ASSESSMENT OF THE PLANT REMAINS FROM NUMBER ONE, POULTRY

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Introduction

The purpose of this report is to record the preservation, abundance and diversity of plant remains from representative samples, to assess their potential to answer research questions, and to estimate the time required to fully analyse and report on selected samples. The Poultry site, situated close to the Walbrook stream and in the centre of the Roman and medieval city, provides an excellent opportunity to study well preserved organic material. Over 800 environmental samples were taken from the site, and flots from 176 of these have been assessed. Figure 1 shows how these samples are distributed between the main excavation areas of the site.

Figure 1: numbers of processed samples and assessed flots from each area and period. sp = no. samples processed, sa = no. flots assessed.

area	early Roman		late Roman		sub-Roman/ late Saxon		late Saxon/ early med.		medieval	
	sp	sa	sp	sa	sp	sa	sp	sa	sp	sa
5	12	3					32	5		
8	37	12	25	8			99	19	2	1
9	22	8			11	3	69	14		
10	93	22	47	7			95	21		
11	31	10	8	3			62	16		
12	41	12	10	3						
total	236	67	90	21	11	3	357	75	2	1

In addition to these processed samples, there are a further 18 ‘single item samples’ and approximately 40 wood samples, mainly from wattle panels and pit linings, which have not been assessed. Thirty one samples taken in association with monolith columns for sedimentological and pollen analysis from areas 9 and 10 have also not been assessed.

Methods

Samples were fully or partly processed by flotation, using 1.00mm and 0.25mm meshes respectively to catch the residue and flot. Samples which were obviously organic had all or part of their flots stored in industrial methylated spirits, while less organic flots and all residues were dried. The residues were sorted by eye for finds and environmental material. Approximately 25% of flots were selected for assessment. Within each area of the site, selection was based on periods, groups, feature types where known and, within these divisions, on any plant remains recovered from the residues. These flots were briefly scanned, using a low-powered microscope, and the abundance, diversity and general nature (method of preservation, unusual features) of plant macrofossils and any faunal remains were recorded, as were the approximate flot volumes. Only dry flots were assessed, as these

are quicker to deal with, and give a reasonably accurate impression of a sample's potential. All data were added to the MoLAS Oracle 7 database, and lists produced for each area (tables 00-00) to show the plant remains from each sample.

On the basis of these results, approximate numbers of samples from each area and period have been selected for further study (see area descriptions and figure 2). At this stage very limited information is available on individual buildings and other land-use groups, and which features are associated with them, so final decisions on precise sample selection will be made only when more detailed stratigraphic information becomes available.

The plant remains

Preservation of plant remains by waterlogging was excellent on much of the site. A large range of plants was found including weed seeds, fruit and nut remains and other plant parts such as cereal bran, stems, mosses, and occasionally pods and flowers. The fruit and nut remains included some relatively rare species, apple endocarp, and possible pear stone cells. The large number of seeds from wild plants in many of the samples tended to be dominated by common waste-ground weed species, but seeds of arable weeds were also well represented. Plant remains from other habitats such as grassland and stream sides were also noted in many samples.

Charred grain was present in small numbers in the majority of samples. A number from all periods contained more substantial quantities, and occasional deposits containing charred straw, and other plant parts were seen, suggesting animal fodder or bedding, flooring, or thatch. Cereal chaff was rare, although one large deposit was found, and several samples contained other charred food plants, notably lentils.

<u>Area 5</u>

Early Roman (12 samples, 3 assessed):
Waterlogged preservation was only moderate in these samples, although some weed seeds and a few fruit stones were preserved in ditch fill [6214] from group 503. A make-up layer [6249] from group 502 contained around 100 charred grains.

No. samples recommended: 2 waterlogged
1 charred

Early medieval (32 samples, 5 assessed):
All assessed flots were from pitfills, and contained moderate to good waterlogged assemblages, consisting mainly of fruit remains including stones and pips, and weed seeds. Apple (*Malus* sp.) endocarp and cereal bran were also common, and [6016] contained numerous seeds of flax (*Linum usitatissimum*). Many of the residues also produced fruit stones. Small quantities of charred grain were present in most samples, and [6027] contained about 100 grains.

No. samples recommended: 10 waterlogged
4 charred

Area 8

Early Roman (37 samples, 12 assessed):
All three of the pre-Boudiccan samples assessed were rich in waterlogged seeds, including fruit remains and weed seeds. Little charred material was present. The six assessed flots from groups 804 and 805 were all rich in waterlogged plant remains including pods/capsules from the fill [8963] of a barrel well. The majority of seeds in most samples were from wild plants.

No. samples recommended: 12 waterlogged
0 charred

Late Roman (25 samples, 8 assessed):
Four samples, all from different groups, contained moderate to good waterlogged assemblages, including seeds of beet (*Beta* sp.), a new find for London, in [7474]. Large numbers of charred seeds were present in [8697], most of them members of the Umbelliferae family, which includes a number of species used as spices.

