Second Wood Street, Nantwich, Cheshire

Palaeoenvironmental Investigations

Oxford Archaeology North

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SUMMARY

Following proposals for the redevelopment of land at Second Wood Street, Nantwich, Cheshire (NGR SJ 520 640), Earthworks Archaeological Services Ltd, on behalf of Schofield Brothers, commissioned Oxford Archaeology North (OA North) to undertake the assessment and analysis of botanical remains from material taken during the 2003 excavations. The excavation revealed features associated with salt-production and bulk samples were taken from a number of features, including wooden barrels, a wooden salt 'ship', and various 'deposits'. It was anticipated that any plant remains would give an indication of activity on the site and of the immediate surrounding environment. In addition, an environmental specialist from OA North visited the site in order to take monolith samples for palynological studies. Two sediment sequences were sampled, one situated outside and the other within the main area of activity.

Much of the organic and inorganic material, which came from the features associated with the salt-making site at Nantwich, is likely to represent debris and plant matter that accumulated both during and after the occupation of the site. The waterlogged seeds are likely to have come from vegetation growing immediately around the site and consisted, primarily, of taxa indicative of open/rough grassland and cultivated and nutrient-rich land, with some damp/wet ground species present.

Although the range of waterlogged and charred plant remains provide valuable information on the resources available to and utilised by the occupants of the site, they provide little corroborating evidence for any salt-making activities. In addition, the test for sodium chloride (NaCl) from a number of the features, such as the salt 'ship' also proved inconclusive for corroborating such activity. It is possible that the fills and associated plant material accumulated after salt-production activities had ceased. However, what is clear is that as well as salt-production, the site may also have been used for a range of other activities, such as tanning and fibre production.

The pollen evidence from the two sequences indicated that the landscape surrounding the site prior to and during its use was of open grassland with cereal cultivation nearby, with some areas of disturbed/manured and damp/wet ground. Limited alder/hazel woodland grew some distance from the site, and it is possible that a rise in lime pollen at the top of the sequence within the main area of activity reflects material brought onto the site. However, without further investigations this interpretation must remain tentative.

ACKNOWLEDGEMENTS

OA North would like to thank Earthworks Archaeological Services Ltd and Schofield Brothers for commissioning the work and their assistance during the fieldwork.

Elizabeth Huckerby visited the site and made recommendations for the programme of palaeoenvironmental work and Denise Druce sampled the deposits with monolith tins. Frances Claxton, formerly of OA North, sub-sampled the monolith tins and carried out the pollen preparations. Sandra Bonsall processed and sorted the plant macrofossil samples, and entered both the pollen and macrofossil data into digital format. Denise carried out the plant macrofossil and pollen analysis under the direction of Elizabeth, and wrote the report and produced the pollen diagrams.

Elizabeth Huckerby managed the project, and both Elizabeth and Alan Lupton edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 Following proposals for the redevelopment of land at Second Wood Street, Nantwich, Cheshire (NGR SJ 520 640), Earthworks Archaeological Services Ltd, on behalf of Schofield Brothers, commissioned Oxford Archaeology North (OA North) to undertake the assessment and analysis of botanical remains from material taken during the 2003 excavations. The excavation revealed features associated with salt-production activity and bulk samples were taken from a number of features, including wooden barrels, a wooden salt 'ship', and various 'deposits'. Elizabeth Huckerby, the OA North Environmental Manager, visited the site and made recommendations for palaeoenvironmental sampling. It was anticipated that any plant remains would give an indication of activity on the site and of the immediate surrounding environment.

1.1.2 In addition, an environmental specialist from OA North visited the site in September 2003 in order to take monolith samples for palynological studies. Two sediment sequences were sampled, one from outside and the other within the main area of activity. A limited programme of palaeoenvironmental assessment and analysis was subsequently undertaken.

2 METHODOLOGY

2.1 THE PLANT MACROFOSSILS

2.1.1 ***Sample selection:*** 15, out of a total of 21 bulk samples were very rapidly assessed for their plant macrofossil content, and these are listed, alongside their associated context and feature details in Table 1.

Sample No	Context No	Feature Type
2	***148***	Salt ship
3	***149***	Salt ship
4	***120***	Deposit
7	***328***	Deposit
8	***334***	Deposit
11	***389***	Deposit
12	***394***	Barrel B3
13	***395***	Barrel B3
14	***406***	Barrel B4
15	***407***	Barrel B4
16	***408***	Barrel B2
17	***409***	Barrel B2
18	***413***	Barrel B1
19	***415***	Barrel B1
20	***416***	Barrel B1

Table 1: The Nantwich bulk samples selected for Plant Macrofossil Assessment/Analysis.

