

Assessment of plant and insect materials from samples of deposits excavated at Heslington East (sitecode HE08-11) by the Department of Archaeology, University of York

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Summary

This document reports an assessment of plant and insect remains recovered from a variety of samples excavated at the Heslington East site by the University of York's Department of Archaeology.

Plant remains were present in most samples in the form of small wood charcoal fragments, and in many cases there were also small numbers of charred cereal grains (usually rather poorly preserved), very rarely a few fragments of glume wheat chaff, a few charred weeds seeds, and fragments thought to be roots or basal twig fragments of heather, together with charred root/rhizome fragments of herbaceous plants and some material thought to be burnt peat.

A few contexts, notably the fills of a large well, produced assemblages dominated by uncharred (waterlogged) plant remains, sometimes with modest concentrations of well preserved insects.

Material examined

The circumstances of excavation during annual Departmental Field Schools and Community Excavations permitted a reasonably comprehensive sampling programme to be undertaken for deposits whose stratigraphy in this area was generally rather shallow and where preservation of biological remains was generally rather limited (except in the case of the fills of a well). The bulk of the material considered here originated in samples of whole sediment collected during excavation, though there were also a few 'spot' samples of charcoal and some concentrations of charcoal from an urned cremation, largely recovered during excavation of the urn fill in the laboratory.

Most of the whole sediment samples were of the order of 7-10 litres in volume (though they ranged from 0.5-48 l) and were, in the main, 'bulk-sieved' as part of an annual exercise involving Year 1 students who were learning methodologies for extracting biological remains from archaeological deposits. This sieving produced a 'residue' of >1 mm material and a 'float' of >0.3 mm material, both fractions usually being dried after disaggregation. The residues were sorted by students (with oversight by ARH) and—as might have been anticipated—rarely yielded more than a very little charred plant material which had failed to 'float' (though they were the source of small amounts of artefactual material, bone and occasionally snails). The flots, where the bulk of the charred plant material resided, were mostly much less thoroughly examined during the student practical classes and they have

therefore been examined in their entirety as part of this exercise; residues have not been revisited.

A few samples (primarily from the fills of the well) were also bulk-sieved, but the flots were kept wet prior to examination by the authors. This is not entirely appropriate for the recovery of insect remains (though it will have enabled larger specimens to be concentrated in a way that would not have been possible with smaller subsamples sieved entirely to 0.3 mm). Some additional insect material was recovered from the dried residues for these samples. One further small group of samples with waterlogged preservation were examined as part of a student project, with oversight, again, by ARH.

Results

Table 1 gives an overview of the materials recorded from the samples.

For the most part there were only small amounts of ancient charred plant material, though many samples yielded uncharred remains thought to be of recent origin. Apart from wood charcoal from trees, small amounts of characteristically curved to sinuous and ‘dimpled’ fragments thought to be the roots or basal twigs of heather (*Calluna vulgaris*) were often recorded, along with some other remains which may have originated with them in imported peat or heathland turves: small fragments of charred root or rhizome from herbaceous plants (most likely grasses, Gramineae, or sedges, *Carex* spp.) and sclerotia (spherical resting bodies) of the soil-dwelling fungus *Cenococcum*. In a few cases, material which may have been burnt peat or humic soil was also noted. The bulk of the records for these materials are for Phase B-D, especially C-D. These are adding to a growing picture of exploitation of heathland resources in the Vale of York in the Roman-British period (Hall, unpublished data, though see Hall and Huntley, 2007, and Hall, 2003, for some relevant discussions).

There were a few deposits with some waterlogged preservation, including the fills of the Roman well and some ditch fills in Group 59. The former contained relatively low concentrations waterlogged plant and insect remains (and some snails!) though interpretatively useful assemblages of plant and insect material could probably be obtained using large subsamples. The plant remains provide evidence for conditions around the well at the time of deposition (which, not surprisingly, seems to have been post-use) and include only traces of plants which seem likely to have been useful in various ways.

