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Technical report: charred plant (other than where mostly of charcoal) and burnt vertebrate remains from excavations at Site 2C in the townland of Magheraboy, nr Sligo, County Sligo, Republic of Ireland (site code: 03E0538)

by

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Summary

Small quantities of charred plant and burnt vertebrate remains recovered from deposits encountered during excavations at Site 2C in the townland of Magheraboy, along the route of the Sligo Inner Relief Road, Sligo, County Sligo, Republic of Ireland, were submitted for analysis. Most of the remains were recovered from pitfills of possible early Neolithic date.

Of the nineteen samples of charred plant remains there were sixteen samples with small amounts of hazel nutshell, two each containing barley, wheat, and hexaploid wheat and a single sample yielding rather greater numbers of wheat grains thought to be emmer/spelt (and suggesting a prehistoric date). Charcoal was limited to a few small fragments, none identified further. All of the samples contained sufficient suitable material for radiocarbon dating to be attempted via AMS, but none could be recommended for dating using the standard radiometric technique.

The small quantity, poor preservation and lack of distinctive fragments of skeletal elements rendered the vertebrate assemblage of little interpretative value. Overall, the small quantities of bone recovered suggested that most of the fragments were likely to represent waste from the preparing and cooking of food.

KEYWORDS: SLIGO INNER RELIEF ROAD; MAGHERABOY; SLIGO; COUNTY SLIGO; REPUBLIC OF IRELAND; TECHNICAL REPORT; ?EARLY NEOLITHIC; PLANT REMAINS; CHARRED PLANT REMAINS; CHARRED GRAIN; BURNT VERTEBRATE REMAINS

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Technical report: charred plant (other than where mostly of charcoal) and burnt vertebrate remains from excavations at Site 2C in the townland of Magheraboy, nr Sligo, County Sligo, Republic of Ireland (site code: 03E0538)

Introduction

An archaeological excavation was undertaken by Archaeological Consultancy Services Ltd (ACS) at a site located in the townland of Magheraboy (NGR 168690/335180), to the south west of Sligo town, County Sligo, Republic of Ireland. The works were undertaken as part of a series of interventions along the route of the Sligo Inner Relief Road.

Many prehistoric features were encountered, some of which formed part of a probable early Neolithic causewayed enclosure. Some Iron Age and early medieval features were also revealed. Small quantities of charred plant and burnt vertebrate remains, recovered partly by hand-collection and partly from the processing of bulk sediment samples, were submitted to Palaeoecology Research Services Limited (PRS), County Durham, UK, for analysis. Most of the remains were recovered from the fills of pits that were excavated within the interior of the enclosure, although some was located within ditch segments. Many of the pits contained early Neolithic artefacts and some charcoal.

Methods

The sediment samples were processed by ACS prior to delivery to PRS, and the small quantities of recovered charred plant (other than where composed mostly of charcoal which were returned and are reported separately) and bone were submitted for analysis. The excavator's standard processing technique was employed. The soil samples were placed onto 1 mm nylon mesh in a sieving tank. The light organic fraction was washed over through a 2 mm sieve into a 500 micron sieve to collect the flots. Each of the soil samples was put through this system twice

to ensure that as much material as possible was recovered.

Some of the vertebrate remains, however, arrived in clumps of sediment which were carefully washed through sieves in the laboratory because of the fragile and fragmentary condition of the bone. Small amounts of additional material were collected by hand.

Plant remains, including charred nutshell and charred cereal grains, were submitted for identification and for consideration as the basis for dating by radiometric technique or accelerator mass spectrometry (AMS).

For the vertebrate remains notes were made, where appropriate, concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity').

Bone fragments were identified to species or species group using the PRS modern comparative reference collection. The bones, which could not be identified to species, were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid) and totally unidentifiable.

Results

Plant remains

The nineteen samples included some consisting only of charred nutshell, and others of charred cereal grains. Altogether there were sixteen samples with small amounts of hazel nutshell, with two each containing barley, wheat, and hexaploid wheat and a single sample (Sample 138, Context 249) yielding rather greater numbers of wheat grains thought to be emmer/spelt

(and suggesting a prehistoric date). Charcoal was limited to a few small fragments, none identified further. Details are presented in Table 1.

Vertebrate remains

Bone from 24 deposits was submitted for analysis. Most of the remains were recovered from pit fills of early Neolithic date, with some also located in the ditch segments.

Table 4 gives, in most cases, the numbers of fragments recovered, their weight and some general notes about each group of bones. Occasionally, poor preservation and the small size of the fragments precluded quantification.

Overall, the bone from most contexts was rather poorly preserved, and many fragments were rounded or had eroded edges. Most fragments were small, generally less than 10 mm in any dimension. Some fresh breakage was apparent. All of the bones were burnt and white in colour.

Little of the material could be identified, mainly because of the extensive fragmentation (and hence very small size of most bones), but also as a result of the lack of morphologically distinctive features.

