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Ancient Monuments Laboratory
Report 25/99

CHARRED PLANT REMAINS FROM CORN DRIERS AND OTHER CONTEXTS OF A ROMANO-BRITISH SETTLEMENT SITE AT BILLESLEY MANOR FARM, WARWICKSHIRE

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Summary

Excavation of part of a Romano-British rural settlement produced charred plant remains from samples from two kilns thought to be corn driers and other features of 3rd to 4th century date. The most abundant cereal found was glume wheat, probably mainly spelt (Triticum spelta). Samples from the flues of the two features interpreted as corn driers contained abundant wheat glumes (chaff) with a few grains and very few weed seeds. This was interpreted as cereal waste seperated by fine sieving and used as fuel, the chaff itself indicated that dehusking of glume wheat was being carried out on the site. Both of these features had a small amount of evidence for irregular germination suggesting the processing of accidentally sprouted grain. A further sample from one of the corn driers contained about equal numbers of grains and glumes and was thought to represent spikelets of the cereal being processed. Parching of wheat spikelets for dehusking may have been one of the processes carried out although the drying of spikelets for storage is also possible from the evidence of the last uses of one of the corn driers.

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Charred plant remains from corn driers and other contexts of a Romano-British settlement site at Billesley Manor Farm, Warwickshire.

Angela Monckton

Introduction

Part of a Romano-British rural settlement at Billesley Manor Farm, north-west of Drayton Barn Cottages, Warwickshire, (SP152560), discovered by field walking in 1992 was excavated in 1995 in advance of the construction of a pipeline by Severn Trent Water Ltd. (Palmer 1995, Warwickshire Museum 1995). Stone foundations at the west of the site were of a building with rectangular rooms aligned at right angles to the Roman Road (see Plan A from Palmer 1995). Another building to the east contained a T-shaped corn drier (28) with its stoke hole to the east. East of this a second T-shaped corn drier (31) was cut into the bedrock with its stoke hole to the west. A discontinuous curving ditch on its west and south sides was presumed to form a footing for a wind break. An Anglo Saxon male burial was found in the top of the flue of the second corn drier. The pottery suggests that occupation began in the 2nd century but the stone buildings were in existence between the 3rd and mid 4th century (Palmer 1995).

Samples were taken from the corn driers and other features to recover charred plant remains which can give evidence of the crops exploited, and possibly give information about activities on the settlement site. It was hoped that the investigation of these samples would provide the opportunity to add to our knowledge of agriculture and diet at this time and to compare the evidence from this site with others in the region.

Features known generally as corn driers are interpreted as having had a stoking area, flues and a drying floor and have been suggested as having a variety of possible functions (van der Veen 1989). Cereals in the following forms could have been processed in corn driers (van der Veen 1989): whole ears could have been dried for storage or to produce green corn; spikelets could have been parched for removal of chaff; cleaned grain could have been dried for storage or to harden it for milling; germinated grain could have been roasted for the production of malt. Interpretation of the use of these features is complicated by the use of chaff for fuel which may become mixed with the some of the product making it difficult to define the material being processed. Chaff is known to be a favoured fuel for grain drying and roasting (Hillman 1982) as it produces little smoke and is an efficient use of a waste product. In addition the material being processed rarely survives in situ so it is difficult to prove the function of such kilns. Furthermore the remains found represent the last use or last few uses of the feature which may not relate to the usual function (van der Veen 1989) and sometimes may only represent rubbish backfill of the feature. The samples found here were of ashy or charred material from the flues of two kilns thought to be corn driers and the composition of the samples was examined in order to find out the type of cereal remains which may indicate the kind of processing that was carried out.

Method

A total of 14 contexts were sampled and processed by wet sieving in a 1mm mesh with flotation into a 0.85mm mesh sieve, the mesh sizes here compare with those used by Hillman (1982), the flotation fractions (flots) were then air dried and packed carefully. The

flots were assessed by Lisa Moffett of Birmingham University and seven contexts were found to have abundant charred plant remains and were selected for analysis.

