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MEDIÉVAL FARMSTEAD AT ECKWEEK,
AVON

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Summary

Samples from the Medieval farmstead at Eckweek, Avon, produced remarkably uniform assemblages of charred plant remains, consisting primarily of grain and weed seeds with very little chaff. Free-threshing tetraploid wheat and bread-type wheat were the main cereals present, but barley, rye, vetches, peas, field beans and possibly oats had also been cultivated. There was very little evidence of 'luxury' food plants, and hazel nut shell fragments were common in many of the samples. There appeared to have been very little change in the arable economy over the five centuries of Medieval occupation. A few charred remains from Iron Age features were also examined.

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CHARRED PLANT REMAINS FROM THE MEDIEVAL FARMSTEAD AT ECKWEEK, AVON

The deserted medieval farmstead of Eckweek is situated on the eastern edge of the village of Peasedown St. John, six miles south-west of Bath. Lying with the Mendips to the south and Cotswolds to the north, the soils in the area are shallow, well-drained and calcareous.

Excavations by Avon County Council during 1989 and 1990 produced evidence of human activity for the Iron Age and Medieval periods, the latter occupation spanning the 9th to 14th centuries. A sequence of farm buildings and associated features have been recorded.

Only a few rural medieval sites have been studied archaeobotanically in Britain, none of which are from Avon. The relatively undisturbed site at Eckweek, therefore, provided a valuable opportunity to examine charred plant remains from several centuries of rural occupation.

METHOD

Bulk soil samples were taken for analysis from selected features including ditches, drains, floor surfaces, pits, post-holes and hearths. The samples were wet-sieved by Eckweek Project staff using a 250 micron meshed sieve to recover the flots. Residues were sieved to 500 microns and stored dry.

The residues were sorted by eye by Eckweek Project staff for environmental remains and artefacts. Further soil samples from the 1990 season of excavation were processed and sorted by A. al Azm at the Ancient Monuments Laboratory. In some cases it was necessary to use hydrogen peroxide to assist in the disaggregation. The flots were sorted under a binocular microscope, x10 to x50 magnification.

Identification and analysis were carried out by the author using the Ancient Monuments Laboratory and the author's own reference collections. On the recovery of a few calcium phosphate replaced plant remains from one of the drains, further microscopic sorting of residues from drain samples was carried out. This produced virtually no additional plant remains but numerous small mammal bones which are discussed elsewhere (Davis, 35/91).

RESULTS

A summarised species list is given in table 1. Full details for each sample (including sample sizes) are presented in table 3. Nomenclature and habitat information follows Clapham *et al* (1989).

The large grain deposit, context 359, was sorted in its entirety for weed seeds, chaff fragments and cereals other than wheat. Small fragments of wheat were sieved off and poorly preserved indeterminate grains were separated out. The various categories of cereal and indeterminate cereal were then counted using a seed counter.

Some notes on identification

a) Wheat

Both free-threshing tetraploid (Triticum turgidum/durum) and hexaploid (T. aestivocompactum s.l.) wheats were identified using criteria outlined by Moffett (1991) for rachis fragments. It is more difficult to distinguish between the grains of the two types of wheat as they can vary greatly in shape. The morphology of the Eckweek wheat ranged from short and rounded hexaploid-type grains to more oval, narrow but 'hump-backed' tetraploid-types. The best preserved wheat was initially recorded as 'Triticum cf. turgidum/durum or T. cf.aestivocompactum in the full species list (table 3) but this information has not been given in the summarised species list as it is not known whether either of the two types is more prone to distortion than the other, thus making the counts of well-preserved grains unrepresentative. Considering the differences in bread-making qualities for the wheats (rivet wheat is a soft, mealy grain whilst bread wheat has a high gluten content and so is more suitable for making bread), differential distortion of grains is a distinct possibility. Identification of the grain will, therefore, be left at the generic level in the final publication report. In addition, as figure 1 shows, a complete range of intermediate forms between the two extremes occurs. The dimensions used for figure 1 were taken from the best preserved, least distorted caryopses. It is unfortunate that the numbers of rachis fragments recovered was not greater over the six phases sampled, as these would have provided much more secure estimates as to the relative proportions of wheats grown. However, rachis remains can also give a biased picture if the straw and chaff of each taxon is not put to the same purposes.

