

## Charred Plant Remains

*By Sharon Cook*

### *Introduction*

Thirteen bulk soil samples were taken during the excavation at Coton Lane, Tamworth in 2018 and processed by water flotation to 250µm (flot) and 500µm mesh (residue). Following an assessment of the flots, which determined that generally the charred plant remains from this site are in poor condition with heavy external encrustation as a result of mineral precipitation, two samples, 2001 from ditch fill 2010 and 2006 from ditch fill 2411 (both from ditch group 51102), were selected for further, more detailed work. Both samples have been dated to the mid/late Roman period (AD 125-410).

### *Method*

Due to their size and the richness of the assemblages both flots were riffled using a sample splitter (van der Veen & Fieller 1982) to obtain a representative portion which was sorted using a low power (x10) binocular microscope to extract cereal grains and chaff, smaller seeds and other quantifiable remains (see Table 1 for details).

Identifications were carried out using standard morphological criteria for the cereals (Jacomet 2006) and with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) for identification of wild plant remains, as well as comparison with modern reference material. Classification and nomenclature of plant material follows Stace (2010).

Quantification of remains is as follows; cereal grains and the seeds of wild plants were only quantified for items of which more than half was present, this means that all cereal and seed counts may be used to reach an MNI (Minimum number of individual seeds). For legumes, chaff and nutshell fragments the count is for all observed fragments, this means these figures are not suitable for use in calculating MNI.

### *The Assemblages*

Generally, despite the poor condition and of charred remains elsewhere on this site, the two samples from ditch 50012 contained a substantial quantity of charred material some of which is well-preserved. Heavy external encrustation on the exteriors of the charred material, a slight metallic appearance to some of the charcoal and evidence of vivianite staining together with occasional extremely well preserved individual grains indicates that this ditch was at least partially water filled during its period of use. Unfortunately, while this has led in some cases to exceptional preservation as with a single grain in sample 2006 which still has fine hairs attached and an oat grain also within sample 2006, still fully enclosed within its floret but unfortunately without the diagnostic base attached, this encrustation has obscured many details.

Table 1 lists the charred taxa identified from both of the sorted samples.

Both flots include cereal grains and chaff, with glume base fragments and other chaff forming the majority of the charred assemblages, excluding charcoal, and cereal grain

forming the next most frequent component within the flots. Uncultivated species form only a small part of the total number of identified items, possibly because smaller seeds had been removed by fine sieving in advance of further crop processing. While oat awns are present these fragments are extremely small and are likely to represent only a small number of complete specimens.

The two samples differ slightly in their make up with only small numbers of barley grains in sample 2001 and a much larger quantity within sample 2006. Wheat (*Triticum* sp.) grains are fairly frequent in both samples and on the basis of the glume base fragments are likely to be mainly, or entirely, glume wheat (*T. spelta/dicoccum*). Despite the large quantity of glume base fragments, due to extensive fragmentation and heavy external encrustation on all material, only a few could be identified to species and these are spelt wheat (*Triticum spelta*). Given the middle to late Roman date, it is likely that the majority of wheat was of this type, as this is typically the case for sites in the west midlands of this date (Cleary 2011).

It is unclear whether the cereals were grown as separate crops or as maslins (van der Veen 1995). Rachis fragments are fairly abundant in both samples, but a large proportion of the cereal grains are too fragmented to fully identify so it is not possible to accurately assess the full makeup of the grain assemblage. A large proportion of the cereal grains are very small in size and appear to be tail grains, i.e. the small grains usually found towards the base of the ear.

The presence of a few rye (*Secale cereale*) grains is interesting as this crop is largely associated with the Saxon period and not commonly found on earlier sites, although it has been occasionally recorded from Roman sites in the east midlands such as Dunston's Clump in Nottinghamshire (Monkton 2006). Further north, other Roman examples include finds from York (Williams 1979), Verulamium (Helbaek 1952), Scotch Corner and Walton-le-Dale (Hall & Huntley 2007). It is believed that rye was introduced to Germany during the Roman period (Mills 2006) however; while in the past the general consensus was that rye when present for this period in Britain represented small groupings of crop contaminants as opposed to being a crop in its own right (Campbell 2016, Senser & Hawkes 1980), further research has concluded that it was possibly a minor crop in areas of marginal soils (Allen *et al* 2017). Rye chaff and grains discovered during excavation for the M6 Toll (Powell *et al* 2008) also provide further evidence for its use as a crop during the Roman period. It is possible that the lack of rye within Roman assemblages is a result of the brittle floret of the rye grain which makes them particularly prone to casual dispersal or as a result of their preference for light sandy soils which may affect preservation.

The small uncultivated plant assemblages are similar in both samples; the majority are common crop contaminants or found in field margins or waste places, such as grass seeds (Poaceae), fat hen (*Chenopodium album*), docks (*Rumex* sp.) and wild radish (*Raphanus raphanistrum*).