2.1.2 ***Sample processing:*** the bulk samples were hand floated and the flots were collected onto a 250µm mesh and air-dried. The complete samples taken from the wooden 'ship' were processed due to the importance of this feature, however, 1 litre of material from the other selected samples was initially processed for the assessment of plant macrofossils. Subsequently an additional 9 litres were processed if abundant plant remains were present.

2.1.3 ***Plant macrofossil analysis:*** analysis of the samples was carried out with a binocular microscope and both charred and waterlogged plant remains were identified where possible. Identification was aided by comparison with the modern reference collection held at OA North and plant nomenclature follows Stace (1997). Any other remains, such as wood and charcoal fragments, bone, insect remains, metal, coal/clinker, and shell, were also quantified. The data was recorded on a pro forma, which are stored with the project archive, and entered into the accompanying results table (*Appendix 1*). The charred seeds and cereal chaff are recorded as actual counts, and the waterlogged seeds on a scale of 1-5, where 1 = <5 items and 5 = >100 items. Other remains are given as a scale of abundance from + to +++++, where + is rare, +++++ is very abundant.

2.2 THE POLLEN

2.2.1 ***Section 1***: Section 1, the sequence outside the main area of activity consisted of *c* 1.50m of clay and sandy clay. The uppermost 1.00m of deposit was sampled with monolith tins from an exposed section within the excavation trench (Section 1/Monoliths 1-2), however the lowermost 0.50m was sampled with a gauge auger (Section1/Core 1).

2.2.2 ***Section 2***: Section 2, the sequence within the main area of activity consisted of *c* 2.25m of organic sandy clay overlying a reddish brown stiff clay, which is likely to represent geologically natural material. It was sampled with a total of five overlapping monolith tins (Section 2/Monoliths 1-5) from an exposed section within the excavation trench.

2.2.3 ***Sub-sampling:*** the core sample and monoliths were cleaned and described in the laboratory and sub-sampled for pollen. Closer examination of the samples revealed that the top *c* 1m in both profiles consisted of clay mixed with probable dumped material. As the exact taphonomy of any organic remains contained within such deposits is uncertain, these upper layers were not sub-sampled for pollen. In total, eight pollen samples were taken, four from Section 1 (Core 1), and four from Section 2 (Monoliths 5-7). The depths at which the samples were taken from current ground surface are shown in Figures 1 and 2.

2.2.4 ***Laboratory procedure:*** the samples were prepared using standard procedures (Faegri and Iversen 1989) and mounted in silicone oil, with two exotic (*Lycopodium*) spore tablets added to each sample to provide a standard counting reference and to determine pollen concentrations.

2.2.5 ***Pollen Analysis:*** the pollen slides were examined with an Olympus BH-2 microscope using x400 magnification routinely and x1000 for critical identifications. Each slide was initially scanned for the presence or absence of pollen grains, and if very limited pollen was evident no further counting was carried out. However, if the sample did contain pollen grains counting was carried out over two cover slips and continued until a sum of at least 300 land pollen grains was reached. Pollen identification was carried out using the standard keys of Faegri and Iversen (1989) and Moore *et al* (1991), and the reference collection held at OA North. Cereal-type grains were only identified to a general level as many were crumpled and/or in a poor state of preservation.

2.2.6 The pollen counts were entered into the TILIA/TILIAVIEW software (Grimm 1991/1994) and are presented as a percentage pollen diagram. The pollen sum includes all land pollen, and aquatics and *Pteridophytes*/*Bryophytes* are shown as the percentage of total land pollen plus group. The total concentration of land pollen in each sample was calculated using TILIA and are shown on the pollen diagram. Due to the limited number of samples from each section the diagrams have not been divided into local pollen assemblage zones.

2.3 TEST FOR SODIUM CHLORIDE (SALT) CONTENT

2.3.1 Five samples were tested for sodium chloride (NaCl), or salt, content in order to determine its presence in any of the features, which could indicate on-site salt-production. The tested samples and their associated context and feature details are shown in Table 2.

Sample No	Context No	Feature Type
1	***64***	Barrel B5
3	***149***	Basal fill of salt 'ship'
11	***389***	Deposit
22	***423***	Barrel B2
23	***428***	Fill of salt 'ship'-western end

Table 2: The Nantwich samples tested for sodium chloride (NaCl) content

2.3.2 A small amount of each sample was initially immersed in dilute nitric acid ($HN0_3$) in order to acidify it. Five drops of silver nitrate ($AgNO_3$) were then added to the material to test for any reaction and thus sodium chloride content.

