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Summary

Both waterlogged and dry deposits were sampled for plant remains, the former yielding fairly rich assemblages of plant microfossils, the latter small amounts of carbonised grain. The seed assemblages from the waterlogged contexts were remarkably similar, comprising mainly seeds from waste and disturbed ground, a typical urban 'background' flora. This supports the interpretation that the deposits were dumped and, taken in conjunction with evidence from earthworm egg capsules and the sometimes sandy matrix of the deposits, suggests that soil from waste ground was being incorporated into the deposits. A small component of seeds probably originated with hay , and a few fruit stones and seeds represent food debris and plants of economic significance, some probably imported. Garden soil may be a component of one or two of the deposits, while a fairly high aquatic component in some of the lower levels may evidence periods of flooding.

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Introduction

Plant remains fom Queen Street were examined in the hope that they would help to elucidate the origin of the various deposits and would give some indication of the activities taking place in the vicinity of, and of the environment around, the site during the period of deposition.

The plant macrofossils were recovered from many contexts, both by floatation from "bulk samples" and from 1kg sub-samples of "biological samples" in the case of the waterlogged deposits (see Kenward et. al. 1980 for an explanation of these terms).

Methods

Samples of, where possible, 30 litres volume were taken from a variety of deposits. Where 30 litres could not be taken a smaller volume was sampled (for sample volumes see Table 1). Two samples of 30 litres each were taken from two columns (B.S. and F.S.) through the deposits of ashy material which had accumulated on Fenwick's Entry and which were rich in bones. As these samples were not rich in plant remains the lists of seeds from the B.S. and F.S. columns have been added together and the sample volumes recorded as 60 litres for the purposes of Table 1.

These "bulk" samples were processed by disaggregating the sediments a bit at a time a in a bucket of cold water and tipping off the floating material into a 500 micron mesh sieve. When all the floating material had been collected the residue was tipped through a 1mm sieve, and when dry this was sorted to check for any seeds which had not floated, as well as to recover small bones and other environmental remains. The floats were sorted, when dry, under a binocular microscope at low magnification.

The "biological" samples of 10-15 litres volume were taken from four sampling columns through the waterlogged organic deposits and the riverlain deposits below. One kilogramme sub-samples of these were processed by boiling with sodium carbonate, to break down the material, and were then washed through a bank of sieves of 4mm, 2mm, 500 micron and 300 micron mesh sizes. These fractions were sorted and the seeds identified under a binocular microscope at low magnification. Juncus seeds and moss fragments were identified using a transmission microscope at magnifications of up to ×400.

Floatation was performed on all the "bulk" samples, but because the waterlogged samples produced enormous floats, which would have been extremely time-consuming to sort, only three (553S, 541 and 544) were sorted completely, and several others were partly sorted, to gain a general impression of the species present. Similarly with the 1kg sub-samples, a selection were sorted completely, but when it became apparent that all the samples contained more or less the same seed assemblage it was decided only to part-sort the remaining samples. The character of the

deposits meant that a detailed count of the seeds seemed unneccessary, and instead an index of 1-4 has been employed as a guide to the abundance of each species wihin each sample.

The plant remains were identified by reference to the comparative collection held in the Environmental Archaeology Unit, University of York. The Latin names follow Clapham, Tutin and Warburg (1962) and Smith (1978).

Results

The plant taxa recorded from the samples are listed in Table 1, with a guide to the habitats in which they are usually now found. Most seeds occurred in low concentrations in most samples and are recorded as "1". The only species to occur in concentrations of "2" in some of the samples were: fat hen (Chenopodium album L.); corn marigold (Chrysanthemum segetum L.); sun spurge (Euphorbia helioscopia L.); red shank (Polygonum presicaria L.); pale persicaria (Polygonum lapathifolium L.); dyers rocket (Reseda luteola L.) and nipplewort (Lapsana communis L.), all of them weeds of cultivated or waste ground.

