Technical report

Analysis of plant remains from Ballinglanna North 1, Co. Cork (E2414)

By Penny Johnston

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Appendix 5 Plant remains

Analysis of the plant remains from Ballinglanna North 1, Co. Cork (E2414)

By Penny Johnston

Introduction

This short report details the results of plant remains analysis from Ballinglanna North 1, Co. Cork (E2414). The site comprised a post-medieval structure, a habitation area, a drainage system, a ditch a metal-working area, two large pits and a burnt mound/fulacht fiadh.

Methodology

The samples were collected on site as bulk soil and were processed using machine-assisted floatation (following guidelines in Pearsall 2000). The floating material (or 'flot') from each sample was collected in a stack of geological sieves (the smallest mesh size was 250μm). When all the carbonised material was collected the flot was then air-dried in paper-lined drying trays prior to storage in airtight plastic bags. The samples were scanned under low-powered magnification (x 10 to x 40) using a binocular microscope. Nomenclature and taxonomic order follows Stace (1997).

Results

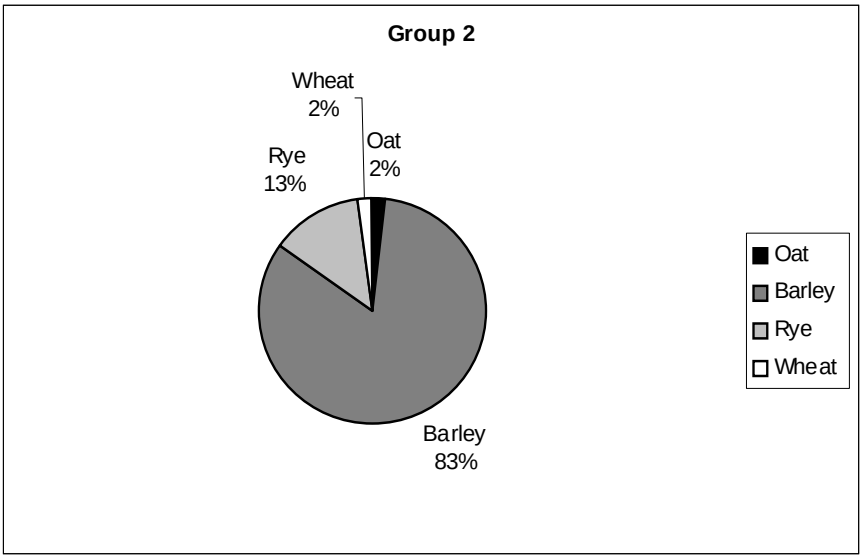
The results of preliminary scanning are presented in Table 1 at the end of this report. A total of 65 samples were scanned. Plant remains were present in 38 of the samples.

The identifications are presented in Table 2. Plant remains were present in samples from Groups 2, 3, 4, 5, 7, 8 and 11. They were most common in samples from Groups 2, 3 and 4 and this analysis will concentrate on material from these groups.

Group 2 (Fulacht fiadh/burnt mound)

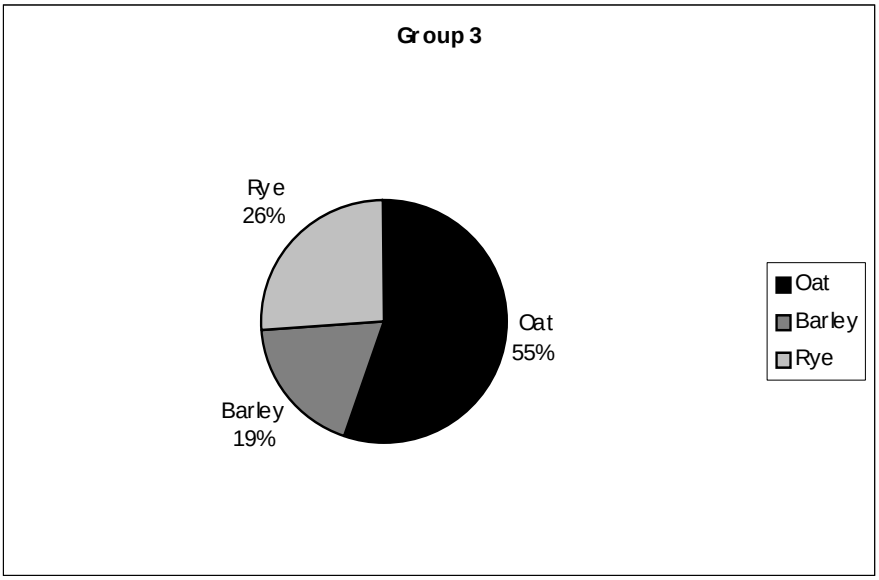
The burnt mound deposits and associated features at Ballinglanna North 1, contained charred plant remains. These included the burnt mound deposit (C.163) and the fill of a well (C.230) and a post-hole (C.225). This result is relatively unusual because charred seeds are not common finds in fulacht fiadh/burnt mound deposits. Studies of plant remains from 132 burnt mound sites indicate that cereal remains were recorded at less than 8% of examined sites. The remains were always preserved by charring and were recorded in very small quantities (IADG 2007). At three burnt mound sites excavated along the route of the N8 Fermoy to Mitchelstown (Ballinglanna North 1, Kildrum 1 and Kilshanny 3), charred seeds were recovered in small amounts. The charred remains from Ballinglanna North 1 were more frequent than at the other sites and included a moderate portion of charred cereal grains. The cereals were predominantly barley (83% of identifiable grains), but a significant portion of rye (13%) was also found along with a small percentage of wheat (2%) and oat (2%). The presence of oat and rye is surprising, as these two cereal types do not

