

## APPENDIX 1 - MACROSCOPIC PLANT REMAINS AND CHARCOAL

### 1.1 Charred Plant Remains and Charcoal

*by Dana Challinor*

#### *Introduction*

- 1.1.1 Soil samples were taken during the excavation for the recovery of charred plant remains and charcoal. A range of features, dating to the Romano-British period, were sampled including ditches, pits, postholes and waterholes. The samples were taken in accordance with the Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. Soil samples were taken in order to provide environmental and economic data, and environmental remains have particular relevance to the general CTRL Research Aims in establishing regional patterns of cereal economy in the Roman period.

#### *Methodology*

- 1.1.2 A total of 55 samples were taken on site. 24 samples were processed by flotation in a modified Siraf-type machine, with the flots collected onto a 250µm mesh. The volume of soil processed varied (from 1 to 41 litres) according to the feature type. All 24 samples processed produced flots which were submitted for assessment. In addition to the samples which produced charred plant remains, there was one sample from pit 242 (context 250) which appeared to contain waterlogged preservation. With the exception of this flot which was retained wet, the flots were air-dried and divided into fractions using a set of sieves. Each fraction was then scanned under a binocular microscope at x10 to x20 magnification. Any seeds or chaff noted were provisionally identified based on morphological characteristics, and an estimate of abundance was made. Fragments of charcoal were randomly extracted, fractured and examined in transverse section. Fragments caught in the >2mm sized sieves were quantified as identifiable.

#### *Quantification*

- 1.1.3 Twenty flots produced identifiable charred remains (Table 8.1). All of these produced cereal grain, predominantly *Triticum spelta/dicoccum* (spelt/emmer wheat), with occasional *Hordeum vulgare* (barley) and some short grained *Triticum* sp. (wheat) which may be either a free-threshing bread type wheat or a short grained spelt. Quantities of cereal grain varied considerably, from a few grains (1-10) to more than 1000. Large assemblages were present in several deposits (124, 125, 508, 559 and 891), spanning the Roman period from AD 70-150 to 270-400. Chaff was also abundant in these samples; mostly *Triticum spelta/dicoccum* glume bases, but *Hordeum* rachis, and charred awn fragments were also recognised. A range of weed seeds were also noted in most samples; these included *Rumex* (docks), small Gramineae (grasses) and Leguminosae (legumes) but the majority of richer samples were dominated by *Bromus* subsect *Eubromus* (brome grass) seeds. A couple of nutshell fragments, thought to be *Corylus avellana* (hazel), were noted in contexts 124 and 162.
- 1.1.4 The samples were generally rich in wood charcoal, with a range of taxa - *Quercus* sp. (oak), *Fraxinus excelsior* (ash), *Alnus/Corylus* (alder/hazel), *Prunus* sp. (blackthorn, cherry) and Maloideae (hawthorn, apple, pear etc).
- 1.1.5 The waterlogged remains from pit 242 (context 250; sample 50) were examined by Dr Mark Robinson of the Oxford University Museum. Vast quantities of degraded

*Rubus fruticosus* (blackberry) seeds were visible but other seeds were rare, with only a few *Juncus* (rush) seeds noted. The flot also contained some poorly preserved mineralised material; fragments of wood and other plant tissues, as well as insect larvae. The fine residue fraction from this sample was also examined. Mineralised small ungulate droppings were noted, as well as some twisted plant fibres, not inconsistent with spun wool. Small faunal remains, including a possible fish scale were present in both the flot and residue.

- 1.1.6 In general, the preservation of charred material was moderate, although many of the grains were infused with sediment. The quantity of cereal remains, found in a range of features, is indicative of crop processing activities on the site. The cereal remains at Bower Road, however, are not typical of processing waste which contains few grains but frequent glume bases and some weeds. At this site, the majority of samples were dominated by grain or grain-sized weeds, comparable to assemblages formed by accidental burning during spikelet processing or storage. The aisled barn at Thurnham Roman Villa, similar to the structure excavated at Bower Road, was associated with a corn dryer which produced similar assemblages. The wood charcoal is likely to represent the dumped remains of fuel, potentially from fires associated with the crop processing. The range of taxa present suggests that there was little deliberate selection of firewood, which was probably collected on an *ad hoc* basis according to availability.
- 1.1.7 The waterlogged remains from context 250 were very poorly preserved and limited to woody fragments and robust seeds. This indicates that the deposit was not permanently anaerobic. The mineralised remains, while not well-preserved, were not inconsistent with material usually found in cess pits. In any case, it is certainly an unusual deposit.

#### *Provenance*

- 1.1.8 The samples were from a range of features of all periods and from all areas of the site (see Table 8.1). Of the five particularly rich samples recommended for further analysis (see below), two are from ditches around the posthole building (contexts 508 and 559 from subgroups 171 and 181), and three are from discrete pits (contexts 124 and 125 from 2nd-century pit 123, and context 891 from 1st- to 2nd-century pit 886 immediately south of the main site). The waterlogged and mineralised remains from context 250 are from pit 242, which contains human and animal bone, pottery and glass suggestive of a special, possibly terminal, deposit.