The seeds of three plants which are now uncommon in the North of England (Clapham et al., 1962) were recovered: Papaver argemone L., the long prickly-headed poppy; Vallerianella dentata (L.) Poll., a lamb's lettuce, and Silene gallica L., the small-flowered catchfly. The most likely explanation for their presence is that these plants were more widespread in the mediaeval period than today. Warmer summers were a feature of the period 1150-1300 (Lamb, 1977: 440) and this could explain the presence of Valerianella dentata in context 636, which dates to the mid-late 13th century. The presence of all three plants in contexts dating to the colder, wetter mid-late 15th century (ibid.) is more difficult to explain, however. The identification of Teucrium scorodonia L. is interesting as the plant is unusual in the British palaeobotanical record.

Discussion

As illustrated in Table 1, the range of plant remains recovered from the non-waterlogged samples (phase 5 +) was very small, and in fact, with the exception of sample 464, none of the samples produced more than a few charred seeds, most of which were cereal grain. Given the low concentration of seeds in these deposits no interpretation can be placed on the results save that the plant remains probably represent a very low "background" assemblage, probably originating in domestic ash, which was the principal component in many of the non-waterlogged deposits, particularly those from Fenwick's Entry (phase 5i).

The waterlogged samples (phases 1 - 4ii) however, were richer in plant remains, although a relatively small group of seeds dominated the samples, including those from the riverlain deposits (phases 1 and 3). The amount of wood in the samples meant that the concentration of seeds was fairly low for such

relatively richly organic deposits, however. The most common seed component of all the waterlogged organic material was seeds from plants which inhabit waste and cultivated land, though seeds from wetland plants are fairly common in some samples, notably 639E.

Very few food plants were represented. Charred grain was recovered in small quantities from most samples, possibly originating as an accidental inclusion in straw which was brought into the town and later burnt. The lack of chaff does not contradict this suggestion as it only survives under particular heating regimes (Wilson 1984). Seeds and fruit stones, including apple (Malus silvestris Mill.), sloe (Prunus spinosa L.) and plum (Prunus domestica L.) were recovered from a few samples, but singly, while blackberry (Rubus fruticosus agg.) and raspberry (Rubus idaeus L.) were recovered in greater quantity from many samples. Sloe, raspberry and blackberry may have been growing wild, however, and the quantities recovered do not argue convincingly for human consumption. Plum and apple were probably grown in gardens. Grape (Vitis vinifera L.) pips were identified in low concentrations from several samples, as were fig (Ficus carica L.) seeds, and these may have been imported or grown locally as documented in England by Gerarde (1636). Williams (1977) concludes that fig seeds recovered from excavations of 14th-16th century deposits in Sewer Lane, Hull, were probably there as a result of the consumption of imported figs. As figs require warm conitions to grow and are now rarely grown in this country it is likely that the figs from Newcastle were imported too, as documented for the 14th century onwards (Allison, 1969). Lamb (1977: 277) illustrates the known vineyards during the warm period 1000-1300, and non are further north than about 53° N (around the Wash). It is likely, therefore, that the grapes too were imported during the colder, wetter 14th and 15th centuries, when the English vineyards were in decline (ibid.). Elderberry (Sambucus nigra L.) and hazelnut (Corylus avellana L.) were frequently identified in the samples, indicating that a local source was available. The seeds of cultivated flax (Linum usitatissimum L.) were present at an abundance of "1" in many samples and indicate that the plant was either imported into the town or grown in garden plots, presumably for the textile industry or for the extraction of oil. Black mustard (Brassica nigra (L.) Koch.) seeds were identified in samples from contexts 639 and 655, and may have been cultivated either for their culinary value or or the extraction of oil for medicine or soap manufacture (Clapham et al., 1962). Hemp (Cannabis sativa L.) was also represented in low concentrations in two contexts (553 and 639) and may have been used for making rope, or again for the extraction of oil.