Although rivet (T. turgidum L.) and hard wheat (T. durum Desf.) cannot be separated morphologically, it is most likely that rivet wheat was the species present, since it is the hardier of the two and is known to have been cultivated in Britain from documentary evidence (e.g. Tusser, 1580).

The separation of bread wheat (T. aestivum L.) from club wheat (T. compactum Host.) by differences in rachis internode length is not always possible (Jacomet, 1987, p.47), so the identification of free-threshing hexaploid wheat has been left at T. aestivocompactum s.l. As most of the grains were large and rounded and there were no very short, dumpy grains present it appears that a bread-type hexaploid wheat was cultivated at Eckweek.

b) Barley

From the small quantity of barley grains recovered it is clear that six-row hulled barley (Hordeum vulgare L.emend.) was present, as some twisted lateral grains were recovered. It is possible that some of the barley was two-rowed, but this could not be confirmed. Some of the grains were notably large and straight.

c) Oats

It is not possible to be certain that oats were grown as a crop at Eckweek, as the few remains still possessing identifiable floret bases were of the wild oat type (Avena fatua L.) with 'suckermouth' scars.

d) Rye

Grains of rye can be difficult to distinguish from distorted wheat grains, but rye was positively identified from a few rachis fragments and well-preserved grains. However, as the quantities were very low it is likely that this cereal was growing as a minor or relict crop. Rye is also a useful fodder catch-crop, so it may have been grazed off whilst still green in spring. It can also be used as a green manure if ploughed back into the soil in spring.

e) Vetches

Leguminous seeds were frequent in the medieval assemblages, but they rarely retained well-preserved hilums which are needed in order to identify them to species level. Figure 2 gives the dimensions of legumes by phase, with the few

seeds identified to species level blocked in. Most of the identified legumes were common vetch (Vicia sativa L.) and these are likely to have been the cultivated subspecies, V. sativa subsp. sativa, although the shrinkage due to carbonisation meant that most fell below the 40-80mm size range given by Clapham *et al* (1962). Since figure 2 presents an approximation to a 'normal distribution' curve for the seed dimensions it is probable that the majority of leguminous seeds were of this species, with the exception of a few outliers such as the small grass vetchling (Lathyrus nissolia L.) seeds. The large legumes which were identifiable, such as field bean, pea and lentil, have not been plotted in figure 2.

DISCUSSION

A. IRON AGE

As only a small amount of carbonised material was recovered from the two Iron Age ditch samples, the remains are of little interpretative value. Wheat (Triticum sp.) and hulled barley (Hordeum sp.) were the cereals represented, and a few typical arable and disturbed ground weed seeds were present. All of the Iron Age weed taxa were also found in the medieval samples, with the exception of fat hen (Chenopodium album L.) which is a common nitrophilous weed of disturbed and cultivated soils.

B. MEDIEVAL

I. Preservation and distribution across the site

The relatively undisturbed nature of the site at Eckweek meant that fairly large assemblages of carbonised plant remains were recovered from the samples which were unlikely to have been affected by post-depositional differential preservation. Only 2 of the 60 samples examined contained no carbonised plant remains at all. The fact that the remains were not always well-preserved is more likely to be a reflection on the temperature of carbonisation and moisture content of the grain at the time of burning, rather than weathering. Many of the cereal grains were puffed and distorted, indicating high temperature carbonisation. However, damage due to redeposition and trampling at the time of occupation is likely to be an important factor to take into account when considering the composition of the assemblages. In addition, differential preservation may have occurred at the time of burning i.e. some of the more delicate plant remains may have been destroyed, as will be discussed later.

A single buttercup (Ranunculus acris/bulbosus/repens) achene was found to be mineralised by calcium phosphate replacement. Calcium phosphate mineralisation occurs in deposits which are highly organic and contain high concentrations of minerals, for example cess pits and middens (Green, 1979), particularly in calcareous areas. The recovery of the seed from the fill of drain 71 which ran below the farmhouse (structure 460) indicates the organic nature of the waste present in the drain. Davis (35/91) identified large numbers of small mammal bones from this feature which he suggested probably originated in owl pellets from birds roosting in the roofs; these would be a further source of phosphates.