3 RESULTS

3.1 THE PLANT MACROFOSSILS

3.1.1 ***The general organic and inorganic remains:*** The results of the analysis of the plant macrofossils are given in Table 2. Nearly all of the contexts contained very abundant charcoal fragments and amorphous plant material. Additionally, all of the contexts, except ***328*** from a 'deposit', contained frequent to abundant wood, including round wood fragments of which a few were identified as *Salix* (willow). A number of the contexts, including ***413***, from Barrel B1, ***148***, the upper fill of the salt 'ship', and ***395***, the lower fill of Barrel B3, contained abundant strips of bark.

3.1.2 Fragments of daub/briquetage were abundant in most of the barrel and wooden salt 'ship' fills, and a fragment of pot, which had retained some residue, was recorded in 'deposit' ***328***. This latter context and 'deposit' ***120*** also contained evidence of metalworking waste and iron staining, and the presence of mineralised plant remains in both contexts suggests that they were used for cess disposal.

3.1.3 ***The charred and waterlogged plant remains:*** Very limited charred and waterlogged cereal remains, including *Hordeum vulgare* (barley) grains, rachis fragments, and undifferentiated culm nodes were present in Barrel B4 and the upper fill of Barrel B2. In addition, 407, from the lower fill of Barrel B4, also contained limited Triticum aestivum (bread wheat) and Secale cereal (rye) rachis fragments.

3.1.4 Both the upper and lower fills of Barrel B3 (***394*** and ***395***) were particularly rich in charred cereal remains, including *Hordeum vulgare*, *Triticum aestivum*, and *Secale cereal*e, plus indeterminate cereal grains and chaff. Many of the cereal grains from the upper fill (***394***) still retained their husks (lemna/palaea) and this sample also contained very abundant cereal culm nodes. A single waterlogged *Avena sativa* (cultivated oat) floret base and a number of waterlogged remains from food/economic taxa, such as *Cannabis sativa* (hemp), *Ficus* carica (fig), and *Linum usitatissimum* (flax) were recorded in the lower fill (***395***). A number of other samples also contained a few charred and waterlogged remains from edible plants, such as *Corylus* (hazel) fragments, *Prunus* sp (blackthorn/cherry), and *Sambucus nigra* (elder), however the low values suggests that these were not abundant at the site.

3.1.5 Although, as a whole, the waterlogged remains from each of the samples were broadly similar, very slight differences were apparent. Three of the contexts, ***407*** (the lower fill of barrel B4), ***416***, (one of the fills of Barrel B1), and 'deposit' ***334***, contained relatively abundant waterlogged remains of food/economic plants and weed seeds associated with arable land and wet ground. Species directly associated with cultivation include *Agrostemma githago* (corncockle), *Chrysanthemum segetum* (corn marigold), and *Stellaria media* (common chickweed). Wet ground species, such as *Carex* (sedges),

Juncus sp. (rushes) and *Ranunculus batrachium*-type (crowfoot), were also abundant in two of the samples.

3.2 THE POLLEN

3.2.1 The percentage pollen diagrams for both sections are shown in Figures 1 and 2, and both contained similar assemblages, dominated by herbaceous pollen. The most dominant pollen in both diagrams was Poaceae (grass), which reached *c* 50% of the total land pollen (TLP). The Poaceae pollen was accompanied by a wide range of other herbaceous taxa; however, none of these exceeded 10% TLP. The suite of pollen from herbaceous taxa in both diagrams include species typical of open grassland or rough ground, such as *Ranunculus* sp (buttercups), *Solidago virgaurea*-type (goldenrod, aster type), *Taraxacum*-type (dandelions) and *Centaurea nigra* (common knapweed). In addition, the presence of *Plantago lanceolata* (ribwort plantain) pollen indicates disturbance often associated with grazing livestock, and *Urtica* sp. (nettles), suggests the presence of nitrogen-rich or manured ground.

3.2.2 The two diagrams also contain pollen indicative of cultivation, including cerealia-type (cereal) and other taxa associated with arable ground, such as *Anthemis* (chamomile), Brassicaceae (cabbage family), *Centauria cynanus* (cornflower), and *Fallopia convolvulus* (black-bindweed). The Cyperaceae (sedge) and *Potamogeton* (pondweed) pollen is indicative of damp/wet ground.

