2036

ANCIENT MONUMENTS LABORATORY

INTERIM REPORT /

A.M. No.

This report is sent to keep excavators informed of the progress of work on their material and is not to be considered as necessarily representing the final conclusions on the work reported. Thus the Chief Laboratory Officer should be informed of any intention to publish information given in an A.M.L. Interim Report so that he may advise as to its suitability for publication.

On completion of an investigation, a formal report, correlating the information notified in any Interim Report will be prepared by the Laboratory. This report may include a revision of conclusions previously notified.

SITE Braintree

Interim report on technological materials

EXCAVATOR G.D. Pratt

751071 This material is vitreous on one surface and fired clay on the other, with no sharp division between the two. It is probably furnace lining although a hearth for melting copper alloys, or for ironworking, and in which high temperatures were reached could produce very similar material.

751072 Fired clay containing chalk fragments and small ferruginous nodules, probably iron fines - the small pieces and dust of roasted iron ore left behind when the larger bits are taken to charge a furnace. The iron nodules could however occur naturally in the clay.

751073 Fired clay showing distinct laminations, indicative of deliberate working.

751074 Fired clay pieces, many with shaped surfaces indicating their one time proximity to e.g. wattles.

751075 Fired clay containing more and larger inclusions than any of the preceeding samples, especially of chalk. They are mostly oxidised fired to a fairly high temperature (c.f. 751072-4 which are mixed oxidised/reduced fired materials, fired at a lower temperature). Comparatively large and flat surfaces were noted on most of the pieces.

751076 A piece of iron smelting ('tap' type) slag, identifiable by its high density and crystalline and slightly coloured appearance in fracture. Isolated fragments are not significant, however, and can sometimes be variants produced in iron working.

751077 A piece of ferruginous material, probably roasted poor quality iron ore; again (cf. 751072), this may have been a naturally occurring specimen heated accidentally.

/cont.

751078 This is a mixture of small pieces of slag, mostly iron working slag but with one piece of (probably) iron smelting slag and a few pieces of fuel ash slag.

751079 Many small pieces of fluxed material showing the range of gradation from iron working slags to fuel ash slags. Some showed distinct blue and green colours, but no copper was found on milliprobe examination. Such colours are found in small globules or runs of glass in early metalworking, and appear in massive form in the slag produced by the blast furnace in the 16th century.

751080 These are mainly pieces of cinder from iron working, including casts and replacements of unburnt fuel (wood) together with slag. There is also one piece of corroded metallic iron.

751081 A corroded piece of metallic iron.

751082 Fuel ash slag coloured with a little iron.

751083 Ash and clay fluxed on the surface to produce a fuel ash slag. One piece of corroded metallic iron.

751084 Layers of ash and clay fluxed on the surface giving a fuel ash slag appearance.

751085) Two pieces of unburnt 'box stone', useable as iron ore.
751086)

The above samples show definite evidence for iron working; it is much less positive for iron smelting as it stands, but this would be confirmed by larger quantities of specifically smelting residues (e.g. 751071 & 751076) which may be present outside the excavated area.

Justine Bayley & Leo Biek

5.3.76.