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ANCIENT MONUMENTS LABORATORY

REPORT

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TITLE

Examination of slag from
Chester Castle, CHESHIRE

EXAMINATION OF SLAG FROM CHESTER CASTLE, CHESHIRE

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The material examined (AM 830619) consisted of slag, hearth lining, charcoal and iron objects. Identifications of each sample are given in the appendix below.

Apart from the iron objects, all the material was probably waste from iron smithing. Some of the iron slag could not be confidently identified as either iron smelting or iron smithing slag, however it was probably produced during iron smithing as no clear evidence for iron smelting, such as tap slag, was found. The iron slag including the smithing slag, which is the slag which collects in the bottom of a blacksmiths hearth, was more magnetic than would normally be expected. This may be due to unusually large amounts of hammer scale, which is magnetic iron oxide flaked from iron during blacksmithing, having collected in the blacksmith's hearth, although no discrete hammer scale was observed. The fuel ash slag contained a high level of iron and was probably also formed in a blacksmiths hearth. It is the result of high temperature reaction between fuel ash and silica rich material such as sand and clay and can be formed in any fire which reaches a sufficient temperature, although it is often associated with metalworking hearths and furnaces.

The material found suggests that blacksmithing took place on or near the site. The amount of material examined would only indicate a small scale, local operation, but without knowing what proportion of the total amount of iron smithing waste this represents no further comment on the likely scale of iron smithing on the site can be made.

APPENDIX - IDENTIFICATION OF SAMPLES

AM Lab. No.	Excavator's No.	Identification
830619	C0006/059	Iron object
"	C0006/060	Iron slag
"	C0006/061	Iron smithing slag
"	C0023/062	Iron smithing slag
"	C0023/063	Iron smithing slag
"	C0026/064	Iron object
"	C0032/065	Iron smithing slag
"	C0048/066	Iron smithing slag
"	C0048/067	Hearth lining + iron smithing slag
"	C0050/068	Iron object
"	C0006/076	Iron object
"	C0006/077	Iron object
"	C0006/078	Iron smithing slag + charcoal
"	C0006/079	Iron smithing slag + charcoal
"	C0006/080	Iron slag
"	C0006/081	Iron slag
"	C0006/082	Iron object
"	C0006/093	Iron smithing slag
"	C0041/094	Fuel ash slag + charcoal
"	C0048/095	Fuel ash slag