1) Area A

Figures 3 and 5 show the distribution of the remains across the site as fragments per litre of soil sieved, in order to attempt to identify any areas of concentration. The principal component of all of the assemblages without exception was grain (figures 3a and 5a; table 2). In a few cases large quantities of cereals were recovered. For ceramic phases 2 and 3 some of the features at the southern end of trench A contained large concentrations of grain (most notably pit 357 with nearly 9000 grains). In phases 4 and 5 the large pit 221 at the eastern end of building 460, an occupation deposit under the wall of the building (context 285, 308 grains) and drain 171 produced large quantities of cereals. Samples from ceramic phase 6 generally contained much smaller amounts.

The distribution of chaff fragments and arable weed seeds is shown in figures 3b and 5b. The presence of high concentrations of chaff fragments and weed seeds in comparison with cereal grains is usually considered to indicate crop processing waste (Hillman, 1981). It can be seen from figures 3 and 5 and table 2 that no deposits of this type were recovered, since the chaff component never exceeded 7% of the total assemblage and arable weeds were usually around 10-15%. No obvious distribution pattern for these waste components emerged from the analysis, except that where the total assemblages were large some relatively large quantities of chaff and weed seeds were recovered, particularly the latter. The distribution, therefore, roughly coincides with that of the cereals, as given above. Crop processing waste is further discussed in section IV.

The concentration of legumes was low but fairly constant (figures 3c and 5c), with greater quantities again being found in the larger assemblages for all of the phases in area A.

ii) Area H

The samples from features in area H (figures 4a-c), ceramic phases 2 and 3, were as uniform in content as those in area A with no clear distribution pattern emerging. Again, cereals were the principal component, with larger quantities of chaff, weed seeds and legumes only occurring where the total assemblages were large. Pits 3061 and 3094 to the south of the area contained fairly large assemblages, the latter including a relatively high concentration of vetch seeds.

The Eckweek carbonised assemblages are notable in their uniformity. Species composition and proportion of crop to crop processing waste (i.e. grains to chaff fragments and arable weed seed ratios) are remarkably constant across the site and through the phases. The fact that, for example, no samples were dominated by any cereal other than wheat (see section III), and yet other cereals were present in most of the samples in small numbers, is remarkable. Similarly, all of the samples were dominated by cereal grains rather than crop processing waste. This suggests that the carbonised remains represent general redeposited domestic waste which was fairly uniform in its composition across the site and through the phases of occupation. The only differences found are in the overall quantities of that waste in the features, and this shows no obvious spatial pattern. There was no clear evidence of large scale accidental burnings of a processed or unprocessed crop, or the burning of quantities of crop processing waste.

II. Distribution through the phases

A more detailed discussion of changes through the phases of occupation is given later, but it should be borne in mind that, for all of the sections following, the quantity of data for each ceramic phase varies greatly. This is shown by the differences in number of samples and total quantity of soil sieved given at the bottom of the summarised species list, table 1. However, not all of the differences are due to the level of sampling, as the large variations in the number of fragments per litre indicate. Ceramic phase 6 produced significantly

fewer carbonised remains per litre of soil sieved than the previous four phases. This may be due to;

- a) less waste was being produced during this period, i.e. differences in the level of occupation/activity on the site.
- b) less of the waste was being burnt, i.e. differences in the use or treatment of waste.
- c) less of the burnt waste was being deposited in the area sampled, i.e. differences in the pattern of waste disposal.

III Crop plants

a) Cereals

Tetraploid (probably rivet) and hexaploid (bread-type) free-threshing wheats were the predominant cereals in all of the samples examined. Wheat grains were also the most numerous component of almost all of the assemblages, with only one or two having a few more weed seeds or indeterminate grains. These facts are unusual in a site but even more so considering that the occupation spans five centuries. It is interesting to note that the faunal remains also indicated that there was also very little change in the species and the relative proportions of animals consumed over the periods studied (Davis, 35/91).