During the analysis the selected flots were sorted at x10 magnification with a stereo-microscope and then the plant remains identified by comparison with modern reference material at Birmingham University, counted and recorded in Table 1. The larger flots had a sub-sample sorted because of the abundance of the material. The plant names follow Stace (1991) and are seeds in the broad sense unless stated. To compare the samples with each other and with those from other sites the percentages of chaff (glumes and spikelet forks which consist of two glumes joined together), cereal grains and weed seeds were calculated for each sample (Table 1) and shown on a triangular diagram (Fig. 1). This was because the proportions of types of remains can give evidence of crop processing activities (Hillman 1981). The proportion of charcoal in the flots was estimated and recorded in Table 1.

The plants remains

Wheat: Wheat chaff fragments were numerous in most of the samples and the majority of identifiable glumes were of spelt (*Triticum spelta*) with prominent minor veins, one prominent wide angled keel and wide bases. A few glumes were identified as emmer (*Triticum dicoccum*) because of their lack of prominent minor veins, the acute angles of the two keels and their small size. Glumes which were too short to distinguish these features or were of intermediate type were identified only as the glume wheats either emmer or spelt (*Triticum dicoccum/spelta*). Small rachis segments were also identified only as glume wheat. The identifiable cereal grains were mainly of wheat (*Triticum* sp), a few of these had the characteristic humped shape of emmer, and a few were short rounded grains classed as free-threshing wheat, possibly bread wheat (*Triticum aestivum* s.l.). However the majority were consistent with the form of spelt wheat grains and spelt can also produce short grains. Germinated grains with sprout impressions were very few, but some grains were identified as germinated because they were shrivelled and shrunken. Germinated grains formed a small percentage of the grains and detached cereal sprouts were of varying length and were not numerous. Many of the indeterminate cereal grains were probably wheat and these did not appear germinated.

Preservation: Many cereal grain fragments were found and the equivalent number of whole grains was estimated but not included in the totals. As well as cereal grain fragments there were many glume fragments suggesting that the remains were broken, perhaps by physical action, but not destroyed by burning. Experiments have shown that in some burning conditions differential destruction of chaff can occur and examination of the preservation of the grains can give indications of this (Jones and Boardman 1990). Because grains survive burning better than glumes in experiments (Jones and Boardman 1990) the samples dominated by chaff reflect the original composition of the assemblage. Very small fragments of charred and silicified awns (barbs) were found in some of the samples either falling into the flues from above or carried by the draught.

Other cereals: Occasional barley grains (*Hordeum vulgare*) were found, probably mixed with the wheat during storage or remaining in the features from previous use. The barley was of a hulled form and the presence of twisted grains showed that six row barley was present. Grains identified as cereal or large grass (Cereal/Poaceae) include a few possible oat grains (*Avena* sp) because oat awns of characteristic twisted shape were found, the oat is

probably wild oat which is an arable weed. Others of these grains are small cereal grains or tail grains which are usually removed during cleaning the cereal and form part of the waste.

Other plants: The only evidence of collected or cultivated plants used as food was from a fruit stone of sloe or bullace (*Prunus* sp) present probably as food waste thrown into the fire. The seeds present were mainly weeds of arable or disturbed ground associated with the cereal crops with the exception of a few plants of grassland habitat found in one of the samples (see 102/1 below). There is only a small weed flora associated with the cereals, larger samples may possibly have recovered a wider range of plants. However the low percentage of small seeds suggests that most have been removed earlier in processing by coarse sieving the spikelets (Hillman 1982) alternative explanations are that reaping high on the straw was carried out or weeding of the fields reduced numbers of weed seeds in the products (Hillman 1982). Most of the seeds can grow in a range of soil types but wild radish (*Raphanus raphanistrum*) and corn gromwell (*Lithospermum arvense*) as found at Tiddington (Moffett 1984) prefer light sandy soils. Spelt is usually considered to be an autumn sown crop but the few seeds unfortunately do not provide sufficient evidence to draw conclusions about sowing time or harvesting methods. The most abundant seeds are those of the larger grasses including brome grass (*Bromus* sp) which are a common occurrence with charred grain (Jones 1981) the large seeds remaining with the grain until final cleaning. The weeds goosefoots (*Chenopodium* sp) and docks (*Rumex* sp) are common on any disturbed ground found in settlements, gardens or cultivated fields.

