

Palaeoecology Research Services

**Assessment of biological remains from excavations at
the site of the former Deva garage, 27 Grosvenor Park
Road, Chester (site code: B3471A)**

by

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Summary

Biological remains recovered from 15 samples (processed by the excavator) from deposits revealed by excavations at the site of the former Deva garage, 27 Grosvenor Park Road, Chester were submitted for an assessment of their bioarchaeological potential.

Plant material of interpretative value was not abundant in these samples, but there are rather few dated assemblages from the post-medieval period with even modest assemblages of uncharred material. The records of foodplants, hop, hemp and pot marigold should therefore be put into context through more detailed analysis of selected samples. The varied nature of the insect groups examined strongly suggests that a significant contribution could be made to reconstruction of the site. The fragments of marine shell, the land snails, and the fragments of eggshell, recovered from the sample residues were too few to be of any great interpretative value. Recovered land snail assemblages may provide additional evidence in support of that obtained from the plant and other invertebrate remains, however. Fish remains from the deposits were quite scarce but, on the whole, were reasonably well preserved. Identified species showed a similar range to those recorded from post-medieval deposits at Bridge Street, Chester, but were considerably less numerous.

It is recommended that a detailed record should be made of plant and invertebrate remains, from additional subsamples of raw sediment, from the samples assessed here (and from any others from similar deposits), and the results brought to publication.

Any development at this site through which destruction of the more organic deposits is likely to be brought about should be accompanied by excavation and careful sampling, with properly planned post-excavation assessment and analysis of the plant and invertebrate remains from selected deposits. Similarly, if further excavation should reveal deposits with greater concentrations of well preserved fish bone then an additional assessment, and, if appropriate, analysis should be undertaken. Beyond the site itself, these biological remains (particularly the plant and insect remains) preserved by anoxic waterlogging are important as representatives of deposits in Chester, for which relatively little has been recorded to date.

KEYWORDS: DEVA GARAGE; CHESTER; ASSESSMENT; ROMAN TO MODERN; 17TH AND 18TH CENTURY; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; SHELLFISH; LAND SNAILS; EGG SHELL; VERTEBRATE REMAINS; FISH BONE

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Introduction

Two archaeological excavations (in October 2000, and between 10 September and 12 October 2001), and a watching brief (April 2001) in advance of the second excavation, were carried out by Gifford and Partners Ltd at the site of the former Deva garage, 27 Grosvenor Park Road, Chester (NGR XX).

Six main phases of activity were identified during the watching brief:

- Phase 1 – Roman occupation deposits
- Phase 2 – Medieval occupation indicated by unstratified finds
- Phase 3 – Large 17th century pit
- Phase 4 – 18th century culvert, property boundary ditch and deposits
- Phase 5 – 19th century brick and sandstone structures, ditch and deposits
- Phase 6 – Surfaces, structures and services associated with the construction of the new garage in 1991

Biological remains recovered from 15 samples processed by the excavator were submitted to PRS for an assessment of their potential. The majority of the vertebrate remains were assessed separately with only the fish bone, recovered from the samples, submitted for inclusion here. With the exception of the sample from Context 207 (recovered during the watching brief), all of the material assessed in this report was recovered during the second excavation from deposits assigned to Phases 3 and 4.

Methods

Sample processing was undertaken by the excavator. Plant and invertebrate macrofossil remains were examined in the washovers

(termed ‘flots’ by the excavator) from bulk-sieved samples and as material picked out from the residues by Gifford’s staff.

Small amounts of fish bone and shell sorted from the residues were also examined. Brief notes on the preservational condition of the remains were made and, where possible, the remains were identified to species (or species group).

Results

All the samples yielded at least a little woody detritus (in some cases this appeared to consist of bark and modern woody root fragments rather than wood *per se*), whilst some of the washovers had a modest content of woody fragments, sometimes very small, with small numbers of insects and sometimes a few snails. It should be noted that the plant and (in particular) insect material would have been easier to examine had the washovers not been dried; indeed, a more appropriate strategy for examination of insect remains would have been to process ‘GBA’ subsamples (*sensu* Dobney *et al.* 1992), using paraffin flotation (Kenward *et al.* 1980). The use of bulk-sieving with 500 micron meshes also means that smaller insect and other invertebrate remains will not have been retained.

Plant remains

Fruits and seeds, mostly uncharred, were present in all the washovers/residues, sometimes in quite high concentrations. There were small amounts of wood charcoal in some samples, a very few charred plant remains (single grains of barley in two samples), and a trace of mineral-replaced material in one sample. Table 1 gives the volumes of washover recovered and some notes on the remains present.

