ANCIENT MONUMENTS LABORATORY REPORT

4015

SERIES/No CONTRACTOR

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TITLE Grays Brewery, Chelmsford.
Plant macrofossils; notes on other macrofossils

Site:	Grays Brewery, Chelmsford
County:	Essex
Code:	GBC 82
Type of site:	Ditches and other features
Geology:	Brickearth
Director:	D. Priddy
Type of material:	Plant macrofossils: notes on other macrofossils

Grays Brewery, Chelmsford

Samples from a possible prehistoric feature (207, 227), a Roman ditch (229), a 13th century ditch (59, 60) and 13th century 'hearth' structure (73, 100, 111, 114) were examined. Macrofossils were extracted from samples of these predominantly wet deposits using the laboratory methods of Kenward et al (1980). The plant macrofossils extracted have been studied in detail, and short notes are given below on other macrofossils. Unprocessed portions of several samples have been retained for possible future insect analysis. Plant remains identified are listed in Table .

1. Prehistoric (?) Gully.

207. Moist greyish-brown silt loam with re-worked brickearth; rare small - medium flints and quartzites; rare twigs etc.

227. Wet greyish-brown silt loam with re-worked brickearth; rare small - medium flints; rare twigs etc., rare mollusc shells (Anisus leucostoma, Lymnaea sp); rare fish bone including vertebra and stickleback 'spine'.

The seed assemblages from these two samples include a mixture of grassland taxa, ruderals, segetals, wetland plants, aquatics and scrub plants. The relatively high frequencies of Plantago major seeds indicate the proximity of trampled ground, but there is also evidence for a mixed wet grassland community including herbs, rushes, sedges and Bristle Scirpus. The seeds of aquatics (Alisma plantago-aquatica, Lemna sp, Polygonum cf hydropiper) may indicate that the sediments filling this gully were formed in shallow water, but these seeds could equally have been deposited by river flooding, as could the fish-bones and freshwater molluscs from 227. Fruitstones and thorns of bramble (Rubus fruticosus), seeds of elder (Sambucus nigra) and seeds of ruderal plants from scrub and weed vegetation in the vicinity are also present.

The testa fragments of Agrostemma githago and achenes of Anthemis cotula are more likely to be derived from harvested cereal crops: these weeds are typically segetals rather than ruderals. The identifications of these two plants cast doubt on the suggested prehistoric date for this gully: A. githago has not been reported from pre-Roman contexts in this country, and the earliest record of A. cotula is of Iron Age date (Godwin 1975; Jones 1978, 106).

2. Roman ditch.

229. Moist dark greyish-brown clay loam; stoney, with common small - medium flints; charcoal; rare small bone fragments including fishbone. The fill of this feature had not remained permanently waterlogged, and the only plant macrofossils present in the sample examined were rare small charcoal fragments and a damaged charred glume base of spelt, Triticum spelta.

3. 13th century ditch.

59. Wet dark brown organic loam with re-worked brickearth; rare small flints; insects, cladoceran ephippia, mussel and oyster shell, avian eggshell, mammal bone fragments, fishbone; charcoal, rootlets.

60. Waterlogged very dark brown structured organic deposit; rare small flints; insects, oyster shell, rare bone fragments including fishbone; charcoal, twigs, rootlets.

The seed assemblages from this feature include a grassland and wetland component comprising Ranunculus acris/repens-type, Ranunculus flammula, Prunella vulgaris, Mentha arvensis/aquatica, Juncus sp, Eleocharis sp, Carex spp and Scirpus sp. Seeds of these plants are probably derived from vegetation growing in and alongside the ditch. There are also seeds of ruderal plants from local weed vegetation, and fairly high frequencies of crop weeds (segetals) including Anthemis cotula, Centaurea cf cyanus and Agrostemma githago. It is unlikely that there was cereal cultivation on the wet floodplain soils and the seeds of segetals were therefore probably derived from crops imported to the site. Remains of crop plants (wheat, oats, flax) occur at low frequencies. The hazel nutshells, bramble fruitstones, and elder seeds may be food refuse or could indicate some local scrub growth.

4. 13th century 'hearth structure'.

73. Moist part-fired reddish-brown clay loam; rare small flints; fossil mollusc shell fragments, chalk pebbles; rare charcoal.

100. Moist brown silty clay loam; small - medium flints; rare avian eggshell, mammal bone fragments, fishbone; rare charcoal.

111. Wet very dark greyish-brown silt loam; rare small flints; insects, Balanus fragments, avian eggshell, oyster fragments, mammal bone fragments, fishbone; charcoal.

114. Wet very dark greyish-brown silt loam; rare small flints; insects, avian eggshell, oyster fragments, bone fragments; charcoal.

Contexts 73 and 100 contained few macrofossils of any type, though fossil marine mollusc shell fragments and small chalk fragments in 73 indicate the use of clay from the local Till rather than floodplain clays in the construction of this 'hearth'. The seed assemblages from samples of 111 and 114 comprise both charred and uncharred material. Carbonised Rumex nutlets, Vicia seeds and achenes of Anthemis cotula are relatively abundant and there are also some charred and uncharred seeds of other segetals and wetland plants. Cereal remains include a charred barley grain (Hordeum sp) and an oat awn fragment (Avena sp) from 111, and both samples produced uncharred fragments of cereal periderm (bran).

The samples also contained a mixture of miscellaneous food refuse (eggshell, mollusc shell and bone fragments). It therefore seems reasonable, in the absence of evidence for an industrial function, to suggest that this hearth was associated with a kitchen and that the assemblages of plant remains represent domestic processing of cereals. The charred weed seeds are likely to represent 'cleanings' from batches of cereals imported to the site. The periderm fragments may have been produced during bran removal, or may merely be the remnants of grains spilt during food preparation.