Results and discussion

The main cereal found here is spelt as at many Roman sites (Greig 1991), this is a glume wheat with the grains held firmly in the chaff even after initial threshing which only breaks the ears into spikelets. After threshing the straw is removed and the spikelets winnowed to remove light contaminants and coarse sieved to partly clean the spikelets (Hillman 1981). This type of grain is thought to have been stored as spikelets with the chaff still present, because the chaff protected the grains from weevil and fungal attack (Hillman 1984). Before the grain was used the chaff was removed by parching and pounding, followed by fine-sieving to remove the chaff (glumes and rachis) and any small weed seeds, leaving cleaned grain for use (Hillman 1981). This may be done in small batches for domestic use and it is the waste chaff from this cleaning of grain together with a few grains and weed seeds which is often found on occupation sites. Features interpreted as corn driers, because of their frequent association with cereal remains, indicate larger scale processing such as drying and parching cereals at these sites. The waste chaff is preserved by charring if it was burnt either as rubbish or if it was used as fuel or kindling. When samples are found with grain more abundant than chaff they may originate from domestic use of grain or may represent part of the product at various stages of cereal processing.

The corn driers: The samples from these two features, 28 and 31, were examined to investigate the proportions of chaff, grains and weed seeds. The samples from the corn drier, feature 31, contexts 31/2 and 31/3 consist mainly of glumes (over 87%) with few grains and very few seeds (Table 1). In the former chaff was occasionally fused together, this was more pronounced in the sample of similar composition from corn drier, feature 28, context 28/2 where randomly fused chaff suggests that this material was placed in the kiln after separation from the grains. Grains always survive charring better than chaff (Jones and Boardman 1990) so the dominance of chaff in these samples really reflects the original

composition of the material and is similar to waste from cleaning cereals by fine sieving (Hillman 1981). This together with the position of the material in the flues suggests that this is waste chaff used as fuel. The samples from 31/2 and 31/3 are described as ashy and 31/3 contained silicified awn fragments (light chaff), the sample from 28/2 was described as a charred layer. All compare in composition and group together in the bottom right corner of figure 1 comparing with samples interpreted as fine sievings used as fuel at Tiddington (Moffett 1984).

When consideration is given to the process which may have given rise to this waste the small proportion of glumes remaining attached together as spikelet forks may suggest that the cereal had been pounded but high temperature may also cause this separation. Furthermore there are few germinated grains and cereal sprouts are not abundant; in 28/2 and 31/3 the cereal sprouts are of varying lengths from half the grain to twice the grain in length. Successful malting usually produces fairly uniform germination with the sprout being the same length as the grain, sprouts of varying lengths have been thought to indicate that malting was not in progress but that accidentally sprouted grain was being dried (Murphy 1984). The chaff probably originates from the dehusking of glume wheat which had some germination either because it was gathered wet or because some had become damp during storage. The spikelets would have been parched before pounding and dehusking. Awns found in the flues could have come from whole spikelets during parching or drying adding to the evidence for the processing of cereal spikelets. The waste chaff from dehusking was removed from the grain by fine sieving and then used as fuel in the fire to process more cereal, possibly being stored until required for later use.

The composition of the plant remains differed in sample 31/4 which contained about equal amounts of grains and glumes, also with few germinated grains and cereal sprouts. In the whole cereal ear and in the separated spikelet there is one glume to each grain so this may represent some of the cereal in this form which was being parched or dried and which was burnt accidentally. In the whole ear of spelt there are two grains to each rachis segment and in this sample there are too few rachis fragments present to indicate whole ears of wheat, therefore if no differential loss has occurred separated spikelets are suggested. The possibility cannot be excluded that this could represent cleaned grains which became mixed with the chaff used for fuel or that some of the chaff has been burnt away, but the proportions suggest that this may represent some of the material being processed lost in the fire. If this is the case the possibilities are that this was spikelets being either dried or parched. This is consistent with parching for dehusking and the presence of waste chaff indicates that dehusking was being carried out on the site, however it is not possible to prove that this kiln was being used for this purpose although this seems the most likely explanation.

