

20. The Charred Plant Remains

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Twenty one samples from Roman deposits were analysed after processing by floatation to 500 μ and initial assessment of 67 samples from all periods (Huntley and Daniell, 2000). In the laboratory flots were examined at magnifications of up to x50 and seeds were identified by comparison with modern reference material held in the Biological Laboratory of the Department of Archaeology, University of Durham. Charred seeds were counted but non-charred material was scored on a 1–5 scale with 1 = the occasional occurrence to 5 = many 100s in a sample. In a rich charred assemblage it is possible to investigate the nature of cereals – whether whole ears or partially processed material is present – from the proportions of grains to chaff fragments, thus counting is of value. However, water-logged material is not so potentially precise – a single plant will vary the numbers of seeds it produces from year to year as well as different plant species producing very different numbers. The charred data were standardised to seeds per 10 litres processed and these are the figures presented unless otherwise stated.

The largest group of samples was associated with hearths immediately pre-dating the construction of the fort in the late second to early third centuries A.D. (Table 20.1). Hexaploid wheat grains were the most abundant remains – whilst these may have been bread wheat they could equally have been from spelt wheat. Interestingly no barley was present at all which is unusual for Roman deposits. Heather remains were moderately common and, given the nature of the contexts, may represent some aspects of fuel, although more likely to have been the kindling as it was twigs and flowers rather than larger fragments of stem. Context 3112 was a levelling or demolition layer over the hearths and clearly had little plant material in it. This would indicate that it came from elsewhere and did not consist of re-deposited debris from the hearths. Whilst hearths may have been part of corn drying it seems more likely that the plant remains represent remains of food prepared nearby especially as the features are considered to be in temporary use during the construction of the fort.

Table 20.1 Samples from Group 1.

Context number	2911	2918	2910	3085	3112	3106	2871
GROUP	1.1	1.1	1.1	1.1	1.1	1.1	1.2
Cerealia undiff.			1	2	1	2	15
<i>Triticum</i> (hexaploid)		1	5	4		1	25
<i>Calluna vulgaris</i> twigs – heather		6	10	1			
<i>Calluna vulgaris</i> flowers – heather		7					
<i>Anthemis cotula</i> – stinking mayweed		2					
Polygonaceae undiff.			1	1			
<i>Corylus avellana</i> nut frag. – hazel			1				
<i>Carex</i> (trigonous) – sedges			4				
<i>Rumex</i> sp(p).				17			
<i>Stellaria media</i>						1	
<i>Triticum aestivum</i> grain							2

The second group of samples comes from small buildings associated with early modifications of the fort in the late second to early third centuries (Table 20.2). All of the plant remains from group 2.1 came from Building II which was divided into two small rooms. 3053 was a patch of occupation material in the east room and produced a few grains each of hulled barley and oats. The other three contexts from this group were from the west room and produced wheat and oats but no barley at all. Poorly preserved cereal grains, however, dominated the group. A small selection of arable weed seeds occurred including corn flower, a species more typical of medieval deposits. Group 2.2 covered the third phase of modifications when the east and west rooms were combined in the late third century. Oats were most common with 2986, a clay layer surrounding a hearth/pit, also containing moderate numbers of rather poorly preserved barley grains and high numbers of indeterminable cereal grain.

One charred apple/pear pip provides minimal evidence for other food remains. More

cornflower occurred. Context 2003, a soak-away in the west room, produced the richest samples in terms of taxa recorded with a few more weed or ruderal taxa present. The two samples from group 2.3 represent the demolition of Building II in the later third century or later. Whilst they contain the indeterminate cereal and oat grains there is no clear evidence of plant debris being deposited here. Although numbers clearly are small there is a consistent lack of wheat in samples from groups 2.2 and 2.3 – whether this might reflect use of the rooms for animal housing can only be conjectured. Barley is traditionally associated with animal feed, with wheat as human food. The consistent occurrence of oats may also point to animal fodder although oatmeal, obviously, is eaten by people.

The final groups of samples relate to the east granary, notably its change of use in the late third to early fourth centuries and subsequent abandonment (Table 20.3). Chickweed seeds are more common than anything else, but even so numbers are very low. Otherwise there is a

Table 20.2 Samples from Group 2.