Given the nature of the deposits the question of the source of the plant remains within the deposits is difficult to answer. Considering the differences in the composition of the sediments from phases 1-4ii, from poorly humified to well humified organic material and river silts, the flora represented is suprisingly similar. This may indicate that the majority of seeds represent the plants growing around the site, which probably either blew in

or were washed in or were present in soil which was deliberately dumped in to reclaim the riverbank. Earthworm egg capsules were present in all except the lowest organic deposits (phases 2 and 4) which suggests that mineral soil probably diluted the organic material. The preservation of organic material within the deposits of phases 2-4)i, and the lack of clear stratification, suggests that the deposits accumulated rapidly, perhaps arguing for secondary deposition for the majority of seeds. The plant remains from the riverlain sediments were probably deposited both autochthonously and allochthonously, some being from plants which grew on or near the foreshore and others having been transported down the river. The cornfield and grassland weed seeds could certainly have entered the town with hay and straw for fodder, as suggested for similar assemblages from York (Hall et al., 1983) and need not indicate crop cleaning in the town. Grass caryopses do not generally preserve well, even under waterlogged conditions, so their absence is not as much of a problem as it may at first have appeared (Underdown, 1979). Some of the annual weeds e.g. fool's parsley (Aethusa cynapium L.), sun spurge (Euphorbia helioscopia L.) and fat hen (Chenopodium album L.) ould have been garden weeds, and samples from contexts 464 and 556, for example, could represent a group of weeds from a garden or allotment rather than from waste ground, although the distinction is rather subjective. The field bean (Vicia faba L.) and fennel (Foeniulum vulgare Mill.) could have been grown in such gardens, as conceivably could nipplewort (Lapsana communis L.) which was used formerly as a salad plant (Clapham et al., 1962) though it is now a common weed of cultivated ground.

The sedge (Carex spp.) and rush (Juncus spp.) seeds recovered could usually not be identified to species, so it is not clear whether they represent species useful for floor covering and thatching or just the sorts of plants that would be growing on the riverside. As the seeds were never particularly abundant the latter suggestion seems more likely. The Juncus seeds that were identified to species (J. bufonius L. and J. gerardii Lois.) were probably growing locally, the latter on salt marsh in the tidal estuary of the Tyne, and were of no economic significance.

Mosses were never found in sufficient quantity to indicate deliberate importation. The most likely explanation for their presence is that they were brought in on the bark of trees or with turf for roofing. Bracken (Pteridium aquilinum (L.) Kuhn) was common in many samples and may have been used for bedding. Most of the waterlogged deposits contained quantities of wood, frequently chips. Most was oak (Quercus sp(p.)) but birch (Betula sp(p.)) and pine (Pinus sp(p.)) were seen in several samples.

Conclusions

Although the analysis of the plant remains from Queen Street has not provided much evidence of the activities takin place in the vicinity of the site, either in terms of diet or economy, it has been of some value in determining some of the possible sources of the dumped material. While much of the organic

material was obviously human rubbish, including worked wood, leather and bones, the presence of earthworm egg capsules, and in some contexts a high proportion of sand in the organic matrix, argues that redeposited soil was also being incorporated, with its component of plant remains. It is unlikely that the soil would have been transported far, however, and it is probable that the general seed assemblage represents the sort of environment that would have existed near the waterfront in the early 13th and 14th centuries, with a small input of seeds from imported straw and hay, and food debris. Samples with a relatively high component of waterside plants, for example 639E, may testify to periods of flooding, though the absence of obvious flood horizons perhaps indicates that the deposits were not in situ. The evidence from a preliminary assessment of the insect assemblage (Nicholson and Kenward, unpublished) supports the suggestion that part, at least, of the lower organic deposits: 635, 636, 637, 639 and 644/651 being dominated by "outdoor" and "waterside" beetles, in contrast to the predominance of "decomposer" species in the higher waterlogged deposits.

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Table 1 The Plant Remains from Newcastle Queen Street.
(Names and habitats after Clapham, Tutin and Warburg 1962).

