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Examination of Technological Material from Hog Cliff Hill, Dorset

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1) Soil samples

AM600732 (EIV)

No evidence for any industrial activity was found on examining the five samples. A small number of red particles were present in sample 2, the latest fill of pit E2, and these were analysed using powder X-ray diffraction (X.R.D.). Only quartz was detected which was presumably from the soil which contained sand. If haematite ($\alpha\text{-Fe}_2\text{O}_3$) was present it was at too low a concentration to be detected (less than about 5%) even after selective sampling of the particles which appeared most likely to contain it. No other evidence of industrial activity, such as hammer scale, was found in any of the samples, although a few fragments of charcoal were present in sample 1, the fill of post hole E36.

AM600733 (D7)

Two samples were examined. Sample 1 contained charcoal, burnt grain and some possible haematite fragments, as well as soil which included sand and flint. Only quartz was detected on analysing the 'haematite' particles using X.R.D..

Sample 2 did not contain grain, but did include charcoal, soil, a 'haematite' particle and a small fragment of fuel ash slag (see below for comments on fuel ash slag). X.R.D. of the 'haematite' particle showed that it was in fact largely maghemite ($\gamma\text{-Fe}_2\text{O}_3$), a similar iron oxide to haematite, but a small amount of haematite was also present. Maghemite is produced by slow oxidation of magnetite (Fe_3O_4) which is formed by reducing haematite at high temperatures. Its presence is indicative of burning, but not necessarily in a kiln or furnace and it is not evidence that potting took place on the site.

AM600734 (E122)

The sample contained soil, ash and possible haematite particles but only quartz was detected on analysing the 'haematite' using X.R.D.. The 'haematite' was probably burnt iron rich clay containing a high proportion of sand.

AM600735 (?House site A) and AM600736 (?House site B)

Both samples contained only charcoal and soil and were of no direct technological significance.

2) Slag

AM600737 (D12)

A ferruginous nodule, probably weathered iron pyrites. It could have been used as an iron ore, after roasting, but there is no evidence that this sample was intended to be used for that purpose, and its presence is probably accidental.

AM600738 (EIVd)

A small piece of iron slag. Small quantities of iron slag are found on almost all Iron Age and later settlement sites and so no positive conclusions can be drawn from the presence of

one small piece. It was probably iron smithing slag, which is the slag which collects in a blacksmith's hearth.

AM600739 (F19a)

This sample consisted of one natural ferruginous nodule similar to AM600737 and two ferruginous concretions which may have formed round no longer visible iron objects. The latter were not associated with iron working.

AM600740 (E27)

A sample of fuel ash slag, which is the result of a high temperature reaction between ash and silica rich material such as sand or clay. Although it is often associated with metalworking, fuel ash slag can form in any sufficiently hot fire and its presence does not therefore imply that an industrial process was taking place.

3) Burnt clay

AM600718 (D7a)

Oxidised fired clay with a coarse, not very refractory fabric which had not been vitrified. At least two fragments had wattle impressions. There was no direct evidence that the material was from an oven or kiln. It had not been exposed to high temperatures and may simply be burnt daub from a building.

AM600719 (E63)

The sample appeared to be soil burnt under reducing conditions, although it could possibly be a deliberate fired clay with a coarse fabric. Some fragments had taken impressions from adjacent objects during firing, including one apparent 'wattle' impression, and part of the surface of some fragments was vitrified. The sample was probably produced accidentally in a fairly hot fire.

AM600720

Unfired soil which loses its coherence in water. It is of no archaeological significance.

AM600721 (1959)

Apart from one piece of stone, all the fragments were not very refractory, oxidised fired clay, and one piece had a wattle impression. As with AM600718, the material may have been part of an oven or hearth, but there is no direct evidence for this.