For the most part the fruits and seeds represented weeds of waste places with scrub, notably the great majority of the taxa listed in Table 2. There was also a consistent presence of fruits of hop (in 7 of the samples, but in some quantity in the sample from Context 93; the presumed silting in Culvert 69) with small numbers of seeds of food or flavouring plants in most samples (notably fig, *Ficus carica* L., grape, *Vitis vinifera* L.,

apple, *Malus sylvestris* Miller, fennel, *Foeniculum vulgare* Miller and ?parsley, cf. *Petroselinum crispum* (Miller) A. W. Hill), with the greatest concentrations of these taxa in the sample from Context 118 (the primary fill of a large boundary ditch/drain, 107). Other taxa of interest and interpretative significance were hemp (*Cannabis sativa* L.), an oil-seed and fibre plant, in three samples and pot marigold (*Calendula officinalis* L.), a herb and ornamental, in two samples.

Insect remains

All but one of the samples yielded at least a few insect remains, which were (so far as can be judged from dried material of this kind) in excellent preservational condition. Undoubtedly, had conventional paraffin extraction and 300 micron sieve meshes been used, substantial numbers would have been recovered.

Mollusc remains

Small quantities of marine mollusc shell were recovered from the residues of all 15 of the submitted samples. The remains were mainly present as small fragments and most of the shell appeared to be of mussel. Five of the samples (Sample 3, Context 50; Sample 1, Context 63; Sample 2, Context 93; Sample 6, Context 95; and Sample 11, Context 118) also gave traces of cockle shell. Some material, sorted from the residue from the sample from Context 207, thought to perhaps be 'onion skins' was bivalve periostracum.

Small numbers of land snails were present in the washovers and material recovered from the residues of 12 of the samples. The remains were mostly of catholic taxa but the presence of *Discus rotundatus* in Samples 7 (Context 73), 9 (Context 90), 13 (Context 119), and 14 (Context 123), and of *Cochlicopa ?lubrica* in the latter two of these, indicate moderately damp conditions, perhaps provided by leaf litter/garden rubbish.

Traces of eggshell were recovered from nine of the residues.

Summary notes on the shell remains are given in Table 3.

Fish bone

Only very small numbers of fish remains were recovered from the samples. Preservation was quite varied, and material from a number of deposits was somewhat battered in appearance. Burnt fragments were noted from Contexts 63 and 119. Few fragments were identifiable, with the unidentified component made up largely of neural spine fragments. Vertebrae

were the most commonly occurring skeletal element, but several otoliths and other elements were present. The species identified were primarily marine or estuarine and included herring, eel, thornback ray, smelt and flatfish. Freshwater fish were possibly represented by perch—the edges of the ?perch scale recovered from Context 94 were a little damaged making identification rather tentative. All of the remains were of edible fish, and a range of species similar to that recovered from Bridge Street, Chester (Hall *et al.* 2002) was present.

Several herring and eel vertebrae from Contexts 63 and 106 showed characteristic damage associated with consumption and digestion, but were insufficient in number to provide definitive evidence of human faecal material.

Summary notes on the fish bone are presented (together with notes on the shell remains) in Table 3.

Discussion and statement of potential

Plant material of interpretative value was not abundant in these samples, but we have rather few dated assemblages from the post-medieval period with even modest assemblages of uncharred material such as this. The records of foodplants, hop, hemp and pot marigold should therefore be put into context through more detailed analysis of selected samples (provided unprocessed material is available which can be examined by means of subsamples which are not dried prior to examination and where both residue and washover can be examined). These remains also offer comparanda for the material recently studied from deposits of similar date in the very centre of Chester, at Bridge Street, where, interestingly, remains of hop were abundant in one 18th century context (1608), and gorse remains were rather frequent in many post-medieval deposits (Hall *et al.* 2002).

It is not possible to judge from the small number of insect fossils which *have* been recovered whether these assemblages would be of great archaeological significance, although the varied nature of the groups examined, some dominated by outdoor plant-feeding forms and ground beetles, others

dominated by species found in foul matter, strongly suggests that a significant contribution could be made to reconstruction of the site. Assemblages of insects from post-medieval occupation deposits are rather rarely examined, making these of particular interest, especially in relation to the botanical evidence.

The fragments of marine shell, the land snails, and the fragments of eggshell, recovered from the sample residues were too few to be of any great interpretative value; though the first and last are most likely from food waste. In the event of further study of these deposits (see 'Recommendations' below), however, any recovered land snail assemblages may provide additional evidence in support of that obtained from the plant and other invertebrate remains.