Context.	315	316	317	319	320	321	323	325	326	356	361	373	374	451	453	464	504	506	511	513	535	541	544	547	548	Habitats
Sample size	60L	60L	60L	60L	60L	60L	60L	60L	60L	30L	30L	15L	10L	60L	30L	30L	15L	15L	15L	15L	1kg	15L	30L	30L	15L	
Aethusa cynapium L.											1															CUL.
Agrostemma githago L.																										CORN.
Anthemis cotula L.																					1	1				AR,WST.
Atriplex sp(p).										1											1	1	1		1	SEA,DIST.
Avena cf. sativa L.					1C	1C	1C	1C	1C						1C	1C		1C	1C	1C		1C	1C		1C	CORN.
Betula sp. (bud)																										WD,MR,HTH.
Brassica sp.	1																					1				CAL.
B. rapa L.	1																					1				STR,AR,WST.
Brassica/Sinapis arvensis L.																			1C				1			
Carduus/Cirsium sp(p).																										
Carex sp(p).			1C		1	1				1	1	1			1	1	1					1	1		1	WT,HE,MR,HTH.
Centaurea sp(p).																	1									DIST,GS,SEA.
Cereal indet.			1C	1C	1C							1C			1C		1C	1C		1C		1C		1C		CORN.
Chenopodium album L.																2					1	1	1	1	1	WST,CUL.
Chrysanthemum segetum L.						1C										1					1				1	AR,AC.
**Corylus avellana L.											1						1					1	1			WD,HE,SCR.
Eleocharis palustris (L.) Roem. & Schult / E.uniglumis (Link) Schult.																						1				WT.
Euphorbia helioscopia L.																2						1			1	CUL.
Ficus carica L.							1			1	1	1				1						1	1			CUL.
Galeopsis subgenus Galeopsis																						1	1			
Gramineae																										
Hordeum sp(p).						1C													1C							CORN.
Juncus sp(p).																					1					WT,HTH,AR,WST.
Juncus conglomeratus/ effusus/inflexus																										WT.
Labiatae indet.										1																
Lapsana communis L.						1C										1						1				WST,HD,WD,WL.
Leontodon sp. L.																										GS,DN,CAL.
Linum usitatissimum L.																										CUL.
Menyanthes trifoliata L.																										AQU,BOG.
Polygonum aviculare L.																					1	1	1			WST,AR,SEA.
P. convolvulus L.																						1				WST,AR,CUL.
P. hydropiper L.															1							1				WT.
P. lapathifolium L.								?1C								1					1	1				WST,CUL,WT.
P. persicaria L.																1					1	1	1		1	WST,CUL,WT.
Potentilla anserina L.																						1				WST,WT,DN.
P. cf. erecta (L.) Rausch																										GS,HTH,BOG,WD. FEN,MTN,LT.
P. palustris (L.) Scop.																						1			1	FEN,BOG,WT.
P. cf. reptans L.												1				1						1				HD,WST,GS,N-AL.
Prunella vulgaris L.																					1					GS,WST,N-AL.
Prunus domestica L.																						1+				CUL.
P. spinosa L.																										WD,HD.
Quercus sp.(bud)																			1				1			WD,HD.
Ranunculus flammula L.												1				1						1	1		1	WT,SEA.
R. sardous Crantz.																					1	1				WT,AR,WST.
Ranunculus Section Ranunculus												1									1	1			1	
Ranunculus sceleratus L.																										WT.
Raphanus cf. raphanistrum L.												1P				1P					1	1P				WST,CUL,N-AL.
Reseda luteola L.																1						1	1	1		DIST,AR,CAL.
Rubus fruticosus agg.						1	1	1	1	1	1		1	1	1	1					1	1	1	1		WD,WST,HD,SCR.
R. idaeus L.										1						1						1	1		1	WD,HTH.
Rumex sp(p).										1		1C				1				1			1	1		WST,HTH,GS,CUL.
R. acetosella L.												1		1		1						1	1			HTH,GS,CUL.
*Sambucus nigra L.	1	1	1	1	1	1		1	1			1		1	1	1	1					1				WD,DIST,WST,
Scirpus lacustris L.																						1				WT-AQU.
Silene alba (Mill.) Krause																						1	1			HD,WST,CUL.
S. vulgaris (Moench) Garcke																							1			GS,AR,DIST.
Sonchus asper (L.) Hill														1		1						1				CUL,WST.
S. oleraceus L.											1			1		1						1				CUL,WST,DIST.
Spergula arvensis L.																1						1				AR,CAL.
Stachys sp(p).													1			1						1				
Stellaria media (L.) Vill																1					1	1	1		1	CUL,WST.
Triticum aestivum type	1C			1C										1C	1C			1C	1C	1C	1C					CORN.
Urtica dioica L.													1										1			HD,WD,GS,DIST.
Vicia faba L.																						1				CUL.
Viola sp(p).																					1				1	WD,GS,HTH,WT.
Vitis vinifera L.			1								1															CUL.