#### *Comparative Material*

- 1.1.9 The range of species identified are appropriate for the Romano-British period. The cereal taxa, *Hordeum vulgare* and *Triticum spelta*, are the principal cereals recorded throughout southern Britain at this time (Greig 1991) and have been recorded from other contemporary sites within the CTRL project (eg. Thurnham Villa, Hockers Lane and East of Station Road). In addition, deposits from Thurnham Villa and Hockers Lane have produced *Triticum dicoccum*, which has not been recorded at Bower Road. However, the presence or absence of *T. dicoccum* will need to be confirmed at the analysis stage. It is one of the research aims to establish how important this crop was in the region during the Roman period.
- 1.1.10 The mineralised material is very unusual for this period. Only two other sites (Silchester, Hampshire and Uley, Gloucester) have produced mineralised deposits of Roman date (Mark Robinson, pers. comm.).

*Conservation*

- 1.1.11 The flots are in a stable condition and can be archived for long term storage.

*Potential for further work*

- 1.1.12 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 1.1.13 Five samples of charred plant remains are recommended for full analysis (samples 1, 4, 46, 47 and 67). These have the potential to provide economic information for the site as well as to aid understanding of regional agricultural patterns. Further analysis of the distribution of charred plant remains across the site may enhance understanding of the function of structures and areas of the site, and the nature and range of activities carried out there. Current knowledge of the agricultural activities of the area in the Iron Age and Romano-British periods is limited and the CTRL projects offer the opportunity to conduct a regional study.
- 1.1.14 Further work on the wood charcoal would increase the species list, but is not considered necessary, as it has little potential to add to the economic or environmental understanding of the site.
- 1.1.15 The presence of Roman mineralised remains is of regional as well as national interest. The provenance of this material enhances its value, as pit 242 contained possible special deposits of human and animal bone, pottery and glass and may represent a terminal deposit. Full analysis of the mineralised remains may add to the list of material associated with this special deposit and thus be of value for the analysis of ritual practice during the Roman period. Although the preservation at Bower Road is not very good, the material is rare enough to warrant further work
- 1.1.16 It is recommended that full analysis is carried out on the five richest charred samples and the mineralised material. The full analysis comprise standard procedures of sorting the material , identifying and counting it. The faunal remains should also be looked at by a specialist.

*References*

Greig, J. 1991 The British Isles, in W. van Zeist, K. Wasylkova and K-E. Behre (eds) *Progress in Old World Palaeoethnobotany*, 299-334, Rotterdam

Table 7.1: Samples with charred plant remains and charcoal

Sample	Context	Feature	Period	Sample size (l)	Flot size (ml)	Charcoal	Charcoal id	Grain	Chaff	Weed seeds	Notes
1	508	Ditch	270-400	41	70	+++	<i>Fraxinus</i> Maloideae	+++	+++	+++	Charred awn frags
2	515	Ditch	-	37	40	+	<i>Quercus</i> Maloideae	+	+	+	<i>Triticum spelta</i> spikelet fork.
4	559	Ditch	LIA-70	40	45	++	<i>Alnus</i> <i>Corylus</i> Maloideae	+++	+++	+++	Small bones
5	419	Ditch	-	20	75	++++	<i>Quercus</i> Maloideae	+		+	
6	417	Postpipe	ERB	20	18	+	<i>Quercus</i>	+		+	
15	338	Posthole	ERB	12	45	++++	<i>Alnus/Corylus</i> <i>Prunus</i>	+		+	Lots snails
21	463	Ditch	200-270	40	60	+	<i>Quercus</i>	+	+	-	
22	464	Ditch	ERB	22	55	+	<i>Quercus</i>	+	-	-	
23	367	Ditch	100-150	38	80	+++	<i>Quercus</i> <i>Fraxinus</i>	++	+	+	Charred awn frags
26	215	Water hole	270-300	40	70	++	<i>Alnus/</i> <i>Corylus</i> <i>Fraxinus</i>	++	++	+	<i>Hordeum</i> rachis
27	243	Pit	4th C	40	25	++++	Maloideae <i>Quercus</i> <i>Alnus/</i> <i>Corylus</i>	+	-	+	
44	102	Water Hole	130-200	40	30	+	<i>Alnus/</i> <i>Corylus</i> <i>Quercus</i>	+	+	-	
46	124	Pit	150-200	0	28	++	<i>Quercus</i> Maloideae	++++	+++	++++	<i>Corylus avellana</i> nutshell
47	125	Pit	150-200	35	35	+++	<i>Quercus</i> Maloideae	+++	++++	++++	
48	126	Pit	3rd C	22	28	++	<i>Quercus</i> Maloideae	++	++	++	
49	148	Pit	70-200	32	35	++	Maloideae <i>Alnus</i> <i>/Corylus</i>	++	+	++	
53	104	Water Hole	ERB	20	15	+	<i>Quercus</i> <i>Prunus</i>	+	-	-	Lots snails
54	162	Water Hole	70-150	40	40	+++	<i>Quercus</i> Maloideae	+	+	+	<i>Corylus avellana</i> nutshell
56	673	Posthole	RB	0	30	+++	<i>Quercus</i>	+	-	-	
67	891	Pit	70-150	0	800	+++	Maloideae <i>Alnus/</i> <i>Corylus</i>	1000+	++++	+++	Charred awn fragments

+ = 1-10 items; ++ = 11-50 items; +++ = 51-100 items; ++++ = 101-1000; 1000+ = >1000