Where some level of identification was possible, the remains appeared to be mainly of medium-sized mammals, with large mammal fragments recovered from a single deposit (Context 155). One deposit produced bones, one of which could be definitely identified as caprovid and it could be suggested that the rest of the medium-sized mammal fragments were also caprovid.

Discussion

Ancient plant remains were restricted to generally small quantities of rather variably preserved charred cereal grains, hazel nutshell and a little wood charcoal. These remains almost certainly represent food waste but are of little further interpretative value—with the possible exception of the rather more substantial assemblage from Context 249 (Sample 138), which consisted largely of grains thought to be emmer/spelt wheat implying a prehistoric date for the deposit. All of the samples contained sufficient suitable material for radiocarbon dating to be attempted via AMS, but none could be

recommended for dating using the standard radiometric technique. After discussion with the excavator, material for AMS dating was sorted from two samples (Samples 123 and 138, Contexts 230 and 249, respectively) and returned for submission.

The small size, poor preservation and lack of distinctive fragments of skeletal elements renders the vertebrate assemblage of little interpretative value. Bones that were identifiable represented animals, but some of the smaller unidentified fragments were so poorly preserved that the presence of human remains cannot be entirely ruled out. Overall, however, the very small quantity of bone recovered strongly suggests that most of the fragments are likely to represent animals and be waste from the preparing and cooking of food.

Retention and disposal

Other than those required for radiocarbon dating, all of the recovered remains should be retained as part of the physical archive for the site.

Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

Acknowledgements

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Table 1. Charred plant remains (other than where predominantly of charcoal) from deposits at Site 2C in the townland of Magheraboy, nr Sligo, County Sligo, Republic of Ireland.

Key to abbreviations:

charcoal—+ / ++ = little/moderate amount (reflected in weight in notes column, but cannot be related to size of sample from which charcoal was originally extracted); number = size (in millimetres) of largest fragments; A = alder (*Alnus*); C = hazel (*Corylus*); F = ash (*Fraxinus*); I = holly (*Ilex*); P = apple/hawthorn/rowan (*Pomoideae*); Pr = blackthorn/cherry/plum (*Prunus*); Q = oak (*Quercus*); S/P = willow/poplar/aspens (*Salix/Populus*); U = unidentified charcoal, not one of these other taxa.

other remains—grain: A = oats (*Avena*); H = barley (*Hordeum*); T = wheat (*Triticum*) (*Tac* = bread/club wheat, *T. aestivo-compactum*); Td/s = emmer/spelt, *T. dicoccon* Schrank/*T. spelta* L.; Th = hexaploid wheat); nutshell: N = hazel (*Corylus avellana* L.).

Context	Sample	Charcoal	Other remains	Notes
25 (pit fill)	13 14	+ 5 U	about 25 fragments N 11 fragments N	
29 (?)	23		T	plus 2 uncharred <i>Rubus</i> (blackberry/raspberry) seeds, perhaps modern
31 (pit fill)	24		5 fragments N	
33 (pit fill)	21	+ 5 U	about 27 fragments N	
37 (pit fill)	25		about 14 fragments N	
41 (?)	17		about 17 fragments N	
93 (pit fill)	38		about 12 fragments N	
96 (pit fill)	62		6 fragments N	
108 (pit fill)	79		about 20 fragments N	
126 (?)	89		11 fragments N	
155 (?)	42		several tens of fragments N	
207 (?)	128	+ 5 U	5 fragments N; fragments of one cereal grain	
210 (?)	131		8 fragments N	
212 (?)	125		approx. 30 fragments N	
220 (pit fill)	124		H, Th	about 5 g charred cereals, mostly encrusted with silt; apparently mostly wheat (including some hexaploid grains), the rest barley
230 (pit fill)	123		H, Th	about 2 g charred cereal grains, plus one uncharred <i>Rubus</i> seed (bagged separately), grain a mixture of rather silt-encrusted barley and wheat (including some hexaploid grains)
249 (?)	138	+ 5 U	a few tens of fragments N; Td/s	a large bag of wheat from which a smaller subsample had already been sorted; smaller subsample comprising about 1259 mg of moderately well-preserved wheat, probably all emmer/spelt (a few fragments of charcoal removed before weighing); rest of sample containing many modern roots; there was no chaff or weed seeds
275 (?)	175		a few tens of fragments N	

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Table 2. Notes on the suitability of charred plant remains (other than where predominantly of charcoal) from deposits at Site 2C in the townland of Magheraboy, nr Sligo, County Sligo, Republic of Ireland, for radiocarbon dating. Key: Radio = standard radiometric technique; AMS = accelerator mass spectrometry. Possibilities for dating are indicated thus + = possible, but not ideal given size of sample; ++ = easily enough datable material; () indicates cases where dating would be on material which might return a misleading date.