Layer 102/1, 1st to 2nd century date: This produced a sample which has more seeds present than found in the other samples. Some of the seeds are of grassland plants including eyebright or bartsia (*Euphrasia/Odontites*), cat's-tail grass (*Phleum* sp), crested dog's-tail grass (*Cynosurus cristatus*) and fairly abundant smaller grasses. This suggests grassland in the vicinity and the material possibly represents fodder brought to the site, it may however be kindling to start the fire. Abundant chaff with some cereal grains with arable weed seeds suggests the cleaning of grain for consumption. The deposit may simply represent a mixture of rubbish which was burnt for disposal.

Late 3rd to 4th century gully 9/1: The sample from this feature is so similar in composition to 31/2, 31/3 and 28/2 (see fig. 1.) that it appears to be waste spent fuel from the corn driers.

Post-240AD gully 11/1: This sample differs from 9/1 in having a higher proportion of grains in a less productive sample and may consist of redeposited spent fuel possibly mixed with other waste.

Comparisons with other sites

The evidence here for the use of spelt chaff as fuel has been found at a number of sites in England (van der Veen 1989) and compares with that found from Roman sites in this area such as at Tiddington Romano-British village (Moffett 1986), the rural settlement at Wasperton (Bowker 1987) and the villa site at Salford Priors (Moffett and Ciaraldi 1997). Unlike at Tiddington where evidence for malting was found as abundant cereal sprouts and germinated grains, the small amount of evidence for germination here was taken to indicate the processing of cereal including accidentally sprouted grains as was found at Fengate Farm, Weeting, Norfolk (Murphy 1984). The germination found at Wasperton in the kilns with evidence for spelt chaff used as fuel was thought to be insufficient to indicate malting and was thought to indicate parching or drying of a partially spoiled crop which compares with the interpretation here. The site at Wasperton also had evidence for the processing of barley which was not found at this site. Large scale processing has been found at Tiddington and at Salford Priors and the very abundant chaff remains found as fuel at the latter site was thought to be evidence for processing large quantities of spelt for commerce or trading (Moffett and Ciaraldi 1997), however, there are insufficient plant remains to suggest this here.

Conclusions

The main cereal found was wheat consisting of the glume wheats, spelt with a little emmer, there were also a few grains of free-threshing wheat, possibly bread wheat. The only evidence for other cereals was a few grains of barley. Very few weed seeds were found indicating the efficient cleaning of the wheat either by coarse sieving during processing or perhaps by weeding of the fields. The few weeds represented in the samples could have grown on the clay soils of the area although cultivation of lighter sandy soil is also suggested. Processing of glume wheat on the site is indicated because the most numerous remains were of wheat chaff, mainly glumes, with few grains and seeds.

Samples with abundant wheat chaff from the corn driers were interpreted as waste chaff used as fuel in the corn drier because the proportions of remains compare with those found in the cleanings of glume wheat separated by fine sieving. In glume wheats the grain is held firmly in the chaff and they require parching and pounding to free the grain from the chaff before the waste is removed with a fine sieve. This waste therefore indicates the dehusking of glume wheat on the site with the waste probably saved and used as fuel to parch or dry later batches of cereal.

Among the waste was a small amount of evidence for irregular germination of the wheat which was thought to indicate the processing of grain which had sprouted accidentally. The grain may have sprouted either because it was gathered wet or had become damp in storage

hence parching or drying would be necessary to prevent further spoilage. A further sample from one of the kilns which had about equal numbers of grains and glumes was thought to represent remains of spikelets of the wheat being processed. Parching spikelets of spelt for dehusking may have been one of the processes carried out in the corn drier although the drying of spikelets for storage is also possible from the evidence of the last uses of the feature. There is insufficient evidence from the plant remains to suggest large scale processing of wheat at this site although the presence of the kilns interpreted as corn driers suggests the ability of the occupants of the settlement to process cereals in batches for storage or consumption, it also suggests the ability to deal with problems of storage of the harvest.

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Bibliography

Boardman S, and Jones G., 1990 Experiments on the effect of charring on cereal plant components. Journal of Archaeological Science 1990, 17, 1-11.

Bowker, C. H., 1987 Charred plant remains from Wasperton. Archive Report.

