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Ancient Monuments Laboratory
Report 7/88

THE CHARRED PLANT REMAINS FROM WRAYSBURY, BERKSHIRE.

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Summary

Wet sieving and flotation were used to recover seeds from 180 soil samples from pits, ditches and gullies. Most of these contexts were Anglo-Saxon in date though there is some later contamination in many of them. Cereals, other crops and weeds were identified.

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The Charred Plant Remains from Wraysbury, Berkshire

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Sampling and Recovery

Some 180 samples of soil were wet-sieved through a 1mm. mesh for the recovery of charred plant remains, small animal bones etc.. Most of the samples came from negative features such as pits, ditches and gullies and 100%, 50% or 25% (occasionally less) of the soil from each feature was sieved. In addition, smaller samples (usually ca. 2 litres but occasionally more - up to 12 litres) from most features were processed by flotation (using sieves of mesh sizes 1mm. and 300µ) with subsequent wet-sieving of the residue (through a 1mm. mesh). The larger wet-sieved samples and the residues from the smaller samples were sorted for plant remains by the excavator (S. Lobb) and assistants, while the 1mm. flots from the smaller samples were sorted by the archaeobotanist (G. Jones). If the 1mm. flot produced 50 or more seeds, subsamples of the 300µ flots were also sorted for weed seeds etc., but no identifiable remains were found. The results of identifications from both types of sample have been combined in Table 1 though it should be noted that the proportion of weed seeds from the wet-sieved samples tended to be smaller than from the samples processed by flotation with subsequent wet-sieving. Contexts (54 in all) which yielded 50 or more seeds from the combined samples were selected for statistical analysis.

Dating

Most of the contexts are dated primarily to the Anglo-Saxon period though there is early and post-Medieval contamination of many contexts and a problem of residual Roman, bronze age and even neolithic material in other contexts (Lobb pers. comm.). Most of the evidence for contamination and residuality comes from the pottery study and C^{14} dating of charcoal samples and the absence of evidence for contamination or residuality in an individual context cannot be taken to indicate a purely Saxon date for the plant material. Moreover, some contexts provided no dating evidence at all. Given this problem of isolating contexts of different date, all samples have been included in the following discussion, recognising that contamination by pre- and post-Saxon plant material is a possibility. Differences which may reflect chronological changes will be mentioned as they occur.

Species Represented

The free-threshing cereals, bread wheat (*Triticum aestivum*), barley and oat (*Avena* sp.), are all common at Wraysbury and each predominates in some samples. The presence of hulled, twisted barley grains indicates the presence of six-row hulled barley (*Hordeum vulgare*). It is not possible to distinguish wild from cultivated oat on the basis of grains alone and no floret bases were found. However, the predominance of oat in some samples suggests that oat, as well as the bread wheat and barley, may have been cultivated as a crop in its own right. The other cereal species, emmer (*T. dicoccum*), spelt (*T. spelta*) (both glume wheats) and rye (*Secale cereale*) were present in much smaller quantities and do not predominate in any sample. They may, therefore, be nothing more than contaminants of other cereals.

Pea (*Pisum sativum*) and Celtic bean (*Vicia faba*) are similarly represented by few seeds and may also be contaminants of the cereal crops. Vetch or vetchling (a *Vicia/Lathyrus* species), however, is apparently present in larger quantities in some samples suggesting either that it was cultivated as a crop (though there is no sample in which it predominates) or that it represents weed infestation of other crops by a wild species. Otherwise, the most commonly represented weed species were *Bromus secalinus/mollis, Agrostemma githago* and *Galium* cf. *aparine*. Fragments of hazelnut shell (*Corylus avellana*) were also common and a single seed of possible flax (cf. *Linum* sp.) was found in one sample.

Crop Processing

There is very little chaff (rachis etc.) or straw in the samples and the proportion of weed seeds is low. This suggests that the samples represent cleaned grain, the chaff, straw and weeds having been removed by winnowing and grain cleaning. Moreover, the most commonly represented weeds (*Bromus secalinus/mollis, Agrostemma githago, Galium* cf. *aparine* and possibly *Vicia/Lathyrus*) are all large-seeded suggesting that the grain had been cleaned by sieving (Hillman 1981).

It has been suggested (Hillman 1981) that the absence of residues from the early stages of crop processing (such as straw waste and the rachis of free-threshing cereals) may indicate a consumer site not producing its own cereals. However, the charred remains of straw and free-threshing cereal rachis are rarely recovered in quantity on archaeological sites. This may be because such residues are generated and utilised (e.g. for animal fodder) in areas where they are unlikely to be

exposed to fire (Jones 1987) or because they are more easily destroyed by fire than grain or the denser chaff (glume bases) of glume wheats (Boardman and Jones forthcoming).

The ubiquity of charred, cleaned grain around the site is perhaps surprising. Such material usually becomes charred by accident (unlike cleaning residues which may be used as fuel - Hillman 1981) during parching or cooking activities or when grain in store catches fire. The only evidence for a hearth or oven in the region of the present samples is pit 588 (in trench 9) which contains burnt material and may have flues leading from it (Lobb pers. comm.). However, the pit contained relatively few charred grains so it is not possible to compare the composition of samples around the site with those derived from structures associated with corn-drying etc..

Spatial Distribution of Crop Plants

Only samples which produced 50 or more seeds will be discussed in the following trench-by-trench account.

Trenches 1 and 7

The samples in these two trenches come from two ditches (423 and 561) and two pits (455 and 560). They tend to have similar compositions with wheat (mostly bread wheat) predominating and barley as the second largest component. There is nothing about the plant remains in ditch 423 (contexts 197, 198, 199, 200) which would support a different date for this feature as suggested by the pottery study (Lobb pers.comm.). Indeed, the composition of these grain samples is very similar to that from pit 455 (context 196) which has no evidence of contamination. The similarity of composition of samples in these two trenches suggests that they are all either from the same source or from repeated activities of the same kind in the same area.