These three insect assemblages are broadly similar (allowing for random sampling effects in a diverse fauna). They are typical of well fills, with abundant remains of ground-living species likely to have succumbed to the ‘pitfall’ effect. Others probably entered in flight. They suggest (in confirmation of the evidence from plant remains) that the surroundings were probably weedy terrain with some grassy areas, and there was probably grazing nearby (not necessarily within less than hundreds of metres, though, allowing for the mobility of dung beetles and in view of the predominance of scarabaeids over foul-matter staphylinids and hydrophilids). There was strikingly little evidence of human occupation—no clear synanthrope component beyond species favoured by disturbance, which make up almost the whole of the assemblages. This may be the result of infilling during

abandonment, or simply be because the well was considerably removed from buildings in contemporaneous occupation. Assuming that the insects were not stirred into the fills from a lower use-phase sediment (as postulated for the Skeldergate well in York by Hall *et al.* 1980), it appears that conditions around the well remained surprisingly constant over a very long period of time.

The deposits from the Group 59 ditch were examined as part of a student project and showed that modest assemblages of uncharred plant and insect material were present giving evidence for the environment in and near the ditch—mainly wetland taxa with some weeds and grassland types, as well as woodland plants, perhaps from nearby hedges. Some remains of heathland plants were present here, too.

Recommendations for further work

A small proportion of the sampled deposits were sufficiently rich in wood charcoal to make the identification of a subsample worthwhile to establish the range of taxa present over the long period represented by the deposits (though taking care to avoid material from contexts where there is the likelihood of reworking or residuality). It may also be worth revisiting those samples with modest assemblages of charred cereal grains to establish more carefully the taxa present, though preservation was generally rather poor and it is likely that many grains will not be confidently assigned to one of the cereal taxa.

The waterlogged deposits from the well yielded assemblages which offer some indication of the surroundings of the well at the time of deposition and/or represent remains present in sediments deliberately deposited into the well (and which may therefore include some material which is a little older). They deserve further consideration, as do the samples of ditchfills.

References

Hall, A. (2003). Recognition and characterisation of turves in archaeological occupation deposits by means of macrofossil plant remains. *Centre for Archaeology Report 16/2003*. [available at <http://research.english-heritage.org.uk/report/?8799>]

Hall, A. R. and Huntley, J. P. (2007). *A review of the evidence for macrofossil plant remains from archaeological deposits in Northern England*. (English Heritage) [Research Department Report Series 87/2007](#). 450pp.

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Table 1. Complete list of samples examined for plant and invertebrate remains from Heslington East (University Department of Archaeology-dug areas). List follows stratigraphic group, then context, then sample number order. Samples marked with an asterisk are considered worthy of some further investigation, at least at the level of some charcoal identifications. Selected taxa are shown with their abundance on a four-point scale (1—trace; 2—moderate amount), with further remains mentioned in the ‘Notes’ column.

Key: + = trace noted during initial sorting but not seen during assessment; ch—charred; fgts—fragments; glb—glume-bases; indet.—indeterminate (not identified further); rt-tw—root/basal twig. The number in parenthesis in the ‘wood charcoal’ column indicates the size of the largest fragment (to the nearest 5 mm).

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
0	438	92/BS		8								1[5]	sample from subsoil, though presumably containing some charcoal from occupation
1	46	30/BS	7		1							1[5]	
1	75	12/BS	5					1				1[5]	
1	114	32/BS			1			1				1[15]	
1	181	27/BS	11									+	
1	195	33/BS										1[15]	
2	106	23/BS										1[5]	
2	190	29/BS	9									1[5]	
3	38	22/BS			1			1				1[10]	
3	38	25/BS	11		1							1[10]	
3	51	28/BS						1				1[5]	
3	67	67/SPT	6									1[10]	
3	107	21/BS	11									1[10]	
4	90	40/BS	8									1[5]	
5	188	26/BS	11									1[10]	
6	82	17/BS*	11									2[30]	about 200 cm ³ charcoal