Greig J., 1991 The British Isles in W. van Zeist, K. Wasylikowa and K. Behre eds. Progress in Old World Palaeoethnobotany. Rotterdam: Balkema. p299-334

Hillman G., 1981 Reconstruction of crop husbandry practices from charred remains of crops
in R. Mercer Farming practices in British prehistory. Edinburgh University Press 1981, 123-162.

Hillman G., 1982 Evidence for spelting malt, in R Leech (ed) Excavations at Catsgore 1970-73. A Romano-British Village. Bristol: Western Archaeological Trust Excavation Monograph 2, 137-41.

Hillman G., 1984 Interpretation of archaeological plant remains: the application of ethnographic models from Turkey. in W. van Zeist and W. A. Casparie (eds.) Plants and Ancient Man. A. A. Balkema: Rotterdam. 1984, p1-41.

Jones M., 1981 The development of crop husbandry in M. Jones and G. Dimbleby The environment of man, the Iron Age to the Anglo-Saxon period. BAR Brit Ser 87, Oxford.

Moffett L., 1986 Crops and crop processing in a Romano-British village at Tiddington, Warwickshire: The evidence from the charred plant remains. Ancient Monuments Laboratory Report 15/86 English Heritage, London.

Moffett L. and Ciaraldi M., 1997 Plants and economy at Salford Priors, Warwickshire. Archive report for Warwickshire Museums (1997).

Murphy P., 1984 Fengate Farm, Weeting, Norfolk: Plant Remains (Archive Report)

Palmer S., 1995 Billesley, NW of Drayton Barn Cottages (SP152559), West Midlands Archaeology 38, 86-88.

Stace C., 1991 A new flora of the British Isles. Cambridge University Press.

Veen van der M., 1989 Charred grain assemblages from Roman-Period corn driers in Britain. Archaeol. J. 146 (1989), 302-319.

Warwickshire Museum 1995 A46 Alcester to Stratford Improvement, Supplementary Archaeological Report, Warwick.

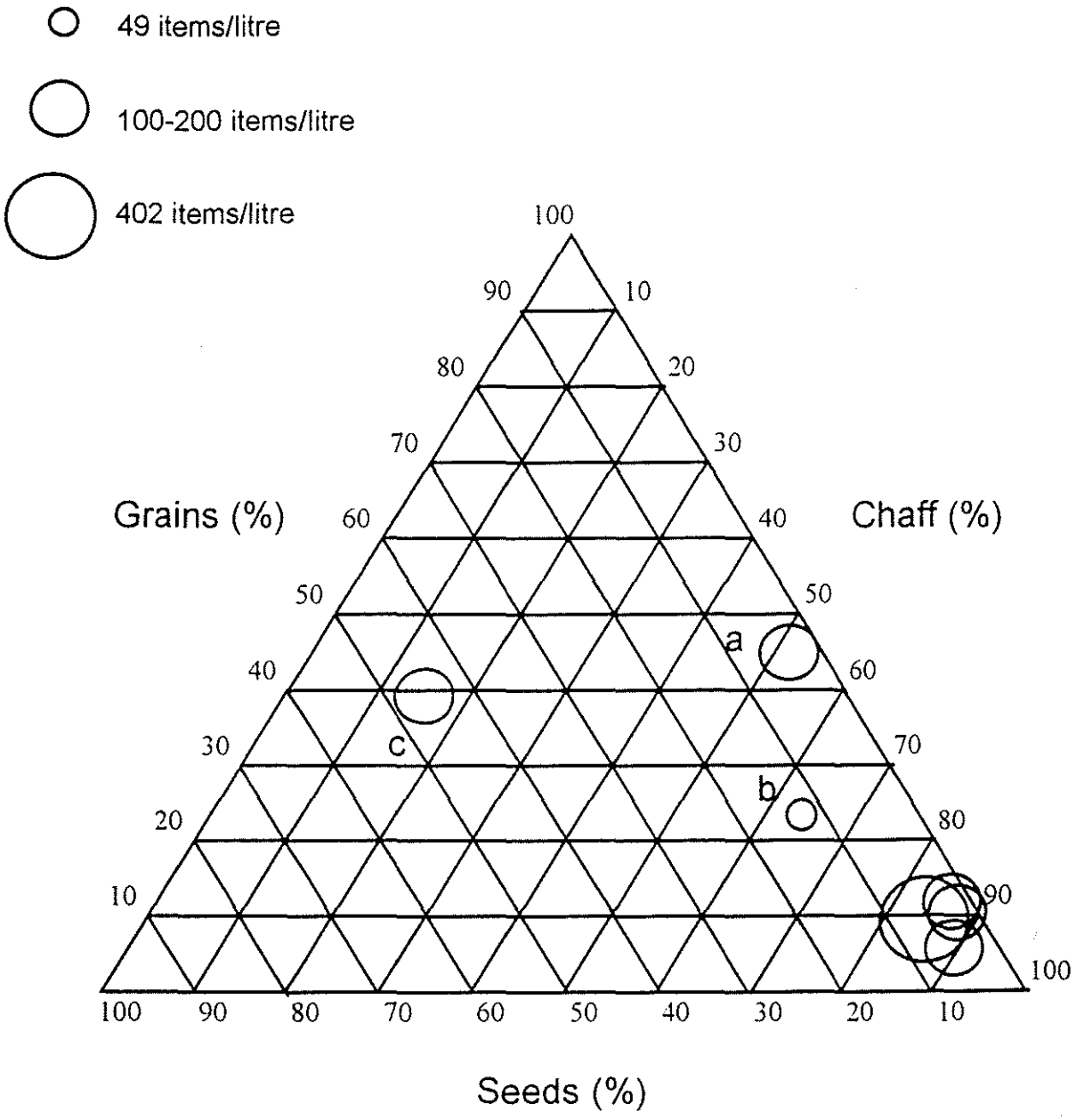
Table 1. Charred Plant Macrofossils from Billesley Manor, Warwickshire.