As discussed earlier, it was not possible to determine what the relative proportions of the two wheats were, although where identifiable rachis fragments were present roughly similar proportions of each were present for ceramic phases 2 to 4. The impression gathered from the grain morphology, albeit tentative, was that possibly slightly more rivet than bread wheat was present. One phase 5 sample (context 237) contained a large quantity of rachis fragments which were predominantly rivet-type, but as the other samples in this phase contained little, if any, chaff it is not possible to know whether this sample was representative of the phase as a whole. The very tentative grain identification again appeared to favour rivet-type rather than bread-type wheat.

It is unfortunate that the wheats could not be identified to species, as changes in the use of the two cereals which have different growing requirements, growth forms and qualities of baking would have been informative. From the archaeobotanical evidence, bread-type wheat has previously been considered to have been the major wheat grown from the Saxon period onwards. However, more

recently, increasing evidence for the cultivation of rivet/hard wheat is being recovered from Medieval sites in Britain (Moffett, 1992).

Documentary sources suggest that rivet wheat was at one time the primary wheat grown in southern England (Woodward & Luff, 1983). It is a late maturing cereal which grows on a long straw ideal for thatching. Being an awned wheat it is not so readily attacked by sparrows, and according to Percival (1948) it is also "highly resistant to rust, smut and bunt diseases". The grain is soft and mealy and so would produce a rather dense bread in comparison with bread-type wheats. Percival (ibid) suggests that rivet wheat is suitable for biscuit making but can also be mixed with the flour of bread wheats for baking. It is possible that by growing both wheats a farmer would be 'hedging his bets' against pests and diseases. If grown as separate crops the different grains could be kept for the specific culinary purposes to which they are best suited, or if grown as a maslin the flour would be of mixed quality.

Barley, oats and rye were recovered in small quantities from most of the samples. It is possible, therefore, that these cereals were only growing as weeds or relict crops amongst the wheat, particularly in the case of oats where the only identifiable florets were of wild oat. Rye was only recovered as a few grains in phase 3 samples. It may have been a very minor crop, an occasional maslin or been grown as a forage crop, i.e. grazed in the field when young. The fact that rye does not appear in the other phases could simply be due to the increased sampling and recovery of material from phase 3, rather than any real changes in cultivation.

There is no evidence for barley being a major crop at any point, as the quantities recovered are of a similar magnitude to those of oats and no samples were dominated by barley. This seems strange as the local calcareous soils would be well suited to growing barley. It is possible that this is a preservation problem - the cereal was not coming into contact with fire to the same extent as wheat, perhaps because it was only used for fodder and so was not parched or thoroughly processed. However, accidental carbonisation, the use of chaff for tinder, burning of waste bedding etc. would have been expected to provide more evidence of this cereal over the centuries of occupation if it had been an important crop. In addition, vetches were frequent in many of the

samples, and this was almost certainly a fodder crop, although it may have been used for human consumption during times of famine. Vetches also do not require exposure to fire during the processing, and yet they were relatively well represented amongst the carbonised remains. Carbonisation may have occurred through the burning of waste bedding and spoilt crops, or the vetches may have been growing as a relict crop amongst cereals under a crop rotation system. Being legumes, vetches are particularly valued in crop rotations or as a green manure, since they can possess root nodules containing nitrogen-fixing bacteria which help to restore fertility to impoverished soils. However, it is difficult to determine from archaeobotanical evidence when crop rotation was first practiced.

It is possible that legumes and forage crops provided all of the fodder required, in addition to being of value in a crop rotation system, so there was no need to grow large quantities of barley. Wheat would have been the preferred cereal for human consumption, and by growing two types of wheat all of the culinary and thatching requirements were met. There is documentary evidence, however, to suggest that at least some barley was grown. Three title deeds of the fourteenth century (Shorrocks, 1974) describe a two field system which includes a furlong named as Berforlong (barley furlong). Perhaps the cultivation of barley was limited enough to warrant this specific naming. Unfortunately the quantity of carbonised plant macrofossil data is rather low in the fourteenth century samples, so it is uncertain whether the remains are truly representative of the range of crops grown at this time.

