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PLANT REMAINS FROM ROMAN AND ELIZABETHAN CONTEXTS AT GAS HOUSE LANE, ALCESTER, WARWICKSHIRE

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Summary

Samples for plant remains were taken during excavation of an area of the Roman defences in the town of Alcester. All of the botanical material was reworked but some cereal remains were found, including a sample primarily of spelt chaff. A few asparagus seeds and some unidentified dicotyledonous taproot fragments were also found. An Elizabethan tanning pit and malting kiln were also sampled. The malting kiln produced little, but the tanning pit had material preserved without charring which included tree buds, elder seeds and gorse leaves.

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Samples for charred plant remains were taken on a judgment basis by the excavator in consultation with the author. Contexts chosen for sampling usually were those which had other occupation material or where there was visible charred material. Sample size was approximately 20 litres (2 buckets) of soil. The samples were processed by water flotation decanting onto a 0.5mm mesh sieve. The resulting flots were slowly dried, and sorted by a biotechnician using a binocular microscope. All the flots were fully sorted except one (0317/0/1) which was subsampled to save time. In all there were 23 Roman samples and 6 post-Medieval ones. Most of the samples produced some botanical material, but there were three which did not: 0320/0/1, 1043/3/1 and 7175/0/1, all Roman samples. In general the amount of plant material was fairly sparse and the absence of material from these three samples is not considered to be particularly significant. Data from each sample, excluding the three with no remains, is given in Table B.

Roman

All but one of the Roman samples came from period C. The single exception was a sample from Trench A (0317/0/1) which was from period D. This sample did not appear to be significantly different from the period C samples. None of the samples represented material charred *in situ*. All the contexts were occupation layers, floors, pits or slots in which the material had been redeposited from wherever it had originally been charred. Possibly substantial reworking had occurred but it is not possible to tell how much from the plant remains. There were some seeds which had not been charred present in some of the samples. These are presumed to be intrusive, either modern or post-Medieval (see below).

The crop plants found were emmer (*Triticum dicoccum*), spelt (*Triticum spelta*), a free-threshing wheat (*Triticum* sp. free-threshing), hulled barley (*Hordeum vulgare*), bean (*Vicia faba*) and asparagus (*Asparagus officinalis*). There was one rye grain (*Secale cereale*) which could have been either a crop or a weed. A few oat grains (*Avena* sp.) were also found. It is not possible to distinguish wild from cultivated oats from the grains alone, but since oats from Roman period sites, when identified, are usually wild, it is assumed here that these were wild oats.

Spelt, emmer and hulled barley are all typical Roman crops. Spelt and emmer were identified on the basis of their chaff fragments (rachises, spikelet forks and glume bases) as the grains are very difficult to distinguish from eachother. Spelt and hulled barley are ubiquitous on Roman sites as they were they main cereals of Roman Britain. Emmer, the main wheat of prehistoric Britain, is less common on Roman sites, at least in southern Britain, but it is not unusual to find it in small amounts as here. Possibly it may sometimes have been grown mixed with spelt, either accidentally or deliberately. It is also not unusual to find small amounts of free-threshing wheat grains. Where a free-threshing wheat has been identified to species on Romano-British sites it has been identified as a bread wheat type (*Triticum aestivum* s.l., not including the speltoid hexaploids).

Beans are less commonly found than cereals, probably because they are less likely to be exposed to fire and are therefore under-represented (Dennell 1976). They can be cultivated either as a field or as a garden crop.

Asparagus has previously been found in Roman Alcester (Moffett 1988) but as of this writing has not yet been reported from elsewhere in Britain. Its natural distribution is coastal, and therefore the presence of asparagus this far inland suggests it must have bee cultivated, although once introduced inland it might have grown in suitable habitats as a garden escape as it sometimes does today. Both Cato and Columella recommended the burning over of asparagus beds after the stalks were dry as part of the method of management. If this practice was followed at Alcester, it might account for the presence of charred asparagus seeds, although equally the old stalks might have been gathered and burned off with other rubbish.