Feature No.	102	009	011	028	031	031	031	
Context/Sample	1/1	1/1	1/1	2/1	2/1	3/1	4/1	
Context type	L	G	G	CD	CD	CD	CD	
Century AD	1-2	L3-4	L3	L3-4	L3-4	L3-4	L3-4	
GRAINS								
Triticum cf *dicoccum*	3	-	-	1	1	1	-	Emmer
Triticum cf *aestivum*	-	-	-	4	-	1	2	Bread wheat type
Triticum sp.	11	6	11	39	12	37	70	Wheat
Triticum sp. (germinated)	-	1	2	7	-	7	8	Wheat
Triticum sp. (tail grains)	2	4	-	9	-	6	3	Wheat
Hordeum sp. hulled	4	-	-	-	-	1	-	Barley
Hordeum sp. hulled, twisted	3	-	-	-	-	-	-	Barley
Hordeum vulgare L.	-	1	-	2	1	-	-	Barley
Cereal indet.	96	11	19	56	45	107	117	Cereal
Cereal fragments (no of grains)	(15)	(25)	(5)	(35)	(30)	(70)	(50)	Cereal fragments
Cereal/Poaceae	21	-	2	22	-	26	3	Cereal/Grass
Culm node large	2	-	-	-	-	-	-	Cereal stem
Cereal embryos	-	-	-	3	-	-	-	Cereal
Cereal sprouts	2	1	-	27	16	39	1	Cereal sprouts
CHAFF								
Triticum dicoccum Schubl. (sf)	-	-	-	1	3	7	-	Emmer
Triticum dicoccum Schubl. (gl)	-	-	-	-	16	15	2	Emmer
Triticum cf dicoccum (gl)	-	4	-	3	6	2	-	Emmer
Triticum spelta L. (sf)	-	-	-	20	10	9	3	Spelt
Triticum spelta L. (gl)	2	46	6	245	31	193	16	Spelt
Triticum cf spelta (gl)	2	22	-	49	65	33	28	Spelt
T. dicoccum/spelta (sf)	-	14	1	77	57	89	15	Glume wheat
T. dicoccum/spelta (gl)	43	309	91	1057	393	1216	161	Glume wheat
T. dicoccum/spelta (ra)	2	116	2	263	163	104	23	Glume wheat
Triticum sp. cf free-threshing (ra)	-	-	-	3	-	1	-	Wheat
Hordeum vulgare L. (ra)	-	-	-	1	-	-	-	Barley
Cereal rachis	-	-	-	2	-	-	-	Cereal
Awns (silicfied)	-	-	-	-	-	+	+	Awns
Triticum sp (awns)	+	-	-	++	++	++	+	Awns
Avena sp. (awns)	+	-	-	+	+	+	-	Oat
WILD PLANTS								
Chenopodium album type	-	-	-	5	-	-	-	Fat-hen
Chenopodium sp.	6	2	3	2	1	13	3	Goose foot
Atriplex sp.	5	-	-	2	-	-	-	Orache
Polygonum sp.	2	-	-	1	1	-	1	Knotweed
Fallopia convolvulus L.	1	-	-	-	-	-	-	Black Bindweed
Rumex sp.	7	2	1	24	3	4	-	Dock
Raphanus raphanistrum L. (pod)	-	-	-	-	-	-	1	Wild Radish
Brassicaceae	1	-	-	-	-	1	-	Cabbage family
Aphanes arvensis L.	-	-	-	2	-	-	-	Parsley Piert
Prunus sp	-	1	-	-	-	-	-	Sloe/Bullace
Lotus/Trifolium	12	-	-	4	2	-	-	Trefoil/Clover
Vicia/Lathyrus	2	-	-	-	-	2	-	Vetch/Vetchling
Medicago type	20	2	-	3	-	7	-	Medick type
Daucus carota L.	1	-	-	-	-	-	-	Wild Carrot
Lithospermum arvense L.	-	-	-	-	-	1	-	Field Gromwell
Euphrasia/Odontites	1	-	-	-	-	-	-	Eyebright/Bartsia

