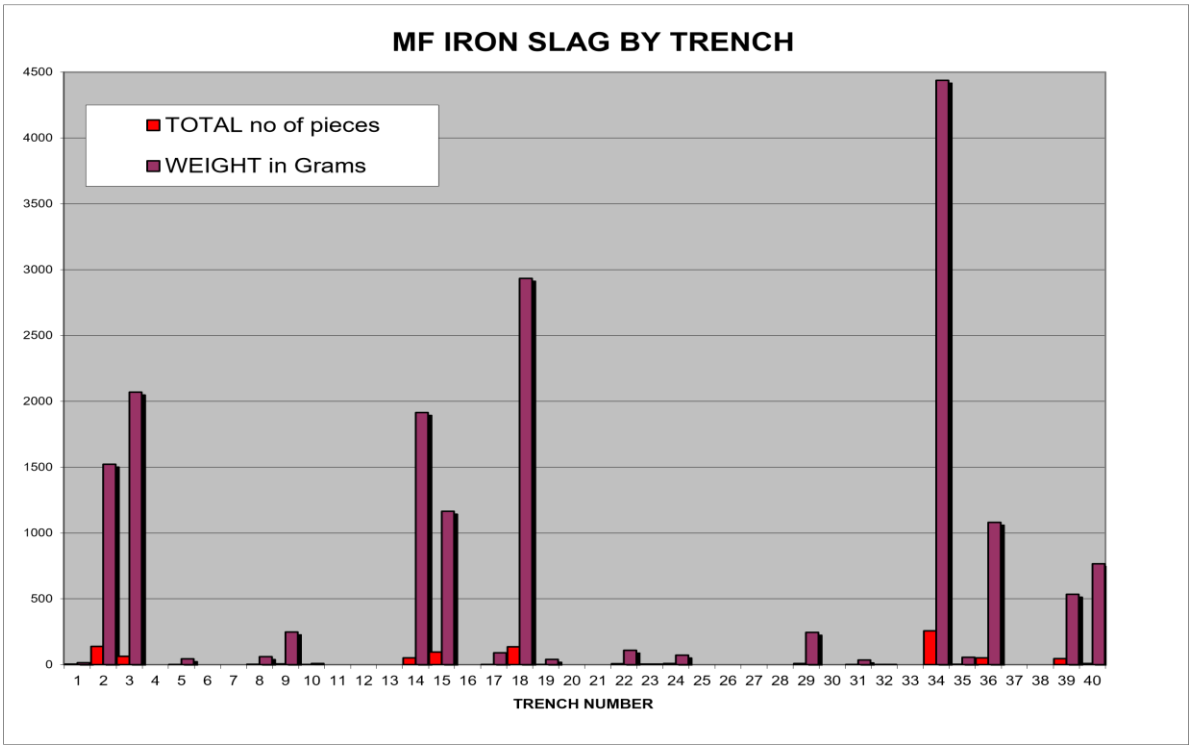


Figure 1. Incidence of iron slag by trench in the MF zone

It is perhaps no surprise that the highest concentration was in Trench 34, a long strip trench just to the west of structures in Trench 22 which contained two Roman smithing hearths. It is surprising though that its neighbouring Trench 39, which also contained the remains of two

Roman smithing hearths, contained much smaller quantities of iron slag (555gms). The large quantities found in Trench 18, near the temenos entrance, might also be expected as there was evidence of hearths of some sort here and it is very possible that 'votive trinkets' may have been made here to sell at stalls close to the main temple entrance. Most of the slag in this trench was found in general Roman layers rather than any discrete features. Trenches 14 and 15, positioned just inside and just outside the main temple entrance and path produced large amounts of Roman material of all types. However, much of the slag in Trench 14 was probalby not from the Roman period as it was found in and around the many Iron Age pits in this area. In Trench 15 there was a very different picture, large amounts of slag being found in topsoil, subsoil, and other Roman layers. The iron slag found in the large shrine building in Trench 2 is not associated with any obvious hearths, but this structure seems to have had large amounts of late Roman material of all types dumped here in its post-fire phase. This may well be because it was a convenient as well as 'sacred' place to relocate votive material after the shrine structure burnt down or because dumped material was used as make-up for later floor surfaces. Indeed, the largest quantity of slag found in this trench was in context (2198), a very finds-rich layer with lots of late Roman coins, pottery and Roman tile etc. Finally, the slag found in and around the small Roman shrine structure in Trench 36 was mostly found in Iron Age layers and pit fills, including Iron Age layer (36029), which sat just above bedrock. So in summary, the iron slag does occur in both Iron Age and Roman contexts across this zone but larger quantities derived from the Roman period contexts.

