5. ENVIRONMENTAL REMAINS

Leilani Lucas

Bulk samples were retained from secure, or sealed, deposits during excavations. Some bulk samples were also retained from deposits where it was possible to retrieve environmental remains that may elicit suitable material for radiocarbon dating. Only during excavations within the castle grounds were such deposits encountered, and thus only a small assemblage of bulk samples was retrieved.

The small quantity of macro-botanical remains from Hume were preserved in charred form and were separated from the soil by systematic water flotation. The methods used in the recovery and processing of the data analysed here are consistent with best practice in archaeobotany, including the use of a low-pressure water flow tap for flotation, sieve sizes of 1mm and 250µm, and the use of a low power binocular microscope for identification. The flots (light fraction) were further separated into three fractions: >2mm, >2mm and <1mm (coarse flot), and >1mm (fine flot). These fractions were then sorted separately to make the process of identification easier as the eyes accommodate and recognise shapes of the same size more efficiently. Apart from the sample recovered from C1015 the samples comprised very limited quantities of poorly preserved, unidentifiable, wood charcoal. Two poorly preserved grains of hulled barley (*Hordeum vulgare*) were identified from C1015 (>2mm and > 1mm coarse flot). The grains were identified based on the most diagnostic characteristics of hulled barley in that they are symmetric and flat-sided in cross-section (Table 3).

Dating material was therefore retrieved from two samples representing sealed or secure contexts, both from Trench 1 within the castle grounds. C1015 contained the remains of two charred barley seeds (*Hordeum vulgare*), providing potential for dating evidence from beneath floor C1003. Two samples of unidentifiable charcoal were retrieved from C1017, providing potential for dating evidence from the probable exterior wall slump from C1009.

5.1 Radiocarbon dates

Ian Hill

The charred seed and charcoal remains retrieved from C1015 and 1017 respectively were able to produce three radiocarbon dates, with two coming from the unidentified charcoal from C1017. The radiocarbon results are presented in Table 4.

The results from C1015 indicate that floor C1013 was probably laid at some time after 1446–1521 cal AD, suggesting that the floor itself and any associated remains relate, at most, to the last 200 years of use of the castle, and/or after the castle was destroyed. The nature of the slumped wall material, C1017, and the nature of the dated material from this deposit (small, unidentified charcoal fragments as opposed to annual seeds) mean that the radiocarbon dates calculated from this deposit are more ambiguous in determining a date for the collapse (or destruction) of the wall, and potentially the building. Three of these dates, from three separate fragments of charcoal, are of a very similar range suggesting that the tree or plant that this wood charcoal derived

Table 3 Environmental remains retrieved from bulk samples

Sample Number	Context Number	Wood Charcoal	Charred Plant Remains
1	1003	3 specimens wood charcoal <2 mm	-
2	006	-	-
3	003	-	-
4	004	3 specimens wood charcoal <2 mm	-
5	1015	1 specimen wood charcoal <2 mm	2 grains of *H. vulgare*
6	1017	specimens wood charcoal <2 mm	-
7	2012	-	1 small fragment of indeterminate plant material

Table 4 Radiocarbon dates from samples retrieved in Trench 1, Hume Castle grounds

Sample Number	Context Number	Laboratory Code	Uncalibrated Date BP	Calibrated Date (AD) at 95.4% Probability	Percentage Likelihood (95.4% probability)
5	1015	OxA–41796	388 +/-22	1446–1521	73.3%
				1586–1623	22.1%
6	1017	OxA–41917	334 +/-18	1490–1531	27.5%
				1537–1637	68%
6	1017	OxA–41918	346 +/-18	1475–1529	37.2%
				1547–1635	58.3%
6	1017	OxA – 42056	334 +/-19	1488–1637	95.4%
6	1017	OxA – 42057	339 +/-19	1480–1530	31.9%
				1540–1635	63.6%

from stopped processing CO_2 sometime between *c* 1540 and 1637. One date provides a broader range, extending as far back as 1488. What is not clear is whether this wood material was actually part of the wall fabric, or indeed whether these fragments may have been derived from later insect or animal activity bringing the charcoal into the deposit. It does suggest, however, that the wall probably did not slump or collapse until after this date range, and in all likelihood after *c* 1540, rather than 1488.