Feature No.	102	009	011	028	031	031	031	
Context/Sample	1/1	1/1	1/1	2/1	2/1	3/1	4/1	
Context type	L	G	G	CD	CD	CD	CD	
Century AD	1-2	L3-4	L3	L3-4	L3-4	L3-4	L3-4	
Galium aparine L.	-	1	-	-	-	-	-	Cleavers
Galium sp.	1	-	-	1	-	1	-	Bedstraw
Carduus/Cirsium	-	-	-	-	-	1	1	Thistles
Carex sp	2	1	-	2	2	3	-	Sedge
Cynosurus cristatus L.	2	-	-	-	-	-	-	Crested Dog's-tail
Bromus hordeaceus/secalinus	-	1	-	11	-	-	-	Brome grass
Phleum sp.	4	-	-	-	-	-	-	Cat's-tail grass
Poaceae large	32	5	6	42	6	13	5	Grasses
Poaceae medium	51	-	-	-	2	1	-	Grasses
Poaceae small	7	5	4	6	2	4	-	Grasses
Indetermined seeds	12	2	-	3	3	4	1	Seeds
OTHER								
Stem fragments	-	-	-	-	-	+	-	Stem
Thorns	-	-	-	-	1	4	-	Thorns
Culm fragments small	6	-	-	-	-	-	-	Grass stem
Culm node small	-	-	-	-	-	1	1	Grass stem
Poaceae (sf)	-	-	-	6	12	-	-	Grass
TOTAL	368	558	140	2008	827	1958	449	(Items) (6338)
Vol sample	3	4	3	5	5	11	4	(Litres)
Vol flot	18	12	19	28	40	210	60	(mls)
% Sorted	100	100	100	50	25	12.5	25	(%)
Items/litre	123	140	49	402	171	178	112	(Items/litre)
% Charcoal	25	33	75	10	10	10	33	approx %
Ratio	0.4	17.6	2.9	11.1	10.3	8.8	1.1	glumes per grain
PROPORTIONS								
GLUMES	14.1	89.9	67.3	86.4	88.4	87.2	51.4	%
GRAINS	38.5	5.1	23.1	7.8	8.6	9.9	45.9	%
SEEDS	47.2	5.1	9.5	5.8	2.3	2.9	2.7	%