No. samples recommended: 6 waterlogged
5 charred

Early medieval (99 samples, 19 assessed):
The majority of these samples were from pitfills. Most of those assessed were similar, and rich in waterlogged remains including fruit stones and weed seeds. Most also contained a few charred grains, and several large charred pulses were seen.

No. samples recommended: 9 waterlogged
2 charred

Medieval (2 samples, 1 assessed):
The assessed flot contained abundant waterlogged plant remains and was similar in nature to those from the previous period.

No. samples recommended: 1 waterlogged
0 charred

Area 9

Early Roman (22 samples, 8 assessed):
Two samples from 'natural strata' showed good organic preservation of weed seeds and a few fruit remains. Three other samples also showed moderate or good waterlogged preservation.

No. samples recommended: 12 waterlogged (including 4 spit samples from monolith column)
0 charred

Sub-Roman / Saxon (11 samples, 3 assessed):
Destruction layer [3463] contained a large assemblage of waterlogged weed seeds, and [3484] had numerous charred grains. The latter were however in a poor state of preservation.

No. samples recommended: 2 waterlogged
0 charred

Late Saxon / early medieval (69 samples, 14 assessed):
Three samples from group 911 contained good waterlogged assemblages, mainly of seeds from wild plants. Most also contained a little charred grain. From group 913 one sample, from occupation layer [2510], had a moderate assemblage of waterlogged plants, and over 100 charred grains. Numerous charred stem fragments, pods etc were seen in the sample from [2818]. Others from the same group contained some charred grain and occasional fruit stones and pulses. Three cesspit fills from groups 917 and 918 had good waterlogged assemblages including some food remains.

No. samples recommended: 10 waterlogged
9 charred

<u>Area 10</u>

Early Roman (93 samples, 22 assessed):
[spits]Good waterlogged assemblages were present in most of the assessed samples from roadside drains. These consisted mainly of wild plants, including well-preserved mosses and other plant parts, although a few food remains were also seen. The samples associated with buildings contained fewer waterlogged remains, but burnt layers from groups 1004 and 1014 contained abundant charred grain, and the former also had very many charred lentils (*Lens culinaris*). A smaller number of lentils were present in samples from group 1016, while charred fruit remains and pulses were found in group 1020.

No. samples recommended: 14 waterlogged (including 5 spit samples from monolith column)
9 charred

Late Roman (47 samples, 7 assessed):
The largest number of samples were from roadside drain fills, which like those from the early Roman period, mostly contained good waterlogged plant assemblages consisting mainly of wild plant remains. One had abundant cereal bran, but no seeds. Similar types of assemblage were found from several other features including a pit and drain fill associated with a structure. There were no good charred assemblages in the samples assessed for this period.

No. samples recommended: 10 waterlogged
0 charred

Early medieval (95 samples, 21 assessed):
Most of the assessed samples had very good waterlogged plant assemblages, which usually included fruits, nuts, cereal bran, and weed seeds. Several samples from group 1034 (dumps and pits) contained good charred grain assemblages, with oats (*Avena* sp.) being the dominant cereal in those assessed. Moderate amounts of charred chaff, plant stem fragments, and weed seeds were also present.

No. samples recommended: 10 waterlogged
8 charred

Area 11

Early Roman (31 samples, 10 assessed):
Samples from four well fills all showed good organic preservation of wild plant species, with some fruit and nut remains in one. Other samples from this period contained a few charred grains, but few waterlogged remains.

No. samples recommended: 4 waterlogged
1 charred

Late Roman (8 samples, 3 assessed):
Ditch fill [17610] produced several hundred charred grains and lentils, and [17644] a moderate waterlogged weed seed assemblage.

No. samples recommended: 1 waterlogged
2 charred

Early medieval (62 samples, 16 assessed):
The three assessed samples from group 1120 contained moderate to good waterlogged assemblages of wild plant seeds, with a few food remains. Several samples from group 1121 were dominated by fruit remains, and a few had potentially interesting charred assemblages. One, from [16760] had several hundred charred grains, while [16892] contained abundant charred stems.

No. samples recommended: 10 waterlogged
7 charred

Area 12

Early Roman (41 samples, 12 assessed):
Of the pre-Boudiccan samples one flot, from fire debris [18281], consisted mainly of charred plant stem fragments, and a drain fill contained abundant waterlogged fruit remains. Many of the later samples were also very rich, particularly those from tank fill [18172], ditch fill [18260], drain fill [18133] and

peat layer [18066], and some included relatively rare finds of olive stones (*Olea europaea*), stone pine (*Pinus pinea*) nuts and bracts and walnut (*Juglans regia*) shells. In burnt deposit [18051], several hundred charred grains were found.

No. samples recommended: 12 waterlogged
3 charred

Late Roman (10 samples, 3 assessed):
The samples from groups 1205 and 1206 contained abundant waterlogged plant remains, the majority of them from wild plants, although food waste was also present.

