ANCIENT MONUMENTS LABORATORY REPORT

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Seri es/No	CONSULTANT
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TITLE	Organic residues: Hamwih 813329, 813330, 813331

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REPORT ON ORGANIC RESIDUES: HAMWIH 813329, 813330, 813331

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The samples were initially examined using infrared spectroscopic analysis. The spectra obtained suggested the presence of organic substances. The samples were then extracted with a series of solvents, namely: hexane, chloroform, methanol and water. The various extracts were then examined by infrared spectroscopy and various chromatographic techniques.

The extracts from 813329 (a lamp) showed the residue to contain a triglyceride system similar to that of a fish oil. Hydrolysis of the hexane extract and investigation of the resulting fatty acids showed the presence of substantial amounts of palmitoleic acid (20%), palmitic acid (15%), oleic acid (40%) and acids having carbon chain lengths of C20 upwards (10%). Such a fatty acid pattern is usually associated with fish. Traces of protein were also detected but at levels too low for identification. It seems reasonable to assume that fish oil was used in the lamp.

The extracts from 813330 (soil) gave a complex series of compounds but only at low levels. The triglyceride pattern and the associated fatty acids showed the extract to contain a system similar to adipoære but levels were very low. Additionally fatty acids having odd numbered carbon chain lengths were detected indicating the presence of bacterial activity. A resinous material was isolated but its chemical behaviour indicated it to be a complex mixture which was in keeping with the presence of charcoal, bone, etc fragments present in the soil. Traces of protein were detecte but again at levels too low for identification.

813331 (a sherd) gave a triglyceride pattern and fatty acid composition closely similar to that for olive oil. Cholesterol was also detected as were traces of proteins, one component of which was identified as albunin. No carbohydrates were detected. It would seem that the pot was used to cook meat in/or with plive oil.

It is interesting to note that neither the lamp nor potsherd gave a resin system which strongly suggests that cross-contamination with the soil has not occurred.

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