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**The Identification of Metalworking Debris from four
Excavations near Gwithian, Cornwall**

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Summary

Excavations were carried out in the Gwithian area during the 1950s and 60s as part of a landscape study. The main phases of occupation in different areas around Gwithian were Bronze Age, post-Roman and medieval. 3.2kg of metal working debris were examined. The only process, which could be possibly identified, was iron smithing. The range and quantity iron working slags suggest that metalworking was of minor significance.

Keywords

Metal Working-Fe

Bronze Age

Medieval

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Introduction

The West Cornwall Field Club carried out excavations in the Gwithian area during the 1950s and 60s. These were all undertaken as part of a landscape study. Gwithian (SW585 414) is located on the eastern side St Ives Bay but the sites are spread over an area of around 10km². The excavations uncovered three main phases of occupation in different areas around Gwithian; these were Bronze Age (GM/V), post-Roman (GM/I and GM/XX) and medieval (CG/-).

The early phase of the site, GM/V, was according to Thomas (1958) a small burial mound with two pits. The excavation of this mound was undertaken in the spring of 1955 where it was determined that the structure was Bronze Age. GM/I, the largest of the assemblages studied, was found by the excavators to be a post Roman settlement consisting of houses complete with pits hearths and a possible pottery kiln. The excavation of GM/XX, the post-Roman field system, revealed ridge and furrow ploughing. The medieval site of Crane Godrevy, CG/-, was discovered in 1951 through documentary evidence and was excavated 1956-1958 with an additional season in 1969. It was found that the settlement lay within an Iron Age enclosure, which probably continued in use until the Romano-British period.

The metalworking debris from the excavations were investigated, the results are reported here.

Methodology

Density and visual appearance was used to discriminate between types of material. All terms used to describe the material can be found in Centre for Archaeology Guidelines, *Archaeometallurgy* (Bayley *et al.* 2001). All pieces were categorised, counted and weighed. **Run slag** refers to pieces of slag which resemble tap slag but are smaller and less distinctive while retaining their ropey appearance. **Other** refers to non-metallic material such as stones, which were collected during excavation.

Table 1 Summary of material by weight (g)

Phase	GM/V	GM/I	GM/XX	CG/-	Total
Non diagnostic		1536	22	237	1795
Run slag		322	28		350
Iron object		73	47		120
Smithing hearth bottom		121		247	368
Tap slag		312			312
Fuel ash slag		58			58
Other	47	28		151	226
Total	47	2450	97	635	3229

For full material list see Table 2

Phases

GM/V Bronze Age pits and plough marks

There are three finds in this phase, a piece of burnt clay, compacted sand containing shell fragments, and a stone relatively rich in iron (around 20% Fe₂O₃). The stone could not have been used as an ore as it is not rich enough. None of these items are evidence for any metalworking

GM/I Post Roman settlement and GM/XX Post Roman field system

The presence of hearth bottoms shows that iron smithing was carried out; the run and tap slag are suggestive of iron smelting. The quantity of material found implies that there was limited iron smelting and working. The material found in GM/XX is generally more fragmented.

CG/- Crane Godrevy RB and medieval settlement

The presence of a smithing hearth bottom in context 335 indicates metalworking in the medieval phase of the site. The find of iron ore is not significant enough to suggest smelting as the other debris from this phase is non-diagnostic.

Conclusions

The material from the Bronze Age phase of this site does not provide any evidence for metalworking.

The majority of the iron-working material was concentrated in GM/I (the Post Roman context).

The range and quantity iron working slags are not sufficient to suggest any major metal working on this site. There is however minor evidence for limited production and smithing on the site.

Recommendations

The small quantities of iron working slag recovered do not warrant further study.

The iron working material should be retained and are stable, therefore do not need any special storage conditions.

Bibliography

Bayley, J, Dungworth, D and Paynter, S 2001 *Archaeometallurgy*. Centre for Archaeology Guidelines 2001-01. London: English Heritage

Thomas, C 1958 *Gwithian Ten Years' Work (1949-1958)*. Excavation Staff, Gwithian, Cornwall

Appendix

Table 2 All material by weight (g) and number of fragments

		Non diagnostic		Run slag		Iron object		Smithing hearth bottom		Tap slag		Fuel ash slag		Other	
Phase	Context	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
CG/-	255													2	151
CG/-	335	4	237					2	247						
GM/I	3	1	5												
GM/I	5	2	38												
GM/I	19	2	10												
GM/I	20					1	7								
GM/I	38	1	5												
GM/I	48	1	3												
GM/I	77	1	6												
GM/I	87	5	150			1	27							1	1
GM/I	105	1	47												
GM/I	112											1	8		
GM/I	142	1	1									3	6		
GM/I	151	1	30			1	11								
GM/I	166	3	26												
GM/I	192	2	8												
GM/I	202	1	90												
GM/I	204	1	10												
GM/I	221	4	27												
GM/I	240	7	30												
GM/I	247									1	32				

		Non diagnostic		Run slag		Iron object		Smithing hearth bottom		Tap slag		Fuel ash slag		Other	
Phase	Context	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
GM/I	262									1	55				
GM/I	268							1	121						
GM/I	282	4	252												
GM/I	297	7	30												
GM/I	303									1	34				
GM/I	313			2	151							1	15		
GM/I	324	3	42	5	45							2	29		
GM/I	340	1	14												
GM/I	352	3	18												
GM/I	?	35	513	2	38	2	28			1	83			2	27
GM/I	Various	9	181	3	88					2	108				
GM/V	15													2	42
GM/V														1	5
GM/XX	8	1	17												
GM/XX	14					4	8								
GM/XX	27	9	5			1	39								
GM/XX	Unknown			2	28										