Ancient Monuments Laboratory
Report 163/87

INVESTIGATION OF SOIL SAMPLES FROM REDCLIFF STREET, BRISTOL FOR EVIDENCE OF DYEING.

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Summary

Analysis of a series of soil fills from a suspected dyeing area yielded no conclusive evidence to support the presence of such an industry.

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Eight soil samples and one pot sherd (BHB855) were submitted for investigation. Initially a sample of the sherd was crushed and subsequently subjected to the same regime as the soil. It was decided to carry out the analysis in two stages. Stage 1 involved attempts to isolate recognisable dye from the samples. Stage 2 examined the various samples for evidence of traces of the material to be dyed.

STAGE 1.

10g portions of sample were gently crushed and extracted with various solvents. Initially, dilute acids were employed but no dyes were isolated. Subsequently, a range of organic solvents were employed, including methanol, pyridine and ethyl acetate. Again no positive results were obtained. Finally, solutions (in various solvents) of the complexing agent EDTA were employed but still without success.

Each extract was concentrated under reduced pressure and then investigated by spectroscopic methods and chromatography. Although traces of humic-like materials and metal ions - especially iron - were detected, no dye-like substances were detected.

STAGE 2.

All samples were microscopically examined but no textiles, leather, residues etc were observed. Most samples appeared to be a hotch-potch of charcoal, coal (?), fragments of mortar, soil and occasional ash slag. 10g crushed portions were subjected to soxhlet extraction using hexane and chloroform in order to detect the presence of characteristic lipid system suggestive of the original presence of wool or similar material (ie from the fulling process or from degeneration of the parent fibres.) Again the results were all negative.

Finally, 2g samples were subjected to refulx with 6M hydrochloric acid for 24 hours in order to hydrolyse any proteinaceous material present such as partially degraded wool. Although traces of amino-acids (the hydrolysis products of proteins) were detected, none were isolated in sufficient quantities to assign to wool or leather degeneration products.

CONCLUSION.

There is no evidence to suggest any of the submitted materials were associated with the dyeing industry. The somewhat

heterogeneous nature of the fills suggest secondary dumping.

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Soil samples investigated:

CDC lower fill, CFU, AMW, AMV, AQP, ARM, AXD, AXT.