Trench 2

The samples from this trench are all from pits. Some of them (those adjacent to trench 1) have a greater proportion of barley than in trenches 1 and 7. Spelt and/or emmer, while still minor components, are also more noticeable in these samples and the proportion of rye is greater in most of the samples (especially in context 215, pit 564 where the proportion of oat is also relatively high). Oat predominates in the sample from context 220 (pit 567).

Trenches 3, 8, 9 and 12

Most of the samples from these trenches are from ditches (574, 579, 580, 581, 582 and 591) and all are remarkably similar in composition. They all contain barley and oat in about equal proportions with wheat (mostly bread wheat) usually the largest component. This again suggests a common origin or repeated similar activity in the vicinity of these ditches etc. and rather suggests that the plant remains from these features are not derived from different archaeological periods. There are small but significant quantities of pulse seeds in many of the Trench 3 samples. These could rarely be identified further but seem to include both pea and *Vicia/Lathyrus*.

Trench 6

The four samples in this trench are rather variable in composition. Three are from ditches (466, 541, 555) and the fourth (context 62) from a pit (459). Oat predominates in this last sample while wheat (bread wheat) predominates in one of the other samples. The other two contain wheat and oat in approximately equal quantities with smaller amounts of barley.

Trench 4

All the samples in this trench come from ditches (21, 22, 23, 393) except context 226 (pit 327). Oat makes up a large proportion of all the samples and predominates in two of them. Wheat is the second largest component in most samples. As all the samples (including that from context 258 - ditch 393 - which has evidence of later contamination) have a large proportion of oat, the plant remains in these features may well be of a similar date.

Trench 11

Most of the samples from this trench are derived from pits except contexts 287, 303 and 506 (from gullies 342, 355 and 507 respectively). Again, all the samples are remarkably similar in composition with wheat the commonest component followed by barley and oat with smaller quantities of rye. However, the most interesting aspect of these samples, which distinguishes them from samples in other trenches, is the occurrence of a relatively high proportion of pulse seeds. These often equal or exceed the barley or oat grains in number and, where they can be identified further, are mostly of a *Vicia/Lathyrus* species (with occasional peas). All the contexts in this trench show evidence of early Medieval "contamination" which may account for the difference in

composition of the plant samples though the proportion of pulse seeds in other contexts with early Medieval contamination is low. As the samples from this trench are all from pits and gullies, whereas most of the samples from other trenches are from ditches, a functional difference may be indicated - regardless of date.

Plant Use

It is possible that some of the crops found at Wraysbury were cultivated for animal fodder. In an attempt to throw some light on this question, a principal components analysis (with varimax rotation - SPSS^x Inc. 1983) was conducted to detect associations between different crops and the quantity of weed seeds. As Table 2 shows, oat and rye, along with weed seeds (especially *Bromus secalinus/mollis*) both load high on the first principal component while wheat (all species together) and barley load high on the second. This could be interpreted in a number of ways. It is possible, for example, that the oats and rye are weeds or contaminants of other crop species and are therefore associated with other weeds in uncleaned samples or in cleaning residues. However, the general paucity of weed seeds, especially those of small size, suggests that these samples are all of cleaned or semi-cleaned crop products. It is more likely then that the oats, which predominate in some samples, do so because they were deliberately grown rather than because they outnumber other weeds in cleaning residues. The rye, which is always present in small quantities, may be nothing more than a contaminant of the oat crop.

The association of weeds (especially *Bromus secalinus/mollis*) with oats may indicate that less attention was paid to excluding weeds from the oat fields and to cleaning weed seeds out of the grain than was the case with wheat and barley. This might be an indication that the oats were intended for animal fodder while the wheat and barley were for human consumption. The relative abundance of oat in trenches 4 and 6 could indicate that this part of the site was especially concerned with animal stalling or fodder storage but there is no structural evidence to support this (Lobb pers. comm.).

The association of wheat and barley could be taken as an indication that the barley was a contaminant of wheat but, given the relatively large proportion of barley in some samples, it is perhaps more likely that both were used for human food and tend to be associated for that reason or even because they were grown together as a maslin.

Analysis of variance and t-tests show that the proportion of pulse seeds (and more particularly of *Vicia/Lathyrus*) is significantly greater in pits and gullies (which predominate in trench 11) than in ditches and

also significantly greater in samples contaminated by early Medieval material (which includes all the trench 11 samples) (Table 3). This difference may therefore be interpreted as chronological, spatial, functional or a combination of all three. For example, it may suggest a different activity in the vicinity of pits and gullies or at least in those uncovered in trench 11. Alternatively, there may have been a change through time in the occurrence of *Vicia/Lathyrus*. If the former, then the use of *Vicia/Lathyrus* for animal fodder in association with these features is a possibility. If the latter, the cultivation of *Vicia/Lathyrus*, presumably for fodder, may be a relatively late development or, if it is a wild species present as a weed of other crops, it could indicate a decline in soil fertility which would favour leguminous species capable of fixing their own nitrogen from the atmosphere.

Conclusions

An attempt has been made to identify plant remains of contemporary date by looking for groups of neighbouring samples with similar compositions. It is assumed that such similarity of composition results from the same or similar activities and that such continuity of function is unlikely to have persisted over very long periods of time. These groups of plant remains, if not exactly contemporary, should at least belong to the same broad archaeological period. It is more difficult, however, to determine whether such groups are of Saxon date or represent "contamination" from earlier or later periods.