Other plants found included a fragment of *Prunus* sp. (which could have been sloe, bullace, damson or cherry) and a fragment of hazel (*Corylus avellana*), both of which could have been collected for food. Most of the other plants were weeds which could have grown in cornfields, gardens or other disturbed ground. These included wild radish (*Raphanus raphanistrum*), fat hen (*Chenopodium* spp.), corncockle (*Agrostemma githago* - almost certainly a cornfield weed), dock, (*Rumex* sp.) plantain (*Plantago lanceolata* type), various Leguminosae (*Medicago/Melilotus/Trifolium* and *Vicia/Lathryus*), cleavers (*Galium aparine*) and weedy grasses (*Lolium perenne*, *Lolium/Festuca* type, *Bromus hordeaceus/secalinus*). Possible seeds of heath grass (cf. *Danthonia decumbens*) represent a plant which is not a weed today but may perhaps have been associated with ard-cultivated fields in the past (Hillman 1982a). Milkwort (*Polygala* sp.), possibly yellow rattle (*Rhinanthus* sp.)

and perhaps some of the Leguminosae could be derived from grassland. It is not possible to say, however, that these few seeds represent a grassland element, as some grassland plants may have invaded crop fields from grassy field margins and some grassland plants can grow as crop weeds.

Many of the samples also had fragments of dicotyledonous taproots. The identification of archaeological parenchymatous tissue including root and tuber fragments is still in its infancy although the pioneering work of Hather (1988) has shown that much progress can be made in this area. A time-consuming project of this nature, however, could not be included within the framework of this excavation report and the identification of these fragments must await future work.

The type of material in the samples for the most part did not seem to vary significantly. The material was primarily cereal grains with a few chaff fragments, weed seeds and other items. Some samples had no chaff fragments and some had slightly larger amounts of cereal grain but it would be difficult to interpret these variations as anything other than chance. Only one sample stood out as significantly different from the others. One of the layers from Trench C (2121/0/1) produced a relatively large amount of glume wheat chaff, most of it too poorly preserved to be identifiable to species, though what was identifiable was primarily spelt. This material closely resembles the fine sieve by-product of spelt processing (step 12 in Hillman 1981, Fig.5) which consists of small dense chaff fragments such as glume bases and rachises, small dense weed seeds and some undersized cereal grains (tail grains). This fine sieve by-product might simply have been burned as waste. Assemblages of material resembling fine sieving waste, however, are sometimes found charred on Romano-British sites in very large quantities such as at Wilderspool (Hillman 1983), Catsgore (Hillman 1982b) and Tiddington (Moffett 1986) suggesting that it may also have been used as tinder or fuel. It is possible, therefore, that this sample represents the cleanings from a domestic fire where crop processing waste has been burned either as tinder/fuel or merely to dispose of it.

Post-Roman

The two main post-Roman features sampled were a malting kiln and a tanning pit, both Elizabethan. Another post-Roman feature contained residual Roman artifacts. It had little in the way of plant remains but it did produce two asparagus seeds.

The plant remains from the malting kiln yielded no evidence of malting. Only a few cereal remains were present, including two spelt glume bases which are probably residual from the Roman period. Malt is made from cereal grains which have been sprouted and then gently roasted. The grains showed no signs of germination, however. The majority of the cereal grains present were wheat, with some barley, rye, and oat. Barley was the usual cereal for malting although other cereals were sometimes malted, and sometimes raw grain and even peas and beans were added for extra starch (Kaye 1936). In the absence of any evidence of germinated grain, the charred material in the malting kiln is just as likely to have been redeposited from elsewhere. The presence of uncharred elder seeds also suggests the deposition (or possibly intrusion) of material not associated with the process of malting.

The majority of the botanical remains in the tanning pit were not charred. Most of the material consisted of elder seeds (*Sambucus nigra*), gorse leaves (*Ulex* sp.) and tree buds, including willow (*Salix* sp.) and oak (*Quercus* sp.). A few fig seeds (*Ficus carica*) and possibly the bramble seeds (*Rubus fruticosus* agg.) suggest the presence of human faecal material. There were also many fragments of stem and leaf which could not be further identified. It seems highly probable that this represents the residues of material used in the tanning process. Elder berries, oak and willow are all high in tannins, and the possible faecal material could derive from liquid latrine waste which may also have been used in the tanning process. The reason for the presence of gorse is not known.

The preservation of the botanical remains is somewhat unusual in that most of it has not been preserved by the usual processes of charring, waterlogging or mineralisation. It seems unlikely that this material is intrusive modern material, however, especially since it seems to consist of the sort of material one might expect to find in a tanning pit, and includes possible human faecal material, which (one assumes) is not likely to be modern. Possibly the chemical conditions in the tanning pit have helped to preserve the botanical material.