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
6	100	5/BS	10									1[10]	
6	101	6/BS	6		1			1				1[10]	
6	102	18/BS*	6									2[15]	about 20cm ³ charcoal including well-grown oak
6	165	165/SPT										1[25]	
6	169	16/BS	8					+					
6	257	65/BS		1					?1			1[5]	
6	262	67/BS		7.5								1[5]	
6	266	59/BS		7.5								1[15]	
6	267	66/BS		1	1							1[5]	
6	269	68/BS		1								1[10]	
6	274	69/BS		5	1			1				1[5]	
7	264	71/BS		0.5								1[5]	
8	258	61/BS		7.5								1[5]	
8	258	64/BS		2.5				1				1[5]	
8	258	258/SPT										1[10]	
8	259	62/BS		7.5				?1				1[25]	
8	278	70/BS		2.5								1[5]	about 50 cm ³ pure <i>Atriplex</i> seeds, perhaps a rodent cache and perhaps not ancient?
11	71	10/BS			1			1	1			1[5]	
11	73	35/BS	11		1			1				1[5]	
11	126	36/BS	11						?1	1		1[5]	also trace of oat, <i>Avena</i> , grains
11	158	37/BS	11		1							1[5]	
12	49	3/BS	11		1				?1	1		1[5]	also traces of charred sedge nutlets

Group	Context	Sample	Wt (kg)	Vol (l)	<i>cf. Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
12	50	8/BS	10		1		1	1				1[5]	also ?burnt peat fragments
12	50	9/BS			1		1			1		1[5]	
12	50	11/BS	9		1			1				1[5]	
12	50	13/BS			1			1		1	1	1[5]	
12	50	14/BS			1		1			1		1[5]	
12	50	15/BS*	10		1		1	1				1[10]	
12	50	34/BS	11		1					1		1[5]	
16	202	41/BS	7										barren
16	1937	296/BS		9				1				1[2]	
17	125	19/BS	10										+
18	47	24/BS	5									1[15]	a single fragment of charred hazel nutshell
18	64	20/BS	4										barren
20	410	96/BS											barren
21	401	98/BS		8						?1		1[10]	
21	717	148/BS								1		1[5]	
21	731	150/BS										1[5]	
21	739	153/BS						1		1		1[5]	
21	743	156/BS										1[10]	
22	722	149/BS			1			1				1[5]	
22	733	152/BS											+
23	734	151/BS										1[10]	
23	734	734/SPT										1[30]	
23	736	155/BS										1[10]	
23	741	154/BS										1[25]	
23	742	742/SPT										1[15]	
24	411	97/BS		8	1			1				1[10]	

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
24	530	131/BS		6				1				1[5]	
24	726	147/BS								1		1[5]	
30	444	444/SPT										1[15]	a single charcoal fragment
30	445	103/BS		9				1				1[15]	
30	479	137/BS		8	1					1		1[5]	also ?burnt peat fragments
30	480	85/BS		6				1				1[5]	
30	480	95/BS		8	1			1				1[5]	
30	484	109/BS*		9					?1	1		1[25]	also trace of ?oat grain(s)
30	485	110/BS		9				1		1		1[10]	
30	495	102/BS		8								1[2]	
30	497	497/SPT										1 [20]	charred roundwood fragments
30	498	94/BS		10	1			1				1[5]	
30	547	547/SPT										1[10]	
31	397	72/BS		9	1							1[10]	
31	397	76/BS		9	1							1[10]	also a single fragment of charred hawthorn (<i>Crataegus monogyna</i>) pyrene)
31	397	397/SPT										1[20]	
34	435	89/BS		7				1				1[5]	
34	437	88/BS		7								1[5]	
34	442	80/BS		8				1					
35	515	122/BS*		4				1				1[5]	also ?burnt peat fragments and a single charred goosegrass (<i>Galium aparine</i>) fruit
36	427	74/BS		8								1[5]	
36	482	105/BS		8					1				
36	483	117/BS		9			1	1	1	1		1[5]	