It would seem likely, based on the lack of charred remains within the other sampled contexts on this site, that samples 2001 and 2006 represent individual dumps of crop processing waste and that this waste was not distributed elsewhere across site. Dumps of

burnt wheat chaff as spent fuel are typically found in Roman features across the east Midlands (Monkton 2006), but the fact that these two samples came from deposits within the same feature may be an indication that storage and preparation of grain for consumption was generally carried out in this specific locality and perhaps one or more of the posthole groupings in this area are from granary type structures. It is generally considered that in the Iron Age and Roman periods glume wheats were stored within the glume and processed in a piecemeal fashion as and when required on a weekly/monthly basis (Hillman 1981, Jones 1985). It is worth noting that a large proportion of the grain in samples 2001 and 2006 are 'tail grains' which are the smaller grains on an ear and are more likely due to their small size to fall through a mesh when sieving to remove waste. Slight abrasion was also noted on the exterior of many grains which may be the result of de-hulling (Cappers 2016: 1499).

### ***Conclusion***

During the middle to late Roman period on this site the charred remains indicate a mixed arable regime with both glume wheat, probably mainly or entirely spelt, and barley cultivated. The occasional rye may be a weed of crop or evidence of small scale cultivation. It is unclear if the oats were crop contaminants or if oat was deliberately cultivated this time. Superficially at least, the numbers of grains appear to be similar to the number identified as wheat and barley, but when the large number of indeterminate cereal grains, which in general shape and size are most likely to be wheat or barley, are taken into account the number of oat grains present appears much less significant. Unfortunately, the lack of floret bases means that it is impossible to further identify the oats, to species.

The concentration of emmer/spelt glume bases as well as rachis fragments, tail grains and weeds of crop indicate that ditch 50012 contained dumps of cereal – predominantly wheat – processing waste indicating the dehusking of wheat, probably grown locally, for consumption.

<b>Sample No</b>		2001	2006
<b>Context No</b>		2010	2411
<b>Feature</b>		2008	2409
<b>Group</b>		50012	50012
<b>Description</b>		Fill of ditch	Fill of ditch
<b>Date</b>		125-410	125-410
<b>Processed soil Volume (L)</b>		35	40
<b>Flot Volume (ml)</b>		375	100
<b>Flot Analysed</b>		25%	50%
<b>Charcoal</b>			
	>4mm	***	***
	2-4mm	****	****
<b>Cereal grain</b>			
<i>Triticum</i> sp.	wheat	24#	24#
cf <i>Triticum</i> sp.	cf. wheat	13#	12#
<i>Hordeum</i> sp.	barley		49#
cf <i>Hordeum</i> sp.	cf. barley	3#	27#
<i>Secale cereale</i>	rye	5#	6#
<i>Avena</i> sp.	oat	8#	28#
<i>Avena/Bromus</i>	oat/brome	13#	36#
Cerealia	indet cereal	114#	224#
<b>Chaff</b>			
<i>Triticum dicoccum/spelta</i>	emmer/spelt glume base	1422#	513#
<i>Triticum dicoccum/spelta</i>	spikelet forks	5#	3#
<i>Triticum spelta</i>	spikelet forks	6#	
<i>Triticum/Hordeum</i>	rachis fragments	188#	54#
<i>Hordeum</i> sp.	barley rachis fragments	6#	5#
<i>Avena</i> sp.	oat awns	***	***
<i>Avena</i> sp.	oat floret fragment	1#	1#
Cerealia	indet detached embryos	10#	27#
<b>Wild Species</b>			
<i>Vicia/Lathyrus</i> sp. <2 mm	vetch/vetchling/tare etc		2#
<i>Persicaria</i> sp.	knotweed	2#	1
<i>Rumex</i> sp.	docks	6#	9#
<i>Spergula arvensis</i>	corn spurrey	1	
<i>Chenopodium album</i>	Fat hen	1#	12
<i>Veronica hederifolia</i>	ivy-leaved speedwell		1
Asteraceae	daisy family		5#
<i>Leucanthemum/Tripleurospermum</i> sp.	oxeye daisies/mayweed	2#	
<i>Tripleurospermum</i> sp.	mayweeds	3#	3#
<i>Juncus</i> sp.	rushes	3	
<i>Carex</i> sp.	sedges	1	5#
Poaceae	grass seeds (various)	8#	13#
<b>Other</b>			
<i>Raphanus raphanistrum</i>	wild radish seed capsules	9# + 1	8# + 1
Indet	tubers/rhizomes	3#	
Indet.	seed/fruit	16#	14#
# Majority fragmented, vitrified or missing some external indicators. *1-5, **5-25, ***25-50, ****50-100, *****100+			

Table 1: Analysis of selected samples.

## APPENDIX C      BIBLIOGRAPHY

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