The cultivated species encountered at Wraysbury are all known from other Anglo-Saxon sites (Green 1981, Jones 1981) though most of them have been found in earlier periods too. However, the predominance of bread wheat over other wheat species and the abundance of oat are generally thought to be features of the Anglo-Saxon and later periods (Green 1981). The composition of the samples from Wraysbury is, therefore, consistent with a predominantly Anglo-Saxon date though an earlier date for some material cannot be ruled out.

The evidence from Wraysbury is consistent with the use of oats for fodder and Green (1981) has also suggested that *Vicia* and *Lathyrus* species may have been collected or cultivated for animal consumption. Alternatively, the *Vicia/Lathyrus* at Wraysbury may have been a weed of other crops and, as such, possibly indicate a decline in soil fertility in the early Medieval period. A similar phenomenon was noted by Jones (1979) during the Iron Age and Roman periods at Abingdon, Oxfordshire.

The possibility that bread wheat and barley were grown as a maslin is also interesting. Neither crop was found without the other in

the Wraysbury samples (though oat is equally ubiquitous) and the practice does have advantages. In good years, the bread wheat (usually the preferred crop) does well and makes up a substantial proportion of the harvest but, in poor years, the barley (which is less demanding) takes the place of the failed wheat ensuring a reasonable yield. This strategy is practised in the Greek islands today (Jones et al. 1986) and is documented for mixtures of various species from the Medieval period in Britain (Slicher van Bath 1963).

References

Green, F.J. 1981. Iron Age, Roman and Saxon crops: the archaeological evidence from Wessex, in M. Jones and G. Dimbleby (eds.) *The Environment of Man: the Iron Age to the Anglo-Saxon Period* (BAR British Series 87). Oxford.

Hillman, G.C. 1981. Reconstructing crop husbandry practices from charred remains of crops, in R.J. Mercer (ed.) *Farming Practice in British Prehistory.* Edinburgh.

Jones, G. 1987. A Statistical approach to the archaeological identification of crop processing *Journal of Archaeological Science* 14: 311-23.

Jones, G., Wardle, K.A., Halstead, P. and Wardle, D. 1986. Crop Processing at Assiros Toumba *Scientific American* 254(3): 96-103.

Jones, M. 1979. The plant remains, in M. Parrington *The Excavation of an Iron Age Settlement, Bronze Age Ring-ditches and Roman Features at Ashville Trading Estate, Abingdon (Oxfordshire) 1974-76* (CBA report 29). London.

Jones, M. 1981. The development of crop husbandry, in M. Jones and G. Dimbleby (eds.) *The Environment of Man. the Iron Age to the Anglo-Saxon Period* (BAR British Series 87). Oxford.

Slicher van Bath, B.H. 1963. *The Agrarian History of Western Europe 500-1850.* London.

SPSS^{X} Inc. 1983. *SPSS^{X} User's Guide.* New York.

Table 1 Charred Plant Remains from Wraysbury (nos. of seeds)

TRENCH	1							2		
FEATURE NO.	413	414	418	419	423		425	563		
FEATURE TYPE	pit	pit	post	post	ditch		pit?	pit		
CONTEXT NO.	176	177	182	183	199	200	312	212	213	314
VOLUME OF SOIL (litres)	32	8	<4	<4	420	180	4	72	100	179
Hordeum (hulled)										
straight	-	-	-	-	1	1	-	1	4	3
twisted	-	-	-	-	-	1	-	1	4	9
indet.	-	-	-	1	9	3	1	12	21	69
Hordeum (indet.)	-	-	-	-	54	5	-	5	6	15
cf. Hordeum sp.	-	-	-	-	11	2	-	6	3	3
Triticum aestivum	-	-	-	2	191	36	-	54	19	57
T. spelta	-	-	-	-	-	3	-	-	-	-
cf. T. spelta	-	-	-	-	4	5	-	5	-	5
T. dicoccum	-	-	-	-	2	-	-	-	7	7
cf. T. dicoccum	-	-	-	-	2	3	-	2	-	7
indet. wheat	-	-	-	-	6	-	1	8	-	3
Secale cereale	-	-	-	-	3	-	-	3	-	7
cf. S. cereale	-	-	-	-	7	-	1	4	1	2
Avena sp.	-	-	-	-	9	9	-	7	-	12
cf. Avena sp.	-	-	-	-	15	2	-	2	2	10
indet. cereal	-	-	2	-	166	41	1	19	18	55
cf. Pisum sativum	-	-	-	-	1	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	-	9	4	-	4	-	2
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	1	-	-	2	3	2
Bromus secalinus/mollis	-	-	-	-	1	1	-	4	-	4
cf. B. secalinus/mollis	-	-	-	-	2	-	-	3	1	5
Agrostemma githago	-	-	-	-	-	-	-	2	-	-
Galium cf. aparine	-	-	-	-	2	-	-	-	-	1
Rumex sp.	-	-	-	-	-	-	-	1	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	1	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	1	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	1	1	-	-	1	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					2					
FEATURE NO.	563	?	564	565	566	567		568		573
FEATURE TYPE	pit	?	pit	pit	pit	pit		pit		pit
CONTEXT NO.	333	214	215	216	219	220	246	221	247	225
VOLUME OF SOIL (litres)	24	?	152	36	32	104	120	136	32	48
Hordeum (hulled)										
straight	-	-	-	1	-	-	-	1	-	-
twisted	-	-	2	-	-	-	-	-	-	-
indet.	2	2	11	3	1	7	-	4	2	1
Hordeum (indet.)	-	1	-	3	-	4	2	3	-	2
cf. Hordeum sp.	1	-	2	-	-	3	2	1	1	-
Triticum aestivum	3	1	12	8	2	65	13	60	13	-
T. spelta	-	-	2	-	-	1	-	-	-	-
cf. T. spelta	-	1	5	-	-	3	-	4	2	-
T. dicoccum	-	-	2	-	-	-	-	-	-	-
cf. T. dicoccum	-	1	2	-	-	-	-	1	-	-
indet. wheat	-	-	-	-	-	5	2	8	-	1
Secale cereale	-	-	3	-	-	3	-	2	-	-
cf. S. cereale	-	-	5	1	-	15	-	1	-	1
Avena sp.	-	-	11	3	-	131	-	8	3	-
cf. Avena sp.	1	1	1	-	-	46	-	3	-	-
indet. cereal	-	2	-	8	4	23	2	45	11	1
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	3	-	-	2	-	-	1	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	-	1	-	-
Bromus secalinus/mollis	1	-	7	-	-	6	1	2	1	-
cf. B. secalinus/mollis	-	-	2	-	-	5	-	6	-	-
Agrostemma githago	-	-	1	1	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	1	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	2	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	1	-	-
grass culm node	-	-	-	-	-	1	-	-	-	-