* Although common, elderberry is probably a modern contaminant in the samples from the ashy layers on Fenwick's Entry (samples 315 - 326 + 451) as organic preservation was poor in these ashy deposits, and the seeds looked remarkably fresh. An elderberry tree grew near the site and fruits were commonly dropped on the site at the time these samples were taken.

All the records refer to seeds unless otherwise indicated.

C = carbonised P = pod fragment ** = nutshell unless otherwise indicated.

Habitat Key.

AC = acid soil AR = arable land AQU = aquatic BG = bog CAL = calcareous ground CORN = cornfield
DIST = disturbed ground DN = dune FN = fen GS = grassland HD = hedgerow HTH = heathland LT = light soil
MNT = mountain MR = moorland N-AL = neutral to alkaline soil SEA = seaside SCR = scree
STR = stream/ riverbank WD = wood WL = wall WST = waste ground WT = wet/ damp ground.

Context	553S	553/574E	556E	558S	567	595	596	605N	630/632N	634N	637E	638S	643	651E	655N	667	671	674	Habitats
Sample size	30L	1kg	1kg	30L	15L	15L	15L	1kg	1kg	1kg	1kg	1kg	1kg		30L	1kg	1kg	1kg	
Aethusa cynapium L.		1		1							1								
Agrostemma githago L.	1	1	1						1	1	1	1	1	1				1	COL.
Anthemis cotula L.	1	2	1					1	1	1	1	1	1		1			1	CORN.
Atriplex sp(p).	1	1	1					1	1		1	1	1				1	1	AR,WST.
Avena cf. sativa L.	1C										1	1	1		1	1	1	2	SEA,DIST.
Betula sp.(bud)			1												1C	1C	1C		CORN.
Brassica sp.	1		1								1	1	1						WD,HR,HTH.
B. rapa L.	1	1	1						1									1	CAL.
Brassica/Sinapis arvensis L.											1						1	1	STR,AR,WST.
Cardous/Cirsium sp(p).	1	1									1	1							
Carex sp(p).	1	1	1					1	1		1	1	1		1			1	WT,WD,HR,HTH.
Centaurea sp(p).				1							1	1							DIST,GS,SEA.
Cereal indet.				1CON		1													CORN.
Chenopodium album L.	1		1	1				1	1		1	1	1		1		1	1	WST,COL.
Chrysanthemum segetum L.	2	1	1	1				1	1	1	2	1	1		1			1	AR,AC.
**Corylus avellana L.	1+1N	1		1		1		1+1N	1	1	1	1	1		1			1	WD,HD,SCR.
Eleocharis palustris (L.) Roem. & Schult / E.uniglumis (Link) Schult												1				1			WT.
Euphorbia helioscopia L.																			
Ficus carica L.																			COL.
Galeopsis subgenus Galeopsis	1	1	1		1			1			1								COL.
Gramineae		1													1		1		
Hordeum sp(p).	1+1C						1												
Juncus sp(p).			1																CORN.
J. conglomeratus/effusus/inflexus								1	1	1					1			1	WT,HTH,AR,WST.
Labiatae indet.	1																		WT.
