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TECHNOLOGICAL MATERIAL FROM CATTERICK, NORTH YORKSHIRE.

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Summary

A range of material from excavations at Catterick were examined. Most related to technological processes associated with Roman occupation in the town and included evidence for ironworking and copper alloy working. A number of stone and ceramic discs were also examined, and several pigment samples were identified by analysis.

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The finds examined from Catterick represented a wide range of material which related to technological processes that were carried out either at the site or in the nearby Roman town of Cataractonium.

The majority of the material, with a total weight of about 6.5 kg, related to the working of iron. The residues (AML Nos. 723869-902) included smithing slag, hearth lining, tap slag and corroded iron objects (see Appendix for detailed description of each item). The bulk was iron smithing slag; one small piece of tap slag (AML No. 723882), a characteristic smelting residue (McDonnell 1983), was also found but this does not indicate that iron smelting was being undertaken at the site. Some of the pieces of smithing slag contained varying amounts of charcoal; fuel ash slag, hearth lining and a few fragments of 'hearth bottoms' were also identified. 'Hearth bottoms' accumulate at the base of the hearth during the smithing operation and when complete are usually characteristically plano-convex in shape (McDonnell 1983). The small amount of material recovered represents a background spread which is commonly found on settlement sites; there is no evidence of iron being worked in the immediate vicinity of the excavated area, though ironworking was certain to have been undertaken in the town.

There was some evidence for copper alloy working, mainly in the form of 'trays' which seem to be in the shape of box bases, for the collection of fragments and waste from the turning, engraving or filing of copper alloys. Two such trays , found in one building, were approximately 50 cms square with timber round the edge. They were full of finely stratified soil which contained masses of powdered or fragmentary corroded copper alloy, and appear to be the remains of containers for trapping the waste from a copper alloy working operation which Frere (1972) has suggested was probably flushed in by water. The material within the Catterick trays was also likely to have been deposited by water due to the obvious stratification within the soil. The copper salts leached from the debris into the wood during burial have evidently preserved it up to the corresponding level but there was no clear evidence of their full original height. The examples at Catterick can all be dated to no earlier than the late Antonine period, but similar finds from Verulamium (Frere 1972) are dated to before 120 AD. Similar wooden boxes were also found in York dated to the late second century (Ramm 1964). The collected metallic waste could have been extracted and re-melted. Qualitative analysis by X-ray fluorescence showed it to be brass (a copper-zinc alloy). A fragment of a crucible which had been used to melt copper alloys was also found (AML No. 590432) and analysis revealed the presence of copper, zinc and tin which indicates the melting of a gunmetal type alloy.

A number of ceramic and stone discs were also found, some of which had central perforations. The discs with the holes were probably spindle whorls and were all made from pottery except for two examples of millstone grit (AML Nos. 3966 and 3972). The fabric of the ceramic whorls varied considerably, some having a black, friable body with evidence of burnt out organic temper

(AML Nos. 3960, 3962 and 3967) whilst others had a grey body with a smooth black surface (AML Nos. 3961, 3963, 3969, 3970 and 3971). The discs without holes were probably pot lids or counters and were mostly made of millstone grit, although one ironstone counter and one mudstone counter were also identified. Various other ceramic fragments included fragments of figurines, and both oxidised and reduced fired vessels of no direct technological significance. The blue material on one fragment (AML No. 590428) is clearly an accidental deposit of vivianite, an iron phosphate indicative of reducing soil conditions, rather than deliberate decoration.

Several pigments were identified using X-ray diffraction analysis, including Egyptian Blue frit (AML No. 3981), red lead on a ceramic fragment (AML No. 760133) and a lump of haematite.

The remaining 'technological material' was not in fact found to have any such significance although the (probably) accidentally produced glass and partially vitrified stone must have been formed at high temperatures. Other specimens included charred wood, wattle and daub, tile, a whetstone made of mudstone, a composite find of bone and copper alloy, and a ceramic bead.

References

Frere,S., 1972 Verulamium Excavations, Volume I, Report of the Research Committee of the Society of Antiquaries No. 28.

McDonnell,G., 1983 "Tap Slags and Hearth Bottoms, or, How to identify slags", Current Archaeology, No.86, 81-83.

Ramm,H.G., 1976 "The Church of St Mary, Bishophill Senior, York: Excavations, 1964", Yorkshire Archaeological Journal, No.48, 35-68.