become common in archaeological deposits until the medieval period (Monk 1986, 34) and burnt mound deposits are usually considered to be Bronze Age in date. As the site at Ballinglanna North 1 was subject to quite a significant amount of later disturbance it is possible that these seeds are later and re-deposited.



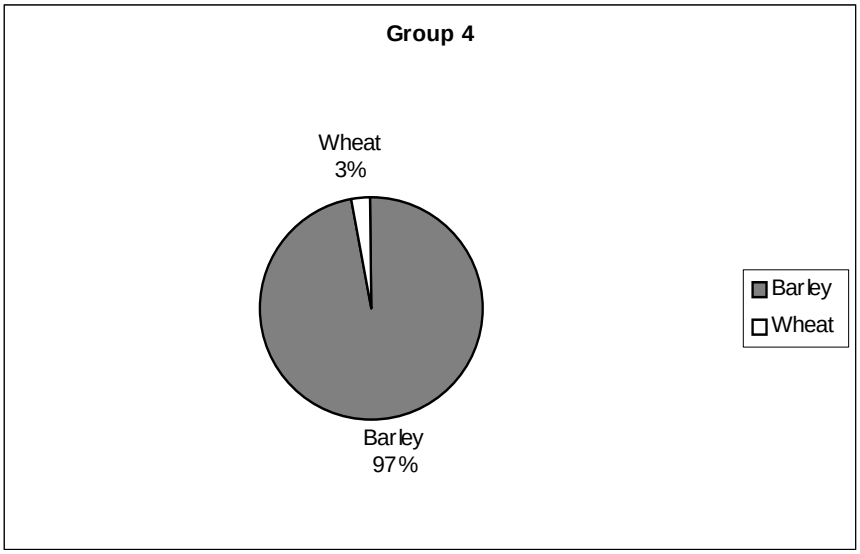
Group 3 (Large pit to the west of the burnt mound)

The material from Group 3 was primarily from a large pit C.268 to the west of the burnt mound contained a moderate quantity of cereal grains. Oat was the most common cereal type in these deposits, representing 55% of the identifiable cereal count. Rye was also present (26%), as was barley (19%). The recovery of small amounts of slag from the deposits in these pits suggest that these were used as a repository for waste from metalworking (a metalworking area classified as Group 4 was located some metres to the east). It is possible that the seeds from this deposit were also associated with metalworking. However, the assemblage from this part of the site was predominantly made up of oat, while the assemblages from the other areas of the site, including the metalworking features, were predominantly made up of barley. The percentage breakdown of the material from this pit therefore distinguishes it from the plant remains found in the other areas of the site.



Group 4 (Metalworking area)

The material from Group 4 was associated with an area of metalworking located to the east of the burnt mound deposits. These were taken from contexts C.214, C.242, C.256 and C.265, three pit fills and one fill of a linear feature. The plant remains from these deposits were primarily barley (97% of identifiable cereal grains), where identifiable they were largely naked barley, and a small quantity of wheat (3%).



It is often recognised by archaeobotanists that charred cereals make their way into archaeological deposits as a result of being burnt as fuel. For example, Monk and Kelleher (2005, 93) briefly discuss the likelihood that some cereals from grain drying kilns came from fuel. The most usual fuel-types discussed are crop processing

residues (such as chaff, weed seeds and occasional cereal grains) which can be used as tinder. However, cereal grains themselves can provide a reliable, heat-efficient source of fuel: an early medieval metalworking furnace in Co. Kerry (Deerpark Lispole 05E1097) produced large quantities of burnt oat grain from firing contexts (Johnston 2006). A large deposit of charred grain was also recovered from a site at Ahanaglogh in Co. Waterford (Brewer 2008, 146) and both sites demonstrate the possibility that surplus grain was used as a source of fuel. This may also be the case in the metalworking deposits found at Ballinglann North 1.