Lapsana communis L.	1	1	1					1	1	1	2	1			1	1	1	1	WST,HD,WD,AL.
Leontodon sp. L.	1	1	1							1	1	1	1					1	GS,DN,CAL.
Linum usitatissimum L.	1	1	1							1	1	1	1		1	1	1		COL.
Menyanthes trifoliata L.	1			1				1											AQU,BG.
Polygonum aviculare L.	1	1	1					1		1	1	1	1		1		1	1	WST,AR,SEA
P. convolvulus L.	1		1	1				1		1	1							1	WST,AR,COL.
P. hydropiper L.	1							1	1				1			1	1		WT.
P. lapathifolium L.	1	2	1					1	1	1	1	2	2		1		1	2	WST,COL,WT.
P. persicaria L.	2	2	1		1			1	1	1	1	2	2		1	1		2	WST,COL,WT.
Potentilla anserina L.	1																		WST,WT,DN.
P. cf. erecta (L.) Rausch	1		1									1							GS,HTH,BG,WD,FN,MTN,LT.
P. palustris (L.) Scop.	1																		FN,BG,WT.
P. cf. reptans L.	1													1					WT,HTH,GS,N-AL.
Prunella vulgaris L.	1	1						1		1	1	1		1					GS,WST,N-AL.
Prunus domestica L.	1												1						COL.
P. spinosa L.	1B							1				1		1		1	1		WD,HD.
Quercus sp.(bud)				1						1									WD,HD.
Ranunculus flammula L.	1			1							1								WT,SEA.
R. sardous Crantz.	1						1	1	1	1	1	1	1	1					WT,AR,WST.
R. section Ranunculus	1	1		1								1		1					
R. sceleratus L.	1							1P	1P	1P	1P	1P	1P	1P	1P	1P	1P		WT.
Raphanus cf. raphanistrum	1P	1P	1P	1P			1	1		1	1	2	1	1	1	1	1		WST,COL,N-AL.
Reseda luteola L.	1								1	1	1	1	1	1			1		DIST,AR,CAL.
Rubus fruticosus agg.	1	1										1							WD,WST,HD,SCR.
R. idaeus L.	1						1	1		1		1			1	1	1		WD,HTH.
Rumex sp(p).		1	1					1			1	1				1			WST,HTH,GS,COL.
R. acetosella L.	1	1	1		1				1	1	1			1	1				HTH,GS,COL.
Sambucus nigra L.	1													1	1				WD,DIST,WST
Scirpus lacustris L.														1					WT-AQU.
Silene alba (Mill.) Krause										1									HD,WST,COL.
S. vulgaris (Moench) Garcke	1		1	1													1		GS,AR,DIST.
Sonchus asper (L.) Hill											1	1							COL,WST.
S. oleraceus L.	1							1											COL,WST,DIST.
Spergula arvensis L.	1	1	1								1						1		AR,CAL.
Stachys sp(p).	1																		
Stellaria media (L.) Vill	1	1							1		1	1			1	1	1		COL,WST.
Triticum aestivum type L.	1C					1C													CORN.
Urtica dioica L.	1	1						1		1	1	1			1		1		HD,WD,GS,DIST.
Vicia faba	1			1F															COL.
Viola sp(p).	1	1					1	1			1	1				1	1		WD,GS,HTH,WT.
Vitis vinifera L.	1								1		1								COL.

All the records refer to seeds unless otherwise stated.
C = carbonised B = bud F = flower CN = culm node N = nut P = pod fragment
** = nutshell unless otherwise indicated. + = sub species insistitia.

Habitat Key.