3.2.3 Both sections contained some tree and shrub pollen, with values of between 20% and 40% TLP. In both cases, *Alnus* (alder) and *Corylus avellana*-type (hazel/myrica gale) pollen dominated the tree/shrub assemblages, with a lesser amount of *Betula* (birch) and *Quercus* (oak). Outside the main area of activity (Section 1) values of tree and shrub are at 40% TLP in the lowermost sample (1.45m depth), but drop to *c* 20% TLP from 1.04-1.36m depth. This pattern is reversed inside the area of activity (Section 2), where tree and shrub pollen rise from 20% TLP at 1.55m and 1.42m depth, to 40% TLP at 1.33m depth. The rise in tree/shrub pollen in the latter sample is primarily attributed to a rise in *Tilia* (lime) pollen.

3.3 THE SODIUM CHLORIDE (NaCl) TEST RESULTS

3.3.1 There was no evidence for residual Sodium chloride (NaCl), or salt, in any of the five tested samples. Therefore, there is no chemical proof that these features were utilised for salt production.

4. DISCUSSION

4.1 THE PLANT MACROFOSSIL EVIDENCE

4.1.1 Most of the waterlogged weed seeds, such as those associated with arable land or open/rough grassland, and those that prefer damp conditions probably originated from plants growing on or nearby the site. The presence of hazelnut fragments, blackberry, and blackthorn/cherry suggest that scrub/hedgerow was growing nearby the site, which may have been used as a food source. The cereal remains in many of the features suggest that straw may have been brought on to, and utilised at the site. Alternatively, it represents the waste generated from small scale cereal processing.

4.1.2 The abundant fragments of charcoal in many of the samples may have originated from fuel debris created on the site during its use, and similarly, the abundant daub/briquetage in most of the samples probably represents either 'industrial' debris or construction material. The presence of willow round wood is interesting as many medieval/post-medieval records suggest that sallow (a form of willow) was the preferred choice of wood for wattle or hurdles (Rackham 2003). The bark strips recorded in two of the barrels (B1 and B3) and the upper fill of the wooden salt 'ship' may be associated with tanning activity.

4.1.3 Barrel B3 had the richest assemblage of charred cereal grain and chaff, including the remains of hulled barley, bread wheat, rye and oat. The abundance of barley grains, which still retained their husks, rachis and culm nodes suggests that the charred material may represent the whole cereal plant, which, after being burnt, was dumped into the barrel. The presence of fig pips, plus some mineralised plant material, suggests that an element of the fill may be made up of cess material. The hemp and flax seeds present in this feature may also have been consumed at the site, as both were commonly used as flavouring (Greig 1991). However, both were also used for their fibres and oil during the medieval period, and may therefore represent small-scale fibre/oil production at the site.

4.2 THE POLLEN EVIDENCE

4.2.1 Without secure dating evidence it is difficult to ascertain the periods represented by the two pollen diagrams. However, in general, the landscape surrounding the site during the sediment accumulation consisted of open grassland with cereal cultivation nearby, with some disturbed/manured and damp/wet ground. The relatively low counts for alder/hazel suggest that these taxa may have been growing some distance from the site.

4.2.2 The significant rise in lime pollen in the uppermost sample from Section 2, from within the confines of the occupation area is interesting, as records suggest that the ability of native lime to colonise new sites is very limited (Rackham 2003). It is possible that lime may have been planted or that lime

branches were brought onto the site. During the Anglo-Saxon period lime was used as a fibre plant for producing low-grade string or cord (Rackham 2003), and there is no reason why the medieval/post-medieval inhabitants were not utilising the same resource alongside hemp and flax (see above).

5. CONCLUSION

5.1 THE PLANT MACROFOSSIL EVIDENCE

5.1.1 The waterlogged remains are likely to have come from vegetation growing immediately around the site and consisted, primarily of taxa indicative of open/rough grassland, cultivated land and ground rich in manure, with some damp/wet areas.

5.1.2 Blackberries, hazelnuts and figs may have been eaten on site, whilst hemp and flax seeds may have been either consumed or used for small-scale fibre production. The abundant bark fragments found in some of the features (e.g. Barrel B3) suggest possible tanning activity on the site, and the abundant roundwood present in most of the features may represent the remains of hurdles or wattle.

5.1.3 Although the range of waterlogged and charred plant remains provide valuable information on the resources available to and utilised by the occupants of the site, they provide little corroborating evidence for any salt-making activities. In addition, the test for sodium chloride (NaCL) from a number of the features, such as the salt 'ship' also proved inconclusive for corroborating such activity. It is possible that the fills and associated plant material accumulated after salt-production activities had ceased. However, what is clear is that as well as salt-production, the site may also have been used for a range of other activities, such as tanning and fibre production. Perhaps representing a range of 'cottage' industries.