Context	Sample	Sample notes	Approximate weight of dateable material	Dateable by?	
				Radio	AMS
25	13	about 25 fragments silty charred hazel nutshell plus a trace of charcoal	565 mg	-	++
25	14	11 fragments charred hazel nutshell	235 mg	-	++
29	23	2 uncharred blackberry (<i>Rubus</i>) seeds, 1 charred ?wheat grain	10 mg	-	+
31	24	5 fragments silty charred hazel nutshell	183 mg	-	++
33	21	about 27 fragments silty charred hazel nutshell; 1-2 fragments charcoal	1233 mg	-	++
37	25	about 14 fragments charred hazel nutshell	781 mg	-	++
41	17	about 17 fragments charred hazel nutshell	579 mg	-	++
93	38	about 12 fragments charred hazel nutshell	325 mg	-	++
96	62	6 fragments silty charred hazel nutshell	199 mg	-	++
108	79	about 20 fragments silty charred hazel nutshell	316 mg	-	++
126	89	11 fragments charred hazel nutshell	458 mg	-	++
155	42	several tens of fragments of silty charred hazel nutshell	1699 mg	-	++
207	128	5 fragments charred hazel nutshell, 1 fragment charcoal; fragments of one cereal grain (probably broken since retrieval)	84 mg total	-	+
210	131	8 fragments charred hazel nutshell, (some silt)	194 mg	-	++
212	125	approx. 30 fragments of charred hazel nutshell	933 mg	-	++
220	124	charred cereal grains, mostly encrusted with silt; apparently mostly wheat (including some hexaploid grains), the rest barley; weight includes modern roots and encrusting silt	3260 mg	(+)	++
230	123	charred cereals plus one uncharred <i>Rubus</i> (bagged separately); grain a mixture of rather silt-encrusted barley and wheat, including some hexaploid material; weight includes dust and roots and encrusting silt	1638 mg	-	++
249	138	a few tens of fragments of charred hazel nutshell, also a large bag of wheat grain from which a smaller subsample had already been sorted; smaller subsample about 1259 mg of moderately well preserved wheat, probably all emmer/spelt (a few fragments charcoal removed before weighing); rest of sample with many modern roots; no chaff or weed seeds	1740 mg	-	++
275	175	a few tens of fragments of silty charred hazel nutshell	471 mg	-	++

Table 3. Material selected and returned to the excavator for submission for radiocarbon dating.

Context	Sample	Dry weight	Material selected for submission
230	123	0.25 g	Charred cereal grains: hexaploid wheat, 250 mg
249	138	1.74 g	Charred <i>Corylus</i> (hazel) nutshell, 1.7 g

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Table 4. Bone recovered from deposits at Site 2C in the townland of Magheraboy, nr Sligo, County Sligo, Republic of Ireland. Key: No. frags = number of fragments; Wt (g) = weight in grammes; **= too fragmented and poorly preserved to quantify.

Context	No. frags	Wt (g)	Notes
43	3	4	one medium-sized mammal scapula fragment and 2 unidentified fragments
55	6	<1	six very small unidentified fragments
66	~4	<1	a few very small fragments of burnt bone
77	3	1	three fragments, two ?medium-sized mammal rib and shaft fragments
79	3	<1	three very tiny unidentified fragments
109	~6	<1	several very small fragments, all were unidentified
112	12	<1	small unidentified fragments
151	9	1	nine small unidentified fragments
155 (bag 1)	28	10	mostly unidentified but includes some medium-sized mammal shaft fragments (?tibia) and carpal/tarsal
155 (bag 2)	21	14	few fragments represent a large mammal petrous temporal bone (i.e. a part of the temporal bone which surrounds the inner ear). Rest of fragments unidentified
156 (bag 1)	22	3	several medium-sized mammal shaft fragments. Rest unidentified
156 (bag 2)	58	17	some large mammal fragments, probably of the same bone. One medium-sized mammal tibia fragment.
207	~80	16	reasonable preservation but very fragmented. Sheep/goat calcaneum and several medium-sized mammal scapula, tibia, phalange (second) and rib fragments (all probably also sheep/goat)
226 (bag 1)	43	5	medium-sized mammal rib and shaft fragments and two sheep/goat second phalange fragments (probably representing the same bone)
226 (bag 2)	10	1	all small and unidentified
226 (bag 3)	18	3	includes medium-sized mammal distal metapodial fragment
226 (bag 4)	10	<0.5	tiny unidentified fragments
226 (bag 5)	48	6	all small and unidentified
226 (bag 6)	14	2	all small and unidentified
232	1	1	medium-sized mammal carpal/tarsal fragment
287	10	<0.5	
321 (bag 1)	4	2	medium-sized mammal sesamoid, rest of fragments unidentified
321 (bag 2)	2	<0.5	both fragments unidentified
325	5	<0.5	all small unidentified fragments
346	26	3	all small unidentified fragments
376	5	<0.5	a few small unidentified fragments
389	**	<0.5	a few very small unidentified 'crumbs' of bone
393	13	2	small unidentified fragments
394	6	1	all small unidentified fragments
397	~3	<0.5	small 'crumbs' of bone
425 (bag 1)	5	<0.5	all unidentified
425 (bag 2)	1	<0.5	all unidentified
425 (bag 3)	20	<0.5	all unidentified
464	**	<0.5	very small 'crumbs' of bone

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