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36	521	118/BS		8	1			1				1[5]	
36	522	120/BS*		8	1			1	1	1	?1	1[5]	also a few charred weed seeds
38	424	73/BS						1				1[5]	
38	469	114/BS										1[15]	
38	490	116/BS		7	1			1				1[5]	
38	491	104/BS		8	1				1			1[5]	
38	536	121/BS		8				1				1[5]	
39	455	115/BS		8				1				1[15]	
39	475	129/BS		4					1			1[10]	
39	586	130/BS		4								1[5]	a single charcoal fragment
42	488	91/BS		8								1[5]	
42	596	138/BS		2								1[3]	
44	597	139/BS										1[2]	
45	599	140/BS		2									barren
46	400	81/BS		8	1		1	1				1[5]	
46	487	99/BS		8	1			1				1[5]	
46	500	100/BS		8				?1				1[5]	also ?burnt peat fragments
46	529	119/BS		8				1				1[5]	
46	537	136/BS		9				1				1[10]	
46	612	142/BS		2				1				1[5]	
48	600	141/BS		1								1[2]	
50	396	77/BS		8	1		1	1		1	1	1[5]	
50	448	75/BS		9				1				1[5]	
52	430	84/BS			1							1[5]	
52	430	111/BS		8	1							1[5]	
52	430	112/BS		8								1[5]	

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53	465	113/BS		8				1				1[5]	
53	466	90/BS		8									
53	466	107/BS		7									barren
53	468	106/BS		9								1[2]	
56	439	93/BS		6								1[5]	
59	413	78/BS*											small assemblage of uncharred seeds including duckweed (<i>Lemna</i>) and water crowfoot (<i>Ranunculus</i> Subg. <i>Batrachium</i>), and some perennial weedy taxa (elder, stinging nettle), with <i>Daphnia</i> ephippia
59	413	82/BS		8	1							1[5]	moderate numbers of uncharred elder seeds
59	413	125/T*	3										examined as part of a student project: see text
59	413	83/BS*		9									moderate numbers of uncharred elder seeds and traces of blackberry seeds
59	440	79/BS*		8									moderate numbers of uncharred elder seeds and traces of blackberry and weed seeds
59	440	86/BS		10								1[10]	also ?burnt peat fragments and moderate numbers of uncharred elder seeds

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59	440	87/BS*		9								1[5]	also some uncharred remains: wood, moderate numbers of elder seeds and traces of hemlock, <i>Stachys</i> and blackberry propagules
59	440	135/T*	3										examined as part of a student project: see text
59	517	129/T*	3										examined as part of a student project: see text
62	944	201/BS		5.5				1				1[5]	
62	971	200/BS		7.5								1[5]	a single charcoal fragment and a single charred elder seed
62	971	206/BS		8									barren
62	971	208/BS		8									barren
62	991	171/BS		7.5	1							1[5]	
62	1121	194/BS		7.5				?1					
63	969	202/BS		8				1				1[5]	
63	969	207/BS		8	+							+	
63	1025	168/BS		6.5								1[5]	also trace of charred sedge nutlets
63	1025	205/BS		11.5	1							1[10]	also burnt peat fragments (to 5 mm)
63	1030	204/BS		7	1			1				1[5]	