Context number	3053	3055	3061	2960	3070	2993	2990	2986	2961	3007	2985
GROUP	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3
Cerealia undiff.		13	4	36		12		154		6	1
<i>Avena</i> grain – oats	7	6		6		10	3	16	1	2	4
<i>Hordeum</i> indet.					2	5		35	1	1	
<i>Hordeum</i> hulled – barley	9				3			6			
<i>Triticum</i> (hexaploid)		4		9							
<i>Prunella vulgaris</i> – self heal			1	1		7				1	
<i>Stellaria media</i> – chickweed				1		1		1	1		
<i>Centaurea cyanus</i> – cornflower		1						1			
Polygonaceae undiff.		1									
<i>Rumex obtusifolius</i> -type docken				1							
<i>Calluna vulgaris</i> flowers – heather				1							
<i>Calluna vulgaris</i> wood – heather						1					
<i>Calluna vulgaris</i> twigs – heather									1		
<i>Tripleurospermum maritimum</i> – scentless mayweed										1	
<4mm legume – vetch						2					
<i>Malus/Pyrus</i> – apple/pear						1					
<i>Carex</i> (lenticular) – sedges						2					
<i>Bromus</i> sp(p). grain						1					
<i>Ranunculus repens</i> -type – buttercups						1					
Gramineae <2mm – small grasses									1		

Table 20.3 Samples from Group 3.

Context number	3346	3346	3353	3235
GROUP	3.1	3.1	3.1	3.2
<i>Stellaria media</i> – chick weed	1	8	4	
Cerealia undiff.	1	6		
<i>Triticum</i> (hexaploid)	1	4		
<i>Avena</i> grain – oats		3	6	
<i>Hordeum</i> indet.			1	5
<i>Triticum aestivum</i> grain	3			
<i>Chenopodium album</i> – fat hen	2			
Gramineae >4mm – large grasses	1			
<i>Triticum spelta</i> glume	1			
<i>Corylus avellana</i> nut frag. – hazel	1			
<i>Carex</i> (trigonus) – sedges		3		1
<i>Anthemis cotula</i> – stinking mayweed			1	
<i>Vitis vinifera</i>			3	
Culm nodes – cereal straw			1	
<i>Triticum aestivum</i> internode			1	
<i>Prunella vulgaris</i> – self heal				4
Polygonaceae undiff.				1

selection of other weedy taxa and evidence for wheat, oats and barley. Both bread and spelt wheats are demonstrably present. Nothing is sufficiently abundant to suggest usage of a particular context and the plant remains are considered to reflect activity elsewhere on-site.

Whilst a few contexts produced low numbers of waterlogged seeds of especially elderberry and blackberry, the robbed remains of a stone platform outside the granary entrance (context 3346) produced a more substantial waterlogged assemblage (Table 20.4). This assemblage was dominated by some hundreds of hazel nutshell fragments but a range of other taxa was present too. Coriander was abundant and there were moderate numbers of fig pips – both typical of the so-called Roman faecal suite and evidence for imports from, probably, the Mediterranean. Blackberry, radish and cabbages would have been locally available possible foods but maybe just ruderals growing in waste places. The remaining plants represented are largely such denizens although the traditional cornfield weeds of corn cockle and corn marigold may well have been brought to the site with cereal crops. Both of these are more typical of medieval deposits in the north. Hemlock and

henbane are both deadly poisons but, as they too are reasonably common ruderal taxa, there is no especial reason to suggest that they reflect a medicinal, or other more nefarious, use.

In more general terms, the matrix component 'clinker/cinder' was dominant in almost all of the samples with charcoal becoming more abundant with time and being dominant in a few of the latest samples. Coal itself was scattered through in low amounts. The main interpretation is that coal was probably a more important fuel at least in contexts associated with these deposits – arguably not surprising given the local abundance of this commodity.

The only context with a variety of matrix components is 3346, the one with abundant waterlogged seeds too. The two obviously are linked. Fly puparia were abundant and probably reflect foul and rotting conditions although insect remains were rare. Unusually for Roman deposits, fish bone was quite common although small and comminuted. It is doubtful whether any could have been identified.

Small mammal bones were never abundant but were constant in Group 3 (change of use of

Table 20.4 Waterlogged remains (1–5 score) – late robbing of granary (context 3346).

t	<i>Corylus avellana</i> – nut fragment	4
a	<i>Chenopodium album</i> – fat hen	3
e	<i>Coriandrum sativum</i> – coriander	3
t	<i>Rubus fruticosus</i> – blackberry	3
r	<i>Conium maculatum</i> – hemlock	3
r	<i>Hyoscyamus niger</i> – henbane	3
x	<i>Ranunculus repens</i> -type – buttercup	3
r	<i>Raphanus raphanistrum</i> pod frag. – radish	3
a	<i>Agrostemma githago</i> – corncockle	2
a	<i>Polygonum lapathifolium</i> – persicaria	2
a	<i>Fallopia convolvulus</i> – black bindweed	2
a	<i>Chrysanthemum segetum</i> – corn marigold	2
w	<i>Carex</i> (trigonous) – sedges	2
r	<i>Rumex obtusifolius</i> -type – docken	2
x	<i>Cirsium</i> sp(p). – thistles	2
r	<i>Brassica</i> sp(p). – cabbage family	2
r	<i>Brassica campestris</i>	2
e	<i>Ficus carica</i> – fig	2

Plus a score of 1 for each of:

– a *Centaurea cyanus* (corn flower), a *Valerianella dentata*, r *Raphanus raphanistrum*, r *Reseda lutea* (weld), a *Galeopsis tetrahit* (hemp nettle), r *Atriplex* sp(p), g *Potentilla erecta*-type (tormentil), a *Polygonum lapath/persicaria*, r *Silene vulgaris* (white campion), r *Rumex acetosella* (sheep's sorrel), t *Crataegus monogyna* (hawthorn), t *Sambucus nigra* (elderberry), a *Polygonum persicaria* (redshank), w *Ranunculus sceleratus* (water crowfoot), x *Lamium* undiff. (dead nettles), x *Ranunculus* sp(p), x *Rumex* sp(p). perianth, x *Silene* sp(p).

(initial letter = ecological category – a = arable weed, e = exotic, r = ruderal, t = wood/scrub, w = wet, x = broad, g = grassland)

the granary), and in one of the early third century samples.

The charred remains are, not surprisingly, dominated by cereal crops and their associated weeds. Cereals need drying prior to storage and thus have a greater opportunity of being burnt than many other vegetation types although, obviously, local bonfires can include rubbish and locally growing vegetation.

Barley, as is nearly always the case in Roman material from northern England, is the most abundant grain with wheats next. Most of the latter have being categorised as hexaploid due to the grains of spelt and bread wheat, the two

common hexaploids, being impossible to separate in most instances. A few grains definitively bread wheat were those considerably shorter and broader and akin to *Triticum aestivo-compactum*. One fragment of chaff from each of these species was also recorded. Spelt was the common wheat of the Roman period although bread wheat was being stored in the granaries at South Shields (van der Veen, 1992). Discussion as to whether bread wheat was locally grown or imported to South Shields for distribution remains ongoing. Oat grains were present throughout but without the characteristic floret bases it is not possible to ascertain whether these were from wild or cultivated oats. The status of oats, again, remains enigmatic although there are suggestions that they became a crop in their own right towards the later part of the Roman period in north-east England already being common in the wetter west in the first century AD (Huntley and Stallibrass, 1995).

Chaff, the ear and stem fragments, is more or less absent, thus it may be concluded that fully processed grain was being used or discarded in these contexts. However, the moderate numbers of indeterminable cereal grains suggest that chaff, if present at first, may not have survived to any extent. The grains themselves, even if not identifiable, were generally well filled – certainly not tail grain or a poor quality crop. This suggests that taphonomic factors caused the poor quality preservation.

Other food plants include fig, grape, apple/pear, blackberry and hazelnuts, the two former being imports and the others locally available. Fragments of heather were scattered throughout the samples with slightly more in the later material but remains are few overall. Heather may have been used as roofing by the Romans as it was later (Emery, 1986) or could have been used either as bedding for animals or people or as fuel. Weed seeds were quite rare. Their apparent abundance in the pre-construction barrack phase is a result of only two samples being analysed and one having 17 dock seeds in it. Nothing is abundant. They represent traditional arable weeds and the more ruderal

and weedy species expected to be growing around a nutrient enriched occupied site.

Fig. 20.1 presents a comparison between the groups illustrating those charred taxa present at concentrations of more than or equal to 5 and then grouping into 3 subjective blocks – rare, occasional, abundant – for each group. It most strongly shows an apparent shift from wheat to barley in groups 1 to 2 with both having abundance in different parts of group 3.

Whether such a change relates to the fort as a whole is doubtful but it may well suggest a change in use of this area of the fort. Perhaps from a more human-use early phase, as suggested by the contexts, to one where animal activities were the norm.

Although this is a relatively small dataset it provides the only information on plant remains for Roman Newcastle upon Tyne. Barley and wheat, both bread and spelt, were used, oats may have been. The crops in the fort were apparently fully processed although, of course, contexts containing processing debris may have not survived, not been excavated or not have been present. As always in archaeology we only have a sample of the whole site.

Group	1.1	1.2	2.1	2.2	2.3	3.1	3.2
Triticum (hexaploid)	■	■	■	■	■	■	■
Cerealia undiff.	■	■	■	■	■	■	■
Hordeum hulled (barley)			■	■	■	■	■
Avena grain			■	■	■	■	■
Rumex obtusifolius-type (docken)			■	■	■	■	■
Hordeum indet.			■	■	■	■	■
Triticum aestivum grain (bread wheat)			■	■	■	■	■
Calluna vulgaris twigs (heather)	■						
Calluna vulgaris flowers	■						
Carex (trigonus) (sedges)							
Rumex sp	■						
Bromus sp						■	■
Vitis vinifera						■	■
Gramineae ?4mm (large grasses)						■	■
Polygonum lapath/persicaria							

KEY
 □ absent □ rare ■ occasional ■ abundant

Fig. 20.1 Abundance of major charred taxa recovered from Roman deposits.

