Report 3420 Lab - for ref.

Some sherds from St. Mary's Abbey, Cirencester, Gloucs.

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Six sherds (AM 810000-5) were submitted as possible crucibles. They were thought to date from the 12th or 13th century AD. All were examined under a binoccular microscope and qualitative analyses of surface deposits were carried out by energy dispersive x-ray fluorescence.

The first sherd (AM 810000) was a 'rim' with an external diameter of about 13 cm. The fabric was fired red and was quite hard and fine textured. It was however very crudely finished with ?bubbles in the hand-formed clay and a deeply convoluted inner surface. Over parts of this surface was a whitish deposit which was seen to be made up of partly vitrified quartz grains. Near the rim this process had proceeded almost to completion, giving a colourless glass with a few included grains. Further from the rim the vitrification decreased and near the broken edge of the sherd was only just sufficient to hold the quartz grains together. These deposits may have formed accidentally or may be associated with glass manufacture, though without more supporting evidence it would be rash to claim this as evidence for a glass-making industry.

The second sherd (AM 810001) was from the base or wall of a large vessel in a reduced-fired, coarse fabric. Its inner surface was covered with corroded blobs of lead. The vessel was probably used to melt lead metal, some of which was left behind.

Sherd AM 810002 was from a base of diameter c. 15 cm. The pot was of a coarse fabric and was reduced fired with an oxidised surface. The patchy vitreous deposit on its inner surface was a lead glaze. Over this was a ferruginous deposit, probably an accidentally deposited iron pan. AM 810004 also owed its partial vitreous covering to a lead glaze, though in this instance it was on the outside of the vessel and appeared far from successful. The voids in the inner surface are due, in part at least, to grits falling out of the pot in use.

AM 810003 was of a far softer fabric than any of the above, was reduced-fired and had contained a considerable amount of vegetable temper. The inner surface was covered with an irregular brown vitreous layer which contained considerable amounts of lead but also some copper, zinc and silver. It may have been part of a crucible used for melting non-ferrous metals or may have been used as a 'heating tray', the latter possibility being supported by the fabric which does not appear sufficiently refractory to be from a true crucible. 'Heating trays' are flattish dish or disc shaped crucibles which are

known on many early mediaeval metal-working sites (Bayley, forthcoming) and are used in some way in fine metal-working. Roesdahl (1977) suggests they held objects while eg filigree decoration was soldered on.

The final sherd (AM 810005) was the base part of a conical-bottomed crucible that had been used to melt a copper alloy, probably a leaded bronze (Lead, copper and tin detected by XRF). A mediaeval crucible of similar shape is known from Wadsley, near Sheffield (Tyle cote,1962) and Roman examples of similar shape though larger size are also known from Silchester and Gestingthorpe.

Only sherds AM 810003 and AM 810005 had a truely metallurgical use. AM 810001 was probably a cooking pot used to melt lead, which requires only a relatively low temperature. AM 810002 and AM 810004 were domestic pottery with a lead glaze. AM 810000 may have had an industrial use connected with the manufacture of glass.

References

Bayley, J (forthcoming) The crucibles in Excavations at Chalk Lane, Northampton by J Williams
Further examples are also known from Flaxengate, Lincoln and Coppergate, York.

Roesdahl, E (1977) Fyrkat: En jysk vikingborg. II Oldsagerne og Gravpladsen.