Acknowledgements

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References

Dennell, R. 1976. The Economic Importance of Plant Resources Represented on Archaeological Sites. *Journal of Archaeological Science* 3, 229-247.

Hillman, G. C. 1981. Reconstructing Crop Processing from Charred Remains of Crops. In Mercer, R., (ed.), *Farming Practice in British Prehistory* pp. 123-162. Edinburgh: Edinburgh University Press.

Hillman, G. C. 1982a. Crop Husbandry at the Medieval Farmstead, Cefn Graenog. In Kelly, R. S., The Excavation of a Medieval Farmstead at Cefn Graenog Clynnog, Gwynedd. *The Bulletin of the Board of Celtic Studies* Part 4 (May, 1982), 859-908 (901-906).

Hillman, G. C. 1982b. Evidence for Malting Spelt. In Leech, R., *Excavations at Catsgore 1970-1973, A Romano-British Village*, pp. 137-141. Western Archaeological Trust, Excavation Monograph 2.

Hillman, G. C. 1983. Crop Processing at 3rd Century Wilderspool. In Hinchcliffe, J. and Williams, J. H., *Excavations at Wilderspool 1966-1968*. Cheshire County Council Monograph.

Kaye, N. 1936. *Brewing, a Book of Reference*. London: George Clark & Son Ltd.

Moffett, L. 1986. Crops and Crop Processing in a Romano-British Village at Tiddington: The Evidence from the Charred Plant Remains. London: English Heritage, Ancient Monuments Laboratory Report 15/86.

Moffett, L. 1988. Gardening in Roman Alcester. *Circaea* 5 (2), 73-78.

TABLE B
ROMAN BOTANICAL SAMPLES

Trench:	7 north	7 north	7 north	7 north	7 north	7 north
Context:	7257/0/1	7125/0/1	7191/0/1	7237/0/1	7120/0/1	7127/0/1
Sample size (litres):	40	20	20	20	20	20
% analysed:	100	100	100	100	100	100
Phase:	C12	C13	C13	C13	C14	C14
Context type:	layer	layer	layer	layer	layer	layer
Cultivated plants						
Triticum dicoccum/spelta spikelet forks	-	-	-	-	-	-
Triticum dicoccum/spelta glume bases	-	-	-	-	-	4
Triticum spelta glume bases	-	1cf.	-	-	-	1
Triticum sp. free-threshing grains	-	2	1	-	3	1
Triticum sp. grains	22	9	3	4	11	10
Triticum sp. germinated grains	-	-	-	2	1	-
Hordeum vulgare hulled grains	1	1	-	-	1	-
Hordeum vulgare grains	1	1	2	-	1	-
Avena sp. grains	2	2	1	-	-	3
Cereal indet. grains	33	9	4	7	-	7
Vicia faba	-	-	-	-	1cf.	-
Vicia/Pisum/Lathryus	1	-	-	-	-	-
Wild plants						
Polygala sp.	-	-	-	-	-	1
Chenopodium sp.	-	-	-	-	1	-
Lathyrus aphaca	-	-	-	-	-	1cf.
Vicia/Lathyrus	-	3	1	1	3	-
Medicago/Melilotus/Trifolium	-	-	-	-	1	-
Leguminosae indet.	-	-	-	-	-	1
Prunus sp.	-	-	1	-	-	-
Plantago lanceolata type	1	-	-	-	1	-
Galium aparine	-	-	-	-	-	2
Lolium/Festuca type	-	-	-	1	-	-
Bromus hordeaceus/secalinus	-	-	1	-	-	-
Danthonia decumbens	-	-	-	-	1cf.	-
Gramineae indet.	3	-	-	1	-	3
Dicotyledonous taproot fragments	-	2	1	10	1	12
Other root/rhizome frags.	-	-	-	-	-	6
Stem frags.	-	2	-	-	-	5
Unidentified	3	1	1	1	-	2
Modern (uncharred seeds)	-	-	-	-	1	-

ROMAN BOTANICAL SAMPLES (continued)