AC = acid soil AR = arable land AQU = aquatic BG = bog CAL = calcareous ground CORN = cornfield
DIST = disturbed ground DN = dune FN = fen GS = grassland HD = hedgerow HTH = heathland LT = light soil
MNT = mountain MR = moorland N-AL = neutral to alkaline soil SEA = seaside SCR = scree
STR = stream/ riverbank WD = wood WL = wall WST = waste ground WT = wet/ damp ground.

Species represented in pollen and C14 samples.

Species	Context	Habitat	Species	Context	Habitat
Agrostis sp(p).	635/636N		Lychnis flos-cuculi L.	674	WT,FN,WTWD,MR.
Alnus rotundifolia L.	553S	WD,WTSS.	Lycopus europaeus L.	553S,635/636N	STR,MR,FN.
Alsine sp.	639E	AQU.	Malus silvestris Mill.	671	CUL.
Alnus glutinosa (L.) Gaertn.	553S,637E	WD,WT.	Mentha sp(p).	547,639E	
Anagallis arvensis L.	674	CUL,WST,DN.	Papaver sp.	356	
Aphanes microcarpa (Boiss. & Reut.) Rothm.	548,544	AC,SN.	P. argemone L.	374	WST,LT,CUL,AR.
			cf. Pinus silvestris (buds + scales)	671	WD.
Arctium sp.	553S	WST,HD,SCR,WDM.	P. lanceolata L.	334 (charred)	GS,N-AL.
Brassica nigra (L.) Koch.	639E,653N	CUL,WST,SEA,STR.	P. major L.	556E	CUL,GS,DIST.
Bromus sp. cargopsis	637	GS,AR,WST,DN,SEA.	P. media L.	644/651	GS,N-AL.
Cannabis sativa L.	639E,553S	WST,CUL.	Potamogeton sp.	553S	AQU.
Capsella bursa-pastoris (L.) Medic.	644/651	CUL,WST.	Primula sp.	644/651	WTGS,WD,HD,CAL.
Centaurea cf. cyanus L.	639E	CORN,WST.	Prunus avium/cerasus	558S,636N	WD,HD.
Cerastium/Stellaria sp.	639E		Ranunculus subgenus Batrachium	639E	AQU,SAQU.
Conium maculatum L.	361	WT,WD.	Reseda lutea L.	539	WST,DIST,AR,CAL.
Crataegus monogyna Jacq.	639E	SCR,WD,HD.	Rosa sp(p).	319,553S	
Descurainia sophia (L.) Webb ex Prantl.	671,667.	WST.	Rubus sp.	596	
Eriophorum vaginatum L. (sclerenchyma spindles).	553/574E	WT,BG,AC.	R. caesius L.	315,553S	GS,SCR,FN,N-AL.
			Salix sp(p). (bud)	541,639E	WT,MR,STR,FN.
Foeniculum vulgare Mill.	553S	SEA,WST,CUL.	Scandix pecten-veneris L.	553S,558S	AR.
Fragaria vesca L.	639E	WD,SCR,CAL,GS.	Bernh.		
Fumaria sp.	544	AR,WST,CUL,HD.	Secale cereale L.	539E	CORN.
Galeopsis sp.	635/636N		Senecio sp.	636N	
Galeopsis subgenus Ladanum	558S	WST,CUL,AR.	Sieglingia decumbens (L.)	671	
			Silene gallica L.	361	WST.
Galium aparine L.	586	HD,WST,CAL,SEA.	Sorbus sp.	325	
cf. Glyceria sp(p.)	674,639E		Stachys cf. sylvatica L.	636N	WD,HD,WST,RH.
Hyoscyamus niger L.	636N	SEA,SN.	Stellaria graminea L.	558S,635/636N	WD,HTH,GS,LT.
Ilex aquifolium L. (leaf frag.)	553S	WD,HD,RK.	S. neglecta Weihe	635/636N	HD,WDM,STR.
			Taraxacum officinale Weber	374,464	GS,WST.
Isolepis setacea (L.) R.Br.	639E	WT,SN.	Teucrium scorodonia L.	553S	WD,HTH,GS,DN,CAL
Juncus bufonius L.	671,667	WT,DIST,AR.	Thlaspi arvense L.	464	AR,WST.
J. gerardii Lois.	636N	SAMA.	Triglochin maritima L.	639E	SEA,SAMA.
Lamium Section Lameopsis	474	CULT,WST,HD.	Valerianella dentata (L.) Poll.	361,636N	CORN.
Lithospermum arvense L.	593,374	AR.			