5.2 THE POLLEN EVIDENCE

5.2.1 The pollen evidence from both sequences indicated that the landscape surrounding the site was of open grassland with cereal cultivation nearby. The pollen corroborated the macrofossil evidence for disturbed/manured and damp/wet ground. Alder/hazel woodland may have been growing some distance from the site.

5.2.2 It is possible that a rise in lime pollen at the top of Section 2 reflects material being brought onto the site. However, without further investigations this interpretation must remain tentative.

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7. ILLUSTRATIONS

7.1 LIST OF FIGURES

7.2 LIST OF PLATES

APPENDIX 1: THE PLANT MACROFOSSIL RESULTS

Context number		***120***	***148***	***149***	***328***	***334***	***389***	***394***	***395***
Sample number		4	2	3	7	8	11	12	13
Feature type		Deposit	Upper fill of salt 'ship'	Basal fill of salt 'ship'	Deposit	Deposit	Deposit	Upper fill of barrel B3	Lower fill of barrel B3
Volume processed (l)		1	1	10	1	5	10	4	4
Flot size (ml)		500	250	2050	500	1700	310	1000	1225
Charred Plant Remains									
Food and economic taxa									
Cerealia indent			1				1	56	3
Hordeum vulgare	barley							7	1
Hordeum rachis								27	11
Triticum aestivum	bread wheat							1	
Triticum eastivum rachis	bread wheat rachis							3	
Secale cereale	rye							2	
Secale cereale rachis	rye rachis							2	3
Avena sp	oats						1		
Avena sativa floret base	cultivated oat floret base							1	
Culm nodes								238	4
Linum usitatissimum capsule frag	flax								3
Weed Seeds									
Centaurea sp								1	
Chrysanthemum segetum	corn marigold							1	
Corylus avellana nut frag	hazelnut						1		
Fabaceae <4mm	pea family						1		1
Plantago lanceolata	ribwort plantain								1
Poaceae								3	
Semi-charred Plant Remains									
Culm node								4	
Ranunculus sardous	hairy buttercup					2			
Waterlogged Plant Remains									
Food and economic taxa									
Hordeum rachis	barley							3	2
Secale rachis	rye							2	
Triticum aestivum rachis	bread wheat								2
Avena sativa floret base	cultivated oat								2
Culm nodes			1			2		13	2
Cannabis satvia	hemp								2
Corylus avellana nut frag.	hazelnut					2	2		2
Ficus carica	fig								
Linum usitatissimum seed	flax					2			2
Linum usitatissimum capsule	flax								3
Prunus sp. frag.	blackthorn/ cherry/plum		1		1				
Raphanus raphanistrum	wild radish						1	1	
Rubus fructicosus	blackberry	1					2	1	
Sambucus nigra	elder						2		
Arable weeds									
Agrostemma githago	corncockle			2		2	2	1	2
Anthemis cotula	stinking chamomile				1	5	2	1	
Chenopodium sp.	goosefoots	1				5			
Chrysanthemum segetum	corn marigold	1	1			2		1	
Euphorbia helioscopia	sun spurge						2	1	
Galeopsis	hemp nettle		1	2		2	2	1	
Sonchus asper	prickly sow		1		1	2			

Context number		***120***	***148***	***149***	***328***	***334***	***389***	***394***	***395***
Sample number		4	2	3	7	8	11	12	13
	thistle								
Stellaria media	common chickweed	1	3			2	2	2	3
Torilis arvensis	spreading hedge parsley				1				
Urtica urens	small nettle		1			2	2		2
Grassland									
Centaurea nigra	common knapweed							1	
Lamiaceae	dead-nettle family								
Lapsana communis	nipplewort	1				2	2		
Leontodon autumnalis	hawkbits					2			
Plantago lanceolata	ribwort plantain							1	2
Rumex acetosella	sheep sorrel	1	1			2		1	
Rumex acetosa	common sorrel	1	1			2			2
Rumex obtusifolius	broad leaved dock	1							
Prunella vulgaris	selfheal				1	2		1	2
Stellaria gramineae	lesser stitchwort		1		1	2		4	2
Ruderals									
Chenopodiaceae undiff.	goosefoot/ orache			2			2	1	3
Conium maculatum	hemlock								
Wet ground									
Bidens tripartita	trifid bur-marigold					2			
Caltha palustris	marsh marigold					2			
Carex lenticular	sedges		1	2				1	3
Carex trigonous	sedges	1	1	2			2	1	3
Eleocharis palustris	common spike rush		1		1	2			
Juncus sp.	rushes	1	1		1	5	2		2
Potentilla palustris	marsh cinquefoil				1				
Potamogeton sp.	pond weed					2			
Ranunculus batrachium-type	crowfoot					2			
Ranunculus flammula	lesser spearwort				1				
Ranunculus scleratus	celery leaved buttercup					5	2		
Broad									
Asteraceae	daisy family								2
Apiaceae	carrot/cow parsley family		1						
Brassica sp	cabbage family		1				2		
Cirsium sp.	thistles							1	
Fabaceae	pea/vetch family		1					1	
Ranunculus repens- type	creeping buttercup		*2*		1	2			3
Lithospermum	gromwells					2			
Persicaria lapathifolia	pale persicaria	1	1		1	2			
Polygonum aviculare.	knotgrass					2	2		3
Potentilla erecta-type	tormentil							1	
Ranunculus repens-type	buttercup							1	
Other Remains									
Amorphous plant remains		+++++	++++	++++	++	++++	++++	++	++++
Modern roots								+++++	
twigs									+++
Buds			+	+				+	++++