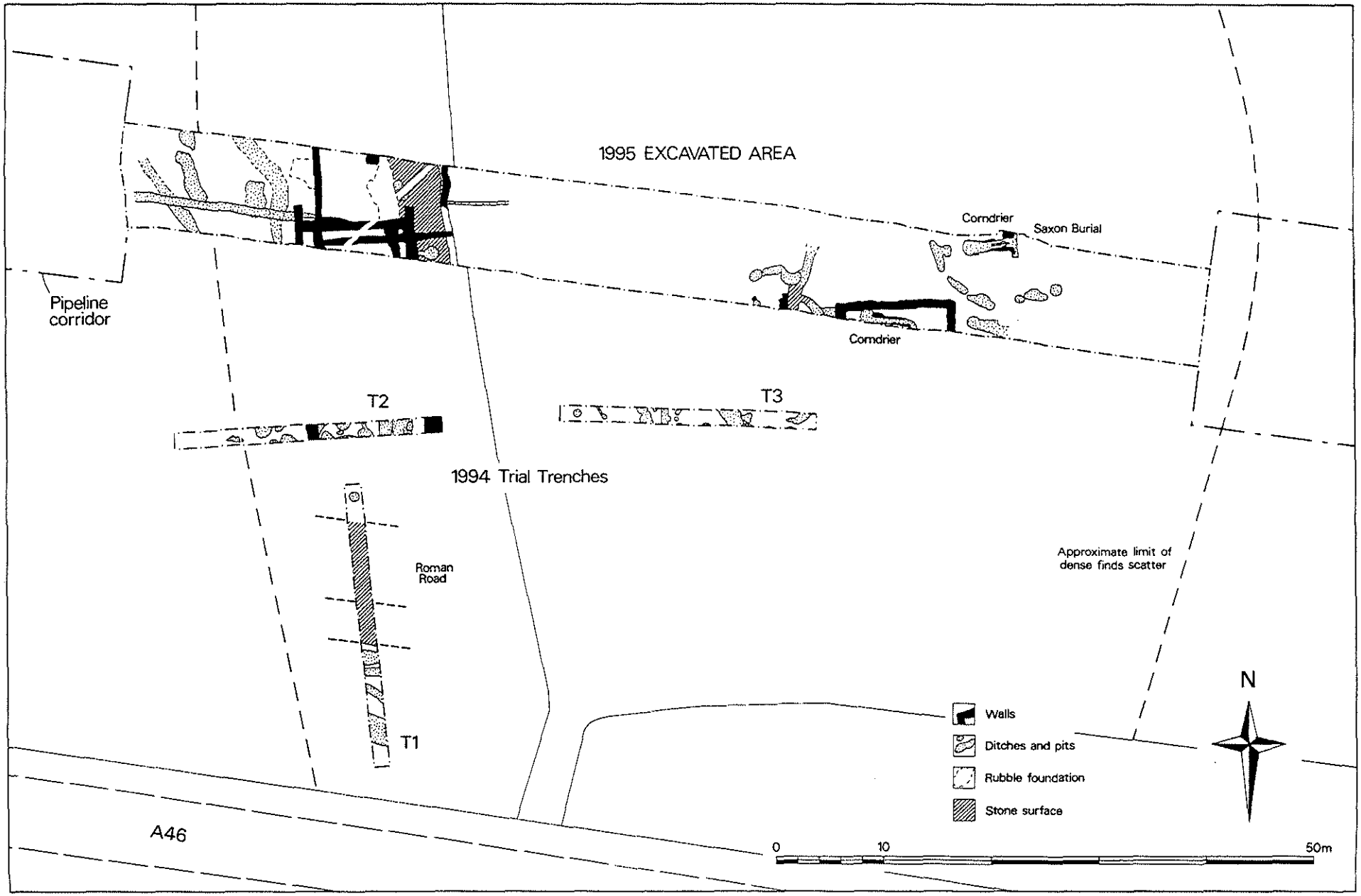
Key. (gl) = glume base, (sf) = spikelet fork, (ra) = rachis fragment;
+ = present, ++ = abundant.
G = gully, CD = corn drier / kiln, L = layer.

Proportions of grains, chaff and seeds in samples.



Key:

a = sample 31/4: b = sample 11/1: c = sample 102/1.


1995 EXCAVATED AREA
Corndrier
Saxon Burial
Pipeline corridor
Corndrier
T2
T3
1994 Trial Trenches
Roman Road
T1
Approximate limit of dense finds scatter
A46
N
Walls
Ditches and pits
Rubble foundation
Stone surface
0
10
50m