Fish remains from the deposits were quite scarce but, on the whole, were reasonably well preserved. Identified species showed a similar range to those recorded from post-medieval deposits at Bridge Street, Chester (Hall *et al.* 2002), but were considerably less numerous. Data provided from the current assemblage would be minimal and, therefore, detailed recording and further analysis is not warranted.

Overall the remains from these deposits point to accumulation of sediment in an area with at least periodic neglect and disturbance, and with small amounts of material representing waste from human activity, of which one must have been brewing.

Beyond the site itself, these biological remains (particularly the plant and insect remains) preserved by anoxic waterlogging are important as representatives of deposits in Chester, for which relatively little has been recorded to date. The only north-western town for which there is a significant record of this kind of material is Roman (and to an extent medieval) Carlisle, which may reasonably be expected to have differed from Chester in many ways. Any data from the present site

will be of substantial value in future synthesis of past activity and environment in towns.

Recommendations

Any development at this site through which destruction of the more organic deposits is likely to be brought about should be accompanied by excavation and careful sampling, with properly planned post-excavation assessment and analysis of the plant and invertebrate remains from selected deposits (to include those assessed here). If further excavation is not required because development does not threaten the archaeological resource, it is recommended that a detailed record should be made of plant and invertebrate remains from subsamples of about 3 kg of raw sediment from the samples assessed here (and from any others from similar deposits), processed using conventional methods (see 'Results'—paragraph 1); the results should be brought to publication.

Similarly, if further excavation should reveal deposits with greater concentrations of well preserved fish bone then an additional assessment, and, if appropriate, analysis should be undertaken.

Retention and disposal

All of the current material should be retained for the present.

Archive

All relevant material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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References

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Table 1. Samples examined for plant and invertebrate remains (in context number order). Note the following context pairs which are known or thought to be equivalent: 50 = 63; 73 = 108; 90 = 119.

Phase	Context	Sample	Vol. processed (litres)	Approx. vol. of washover (litres)	Notes (not a complete inventory for each sample)
4	50	3	30	0.275	traces of hop
4	63	1	30	0.150	trace of grape
3	73	7	20	0.050	
3	90	9	10	0.025	traces of partly-charred <i>Ulex</i> (gorse) spines and uncharred hop achenes
4	93	2	10	0.075	many tens of hop achenes per litre; traces of fig
4	94	12	10	0.125	trace of pot marigold, grape, fig, hop
3	95	6	20	0.120	
4	96	4	10	0.050	trace of hemp, hop
4	105	5	5	0.030	traces of hop, hemp, apple and pot marigold
3	106	8	10	0.125	traces of fig, apple, cherry and small plum stones, hop
3	108	10	10	0.500	one hemp achene fragment
3	118	11	20	0.200	about 0.5 l. of wood fragments sorted from residue; fennel and ?parsley, fig, blackberry, apple, and grape all recorded; traces of uncharred <i>Ulex</i> spines
3	119	13	20	0.125	
3	123	14	60	0.500	a single charred barley grain recorded; traces of uncharred <i>Ulex</i> spines
-	207	-	10	0.150	a single charred barley grain recorded

Table 2. Plant remains and other components recorded from the washovers (with some material selected from the residues) from the samples at Deva garage, Chester. Remains were uncharred seeds/fruits unless otherwise indicated).

Taxon	No. samples in which recorded
wood fragments	12
<i>Ranunculus</i> Section <i>Ranunculus</i> (buttercups)	11
<i>Urtica dioica</i> L. (stinging nettle)	11
<i>Aethusa cynapium</i> L. (fool's parsley)	10
<i>Conium maculatum</i> L. (hemlock)	10
<i>Sambucus nigra</i> L. (elder)	10
earthworm egg capsules	10
<i>Atriplex</i> sp(p). (oraches)	9
<i>Rubus fruticosus</i> agg. (blackberry, bramble)	9
bark fragments	9
charcoal	9
<i>Chenopodium album</i> L. (fat hen)	8
<i>Stachys</i> sp(p). (woundworts)	8
<i>Arctium</i> sp(p). (burdocks)	7
<i>Euphorbia helioscopia</i> L. (sun spurge)	7
<i>Humulus lupulus</i> L. (hop)	7

Table 3. Notes on the snail and fish bone remains recovered from the sample residues from Deva garage, Chester. Note the following context pairs which are known or thought to be equivalent: 50 = 63; 73 = 108; 90 = 119. **Key:** Ph – Phase; C – context number; S – sample number; f – a few fragments; frag(s) – fragment(s); unid – unidentified