Context number		***120***	***148***	***149***	***328***	***334***	***389***	***394***	***395***
Sample number		4	2	3	7	8	11	12	13
Bark strips			++						++++
Wood		+++++	+++++	+++++	+	+++	+++	+++	+++++
Round wood			+++	++++					+++
Charcoal		++	+++++	+++++		+++++	++++		+++++
Bryophyte fragments		+	+	+++		+++	+	+	+++
Sphagnum leaves						++			
Fungal sclerota					++++				
Insect remains		++	+	+++	+	++++	+	+	+++
Earthworm egg cases							+		
Fly puparia				++		+	+		
Coal/clinker		+	+		+++		+		+
Pot fragments					+				
Daub/briquetage			+++			+++		+++	+++
Sand		++++		+++++	+++++	+++++	+++++	+++++	
Gravel							+++++		
Burnt clay				+++					
Marine shell			+						
Mineralised material					+++				+++
Metalworking waste		+++			++++				

The figures for charred and semi-charred plant remains represent actual counts, whereas waterlogged plant remains are scored on a scale of abundance of 1 - 5 where 1 = <5 items and 5 = >100 items.
Other remains are scored on a scale where + = present and +++++ = very abundant.

THE PLANT MACROFOSSIL RESULTS CONT.

Context number		***406***	***407***	***408***	***409***	***413***	***415***	***416***
Sample number		14	15	16	17	18	19	20
Feature type		Upper fill of barrel B4	Lower fill of barrel B4	Upper fill of barrel B2	Middle fill of barrel B2	Fill of barrel B1	Fill of barrel B1	Fill of Barrel B1
Volume processed (l)		1	5	2	1	4	1	1
Flot size (ml)		500	1200	1000	500	750	300	300
Charred Plant Remains								
Food and economic taxa								
Cerealia indent	cereal indet	3	2	1				
Hordeum vulgare	barley	1		3				
Hordeum rachis	barley rachis	11	2	3				
Triticum aestivum rachis	bread wheat rachis		2					
Secale cereale rachis	rye rachis	13						
Culm nodes		26	28	6				2
Corylus avellana nut frag	hazelnut					2		2
Semi-charred Plant Remains								
Culm nodes			4					
Waterlogged Plant Remains								
Food and economic taxa								
Hordeum rachis	barley		2					
Secale rachis	rye		2					
Culm nodes			2	1	1	2		
Corylus avellana nut frag.	hazelnut	1	2	1		2	1	
Linum usitatissimum seed	flax		2	1				2
Linum usitatissimum capsule	flax		2					2
Prunus sp. frag.	blackthorn/ cherry/plum			1				2
Rubus fructicosus	blackberry							2
Arable Weeds								
Agrostemma githago	corncockle		2	1	1			2
Anthemis cotula	stinking chamomile	1				2		
Chrysanthemum segetum	corn marigold							2
Galeopsis tetrahit	hemp nettle							2
Sonchus asper	Prickly sow thistle		2					2
Stellaria media	common chickweed	1	3	1	1		1	3
Urtica urens	Small nettle	1						2
Grassland taxa								
Lapsana communis	nipplewort							2
Leontodon autumnalis	hawkbits	1	2					
Rumex acetosella	sheep sorrel	1	2					4
Rumex acetosa	common sorrel		2				1	3
Rumex obtusifolius	broad leaved dock		2					2
Prunella vulgaris	selfheal	1	2	1				2
Stellaria gramineae	lesser stitchwort	1						2
Ruderals								
Urtica dioica	common nettle				1			
Wet ground								
Carex trigonous	sedges	1	2					2
Carex lenticular	sedges	1	2	1				2

