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Technological remains from 145 Bartholomew Street, Newbury, Berks.Justine Bayley
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The site produced a small quantity of slag, the majority of it from pit 958 which was of late 13th-early 14th century date. The rest of the slag came from contexts dating from the 11th to 14th centuries. There was also a small quantity of copper alloy waste which came from late 15th and 16th century levels.

The slags included tap slag, smithing (forging) slag and hearth lining and had a total weight of 5-6 kg. The earlier phases (1-3) produced only smithing slag and hearth lining while phase 4A in addition ^{produced} tap slag, suggesting iron smelting rather than just smithing. The one piece of haematite found associated with the tap slag may be interpreted as corroborating evidence; it is an iron ore that could have been smelted. It should however be noted that this soft powdery form of the ore was widely used as a red pigment; indeed another similar find was made in a 14th or 15th century floor level on this site (Find 152 from context 2440 - A.M. No. 793448).

Individual identifications of the slags are given below (table 1) together with a glossary of terms used. The total quantities of slag found make it unlikely that much metalworking was being carried out on site. The smelting slag in particular was probably an 'import' as no furnace remains have been found and all the smelting slag came from one pit. Smithing hearths are less permanent and so may disappear more easily. It is possible that smithing was carried out on the excavated site.

All the copper alloy was deeply corroded and in many cases little if any metal survived, especially in the less massive pieces. The finds can be roughly divided into three groups but it should be noted that some of the descriptions applied to individual pieces are only approximate (see table 2). The three groups are blobs and dribbles, irregular lumps and sheet fragments. The first group is metal that has been spilt while molten and has solidified where it fell. The find spot need not be the primary context. The lumps are probably not parts of finished objects and are therefore likely to be by-products of manufacturing processes. The sheet fragments may be parts of objects or may be offcuts; their state of preservation makes it impossible to say which.

The clay fragment may be part of a mould but the fabric is harder and more heavily tempered than is usual. It has a black deposit on its inner surface.

The copper alloy scrap is representative of the sort of waste found in a metal-working shop. However its small quantity and lack of concentration preclude any meaningful interpretation in this case. The lack of other metal-working finds such as hearths, crucibles, copper-bearing slags or moulds makes it unlikely that copper alloy metal ^{of} working was carried out on the excavated site.

Table 1: Slag identifications

Phase 1 (pre late 11C)	
1310	smithing bun 12 cm diameter
1578	smithing slag
1583	smithing slag
Phase 2 (late 11C - late 12C)	
1266	smithing slag
1555	hearth lining
1577	smithing slag
2378	hearth lining
2720	smithing slag
2765	smithing slag
2819	smithing slag
Phase 3 (early-mid 13C)	
1504	smithing slag
2392	smithing slag
2548	corroded iron
2715	smithing slag
Phase 4A (late 13C - early 14C)	
943	smithing slag & iron object
959	haematite, hearth lining, tap slag and run slag
960	hearth lining, tap slag and run slag
961	smithing slag
2525	smithing slag and smithing bun 8 cm diameter
2597	smithing slag and hearth lining
2603	hearth lining, smithing slag and an irregular smithing bun (12x7cm)
Phase 4D (14C)	
752	smithing slag
784	smithing slag
U/S	smithing bun 9 cm diameter

Note: The numbers are the context numbers.

Glossary

Tap slag is run out of a smelting furnace while it is liquid. It shows distinct flow lines and is dense with a few large gas bubbles.

Run slag has also been run out of a furnace but when it is less fluid than tap slag and therefore has an internal structure similar to that more usually associated with smithing slags; it is spongy in texture with lots of small gas bubbles and has a lumpier surface than true tap slag. The pieces seen here are all 'fingers' 15-20 mm in diameter.

Smithing slag is produced when the bloom from a furnace is made into iron objects. The forging process squeezes out the residual slag which then collects in the smithing hearth. The temperatures reached are not as high as in a smelting furnace so the slag is less fluid and the slag lumps have a spongy appearance produced by dribbles of slag sticking together but not running into a pool. Often the smithing slag collects at the bottom of the hearth and forms a round plano-convex smithing bun or smithing hearth bottom. Typical sizes are about 10 cm in diameter.

The clay lining of the hearth is strongly heated and vitrifies, producing hearth lining which varies from vitrified clay (on the fire side) through high fired to low fired clay as one moves away from the hearth. Typical thicknesses are 5-10 mm.

Table 2: The copper alloy scrap

Finds no.	Description
68	irregular lump. ?spilt metal
77	? wire loop
78	blob
119	sheet fragments
120	lump. ? blob
123	part of a lump. ? just copper corrosion products
130	? sheet fragments. very corroded
136	lump. ? offcut
194	droplet
214	? just copper corrosion products
1044	sheet fragment
1059	massive dribble
1073	sheet fragment
1078	? clay mould fragment
1082	lump
1108	lump
1110	two lumps

The sample from context 2618 did not contain any recognisable metal droplets.