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EXAMINATION OF TECHNOLOGICAL SAMPLES FROM BAYHAM ABBEY, SUSSEX

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The material examined (AM 790272, 822328, 822356 and 822357) consisted of three groups of copper alloy fragments (AM 822328, 822356 and 822357) and a plano-convex ingot of lead with charcoal inclusions (AM 790272). The samples were analysed qualitatively using energy dispersive x-ray fluorescence.

The copper alloy samples were, with the exception of AM 822328 (h) all leaded bronze (a copper-tin-lead allpy). All except AM 822356 (b, f, g and j) and AM 822357 (b) also contained antimony and the appearance and composition of all the samples suggested that they were dribbles of waste metal from copper alloy casting. The presence of antimony was probably not due to deliberate choice of antimony rich copper, but to the accidental use of copper smelted from copper ores containing antimony.

AM 822328 (h) was a solid cylinder of low lead gunmetal (a copper-zinc-tin-lead alloy) and bore no relation in appearance or composition to the other samples.

The final sample (AM 790272) consisted of a dense plano-convex ingot of lead with charcoal inclusions weighing about 5 kg and about 15 cm in diameter and 6 cm in depth. It could have been formed by melting down lead in a hearth and collecting the lead in the bottom of the hearth or, though less likely, formed by melting lead out of a leaded copper alloy.

The material examined indicates that melting and, probably, casting of leaded bronze was carried out on the site, and that some of the alloys used also contained antimony. Gunmetal may also have been worked on the site. Lead melting was probably carried out on the site although there is insufficient evidence to be certain what process produced the lead ingot.