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63	1037	170/BS		6				+				+	
63	1037	203/BS*		3	1		1	1			?1	1[10]	
64	1060	193/BS		7.5								1[5]	
68	1261	212/BS		7	1							1[10]	
68	1261	217/BS		7								1[10]	also a fragment of charred sloe (<i>Prunus spinosa</i>) fruitstone
69	1257	216/BS		8	1							1[5]	
70	1266	213/BS		6								1[20]	
70	1270	214/BS		7			1		1			1[10]	
70	1272	215/BS		1								1[10]	
70	1272	218/BS		7	1							1[10]	
70	1274	219/BS		7	1							1[15]	also fragments of charred ?sloe (<i>Prunus spinosa</i>) fruitstone
71	987	163/BS		8.5								1[5]	
71	987	164/BS		7.5				1				1[10]	
72	1053	178/BS		8.5								1[5]	
73	1006	165/BS		4								1[10]	
73	1014	167/BS		7.5	1							1[5]	
75	1011	166/BS*		9								1[10]	
76	990	162/BS		7.5								2[25]	
76	1007	186/BS*		8.5				1				1[20]	
76	1079	196/BS		9	1			?1				1[5]	
77	989	161/BS		8.5								1[10]	
77	1044	172/BS*		9	1							1[5]	also ?burnt peat fragments (to 5 mm)

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
77	1044	179/BS*		9								1[2]	moderate numbers of uncharred elder seeds and some other seeds, including henbane, <i>Hyoscyamus niger</i>
77	1065	184/BS*		15				1				2[10]	moderate numbers of uncharred elder seeds
77	1065	1065/T			1				1	1		1[25]	the wet residue consisted of about 175 cm ³ of waterlogged material, mainly rather decayed wood fragments, including some hazel roundwood from stems to 30mm diameter; charred material included ?heather root/basal twig, a few very variably preserved charred grains and a few rachis fragments of barley
79	1193	1193/SPT										1[10]	a single charcoal fragment
82	1028	187/BS		9								1[10]	
86	1405	236/BS		8								1[2]	
87	1475	238/BS		8	1							1[5]	
87	1484	241/BS		9	1					1		1[5]	
88	1387	229/BS		9	1		1					1[5]	
91	1501	239/BS		9				1				1[2]	
93	1444	230/BS		8								1[5]	
93	1497	240/BS		8								1[2]	

Group	Context	Sample	Wt (kg)	Vol (l)	<i>cf. Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
94	1889	287/BS		9									barren
94	1891	294/BS		9.5								1[15]	
94	1909	295/BS		9.5				1					
94	1910	293/BS		9								1[2]	
95	1940	303/BS		47.5				1				1[5]	
95	1944	302/BS		37	1			?1				1[5]	
95	1954	300/BS		9									barren
96	1748	284/BS		10								1[2]	
97	1415	220/BS		8.5						1		1[5]	
97	1417	221/BS		4								1[5]	
97	1442	227/BS		8				1				1[5]	
98	1437	231/BS		8								2[15]	
98	1437	232/SPT										2[25]	
98	1437	233/SPT										2[15]	
98	1437	235/BS		3								1[10]	
98	1437	245/SPT										1[10]	
98	1437	246/SPT										1[10]	
98	1437	247/SPT										1[10]	
98	1437	248/SPT										1[10]	
98	1437	1437/14C	0.105									2[25]	
98	1438	1438/SPT		1								1[5]	
98	1898	290/BS		9				1	1			1[5]	
98	1899	291/BS		9								1[2]	
101	1760	1760/SPT										1[20]	

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
103	1496	242/BS		9	1			1				1[5]	
103	1496	243/BS		9.5								1[10]	
103	1670	272/BS		9								1[2]	a single charcoal fragment
103	1671	266/BS		2				1				1[2]	
103	1728	273/BS		7.5								1[2]	also a trace of charred sedge (<i>Carex</i>) nutlets
103	1904	288/BS		9				1				1[10]	
103	1905	289/BS		11								1[5]	a few uncharred elder, blackberry and other seeds
104	1666	267/BS*		2.5	1							2[25]	
104	1746	275/BS		23								1[5]	
104	1746	276/BS		7.5	1		1					1[5]	
105	1178	211/BS*		9	1			2	1	1		1[10]	trace of charred brome caryopses and very small spherical legume seeds
105	1178	223/BS*		9.5	1		1	1				1[10]	fragment of charred sloe fruitstone
105	1178	226/BS*		9	1			1				1[5]	
105	1178	274/BS*		8	1			1	1	1		1[5]	
105	1619	1619/SPT										1 [25]	a single fragment of ash charcoal
106	1033	176/BS		9.5				?1				1[5]	
106	1033	185/BS		9	1			1				1[10]	a single oat grain
106	1036	177/BS		10				1				1[5]	
106	1036	224/BS		4	1							1[5]	a trace of ?burnt peat/mor