Context number		***406***	***407***	***408***	***409***	***413***	***415***	***416***
Sample number		14	15	16	17	18	19	20
Eleocharis palustris	common spike rushes							2
Isolepis sp.	club rushes	1						2
Juncus sp.	rushes							5
Ranunculus subg. *Batrachium*	crowfoots		2					
Ranunculus scleratus	celery leaved buttercup	1		1	1			2
Broad taxa								
Apiaceae	carrot family		2			2		
Brassica sp	cabbage family	1						
Cirsium sp.	thistles	1		1	1	2		2
Fabaceae	pea family	1	2					
Ranunculus repens - type	creeping buttercup		2	2	1			4
Persicaria lapathifolia	pale persicaria	1						2
Potentilla erecta-type	tormentil		2	1		2		3
Other Remains								
Amorphous plant remains		++	+++	+++	++++	++	++	++
Modern roots		+					+	
Buds			+					
Bark strips						++		
Wood		++	++++	+++++	++	+++++	+++++	+++++
Round wood			+++	+++		+++		+++
Charcoal		+++++	+++++	+++++	+++++	+++++	+++++	+++++
Bryophyte fragments				+	+	+	+	+
Mammal bone/teeth			+			+	+	+
Insect remains			++++	+++	++	+		+
Insect egg case							+	
Fly puparia								+
Coal			+	+				
Daub/briquetage		+++	+++	+++	+++		+++	+++
Sand			++			+++	+++++	+++++
Silt/clay						++++		
Mineralised material							++	

The figures for charred and semi-charred plant remains represent actual counts, whereas waterlogged plant remains are scored on a scale of abundance of 1 - 5 where 1 = <5 items and 5 = >100 items.
Other remains are scored on a scale where + = present and +++++ = very abundant