Ph	C	S	Egg shell	Marine shell	Snails	Fish bone
4	50	3	f	Approx. 20 frags including ?mussel (<i>Mytilus edulis</i> L.) and 1 fairly intact cockle (<i>Cerastoderma edule</i> (L.)) valve		Eighteen fragments of fish bone were recovered from this sample. Most bones represented neural spines and fragments of unidentified fish scale. A single herring (<i>Clupea harengus</i> L.) vertebra was identified.
4	63	1	f	Approx. 25 frags including cockle and mussel		This sample produced 36 fish bones, few of which could be identified. Although of reasonable preservation, the bones were somewhat battered in appearance and almost half of them were burnt. Where identification was possible, a number of vertebrae were recorded as flatfish (Pleuronectidae). Several of the vertebrae were crushed and this may be consistent with their having been chewed and digested prior to their being incorporated into the deposit.
3	73	7		A few frags of ?mussel shell	A few land snails fragments including 1 ? <i>Discus rotundatus</i> (Müller) and 1 ? <i>Oxychilus</i> sp.	Four fish bones were present within the sample. One vertebra was identified as flatfish.
3	90	9		Approx. 20 frags mostly/?all of mussel	A few land snails fragments including 1 ? <i>D. rotundatus</i>	Few (9) fish bones were recovered from this sample and most were spines and as such could not be identified. Herring was the only species identified.
4	93	2	f	Approx. 15 frags including cockle and mussel	1 unid land snail spindle frag	Ten fish bone fragments were recovered, of which one was identified as herring.
4	94	12		A few frags of ?mussel shell	A few land snails fragments including 1 <i>Cochlicopa</i> sp., 1 ? <i>Oxychilus</i> sp. and 1 ? <i>Helix</i> sp. (as frags)	Five fish bones were identified from the sample. A single fish scale was tentatively identified as perch (cf. <i>Perca fluviatilis</i> L.).
3	95	6	f	Some frags including cockle and mussel	A few land snails fragments including 2 ? <i>Oxychilus cellarius</i> (Müller)	Fish bone was scarce from this deposit, with only a few very small fragments being recovered. Two herring vertebra were recorded. Also present was a small mammal calcaneum.
4	96	4	f	A few frags of mussel	3 unid land snails	Four unidentified fragments of ?fish bone were recovered.
4	105	5	f	A few frags	Approx. 20 frags of unid land snails	Four unidentified fragments of ?fish bone were recovered.
3	106	8	f	1 unid frag	Approx. 20 frags of ? <i>Helix</i> sp. (probably 1 individual)	This deposit produced a very small assemblage of fish bone, amounting to 6 fragments. All were well preserved. Several of the bones were identified to species, and included, herring, eel (<i>Anguilla anguilla</i> (L.)), thornback ray (<i>Raja clavata</i> L.) and small gadid. Both the herring and eel vertebrae had a rather crushed appearance.
3	108	10		Approx. 15 frags of mussel (?all from one valve)	1 frag of ? <i>Trichia</i> sp.	Six unidentified fish spine fragments were present in the sample.
3	118	11		Approx. 30 frags mostly of mussel with 1 cockle frag	1 <i>Helix</i> sp., 7 ? <i>Trichia hispida</i> (Linnaeus), 1 ? <i>Aegopinella</i> sp. (as frag)	This deposit produced 12 fragments of fish. A number of vertebrae were identified as herring and ?smelt (cf. <i>Osmerus eperlanus</i> (L.)), but many of the fragments were rather battered in appearance. Fragments of fish scale were also identified.
3	119	13	f	Small amount of mostly ?mussel	3 <i>D. rotundatus</i> , 10 <i>O. cellarius</i> , 1 <i>Cochlicopa lubrica</i> (Müller), 1 ? <i>Trichia</i> sp.	Seventeen fragments of bone were recovered from this sample. Preservation was mostly quite good and several fragments, mostly vertebrae, were identified as herring and flatfish.
3	123	14	f	Small amount of mostly ?mussel	3 <i>D. rotundatus</i> , 1 <i>C. lubrica</i> , 1 <i>Cepaea/Arianta</i> sp. (as frags)	Fish bones from this sample amounted to 48 fragments, many of which were unidentified spine. Those fragments which could be identified were mainly vertebrae and included flatfish, herring, eel and smelt.
-	207	-		Approx. 20 frags including ?mussel		Only eight fragments of fish bone were noted from this sample. Flatfish were identified, and additionally an amphibian pelvis fragment.