Habitat Key

AC = acid ground ACGS = acid grassland AR = arable land AQU = aquatic BG = bog CAL = calcareous ground CORN = cornfield CUL = cultivated land DIST = disturbed ground DN = dune F = fen GS = grassland HD = hedgerow HTH = heathland LT = light soil MR = moorland N-AL = neutral to alkaline ground RH = rich soil RK = rocky places SAMA = saltmarsh SAQU = sub-aquatic SCR = scree SEA = seaside SN = sand STR = stream/ riverbank WD = woodland WDM = wood margins WST = waste ground WT = wet/ damp places WTAL = wet basic soils WTGS = wet grassland WTWD = wet woodland

Tables Habitats and Notes after Smith 1978

Species	Contexts	Habitats
Anomodon curtipendula (Hedw.) Brid.	639E	RK,WL,BK.
Calliergon giganteum (Schimp.) Kindb.	637/637E	WTGR,STR,FN,MR,BG.
Dicranum sp. Hedw.	563,574E	WTN,BG,DN,RK,WDM,CAL
Hylocomium splendens (Hedw.) Br. Eur.	674,	TURF,SOIL,WTN,MR,BK,DN.
Hypnum cupressiforme Hedw.	563E, 637E, 644/651, 636A, 639/636N	RK,WL,BK,SOIL,AC.
Isothecium myosuroides Brid.	563B	RK,WL,BK,WD.
I. myurum Brid.	671, 635/636A	WD,RK,STR,SGR,WDL.
Leucodon sciuroides (Hedw.) Schwaegr.	563G	WL,RK,BK,OPEN.
Neckera complanata (Hedw.) Hub.	563B, 674, 639E, 637E, 563/574E, 635/636N	WL,RK,SOIL,WD,CAL.
Polytrichum spp. Hedw.	563B, 639E	
Rhytidiadelphus triquetrus (Hedw.) Warnst	639E	WTT,DGS,WDL,MR,MNT,DN.
Scorpidium scorpioides (Hedw.) Limpr.	644/651	MUD,WT,FN,MR,BG.
Sphagnum spp.	644/651, 637E, 556E, 635/636N	BG,MSH,WTWDL,MR,DGS.
Thuidium tamariscinum (Hedw.) Br. Eur.	5535, 671, 644/651	WT,WD,RK,WDL.

Habitat Key

AC = acid ground BG = bog BK = bark CAL = calcareous substrata DGS = damp grassland DN = Dune FN = fen MR = Moorland MNT = mountain MSH = marsh MUD = mud OPEN = open places RK = bark SN = sand SOIL = soil STR = stream/ riverbank TURF = turf WD = wood WDL = woodland WDM = wood margins WT = wet/ damp places WTGR = wet ground WTT = wet turf WTWDL = wet woodland

Miscellaneous

Bracken, Pteridium aquilinum (L.) Kuhn, was present in low concentrations in most of the waterlogged 'dumped' contexts, as were wood chips, mostly of oak, although fragments of pine (Pinus sp.) were seen in samples from contexts 662 and 671. Pteridophyte megaspores, possibly re-deposited pre-Quaternary, were seen in all of the waterlogged samples, as were earthworm egg capsules (except for the river silts 667, 671 and 674).

A Note on Habitats.

The habitat information given in the tables above is intended as a guide to the habitats in which the plants are now found, and some of the habitat types are necessarily vague. Where an identification is given to family or genus the habitats are shown only when all the members of the group occupy the same sorts of habitats.