TRENCH	2	3								
FEATURE NO.	571	?			579			580	581	
FEATURE TYPE	post	pit			ditch			ditch	ditch	
CONTEXT NO.	329	29	258	430	461	431	469	275	276	384
VOLUME OF SOIL (litres)	8	10	34	40	34	40	56	162	236	16
Hordeum (hulled)										
straight	-	-	-	1	2	-	-	1	-	-
twisted	-	-	1	-	-	-	-	-	-	-
indet.	1	3	12	18	3	-	2	15	7	2
Hordeum (indet.)	-	6	35	30	13	2	1	19	9	3
cf. Hordeum sp.	-	-	5	11	-	1	-	-	3	1
Triticum aestivum	2	22	97	77	40	6	8	64	91	18
T. spelta	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	1	5	0	3	10	1	-	8	1	1
T. dicoccum	-	-	2	-	-	-	-	-	-	1
cf. T. dicoccum	-	-	-	3	4	-	-	7	-	-
indet. wheat	-	1	5	3	9	-	-	8	-	3
Secale cereale	-	-	10	3	1	-	1	-	1	1
cf. S. cereale	-	-	5	9	3	-	2	1	2	2
Avena sp.	1	7	55	44	25	10	6	39	31	4
cf. Avena sp.	-	-	20	18	1	1	4	2	9	5
indet. cereal	2	37	65	71	39	19	12	114	54	11
cf. Pisum sativum	-	-	1	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	4	3	1	-	-	4	1	-
cf. Linum sp.	-	-	-	-	-	-	-	-	1	-
Corylus avellana	-	13	7	8	4	-	-	14	9	2
Bromus secalinus/mollis	-	-	29	48	9	5	2	14	9	1
cf. B. secalinus/mollis	-	-	5	8	5	1	1	7	5	-
Agrostemma githago	-	-	-	-	-	-	2	1	3	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	1	-	1	-	2	-	-
Plantago cf. lanceolata	-	-	-	1	-	-	-	-	1	-
Brassica/Sinapis	-	-	-	1	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	1	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	1	-	-
Gramineae	-	-	-	1	-	-	-	1	-	-
Cyperaceae	-	-	-	1	-	-	-	-	-	-
indet.	-	-	1	1	-	2	-	-	-	-
grass culm node	-	-	1	-	-	-	-	-	-	-