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
													humus (to 5 mm)
106	1099	225/BS*		9	1							1[10]	
106	1099	228/BS		14	1							1[5]	
106	1493	237/BS		9	1			1				1[5]	
106	1562	256/BS*		10								2[10]	
106	1562	257/BS		3						1		2[15]	
106	1616	258/BS*		7								1[10]	
106	1616	262/BS*		9								1[20]	charcoal includes oak, ash
106	1617	259/BS*		5				2				1[15]	
106	1617	270/BS*		0.5			1	2				1[5]	
106	1661	1661/ SPT										1 [40]	ash charcoal, from a branch with about 4-5 years rings clearly visible, very wide rings
106	1689	268/BS		10				1				1[5]	
106	1692	1692/ SPT								1			a single wheat grain!
107	1073	182/BS*		48	2							2[10]	
107	1548	251/BS		8								1[10]	
107	1548	252/BS*			1	1						1[25]	
108	1568	254/BS		8								1[10]	
108	1568	255/BS		8	1							1[5]	
108	1672	269/BS		8								1[2]	
108	1676	311/BS*		1	1	1		1				1[5]	
108	1764	277/BS		9	1			1		1		1[5]	
109	1045	175/BS		9								1[5]	
109	1651	261/BS		5	1			1				1[15]	

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
110	1096	189/BS		15.5								1[5]	
110	1096	222/BS		8								1[5]	
110	1101	190/BS*		9.5	2	2						1[10]	also burnt peat fragments (to 10 mm) and traces of charred sedge nutlets
111	1887	292/BS		10				1		1			
111	1978	298/BS		9.5									traces of uncharred hemlock, elder and blackberry seeds
111	1979	299/T*			<p>The plot of about 100 cm³ was mainly herbaceous plant detritus, though there was a single large land snail and a few small ones. Quite a lot of moss shoots were present and these might repay closer examination. One hollow herbaceous stem fragment (to 40 mm) might well have originated in a large umbellifer, and that might well have been maybe hemlock (<i>Conium</i>) in view of the frequent well preserved seeds of this. (Preservation of plant and insect remains by waterlogging was generally good.) Overall, the plant assemblage pointed to stands of hemlock and nettles with some rough grassland – the likely vegetation around the well at the point this deposit accumulated.</p> <p>Dry tube: <i>Harpalus</i> sp.; <i>Geotrupes</i> sp.; Diptera puparium; <i>Pterostichus melanarius</i> (Illiger); <i>Aphodius</i> spp. (two species); <i>Amara</i> sp.; <i>Hypera</i> sp.</p> <p>Spirit tube: Some good preservation of delicate remains such as homopteran wings. <i>Pterostichus melanarius</i> (Illiger); <i>Nebria</i> sp; (probably <i>brevicollis</i> (Fabricius)); <i>Harpalus</i> sp. (several); <i>Trechus obtusus</i> Erichson/<i>quadristriatus</i> (Schrank); <i>Amara</i> sp?p. (several); <i>Pterostichus</i> sp. (small); Staphylininae sp?p.; <i>Ocypus olens</i> (Müller); <i>Tachinus</i> sp.; <i>Tachyporus</i> sp.; <i>Xantholinus</i> sp.; <i>Catops</i> sp.; <i>Geotrupes</i> sp.; <i>Aphodius prodromus</i> (Brahm); Auchenorhyncha spp. (at least two species); <i>Aphodius</i> sp. (broad, black); <i>Hypera</i> sp.; Ceuthorhynchinae spp. (at least two species); <i>Sitona</i> spp. (two species); Elateridae spp. (two species); Halticinae sp.; <i>Gastrophysa viridula</i> (De Geer).</p> <p>See text for comments on the insect remains.</p>								
111	1979	1979/SPT			waterlogged roundwood to 140 x 20 mm, some with a little bark attached – mainly hazel with some willow								