Context No.		207	227	229	59	60	73	100	111	114
Sample weight (kg)		1	1	2	1	1	2	2	1	1
Triticum aestivum s.l.	ca	-	-	-	-	1	-	-	-	-
Triticum spelta L.	gb	-	-	1	-	-	-	-	-	-
Hordeum sp.	ca	-	-	-	-	-	-	-	1	-
Avena sp	ca	-	-	-	-	1	-	-	-	-
Avena sp.	af	-	-	-	-	-	-	-	+	-
Cereal indet.	ib	-	-	-	-	+	-	-	-	-
Cereal indet.	p	-	-	-	-	-	-	-	+	+
Ranunculus acris/repens-type		5	2	-	19	42	-	-	-	-
Ranunculus flammula L.		-	-	-	-	6	-	-	-	-
Brassica sp.		-	-	-	4+fr	4+fr	-	-	-	-
Raphanus raphanistrum L.		1fr	-	-	1fr	fr	-	-	-	-
Agrostemma githago L.		-	+	-	+	fr	-	-	-	-
Stellaria media-type		1	1	-	1	6	-	-	-	-
Scleranthus cf annuus L.		-	-	-	1	-	-	-	-	-
Caryophyllaceae indet.		4	-	-	1	-	-	-	-	-
Chenopodium album L.		-	-	-	8	4	-	-	-	-
Atriplex patula/hastata		-	-	-	7	4	-	-	-	-
Chenopodiaceae indet.		-	1	-	3	12	-	-	2	3
Linum usitatissimum L.	s+c	-	-	-	-	2	-	-	-	-
Vicia sp.		-	-	-	4	-	-	-	13	6
Rubus fruticosus agg.		42	-	-	13	1	-	-	-	-
Rubus sp.		-	1	-	-	-	-	-	-	-
Rubus-type	th	-	1	-	-	-	-	-	-	-
Potentilla sp.		-	1	-	1	-	-	-	-	-
Aphanes arvensis/microcarpa		-	1	-	-	2	-	-	-	-
Conium maculatum L.		-	-	-	-	-	-	-	1	-
Apium sp.		-	2	-	-	-	-	-	-	-
Umbelliferae indet.		-	-	-	-	2	-	-	-	-
Polygonum aviculare agg.		-	12	-	4	-	-	-	-	-
Polygonum persicaria/lapathifolium		2	-	-	-	5	-	-	-	-
Polygonum c.f. hydropiper L.		7	-	-	-	-	-	-	-	-
Polygonum sp.		-	-	-	-	3	-	-	-	-
Rumex acetosella agg.		-	-	-	2	11	-	-	-	1
Rumex sp.		7	8	-	21	36	-	1	11	162
Urtica dioica L.		3	2	-	4	6	-	-	-	-
Urtica urens L.		-	-	-	1	-	-	-	-	-
Urtica sp.		-	-	-	-	-	-	-	-	1
Corylus avellana L.		-	-	-	+	+	-	-	+	+
Solanum c.f. nigrum L.		1	-	-	2	-	-	-	-	-
Mentha arvensis/aquatica		5	10	-	1	-	-	-	-	-

Lycopus europaeus L.		1	1	-	-	-	-	-	-	-
Prunella vulgaris L.		-	1	-	-	2	-	-	-	-
Plantago major L.		42	7	-	-	1	-	-	-	-
Plantago lanceolata L.		2	-	-	-	-	-	-	-	1
Sambucus nigra L.		2	-	-	1	-	-	-	-	-
Bidens cernua L.		-	2	-	-	-	-	-	-	-
Bidens sp.		8fr	1	-	-	-	-	-	-	-
Anthemis cotula L.		1	2	-	9	74	-	-	18	cf2
Cirsium/Carduus sp.		-	2	-	-	-	-	-	-	-
Centaurea c.f. cyanus L.		-	-	-	1	3	-	-	-	-
Lapsana communis L.		-	-	-	3	7	-	-	-	-
Compositae indet.		2	-	-	-	4	-	-	-	-
Alisma plantago-aquatica L.		-	4	-	-	-	-	-	-	-
Alismataceae indet.		-	-	-	-	-	-	-	1	-
Juncus sp.		+	+	-	+	-	-	-	-	-
Lemna sp.		1	-	-	-	-	-	-	-	-
Scirpus sp.		-	-	-	-	1	-	-	-	-
Eleocharis sp.		-	-	-	14	24	-	-	2	-
Isolepis setacea (L) R.Br.		-	1	-	-	-	-	-	-	2
Carex sp.		4	-	-	2	4	-	-	2	1
Carex sp.	uf	-	+	-	-	+	-	-	-	-
Gramineae indet.		10	1	-	3+1(c)	25	1	-	2fr	8
Gramineae indet.	cn	-	-	-	-	+	-	-	-	-
Indet. bracts		-	-	-	+	-	-	-	-	-
Charcoal		-	-	+	+	+	+	+	+	+
Twigs		+	+	-	-	+	-	-	-	-
Buds/budscales		+	-	-	-	+	-	-	-	-
Mosses		+	-	-	-	-	-	-	-	-
Indeterminate seeds		14	8	-	6	32	-	1	34	12

Table : Plant macrofossils.

All taxa are represented by fruits or seeds except where indicated.

Abbreviations: af - awn fragments; ca - caryopses; cn - culm nodes; gb - glume bases; ib - indeterminate inflorescence bracts; p - periderm fragments; s+c - seeds and capsule fragments; th - thorn; u - utride fragments.