TRENCH					3					
FEATURE NO.			581				583		582	
FEATURE TYPE			ditch				gully		ditch	
CONTEXT NO.	401	468	470	523	543	544	385	395	437	521
VOLUME OF SOIL (litres)	120	34	40	17	18	49	18	76	204	44
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	1	-	-	-	-	-	-	-	-	-
indet.	7	2	5	1	-	1	2	3	6	2
Hordeum (indet.)	11	7	3	2	-	2	4	5	2	4
cf. Hordeum sp.	3	-	4	-	-	-	4	2	1	2
Triticum aestivum	31	21	19	3	-	13	23	21	27	13
T. spelta	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	3	2	-	-	-	-	1	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	1	3	-	-	-	-	-	-	-	-
indet. wheat	4	7	3	-	-	-	4	1	2	-
Secale cereale	1	-	-	-	-	-	-	2	-	1
cf. S. cereale	1	4	-	-	-	-	3	1	-	1
Avena sp.	11	7	4	1	-	3	11	6	5	7
cf. Avena sp.	9	2	4	-	-	2	1	2	11	3
indet. cereal	28	22	25	2	2	1	25	14	27	10
cf. Pisum sativum	-	-	-	-	-	-	-	-	1	-
cf. Vicia/Lathyrus	-	1	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	8	4	-	-	-	-	3	2	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	2	2	-	-	-	-	2	-	2	1
Bromus secalinus/mollis	5	6	3	-	-	-	5	-	3	3
cf. B. secalinus/mollis	2	2	-	-	2	1	1	1	1	1
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	3		4							
FEATURE NO.	578	?	21	22		36	393	23	24	25
FEATURE TYPE	pit	?	ditch	ditch		?	ditch	ditch	?	?
CONTEXT NO.	476	?	15	16	71	85	253	17	24	25
VOLUME OF SOIL (litres)	35	?	112	142	64	98	96	122	8	8
Hordeum (hulled)										
straight	-	-	1	1	-	-	1	-	-	-
twisted	1	-	1	-	-	-	-	-	-	-
indet.	-	-	1	10	-	1	1	2	-	-
Hordeum (indet.)	13	-	8	18	5	-	1	1	-	-
cf. Hordeum sp.	-	-	-	-	1	-	-	3	-	-
Triticum aestivum	24	2	33	29	18	5	23	5	-	-
T. spelta	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	6	-	2	6	3	-	1	2	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	1	-	-	1	-	-	-	1	-	-
indet. wheat	3	-	1	12	1	3	-	-	-	-
Secale cereale	-	-	-	1	1	-	1	1	-	-
cf. S. cereale	2	2	1	2	3	1	2	4	-	-
Avena sp.	14	5	13	26	12	20	12	71	-	-
cf. Avena sp.	4	0	7	5	5	4	6	28	-	-
indet. cereal	12	2	27	22	14	1	22	24	-	-
cf. Pisum sativum	-	-	1	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	1	-	-	-	-	-	-	-
indet. pulse	2	-	3	3	-	1	-	1	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	2	-	6	6	1	1	-	-	-	-
Bromus secalinus/mollis	1	-	2	-	-	-	-	1	-	-
cf. B. secalinus/mollis	2	-	4	1	1	1	1	2	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	1	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					4					
FEATURE NO.	?	?	317	315	319	241	90	326	327	330
FEATURE TYPE	?	post	post	pit	gull.	post	gull.	pit	pit	pit
CONTEXT NO.	56	28	47	49	52	54	55	205	226	239
VOLUME OF SOIL (litres)	2	2	8	5	26	8	155	16	18	8
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	1	-	1	1	-	-	-
Hordeum (indet.)	-	-	-	-	1	-	-	-	2	-
cf. Hordeum sp.	-	-	1	-	12	3	-	-	5	1
Triticum aestivum	-	-	1	-	-	-	13	-	15	-
T. spelt	-	-	-	-	1	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	1	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	-	-	-
indet. wheat	-	-	-	-	-	-	-	-	-	-
Secale cereale	2	-	-	-	-	-	-	-	2	-
cf. S. cereale	2	-	-	-	-	-	-	-	5	-
Avena sp.	1	1	12	6	4	12	6	1	63	2
cf. Avena sp.	-	-	9	-	1	6	2	1	17	1
indet. cereal	-	-	7	-	5	1	12	2	14	-
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	-	-	-	-	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	-	-	-	-
Bromus secalinus/mollis	-	-	-	-	-	-	-	-	9	-
cf. B. secalinus/mollis	-	-	2	-	-	-	-	-	2	-
Agrostemma githago	-	-	-	-	-	-	-	-	1	-
Galium cf. aparine	-	-	-	-	-	-	1	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	1	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	4			6						
FEATURE NO.	328	331	334	?	459	474		555		
FEATURE TYPE	post	pit	gull.	?	pit	ditch		ditch		
CONTEXT NO.	252	268	308	61	62	63	311	65	272	274
VOLUME OF SOIL (litres)	8	16	16	8	10	32	26	186	96	50
Hordeum (hulled)										
straight	-	-	-	1	-	-	-	-	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	-	1	-	3	3	-	2	1	-	-
Hordeum (indet.)	-	4	1	1	2	2	2	4	-	1
cf. Hordeum sp.	-	-	-	-	3	1	3	4	-	3
Triticum aestivum	-	10	1	-	5	4	5	5	3	3
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	1	1	-	-	-	-	1	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	3	-	-
indet. wheat	-	-	-	1	2	2	2	3	1	1
Secale cereale	-	-	-	-	-	-	-	2	2	-
cf. S. cereale	-	-	-	-	1	-	1	4	1	-
Avena sp.	1	10	1	3	73	8	4	11	4	5
cf. Avena sp.	-	3	-	-	18	10	-	8	4	3
indet. cereal	-	4	8	3	31	8	1	17	5	2
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	-	1	-	1	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	3	-	-	-
Bromus secalinus/mollis	-	-	1	-	3	-	-	3	1	1
cf. B. secalinus/mollis	-	-	-	-	-	-	2	3	2	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	1	-	-	1	-	-