Much smaller quanties of iron slag were found in the MFP zone trenches, only 56 fragments in total. All the MFP trenches produced small quantities of iron slag, except Trench 1 which produced none. The largest quantities in this zone were found in MFP Trench 2 (33 fragments) and most of these came from one context (2318), which was an Iron Age midden layer. Most of the iron slag in these trenches is from Iron Age pits and ditch fills or general layers that produced Iron Age pottery.

The MFNA zone produced only three fragments of iron slag , so no real evidence for metal-working in this zone, either in the many Iron Age features or in the main Roman temple complex within its temenos.

For the MF zone in particular, there was clearly evidence of iron smithing in different parts of the site, especially in the two Roman hearth features [34004] and [34009] in Trench 34. These two hearths were situated very close to each other and were limestone built of several courses and were seated directly on bedrock. Third and fourth century Roman coins found in this trench may suggest this activity took place in the late Roman period. As well as the iron slag finds concentrated in these two features, there were also quantities of charcoal and hammer-scale as well as fragments of iron objects. The latter possibly for melting down and re-working? It seems very likely that some of the fragmentary iron objects of many types found across the site were actually made on site from the iron produced in such smithing hearths.

Copper Alloy Slag

The amount of clearly identifiable copper slag fragments, bearing very distinctive bright green tones, was very small across the whole of the site (see Figure 2). Some were just traces in fired clay crucible fragments. Only six definite fragments were found in the MF zone and 12 fragments in the MFP zone, and none in the MFNA zone. Only five trenches in the MF

zone produced any definite fragments and only three trenches in the MFP zone. The quantities are too small for any statistical analysis or any comparison between different parts of the site.

As discussed in the Iron Slag report above, as funding did not allow for any slag specialist to analyse and catalogue any part of the slag assemblage, these figures may not be accurate. There may well be other fragments of cu-alloy slag within the 'iron slag' assemblage, as it can be difficult to be certain of the metal type without experience or scientific analysis. So only the pieces with a clear green copper colour have been included in the cu-alloy slag lists.

MARCHAM CUALLOY SLAG DATABASE - MF and MFP

In Context Order

MF zone

Context	SF No.	Metal	No. frags	Comments
18000	3148	CU.ALL	1	
18000	4195	CU.ALL	1	
22092	4586	CU.ALL	1	
24036	3986	CU.ALL	1	possible cu-alloy slag?
25006	3965	CU.ALL	1	
35004	5022	CU.ALL	1	
TOTAL NUMBER			**6**	

MFP zone

Context	SF No.	Metal	No. frags	Comments
2010	60	CU.ALL	1	
2061	58	CU.ALL	1	traces in crucible frag.
2311	187	CU.ALL	1	possible cu-alloy slag?
3018	377	CU.ALL	1	possible cu-alloy slag?
3018	383	CU.ALL	1	traces in crucible frag.
3226	482	CU.ALL	1	possible cu-alloy slag?
3256	453	CU.ALL	1	traces in crucible frag.
4000	115	CU.ALL	1	
4023	none	CU.ALL	1	
4090	318	CU.ALL	1	traces in crucible frag.
4104	276	CU.ALL	1	
4224	451	CU.ALL	1	possible cu-alloy slag?
TOTAL NUMBER			**12**	

Figure 2. Incidence of copper alloy slag across the site

For the MFP zone, the 12 more certain fragments or traces of copper alloy slag do seem to occur largely in Iron Age contexts, particularly Iron Age pits. Although in MFP Trench 2, the fragments occur in midden contexts with a mix of Iron Age pottery and small amounts of Roman material, in MFP Trenches 3 and 4, the picture is more clear-cut. All the copper alloy slag in Trench 2 occurs in one 'beehive-shaped' Iron Age pit [3017], which also produced

part of a small, fired clay crucible. In Trench 4, all the copper alloy slag fragments were found in Iron Age pit fills, including one piece (SF451 in context 4224) in the basal fill of pit/grave cut [4232] which contained Skeleton 25 (see the human bone report).

So with the limited evidence we have for copper alloy slag and copper alloy working, it seems to be on a far smaller scale than that of iron smithing and largely concentrated in Iron Age contexts in the eastern part of the site in the MFP zone.