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Table 1: Scanned samples from Ballinglanna North 1, Co. Cork (E2414)

Sample	Context	Charcoal	Seeds	% scanned
4	11	High	Low	100
6	13	Medium	Absent	100
7	15	Low	Absent	100
15	18	Low	Absent	100
18	26	Low	Low	100
20	31	High	Low	100
21	40	High	Low	100
32	12	Low	Low	100
38	76	Medium	Absent	100
40	44	High	Low	100
40	34	Medium	Low	100
40	226	Low	Low	100
47	71	Medium	Low	100
48	84	Low	Absent	100
50	93	High	Low	100
51	94	Low	Absent	100
52	95	High	Low	100
53	96	Low	Low	100
54	97	Low	Low	100
55	75	Low	Low	100
55	96	Low	Low	100
58	137	Low	Low	100
59	128	Low	Absent	100

Sample	Context	Charcoal	Seeds	% scanned
61	138	Low	Low	100
63	131	Low	Absent	100
64	132	Low	Absent	100
65	139	High	Medium	100
98	188	High	Absent	100
102	175	Medium	Absent	100
103	177	Low	Absent	100
107	182	High	Absent	100
110	190	High	Absent	100
111	189	High	Low	100
112	196	High	Absent	100
115	192	High	Absent	100
126	222	Medium	Low	100
130	216	Low	Absent	100
131	214	Medium	Low	100
144	?	High	Absent	100
145	242	Low	Low	100
149	256	High	Medium	100
154	261	Low	Absent	100
157	265	Medium	Low	100
187	294	Low	Medium	100
196	300	Medium	Low	100
198	298	High	High	100
217	132	Low	Absent	100

Sample	Context	Charcoal	Seeds	% scanned
225	339	Low	Absent	100
234	352	Low	Low	100
250	275	Medium	Low	100
260	290	High	Absent	100
261	377	High	Absent	100
274	379	High	Absent	100
275	380	Low	Low	100
276	381	Low	Low	100
277	386	Low	Low	100
278	387	Low	Absent	100
279	388	Low	Absent	100
279	388	Low	Low	100
281	337	Medium	Low	100
283	339	Low	Low	100
285	384	Low	Absent	100
286	389	Low	Absent	100
?	163	High	Medium	100
?	134	Low	Absent	100

Table 2: Identified seeds from Ballinglanna North 1, Co. Cork (E2414)

Group	**7**	**7**	**11**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**5**	**5**
Context	**11**	**12**	**21**	**26**	**31**	**34**	**44**	**47**	**75**	**76**	**93**	**93**
Sample	**4**	**32**	**40**	**18**	**20**	**40**	**40**	**72**	**55**	**38**	**50**	**50**
Hazelnut shell fragments (*Corylus avellana* L.)	46		23		4	6	6		1	1		2
Fat-hen (*Chenopodium album* L.)												
Indeterminate seeds from the goosefoot family (Chenopodiaceae)												
Black bindweed (*Fallopia convolvulus* (L.) Á. Löve)												
Probable Sheep's sorrel (*Rumex* cf *acetosella* L.)							1					
Indeterminate seeds from the Knotgrass family (Polygonaceae)			1									
Wild radish (*Raphanus raphanistrum* L.) capsule												
Indeterminate seeds from the mint family (Lamiaceae)												
Plantain (*Plantago* L. species)												
Indeterminate seeds from the sedge family (Cyperaceae)												

Group	**7**	**7**	**11**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**5**	**5**
Context	**11**	**12**	**21**	**26**	**31**	**34**	**44**	**47**	**75**	**76**	**93**	**93**
Sample	**4**	**32**	**40**	**18**	**20**	**40**	**40**	**72**	**55**	**38**	**50**	**50**
Oat grains (*Avena* L. species)			1	1		1	2					9
Possible oat grains (cf *Avena* species)					1							
Barley grains (*Hordeum vulgare* L.)	3					3		2				
Naked barley grains (*Hordeum vulgare* L.)												
Rye grains (*Secale cereale*)						1						
Possible rye grains (cf *Secale cereale*)												
Rye rachis internodes (cf *Secale cereale*)												
Wheat grains (*Triticum* L. species)						1						2
Wheat/Rye grains (*Triticum*/*Secale*)												
Indeterminate cereal grains	1	1	1		1	7	6			1	2	3
Indeterminate grass seeds (Poaceae)												
Indeterminate weed seeds						1	2					