Gramineae	-	-	-	1	-	-	-	-	-	-
Cyperaceae	-	-	-	-	1	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					6					
FEATURE NO.	?	541				467		466		547
FEATURE TYPE	post	ditch				ditch		ditch		pit
CONTEXT NO.	64	70	267	463	412	316	427	380	392	381
VOLUME OF SOIL (litres)	2	98	34	18	50	18	98	146	16	10
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	-	-	-	-	1	-	-	-	-	-
indet.	-	13	2	-	6	-	-	1	-	-
Hordeum (indet.)	1	2	5	2	5	2	5	6	2	-
cf. Hordeum sp.	-	17	3	2	4	3	1	2	2	-
Triticum aestivum	1	162	5	8	10	13	11	10	9	1
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	1	-	-	-	-	-
indet. wheat	1	18	1	-	1	1	3	3	-	-
Secale cereale	-	1	-	-	1	-	-	2	-	1
cf. S. cereale	-	1	-	2	1	-	-	-	-	1
Avena sp.	2	29	6	1	14	8	7	13	8	-
cf. Avena sp.	-	6	1	-	6	3	2	7	1	-
indet. cereal	-	124	-	4	11	9	-	31	10	1
cf. Pisum sativum	-	1	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	3	1	-	-	-	1	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	-	-	-	-
Bromus secalinus/mollis	-	1	-	3	1	1	-	1	-	-
cf. B. secalinus/mollis	-	-	1	2	-	5	2	1	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	1	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	2	-	-	-	-	-	-	1	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	6			7						
FEATURE NO.	542		464	242		562	443	444	445	446
FEATURE TYPE	pit		ditch	pit		pit	post	post	post	post
CONTEXT NO.	456	500	464	159	160	162	163	164	165	166
VOLUME OF SOIL (litres)	18	16	82	10	10	14	4	14	14	10
Hordeum (hulled)										
straight	-	-	-	-	1	-	-	-	-	-
twisted	-	1	-	-	-	-	-	-	-	-
indet.	-	2	1	-	5	-	-	-	-	-
Hordeum (indet.)	1	5	5	-	3	-	-	-	-	-
cf. Hordeum sp.	-	1	1	2	1	-	-	-	-	1
Triticum aestivum	4	2	9	1	-	-	-	-	1	-
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	1	1	-	-	-	-	-	-	-
indet. wheat	-	-	1	-	-	-	-	-	-	-
Secale cereale	-	1	-	-	-	-	-	-	-	-
cf. S. cereale	-	-	-	-	-	-	-	-	-	-
Avena sp.	1	3	6	1	1	1	-	-	-	-
cf. Avena sp.	1	2	1	-	1	-	-	1	-	-
indet. cereal	1	4	11	-	-	1	-	-	-	-
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	-	-	-	-	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	-	-	-	1
Bromus secalinus/mollis	-	-	-	-	-	-	-	-	-	-
cf. B. secalinus/mollis	-	-	-	-	-	-	-	-	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					7					
FEATURE NO.	447		561		560			449	450	454,
FEATURE TYPE	pit		ditch		pit			post	post	pit
CONTEXT NO.	168	203	169	170	271	279	280	171	172	173
VOLUME OF SOIL (litres)	26	26	26	10	4	4	6	9	14	90
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	-	-	-	-	-	-	1	1	-	-
indet.	-	1	2	1	-	2	-	1	-	1
Hordeum (indet.)	-	1	4	-	1	4	9	1	1	-
cf. Hordeum sp.	2	-	1	1	-	1	2	-	-	-
Triticum aestivum	-	2	29	12	3	13	79	1	2	3
T. spelt	-	-	-	-	-	6	-	-	-	-
cf. T. spelta	-	-	2	-	1	-	8	-	-	1
T. dicoccum	-	-	-	1	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	-	-	1
indet. wheat	-	-	3	3	-	2	5	-	-	-
Secale cereale	-	-	-	-	-	-	-	-	-	-
cf. S. cereale	1	-	1	-	1	-	-	-	-	2
Avena sp.	-	-	1	-	-	2	2	-	-	-
cf. Avena sp.	-	-	3	-	-	-	2	-	-	1
indet. cereal	2	1	16	6	1	2	12	-	2	10
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	2	-	-	-	1	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	1	-	-	-	-	-	-	-
Bromus secalinus/mollis	-	-	-	-	-	-	1	-	-	1
cf. B. secalinus/mollis	-	-	-	-	1	-	-	-	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					7					
FEATURE NO.		455		448	423		452	453	451	442,
FEATURE TYPE		pit		post	ditch		post	post	post	post
CONTEXT NO.	174	196	204	194	197	198	229	230	231	238
VOLUME OF SOIL (litres)	42	122	12	9	178	122	4	4	4	4
Hordeum (hulled)										
straight	-	6	-	-	1	2	-	-	-	-
twisted	1	8	-	-	1	1	-	-	-	-
indet.	5	51	-	-	6	19	-	-	-	-
Hordeum (indet.)	1	53	-	2	17	75	-	-	-	-
cf. Hordeum sp.	1	7	-	2	7	38	-	-	-	-
Triticum aestivum	8	123	5	2	5	2 379	-	-	-	-
T. spelt	-	11	-	-	-	-	-	-	-	-
cf. T. spelta	1	-	-	-	1	10	-	-	-	-
T. dicoccum	-	16	-	-	-	1	-	-	-	-
cf. T. dicoccum	2	-	-	-	-	5	-	-	-	-
indet. wheat	-	17	1	-	5	16	-	-	-	-
Secale cereale	-	5	-	-	2	1	-	-	-	-
cf. S. cereale	-	9	-	-	4	8	-	-	-	-
Avena sp.	1	15	1	-	-	19	-	-	1	-
cf. Avena sp.	-	11	-	-	9	43	-	-	-	-
indet. cereal	4	114	4	-	25	284	-	-	-	1
cf. Pisum sativum	-	-	-	-	-	1	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	1	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	6	-	-	5	9	-	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	8	-	-	-	-
Bromus secalinus/mollis	-	5	-	-	-	7	-	-	-	-
cf. B. secalinus/mollis	-	6	1	-	1	6	-	-	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	1	1	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	1	-	-	-	2	-	-	-	-
grass culm node	-	1	-	-	-	-	-	-	-	-