Trench:	B	B	B	B	C	C	C
Context:	1047/0/1	1086/0/1	1097/0/1	1063/0/1	2040/1/1	2094/1/1	2121/0/1
Sample size (litres):	20	20	20	20	20	20	20
% analysed:	100	100	100	100	100	100	100
Phase:	C22	C22	C22	C23	C	C	C31
Context type:	layer	layer	layer	layer	pit	pit	layer
Cultivated plants							
Triticum dicoccum spikelet forks	-	-	-	-	-	-	1
Triticum dicoccum glume bases	-	-	-	-	-	-	1
Triticum dicoccum/spelta spikelet forks	-	-	-	-	-	-	3
Triticum dicoccum/spelta glume bases	1	1	1	-	1	1	400
Triticum spelta rachises	-	-	-	-	-	-	4+3cf.
Triticum spelta spikelet forks	-	-	-	-	-	-	1
Triticum spelta glume bases	1	-	-	3	1	-	93
Triticum spelta/aestivum grains	-	-	1	-	-	-	-
Triticum sp. free-threshing grains	-	-	-	-	2	-	-
Triticum sp. grains	9	1	5	4	13	3	12
Triticum sp. germinated grains	-	-	-	-	-	-	16
Hordeum vulgare hulled twisted grains	-	-	-	1	-	-	-
Hordeum vulgare hulled grains	2	-	-	-	-	-	-
Hordeum vulgare grains	2	1	-	-	1	-	-
Avena/large Gramineae grains	4	-	-	-	-	-	-
Cereal indeterminate grains	8	3	3	2	6	2	21
Coleoptiles	-	-	-	-	-	-	9
Vicia faba	-	-	2	-	-	-	-
Asparagus officinalis	-	-	1	-	-	-	-
Wild plants							
Brassica oleracea/Sinapis alba	-	-	-	-	1	-	-
Agrostemma githago	-	-	-	-	-	-	1
Chenopodium hybridum	-	2	2	-	-	-	-
Chenopodium sp.	1	-	-	-	-	-	-
Vicia/Lathyrus	1	-	1	1	2	1	1
Medicago/Melilotus/Trifolium	3	-	-	1	-	-	-
Conium maculatum	-	-	-	-	-	1	-
Rumex sp.	-	1	-	-	-	1	-
Corylus avellana	-	-	1	-	-	-	-
Rhinanthus sp.	1	-	-	-	-	-	-
Carex sp.	1	1	-	-	1	-	-
Lolium perenne	1	-	-	-	-	-	-
Bromus hordeaceus/secalinus	-	-	-	-	-	-	4
Gramineae indet.	7	-	45	1	-	-	19
Dicotyledonous taproot fragments	2	1	2	2	-	-	-
Other root/rhizome fragments	-	-	3	-	-	4	-
? Flower pedicel	-	-	-	1	-	-	-
Tree buds	-	1	-	-	-	-	-
Unidentified	-	-	4	-	4	1	-
Modern (uncharred seeds)	-	12	1	3	-	21	-

ROMAN BOTANICAL SAMPLES (continued)

Trench:	C	C	C	C	C	C	A
Context:	2122/0/1	2057/0/1	2058/0/1	2061/0/1	2079/0/1	2093/0/1	0317/0/1
Sample size (litres):	20	20	20	20	20	20	20
% analysed:	100	100	100	100	100	100	50
Phase:	C31	C33	C33	C33	C33	C33	D2
Context type:	layer	layer	layer	floor	layer	slot	layer
Cultivated plants							
Triticum dicoccum/spelta spikelet forks	3	-	-	-	-	-	-
Triticum dicoccum/spelta glume bases	8	1	-	1	-	-	-
Triticum spelta glume bases	8	-	-	-	-	-	1
Triticum sp. free-threshing grains	-	3	2	-	-	3	3
Triticum sp. grains	2	31	11	12	9	13	9
Triticum sp. germinated grains	1	-	1	-	-	-	-
Triticum/Secale grains	-	-	-	-	-	2	-
Secale cereale grains	-	1	-	-	-	-	-
Hordeum vulgare hulled, twisted grains	-	-	-	-	-	-	1
Hordeum vulgare hulled grains	-	3	-	-	-	1	3
Hordeum vulgare grains	-	3	4	-	1	-	1
Avena sp. grains	-	2	-	-	-	1cf.	1
Cereal indeterminate grains	8	29	18	3	8	8	9
Cereal indeterminate culm nodes	-	-	-	-	-	-	1
Vicia faba	-	1	-	-	-	-	-
Vicia/Pisum/Lathyrus	-	1	-	-	-	-	-
Asparagus officinalis	-	-	-	-	-	1	-
Wild plants							
Raphanus raphanistrum siliqua seg.	-	-	1	1	-	-	-
Chenopodiaceae indet.	-	-	1	-	-	-	-
V icia/Lathyrus	-	1	-	1	1	2	-
Lathyrus aphaca	-	-	-	-	-	1cf.	-
Medicago/Melilotus/Trifolium	-	-	1	-	-	1	-
Conium maculatum	-	-	-	2	-	-	-
Polygonum aviculare agg.	-	-	1	-	-	-	-
Polygonum persicaria/lapathifolium	-	-	-	-	-	-	1
Rumex sp.	-	-	1	-	-	-	-
Carex sp.	-	1	1	1	-	-	-
Bromus hordeaceus/secalinus	-	1	-	1	-	-	-
Danthonia decumbens	-	-	1cf.	-	-	-	-
Gramineae indet.	3	3	2	5	-	1	-
Dicotyledonous taproot fragments	-	-	5	2	1	1	-
Other root/rhizome fragments	-	1	-	-	-	-	-
Unidentified	-	-	3	1	-	-	-
Modern (uncharred seeds)	-	21	-	-	-	-	-