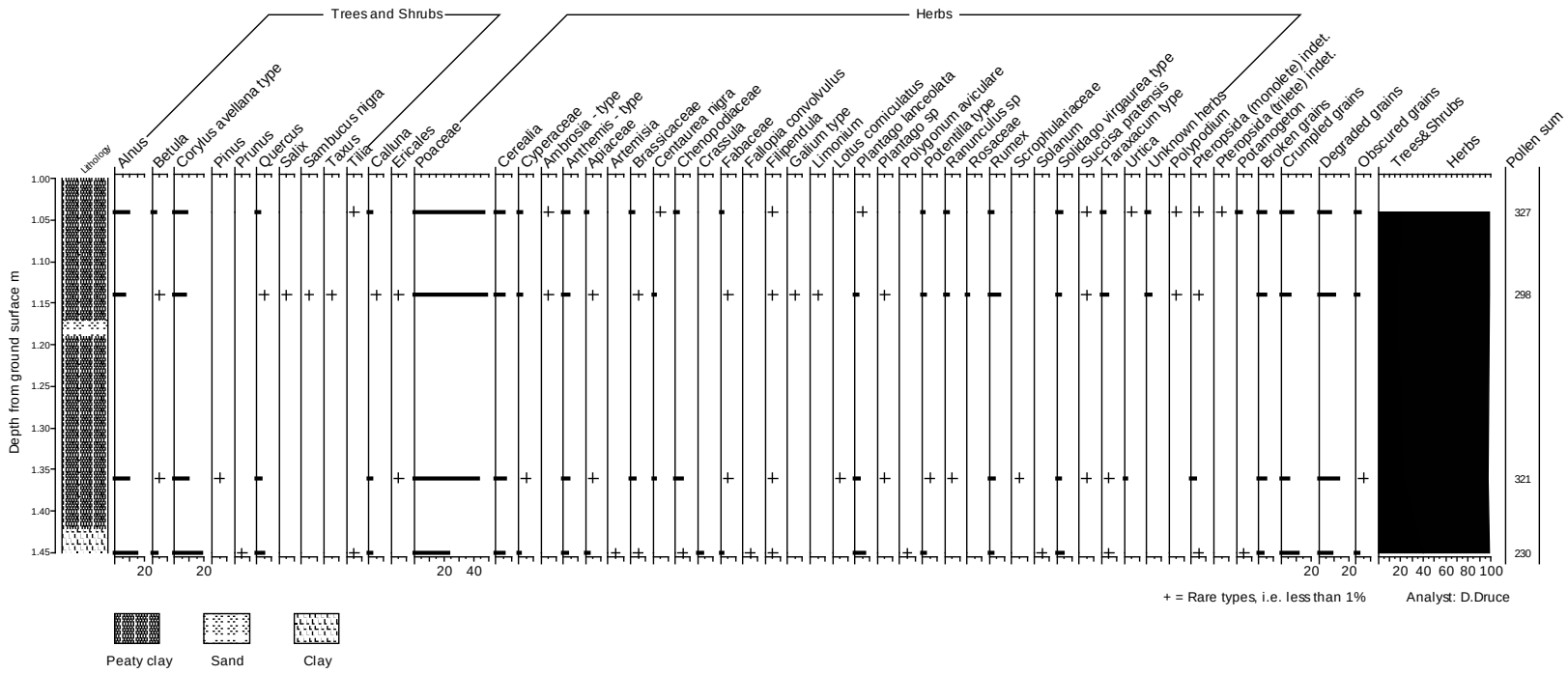

Figure 1: Percentage Pollen Diagram from Second Wood Street, Nantwich, Section 1:from outside the area of activity.

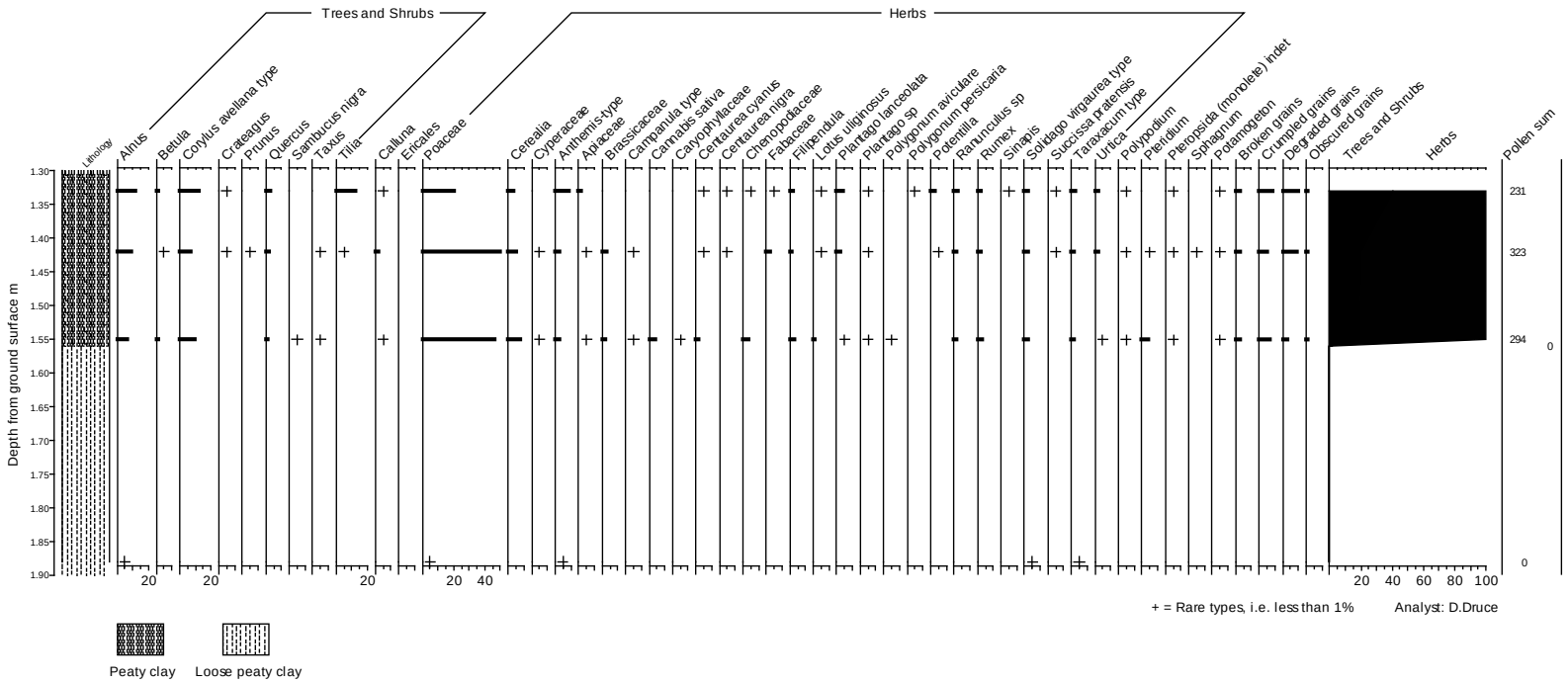

Figure 2: Percentage Pollen Diagram from Second Wood Street, Nantwich, Section 2 from within the area of activity.