Group	Context	Sample	Wt (kg)	Vol (l)	cf_ <i>Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/ rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
111	2046	307/T*			<p>The plot of about 200 cm³ of herbaceous plant detritus included a few large and quite a lot of small land snails. There were two twig fragments to 10 x 55 mm, and odd fragments of 'woody' herbaceous stem, perhaps from a tall umbellifer. Some moss shoots still had a greenish colouration. There was a trace of charcoal to 5 mm.</p> <p>As well as weedy, waste ground and scrub elements, there was a little material from heathland (charred ?heather root/basal twig) and an uncharred leaf of the moss <i>Polytrichum commune</i>. At the same time, there were fragments of flax (<i>Linum usitatissimum</i>) seed and capsule and fruit fragments of beet (<i>Beta vulgaris</i>), as well as a single uncharred spelt wheat glume-base, indicating that remains from at least three cultivated plants were present in the fills as they formed.</p> <p>A single fruitstone which may have been a large sloe or small wild plum had been holed by a rodent.</p> <p>Dry tube 1: Ovoid puparium, apparently Hippoboscidae but not <i>Melophagus</i> (i.e. not sheep ked).</p> <p>Dry tube 2: <i>Pterostichus melanarius</i> (Illiger) (several); <i>Geotrupes</i> sp.; <i>Nebria brevicollis</i> (Fabricius); <i>Hypera punctata</i> (Fabricius).</p> <p>Spirit tube: Rather good preservation of a diverse assemblage. <i>Aphodius contaminatus</i> (Herbst); <i>Aphodius prodromus</i> (Brahm); <i>Agriotes obscurus</i> (Linnaeus); <i>Megasternum obscurum</i> (Marsham); <i>Trechus obtusus</i> Erichson/<i>quadristriatus</i> (Schrank); <i>Hypera</i> sp.; <i>Harpalus</i> sp?p. (several); Auchenorhyncha spp. (at least three species); <i>Philonthus</i> sp.; <i>Sitona</i> sp.; <i>Geotrupes</i> sp.; <i>Otiorhynchus</i> sp. (probably <i>ovatus</i> (Linnaeus)); <i>Cidnorhinus quadrimaculatus</i> (Linnaeus); <i>Amara</i> sp.; <i>Cercyon</i> sp. (terrestrial); <i>Helophorus aequalis</i> Thomson/<i>grandis</i> Illiger; Elateridae sp. (not <i>Agriotes</i>); <i>Pterostichus melanarius</i> (Illiger); <i>Phyllopertha horticola</i> (Linnaeus); <i>Pterostichus</i> sp. (not <i>melanarius</i>); <i>Ceuthorhynchus ?erysimi</i> (Fabricius); <i>Tropiphorus terricola</i> (Newman) (2 specimens).</p> <p>See text for comments on the insect remains.</p>								
111	2093	310/T*			<p>A diverse range of plant remains preserved by waterlogging was noted from the sample, some of which echoed the tall weedy vegetation seen in other samples from the well, dominated by hemlock and stinging nettle. There were also traces of uncharred heather material, along with a few uncharred spelt glume-bases and some frond fragments of bracken (from litter used in stabling, for example?). Again, the well preserved mosses might repay closer examination. Charcoal was present as a trace of very small (<2 mm) fragments.</p> <p>Insect remains: Dry tube: <i>Geotrupes</i> (probably two species); earthworm egg capsule; <i>Amara</i> sp.</p> <p>Spirit tube: Rather good preservation. <i>Helophorus aequalis</i> Thomson/<i>grandis</i> Illiger; <i>Geotrupes</i> sp.; <i>Harpalus</i> sp.; <i>Amara</i> sp.; <i>Agonum</i> sp. (s. lat.); <i>Otiorhynchus</i> sp. (probably <i>ovatus</i> (Linnaeus)); three Auchenorhyncha spp.; <i>Hypera</i> sp.; <i>Xantholinus</i> sp.; Ceuthorhynchinae sp.; <i>Tachinus</i> sp.; <i>Apion</i> sp.; <i>Brachypterus</i> sp.; <i>Aphodius</i> sp. (small); <i>Onthophilus striatulus</i>; <i>Phyllobius</i> sp.</p>								