TRENCH					8					
FEATURE NO.	582				574					257
FEATURE TYPE	ditch				ditch					?
CONTEXT NO.	277	403	475	484	264	404	405	406	471	402
VOLUME OF SOIL (litres)	48	56	16	18	66	99	16	98	16	24
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	-	2	1	-	2	-	-	-	-	-
Hordeum (indet.)	-	9	2	-	3	1	1	5	-	-
cf. Hordeum sp.	4	2	-	-	1	-	-	1	1	1
Triticum aestivum	7	5	5	3	10	11	5	14	5	2
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	1	-	-	-	-	-	1	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	-	-	-
indet. wheat	2	4	-	-	5	2	2	4	-	5
Secale cereale	-	-	-	-	-	-	-	-	-	-
cf. S. cereale	2	-	-	1	-	1	-	1	-	-
Avena sp.	3	4	-	1	7	2	1	3	1	2
cf. Avena sp.	4	11	1	2	11	3	3	5	-	2
indet. cereal	11	12	4	2	7	6	-	9	1	5
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	2	-	-	-	-	2	-	2	1	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	1	-	-	-	-	-	-	-	3
Bromus secalinus/mollis	-	-	-	-	-	-	-	1	-	1
cf. B. secalinus/mollis	-	2	2	-	3	-	2	3	1	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	1	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	1	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	1	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	9									
FEATURE NO.	37	38		593			39	40	?	82
FEATURE TYPE	pit	pit		pit			pit	pit	layer	?
CONTEXT NO.	31	32	210	77	372	400	33	36	79	82
VOLUME OF SOIL (litres)	2	82	66	66	147	16	6	26	106	96
Hordeum (hulled)										
straight	-	-	-	-	1	-	-	-	-	-
twisted	-	-	-	1	-	-	-	1	1	-
indet.	-	1	-	1	7	2	-	-	2	-
Hordeum (indet.)	-	2	3	2	3	2	-	-	4	1
cf. Hordeum sp.	-	1	4	1	4	1	-	-	2	1
Triticum aestivum	-	6	1	5	7	4	-	-	6	-
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	1	-	-	-	-	-	-	-	-
indet. wheat	-	-	3	-	-	-	-	-	3	-
Secale cereale	-	-	-	-	-	-	-	-	-	-
cf. S. cereale	-	1	-	1	1	-	-	-	-	-
Avena sp.	-	-	1	2	2	-	-	1	-	-
cf. Avena sp.	-	-	2	2	4	-	-	2	-	-
indet. cereal	-	11	12	5	18	1	-	4	9	-
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	3	-	-	-	-
indet. pulse	-	1	-	-	-	1	-	-	-	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	1	1	5	2	-	-	-	-	-
Bromus secalinus/mollis	-	-	-	-	-	-	-	-	-	-
cf. B. secalinus/mollis	-	-	-	2	-	-	-	-	-	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					9					
FEATURE NO.	87	594	92	591		592		588		376
FEATURE TYPE	dep.	over.	ditch	ditch		post		pit		pit
CONTEXT NO.	83	373	92	93	310	96	158	201	399	376
VOLUME OF SOIL (litres)	12	2	?	128	96	4	35	35	82	480
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	-	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	-	-	2	4	1	-	1	1	2	2
Hordeum (indet.)	-	-	1	3	5	-	1	-	2	6
cf. Hordeum sp.	-	-	1	4	6	-	2	-	-	2
Triticum aestivum	-	-	3	12	13	2	7	3	9	4
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	-	-	-
indet. wheat	-	-	2	7	3	-	2	1	3	2
Secale cereale	-	-	-	-	-	-	-	-	-	-
cf. S. cereale	-	-	-	2	1	-	-	-	-	3
Avena sp.	1	-	3	2	6	-	-	-	4	1
cf. Avena sp.	-	-	2	6	6	-	1	1	-	1
indet. cereal	5	-	9	17	21	1	11	5	11	17
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	2	1	-	-	-	-	2
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	2	-	-	-	-	-	-
Bromus secalinus/mollis	-	-	-	2	1	-	-	1	-	-
cf. B. secalinus/mollis	-	-	-	1	2	-	-	-	2	-
Agrostemma githago	-	-	-	-	1	-	-	-	-	-
Galium cf. aparine	-	-	-	-	-	-	1	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	1	1	-	1	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	9				11					
FEATURE NO.	595	596		502	337	228	340	341	342	343
FEATURE TYPE	pit	ditch		?	pit	pit	gull.	pit	gull.	post
CONTEXT NO.	426	429	436	487	281	282	284	286	287	288
VOLUME OF SOIL (litres)	35	32	160	163	26	26	26	19	16	2
Hordeum (hulled)										
straight	-	-	-	-	-	-	-	2	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	2	-	-	-	-	4	-	1	-	1
Hordeum (indet.)	2	-	-	-	5	15	7	1	14	5
cf. Hordeum sp.	-	3	-	-	-	2	1	-	6	-
Triticum aestivum	3	2	1	-	8	52	-	2	25	3
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	1	-	-	-	1	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	-	-	-	-	-	-
indet. wheat	-	-	-	-	2	2	2	5	1	-
Secale cereale	-	-	-	-	1	-	-	1	1	-
cf. S. cereale	-	-	-	-	-	1	2	3	2	-
Avena sp.	-	2	-	-	2	5	4	8	1	1
cf. Avena sp.	2	2	-	-	3	12	6	9	6	4
indet. cereal	5	2	1	2	7	25	11	13	43	-
cf. Pisum sativum	-	-	-	-	-	4	1	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	1	1	1	1	1	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	-	-	-	-	2	8	7	14	8	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	1	-	1	-	-
Bromus secalinus/mollis	-	-	-	-	-	5	-	4	3	-
cf. B. secalinus/mollis	1	-	-	-	-	-	1	1	4	-
Agrostemma githago	-	-	-	-	-	-	-	-	-	-
Galium cf. aparine	-	-	2	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	1	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH					11					
FEATURE NO.	359		360	361	347	348	349	350	351	353
FEATURE TYPE	pit		pit	pit	pit	pit	pit	pit	pit	gull.
CONTEXT NO.	292	309	293	294	295	296	297	298	299	301
VOLUME OF SOIL (litres)	2	18	75	82	82	16	65	18	26	34
Hordeum (hulled)										
straight	-	-	-	1	-	-	-	-	-	-
twisted	-	-	-	-	-	-	-	-	-	-
indet.	-	1	-	1	-	-	4	2	1	-
Hordeum (indet.)	-	1	19	21	-	1	42	17	11	2
cf. Hordeum sp.	-	-	7	7	-	2	8	5	7	-
Triticum aestivum	-	18	71	77	10	2	106	99	28	7
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	1	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	2	-	-	-	-	-	-	-
indet. wheat	-	-	2	6	2	-	-	2	-	-
Secale cereale	-	-	4	2	-	-	7	2	2	-
cf. S. cereale	-	4	10	13	-	-	9	2	3	1
Avena sp.	1	2	8	28	1	1	23	13	9	-
cf. Avena sp.	1	1	7	25	1	-	36	11	8	-
indet. cereal	1	6	39	70	5	4	59	41	22	7
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	1
cf. Vicia/Lathyrus	-	-	4	3	-	-	3	2	-	-
Vicia faba	-	-	-	-	-	-	-	-	5	-
indet. pulse	-	6	7	24	2	3	59	15	21	-
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	6	-	-	1	-	1	-
Bromus secalinus/mollis	-	1	6	17	-	-	7	6	7	-
cf. B. secalinus/mollis	-	1	5	5	1	1	8	4	1	-
Agrostemma githago	-	-	-	-	-	-	3	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	-	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	1	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	11									
FEATURE NO.	355	356	357	358	322	379	559	369	383	?
FEATURE TYPE	gull.	pit	pit	pit	pit	pit	pit	pit	pit	?
CONTEXT NO.	303	304	306	320	321	366	367	368	382	393
VOLUME OF SOIL (litres)	42	26	32	34	34	34	42	16	43	?
Hordeum (hulled)										
straight	-	-	-	2	-	-	1	-	-	-
twisted	-	1	-	-	-	-	-	-	-	-
indet.	3	-	-	5	-	-	7	3	-	1
Hordeum (indet.)	30	6	3	17	4	-	16	8	4	4
cf. Hordeum sp.	10	1	-	7	-	-	11	1	2	1
Triticum aestivum	92	25	12	74	7	5	60	30	5	-
T. spelt	-	-	-	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	2	-	-	-	2	1	-
T. dicoccum	-	-	-	-	-	-	-	-	-	-
cf. T. dicoccum	-	1	-	-	-	-	-	-	-	-
indet. wheat	1	2	-	6	2	-	2	1	2	-
Secale cereale	4	1	1	2	-	-	4	2	-	-
cf. S. cereale	6	3	-	4	-	-	9	3	1	-
Avena sp.	19	9	-	22	3	-	19	13	7	1
cf. Avena sp.	17	9	-	6	3	-	12	9	4	2
indet. cereal	23	9	5	38	1	3	40	16	6	-
cf. Pisum sativum	-	-	-	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	2	-	1	4	-	-	3	1	1	-
Vicia faba	-	-	-	-	-	-	-	-	-	-
indet. pulse	23	16	3	41	3	-	42	26	6	2
cf. Linum sp.	-	-	-	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	1	1	-	-
Bromus secalinus/mollis	10	4	1	7	1	1	11	11	3	-
cf. B. secalinus/mollis	3	1	-	6	1	-	6	2	1	-
Agrostemma githago	1	-	-	1	-	-	1	-	-	-
Galium cf. aparine	-	-	-	-	-	-	-	1	-	-
Rumex sp.	-	-	-	-	-	-	-	-	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	-	-	-	-	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	-	-	-	-	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-	-	-	-
Gramineae	-	-	-	-	-	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-
grass culm node	-	-	-	-	-	-	-	-	-	-