Table 2: Identified seeds from Ballinglanna North 1, Co. Cork (E2414) continued

Group	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**2**	**2**	**4**	**5**	**2**	**4**
Context	**95**	**96**	**96**	**97**	**137**	**138**	**139**	**163**	**189**	**214**	**222**	**226**	**242**
Sample	**52**	**52**	**55**	**54**	**58**	**61**	**65**	**?**	**111**	**131**	**126**	**40**	**145**
Hazelnut shell fragments (*Corylus avellana* L.)							16						
Fat-hen (*Chenopodium album* L.)								1					
Indeterminate seeds from the goosefoot family (Chenopodiaceae)													
Black bindweed (*Fallopia convolvulus* (L.) Á. Löve)								4					
Probable Sheep's sorrel (*Rumex* cf *acetosella* L.)													
Indeterminate seeds from the Knotgrass family (Polygonaceae)							1	8					
Wild radish (*Raphanus raphanistrum* L.) capsule								1					
Indeterminate seeds from the mint family (Lamiaceae)													
Plantain (*Plantago* L. species)													
Indeterminate seeds from the sedge family (Cyperaceae)								5					

Group	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**2**	**2**	**4**	**5**	**2**	**4**
Context	**95**	**96**	**96**	**97**	**137**	**138**	**139**	**163**	**189**	**214**	**222**	**226**	**242**
Sample	**52**	**52**	**55**	**54**	**58**	**61**	**65**	**?**	**111**	**131**	**126**	**40**	**145**
Oat grains (*Avena* L. species)		2		1			5	1					
Possible oat grains (cf *Avena* species)											1		
Barley grains (*Hordeum vulgare* L.)		2	1	4	2		1	38	3			1	1
Naked barley grains (*Hordeum vulgare* L.)								1					
Rye grains (*Secale cereale*)								5					
Possible rye grains (cf *Secale cereale*)		1						2					
Rye rachis internodes (cf *Secale cereale*)								3					
Wheat grains (*Triticum* L. species)	1				1			1					1
Wheat/Rye grains (*Triticum*/*Secale*)							1	2					
Indeterminate cereal grains		3	1		4	1	2	82		1			1
Indeterminate grass seeds (Poaceae)													
Indeterminate weed seeds							1	1					

Table 2: Identified seeds from Ballinglanna North 1, Co. Cork (E2414) continued

Group	**4**	**4**	**8**	**8**	**3**	**3**	**3**	**5**	**5**	**?**	**5**	**5**	**5**
Context	**256**	**265**	**275**	**286**	**294**	**298**	**300**	**337**	**339**	**352**	**380**	**381**	**388**
Sample	**149**	**157**	**250**	**277**	**187**	**198**	**196**	**281**	**283**	**234**	**275**	**276**	**279**
Hazelnut shell frags (*Corylus avellana* L.)				1	5	5		1				2	
Fat-hen (*Chenopodium album* L.)						1							
Indeterminate seeds from the goosefoot family (Chenopodiaceae)			1			2							
Black bindweed (*Fallopia convolvulus* (L.) Á. Löve)					2	5	1						
Probable Sheep's sorrel (*Rumex* cf *acetosella* L.)						7							
Indeterminate seeds from the Knotgrass family (Polygonaceae)					5	22	6			3			
Wild radish (*Raphanus raphanistrum* L.) capsule					1	2							
Indeterminate seeds -mint family (Lamiaceae)						1							
Plantain (*Plantago* L. species)						1							
Indet. seeds-sedge family (Cyperaceae)													

Group	**4**	**4**	**8**	**8**	**3**	**3**	**3**	**5**	**5**	**?**	**5**	**5**	**5**
Context	**256**	**265**	**275**	**286**	**294**	**298**	**300**	**337**	**339**	**352**	**380**	**381**	**388**
Sample	**149**	**157**	**250**	**277**	**187**	**198**	**196**	**281**	**283**	**234**	**275**	**276**	**279**
Oat grains (*Avena* L. species)			2		4	16	9					1	2
Possible oat grains (cf *Avena* species)													
Barley grains (*Hordeum vulgare* L.)	1	3	1			6	4				1		
Naked barley grains (*Hordeum vulgare* L.)	27												
Rye grains (*Secale cereale*)						9	5						
Possible rye grains (cf *Secale cereale*)													
Rye rachis internodes (cf *Secale cereale*)													
Wheat grains (*Triticum* L. species)													
Wheat/Rye grains (*Triticum*/*Secale*)					2	4							
Indeterminate cereal grains			1	1	2	16	7		1				
Indeterminate grass seeds (Poaceae)						2	2						
Indeterminate weed seeds					2	1				1			

References

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