POST-ROMAN BOTANICAL SAMPLES

Trench:	B	C	C	C	C	C
Context:	1043/6/1	2001/1/1	2001/2/1	2007/1/1	2007/1/2	2007/1/3
Sample size (litres):	20	20	20	20	20	20
% analysed:	100	100	100	100	100	100
Phase:	E	E	E	E	E	E
Context type:	pit	tanning pit	tanning pit	malting kiln	malting kiln	malting kiln
(All items charred unless stated otherwise, some uncharred categories not counted)						
Cultivated plants						
Triticum spelta glume bases	-	-	-	1	-	1
Triticum sp. free-threshing grains	3	-	-	-	-	-
Triticum sp. grains	8	-	-	9	11	17
Triticum/Secale grains	-	-	-	1	-	-
Secale cereale grains	-	-	-	-	1	1
Hordeum vulgare hulled grains	-	-	-	1	-	3
Hordeum vulgare grains	1	-	-	1	3	2
Avena sp. grains	-	-	-	-	2	-
Cereal indet. grains	2	1	-	9	7	7
Vicia faba	-	-	-	1	-	-
Ficus carica (uncharred)	-	3	15	-	-	-
Asparagus officinalis	2	-	-	-	-	-
Wild plants						
Stellaria media type	-	-	-	1	-	-
Caryophyllaceae indet.	-	-	-	1cf.	-	-
Chenopodium sp.	-	-	-	-	-	5
Ulex sp. leaves (uncharred)	-	abundant	abundant	-	-	-
Vicia/Lathyrus	1	-	-	3	3	2
Rubus fruticosus (uncharred)	-	3	2	-	-	-
Umbelliferae indet.	-	-	-	-	-	1
Rumex acetosella agg.	-	-	-	-	1cf.	-
Rumex sp.	1	-	-	-	-	-
Corylus avellana fragments	1	-	-	-	-	-
Solanum nigrum	-	-	-	-	-	1
Lamium sp. (mineralised)	-	-	-	-	-	1
Galeopsis tetrahit agg./*speciosa* (uncharred)	-	-	-	-	1	-
Galium mollugo/verum	-	-	-	1	-	-
Galium sp.	-	-	-	-	1	-
Sambucus nigra (uncharred)	-	abundant	14	22	-	12
Carex sp.	1	-	-	-	2	-
Carex sp. (uncharred)	-	2	2	-	-	-
Gramineae indet.	-	-	-	-	1	-
Dicotyledonous taproot fragments	-	-	-	1	-	-
Root/rhizome fragments	1	-	-	-	-	-
Quercus sp. buds (uncharred)	-	3	1	-	-	-
Salix sp. buds (uncharred)	-	abundant	abundant	-	-	-
Tree buds, unidentified (uncharred)	1	2	9	-	-	-
Leaf and stem fragments (uncharred)	-	abundant	abundant	-	-	-
Moss fragments (uncharred)	-	-	1	-	-	-
Unidentified (mineralised)	-	1	-	-	-	-