TRENCH	11	12					
FEATURE NO.	507	574			576	575	?
FEATURE TYPE	gull.	ditch			pit	slot	?
CONTEXT NO.	506	255	374	375	256	434	438
VOLUME OF SOIL (litres)	56	43	83	83	123	34	35
Hordeum (hulled)							
straight	-	-	-	-	1	-	-
twisted	-	-	-	-	1	-	-
indet.	4	-	-	1	6	-	-
Hordeum (indet.)	9	4	4	1	16	1	1
cf. Hordeum sp.	6	1	-	-	3	-	2
Triticum aestivum	60	7	-	6	38	4	7
T. spelt	-	-	-	-	-	-	-
cf. T. spelta	-	-	-	-	-	-	-
T. dicoccum	-	-	-	-	-	-	-
cf. T. dicoccum	-	-	-	-	1	-	-
indet. wheat	-	3	-	-	2	1	-
Secale cereale	1	-	-	-	-	-	-
cf. S. cereale	6	1	-	-	2	-	-
Avena sp.	20	-	4	3	28	2	2
cf. Avena sp.	10	2	2	1	5	1	1
indet. cereal	27	5	6	2	20	2	3
cf. Pisum sativum	-	-	-	-	-	-	-
cf. Vicia/Lathyrus	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-
indet. pulse	29	-	1	1	3	-	-
cf. Linum sp.	-	-	-	-	-	-	-
Corylus avellana	-	-	-	-	-	-	-
Bromus secalinus/mollis	9	2	1	-	10	1	-
cf. B. secalinus/mollis	8	-	-	1	4	1	1
Agrostemma githago	1	-	-	-	1	-	-
Galium cf. aparine	1	-	-	-	-	-	-
Rumex sp.	-	-	-	-	1	-	-
Plantago cf. lanceolata	-	-	-	-	-	-	-
Brassica/Sinapis	-	-	-	-	1	-	-
Bilderdykia convolvulus	-	-	-	-	-	-	-
Polygonum cf. persicaria	-	-	-	1	-	-	-
Chenopodium cf. album	-	-	-	-	-	-	-
Gramineae	-	1	-	-	-	-	-
Cyperaceae	-	-	-	-	-	-	-
indet.	-	-	-	-	-	-	-
grass culm node	1	-	-	-	-	-	-

Table 2 Principal Components Analysis of Crops and Weed

	1st. component	2nd. component
oat	**0.77**	0.04
rye	**0.82**	0.36
weed	**0.74**	0.02
wheat	0.16	**0.92**
barley	0.21	**0.93**
pulse	0.49	0.18

loadings greater than 0.5 are indicated by bold type

Table 3 Spatial and Chronological Variation in Proportion of Pulse

	mean %			**significance**	
	ditches	pits	gullies	F	
Vicia/Lathyrus	3	14	16	5.67	<0.01
total pulse	5	23	26	6.20	<0.01
	Saxon	Saxon+Med.		t	
Vicia/Lathyrus	2	14		3.90	<0.01
total pulse	4	22		3.90	<0.01