APPENDIX

Catalogue of technological material from Catterick

AML No.	Site No.	Description
590365	K XIV 9	Copper alloy workers tray
590366	K XIV 9	Copper alloy workers tray
590427	9 XXV 10 8	Wattle & daub fragments
590428	?A	Ceramic rimsherd with vivianite deposit
590429	3	Ceramic bodysherd
590430	H XXV 2 13	Tile
590431	M 9	Ceramic spindle whorl
590432	G II 3	Crucible fragment
590433	11	Ceramic vessel frags
590434	H II 2	Ceramic rimsherd
590435	-	Ceramic bodysherd
590436	M 14	Ceramic fragment
590437	-	Ceramic bodysherd
590438	-	Ceramic bodysherd
590439	H XXX 4	Ceramic figurine
590440	E V 15 102 4	Ceramic figurine
590442	-	Ceramic bodysherd
590443	-	Carved wood
670886	-	Charred wood
723684	-	Bone & copper alloy fragment
723869	Q I 2 3	Smithing slag & hearth lining
723870	P I 11 4	Hearth bottom - smithing slag & hearth lining
723871	R II 7 5	Hearth bottom - smithing slag & hearth lining
723872	R II 5 6	Smithing slag & hearth lining
723873	Q I 3 7	Smithing slag, hearth lining & iron object
723874	P III 2 8	Smithing slag
723875	P II 2 9	Iron object
723876	R III 3 10	Smithing slag
723877	P III 2 11	Smithing slag
723878	R II 4 12	Smithing slag
723879	Q III 3 13	Hearth lining & iron object
723880	R IV 4 14	Hearth bottom
723881	P IV 3 16	Hearth lining
723882	S I 2 17	Smelting slag (tapslag)
723883	P I 6 III 4 18	Smithing slag
723884	P V 4 19	Smithing slag & hearth lining
723885	S I 4 20	Smithing slag
723886	P IV 2 21	Smithing slag
723887	R III 2B 22	Smithing slag
723888	P III 13 23	Smithing slag
723889	Q VI 1 24	Hearth bottom - smithing slag & hearth lining
723890	S I 4 25	Hearth lining
723891	P IV 4 26	Smithing slag
723892	R III 2 27	Hearth bottom - smithing slag & hearth lining
723893	P III 31 28	Hearth lining & iron object
723894	P I 21 29	Smithing slag & iron rich concretion
723895	P III 28 30	Smithing slag & hearth lining
723896	P I 25 31	Smithing slag
723897	P III 32 32	Smithing slag
723898	P VI 3 33	Hearth lining
723899	R X 2 34	Smithing slag
723900	P I 2 1	Smithing slag
723901	P I 7	Smithing slag

AML No.	Site No.	Description
723902	P III 7	Hearth lining
760133	F XXV 13	Red lead pigment on ceramic sherd
760134	-	Samples from copper alloy jar
760139	E XVII 4	Mudstone
760140	J II 3	Ceramic vessel containing charred frags
3960	W 12	Ceramic spindle whorl
3961	W 11	Ceramic spindle whorl
3962	W 23	Ceramic spindle whorl
3963	W 22	Ceramic spindle whorl
3964	W 21	Ceramic spindle whorl
3965	W 15	Possible crude ceramic spindle whorl
3966	W 16	Ceramic spindle whorl
3967	W 14	Ceramic spindle whorl
3968	W 10	Ceramic spindle whorl
3969	W 9	Ceramic spindle whorl
3970	W 6	Ceramic spindle whorl
3971	W 7	Ceramic spindle whorl
3972	23	Ceramic spindle whorl
3973	84	Whetstone
3974	Pe 1	Haematite lump
3975	37	Ironstone Counter
3976	34	Stone Counter
3977	81	Stone Counter
3978	38	Stone Counter
3979	132	Stone Counter
3980	E VI 6	Stone Counter
3981	36	Egyptain Blue pigment
3982	147	Stone Counter
3983	106	Stone Counter
3984	12	Stone Counter
3985	E V 7	Stone Counter
3986	Pe 6	Stone Counter
3987	Pe 12 40	Stone Counter
3988	Pe 11	Stone Counter
3989	Pe 9	Stone Counter
3990	G IV 17 33	Stone Counter
3991	Pe 10	Stone Counter
3992	G VI 4	Ceramic fragment
3993	Pe 14 108	Hollow flint
4755	W 1	Ceramic spindle whorl
-	E III 11	Glassy fuel ash slag
-	F XXIV 6	Hearth debris
-	G IV 2	Fuel ash slag
-	G XXXI 17	Glazed ceramic bead - melon shape
-	H II 22	Vitrified stone
-	K XIV	Rubbish dump - frags of charcoal, bone, stone, ceramics, iron corrosion products, copper corrosion products.