No. samples recommended: 5 waterlogged
0 charred

Figure 2: Approximate numbers of waterlogged and charred samples recommended for further study, for each area and period.

area	early Roman		late Roman		sub-Roman/ late Saxon		late Saxon/ early med.		medieval	
	wlg	chd	wlg	chd	wlg	chd	wlg	chd	wlg	chd
5	2	1					10	4		
8	12	0	6	5			9	2	1	0
9	12	0			2	0	10	9		
10	14	9	10	0			10	8		
11	4	1	1	2			10	7		
12	12	3	5	0						
total	56	14	22	7	2	0	49	30	1	0

Potential of the material

Assessment of the samples has shown an extensive range of waterlogged seeds, fruits and other plant parts to have been preserved in samples from all areas and periods, although the largest number come from the early Roman and early medieval periods (although some of the latter may in fact be from later medieval features). Careful selection of samples to represent a wide range of features from each period should allow food and other cultivated plants to be studied, as well as assemblages of wild plants which may indicate natural habitats or use of wild resources. The majority of good charred plant assemblages again fall into the early Roman and early medieval periods. Many of the samples from all periods which will be selected mainly for their waterlogged assemblages will also contain small numbers of charred remains however, and the cumulative results from these should provide some additional comparative information. The composition of charred assemblages will be used to determine their origins and should provide answers to a number of the research questions listed below.

Insects

Fragments of beetle exoskeleton, and fly puparia were present in many of the waterlogged samples examined, and their study will provide valuable additional evidence to be used in conjunction with the botanical data. They may be used to determine elements of the natural and built environment, and provide evidence for the origin of deposits such as stable sweepings, stored crop products and decaying animal or vegetable matter.

Samples for analysis will be selected from contexts chosen for study of waterlogged plant remains, and which have unprocessed soil remaining. It is invisaged that approximate numbers will be as follows:

early Roman	15
late Roman	3
late Saxon/e. med.	15
TOTAL	33

Revised research aims
[numbers refer to original res. aims]

6.1 Natural topography and environment

6.1.2 Bulk samples associated with monoliths were taken from areas nine and ten. The plant macrofossils and insects from these will, in conjunction with pollen studies, provide information about the local environment in pre-Roman times.

6.1.5 Plant assemblages from early deposits may show changes in the flora of the area caused by human activity.

6.1.6 Botanical evidence for the natural environment at Poultry may be compared with extensive evidence from sites in the upper Walbrook valley (de Moulins, 1990). Others?

6.2 Early Roman

6.2.5 Well-preserved plant remains, including remains of exotic fruits, and seeds of wild plants, have been recovered from pre-Boudiccan samples in some areas. These should help in assessing the character of early occupation in the area.

[6.2.9 Samples containing large quantities of charred grain or chaff, and possibly insect pests, may suggest storage and/or processing of cereals prior to milling, but it is unlikely that environmental evidence could provide direct evidence for this activity.]

6.2.20 Charred plant remains may provide evidence for storage of foodstuffs (see 6.2.9 and 6.2.22). Exotic foods and spices were found in a number of environmental samples and their distribution through time should be noted, and compared with similar finds from other London sites.

6.2.21 The excellent preservation on this site will enable dietary and economic patterns to be investigated using both charred and waterlogged plant food remains which include fruits, cereals, pulses, and occasionally other vegetables as well as herbs and spices.

6.2.22 (and 6.2.10) Charred food remains, if in large enough quantities, may indicate storage of foodstuffs such as cereals and lentils. Plant stems, associated weed seeds and insect remains may suggest animal stalling. The large assemblages of waterlogged remains from wild plants may be the result of activities such as crop processing, while remains of food plants would indicate disposal of rubbish or excrement.

[6.2.23 If appropriate deposits have been sampled within structures (such as different areas of an occupation surface or storage deposit), it may well be possible to detect spatial patterning. Currently the distribution of samples within structures is unknown however.]

6.2.29 Plant assemblages recovered from deposits associated with the Walbrook revetments should be compared with the similarly rich assemblages from the Thames waterfront, to investigate any patterns of disposal or zonation.

6.3 Mid to Late Roman

6.3.6 Environmental samples from this period, may be compared with earlier ones, to determine any changes in the natural environment, as well as in diet, economy and activities.

6.4 Sub-Roman

6.4.4 Only area 9 produced environmental samples from this period, so their potential is limited, but it may be possible to assess any changes in the environment from that in earlier periods.

6.5 Saxon-Early Medieval

6.5.5(?) A large number of environmental samples from this period contain remains of food plants and, occasionally, plants cultivated for other purposes such as flax. These assemblages may provide information on changes in the social and economic nature of the area, which will be compared with that from sites elsewhere in London.

6.5.9 Despite the fact that the majority of environmental samples of this date are from pits, and are therefore likely to contain redeposited material, many include large assemblages of wild plant remains and insects, which may provide information on environments in the vicinity. More local environmental information may be gleaned from ditch fills.

References

de Moulins, D. 1990 'Environmental analysis' in C. Maloney The upper Walbrook valley in the Roman period CBA Research Report 69.

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