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Evaluation of additional possible archaeometallurgical residues from the Peboc site, Llangefni (G2207)

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Abstract

The samples contained a minute quantity of residue from iron-working (smithing), but insufficient to indicate that the activity was conducted in proximity to the point of sampling. Possible clinker was present in two of the contexts, suggesting the use of coal as a fuel. This has been recorded on other sites in the area in the Roman period. The 'burnt clay' samples were mostly fired clay, compatible with an origin in a metallurgical process, but not certainly so.

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Methods

All materials were examined visually with a low-powered binocular microscope where required. As an evaluation, the materials were not subjected to any high-magnification optical inspection, not to any form of instrumental analysis. The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional. The summary catalogue of examined material is given in Table 1. This project was undertaken for Richard Cook of the Gwynedd Archaeological Trust.

Results

The assemblage included residues picked as 'metalworking debris' and some picked as 'burnt clay'.

The 'metalworking debris' included indeterminate slag fragments, slag droplets (just possibly including a single piece of spheroidal hammerscale), a possible slag flat and a total of approximately 19 pieces of flake hammerscale. These were accompanied by a variety of natural materials, charcoal, indeterminate burnt organic matter, and a possible concretion formed on a rusted iron particle. Some of the slaggy materials from contexts 15 and 57 resembled clinker (the residue from the burning of coal), although a certain identification was not possible.

The 'burnt clay' pieces were mainly no-diagnostic. They true fired clay fragments were mainly oxidised fired, with a temper of quartz grains. Some of the material was compatible in degree of processing and firing with being fired clay from a metallurgical hearth, but none of the material was definitely metallurgical in origin. No material showed any vitrification. Some of the material was definitely natural siltstone and sandstone; other pieces were indeterminate.

Interpretation

The materials from contexts 20, 57 and 74 included flake hammerscale. This provides good evidence for iron working somewhere in the vicinity. The total amount of metallurgical residue is very small and such small particles are very easily transported. The location of the activity is not necessarily particularly close to the point of origin of the samples. The presence of possible clinker, suggests that coal was being burnt (as it was at the Tai Cochion /Trefarthen site in the Roman period; Young 2012b). The slag materials from contexts 15, 20, 57 and 74 are not necessarily from iron-working, although given the presence of flake hammerscale, they are very likely to be (as with the previous slag find from the site; Young 2012a).

None of the fired clay samples was conclusively of metallurgical origin, although many of the oxidised – fired particles could have been derived from a metallurgical hearth-lining.

Evaluation of potential

The assemblage has little potential for producing useful information from further investigation.

References

YOUNG, T.P. 2012a. Evaluation of metallurgical residue from the Peboc Site, Llangefni (G2207). *GeoArch Report 2012/14*, 2pp.

YOUNG, T.P. 2012b. Evaluation of archaeometallurgical residues and associated material from Tai Cochion & Trefarthen Roman settlement, Anglesey (G1632-T, G1632). *GeoArch Report 2012/20*, 12pp.

C	S	F	label	notes
15	7	73	mwd	1 maroon slag sheet; 19 probable stones; c.13 slag pieces; 2 clinker fragments
20	3	71	mwd	4 particles of slag, 2 scale-like and 2 true FHS; 17 probably natural; 1 possible concretion on iron? 1 large pyrite tube
57	9	72	mwd	8 pieces of FHS; c. 6 slag pieces; 1 piece BOM; 1 piece of charcoal; c.13 stones; 1 slag/clinker droplet; 1 hollow sphere - droplet or SHS, poorly preserved
74	10	74	mwd	9 pieces of good FHS; 11 pieces of platy slag (1 possible slag flat); 1 slag droplet; 3 pieces possible fuel ash slag; c.11 pieces of stone
7	1	59	burnt clay	1 large rounded grain with very poorly sorted quartz some several mm, in buff matrix; 1 piece mainly grey silt with large voids - could be natural
20	3	60	burnt clay	2 pieces bright orange fired clay with even sorted quartz temper, looks well prepared; 1 dark dull browner piece, also rich in quartz, possibly similar; 1 greyer, harder fired, less well sorted - possibly natural even, but could be a metallurgical clay or concretion?
28	5	61	burnt clay	1 extremely poorly sorted piece, has very little matrix – possibly natural or a concretion; 2 pieces red, moderately poorly sorted; 1 piece orange, finer but with re-entrant faces suggesting loss of large grains.
57	9	62	burnt clay	8 pieces poorly sorted temper; 1 piece fine red siltstone - natural

Table 1: residues by context and sample. FHS = flake hammerscale; SHS = spheroidal hammerscale; BOM = burnt organic material

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