Group	Context	Sample	Wt (kg)	Vol (l)	<i>cf. Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
					(small). See text for comments on the insect remains.								
111	2093	2093/SPT			about 200 cm ³ of miscellaneous wood fragments, including willow (to 40 mm), oak (to 100 mm) and what appeared to be twisted willow withies (to 50 mm)								
112	1092	209/BS		9				1					
112	1093	197/BS		9				?1				1[5]	
112	1160	283/BS		7.5								1[2]	
112	1680	264/BS*		14	1			1				1[5]	also traces of burnt peat fragments (to 20 mm)
112	1681	265/BS		1.5									barren
113	997	181/BS		22.5	1			1				1[5]	
113	1018	198/BS		8								1[5]	
113	1032	174/BS		9.5				1				1[5]	
113	1106	188/BS		8.5								1[10]	
114	1009	169/BS*		7				?1				2[10]	
114	1009	180/BS*		8								2[30]	
114	1046	173/BS		4.5								1[10]	
114	1584	253/BS		9	1							1[5]	
114	2077	309/BS		9								1[5]	
123	1391	271/BS		4	1			1			1	1[5]	
124	1470	1470/SPT										1[15]	
124	1560	244/BS*		22						1		2[25]	
129	2001	304/BS*		10	1			1	1			1[5]	also a trace of oat grains
129	2019	306/BS		4								1[5]	

Group	Context	Sample	Wt (kg)	Vol (l)	<i>cf. Calluna vulgaris</i> (ch rt-tw fgts)	<i>Cenococcum</i> (ch sclerotia)	root/rhizome fgts (ch)	Cerealia indet.	<i>Hordeum</i> sp(p).	<i>Triticum</i> sp(p).	<i>T. spelta</i> (glb)	wood charcoal	Notes
131	1973	305/BS		8						1		1[5]	a single wheat grain
Total no. records					76	3	14	85	16	27	5	232	

Land snail catalogue (by Cath Neal)

Context number	Sample number	Taxa	Number
	4 Hand collected	<i>Ostrea edulis</i> (Linnaeus 1758)	1
	67 Hand collected	<i>Ostrea edulis</i>	1
	287 Hand collected	<i>Ostrea edulis</i>	1
	1887 Hand collected	<i>Cepea nemoralis</i> (Linné 1758)	7
	1978 Hand collected	<i>Cepea nemoralis</i>	9
	1979 299	<i>Cepea nemoralis</i>	1
	1979 299	Slug plate (Limacidae family)	11
	1979 299	<i>Cochlicopa lubrica</i> (Müller 1774)	3
	1979 299	<i>Aegopinella pura</i> (Alder 1830)	1
	1979 299	<i>Vallonia</i> sp.	1
	1979 Hand collected	Unidentified juvenile	1
	1979 Hand collected	Slug plate (Limacidae family)	1
	2046 307	<i>Cepea nemoralis</i>	3
	2046 307	Helicidae sp.	2
	2046 307	<i>Cochlicopa lubricella</i> (Porro 1838)	1
	2046 307	<i>Cochlicopa lubrica</i>	16
	2046 307	Slug plate (Limacidae family)	4
	2046 307	<i>Vallonia pulchella</i> (Müller 1774)	2
	2093 Hand collected	<i>Ostrea edulis</i>	1
	2093 310	Unidentified	1
			68