Similar assemblages dominated by hexaploid and tetraploid wheats with little evidence for other cereals have been recovered from the peasant village of Burton Dassett, Warwicks (Moffett, 111/91) and the grange farm at Dean Court Farm, Oxon (Moffett, 202/87). As at Eckweek, the quantity of barley recovered at Burton Dassett was notably low. It is possible that a grange farm, and perhaps the farmstead at Eckweek, had specific obligations to produce certain crops, and this might explain the unchanging nature of the assemblages at Eckweek over five centuries of occupation.

b) Legumes

The recovery of leguminous seeds from 75% of the samples, amounting to c.4% of

the total remains indicates that legumes were an important crop. There is evidence for common vetch (Vicia sativa subsp. sativa), pea (Pisum sativum L.) and field bean (Vicia faba L.), and two lentils (Lens esculenta Moench) were present in a phase 3 sample. There is little archaeobotanical evidence for the cultivation of lentils as a crop in this country during the Medieval period. However, one or two seeds have been recovered from a number of sites, including sites producing few imported luxury foods (e.g. Dean Court Farm, Moffett, 202/87; Newbury, Carruthers and Green, forthcoming). A 19th century reference from Oxfordshire (Young, 1813) mentions the growing of a small acreage of this pulse as hay for ewes, so lentils may have been grown on a small scale in medieval times.

Vetch was recovered from all ceramic phases, although it was only identified to species level in phases 3 and 4. A single pea was identified in a phase 3 sample, but it is likely that many of the less well preserved large legumes were also peas in the other phases. A few field beans were present in phase 2 and 4 samples. As mentioned earlier, it should be remembered that legumes are likely to be under-represented in a carbonised assemblage through their lack of contact with fire. The peas and beans may have been grown on a garden scale, although there is a documentary record for Eckweek from the thirteenth century of a grant of corn and beans to the hospital of St. John the Baptist in Bath (A. Young, pers.comm.) which suggests that beans were a major crop.

Documentary records for the cultivation of vetches are frequent from the thirteenth century onwards (Currie, 1988). Archaeobotanical evidence for cultivated vetch has been recovered from the following rural sites: a peasant village at Burton Dassett (Moffett, 111/91), a grange farm at Dean Court Farm (Moffett, 202/87) and a thirteenth century farmstead at Round Wood, Stansted (Murphy, 129/90). In an urban context, two deposits of carbonised vetch were recovered from the waterfront at Reading Abbey (Carruthers, forthcoming). Considering the preservation biases mentioned earlier, it is clear that vetches were an important component of the medieval rural economy.

c) Other possible food plants

Carbonised seed assemblages are largely derived from the processing and use of cereals and so are not often a good source of evidence for other dietary

components, such as herbs, spices, fruits and vegetables. However, burnt domestic refuse may contain the remains of fruits and nuts. In the case of wild taxa it is not possible to be certain that they had been deliberately gathered and consumed, rather than accidentally burnt amongst firewood, but it seems likely that all of the local natural resources would have been fully exploited, particularly since there was no evidence that the occupants could afford to buy imported exotic fruits such as are common in urban assemblages of the same period (see section VI).

The remains of wild fruits such as elderberry (Sambucus nigra L.), hawthorn (Crataegus monogyna Jacq.), sloe (Prunus spinosa L.) and blackberry (Rubus fruticosus agg.) were recovered in small quantities from a few of the samples. These fruits can be used for dyeing as well as for culinary purposes. The hawthorn and blackberry seeds, however, had probably been burnt amongst fuel in the kiln (structure 466), as they were recovered from charcoal spreads within and alongside this structure. Hazel (Corylus avellana L.) nut shell fragments were present in many of the samples indicating that nuts were commonly consumed. A possible fruit of cf. Sorbus sp. (includes rowan, whitebeam, service tree) was recovered from a large pit of ceramic phase 3 (feature 234). Mabey (1972) notes that some Sorbus fruits are edible if they are first allowed to 'blet' (rot). All of these fruits and nuts are likely to have been readily available in hedgerows and open woodlands.

The only evidence for cultivated fruits was a single large plum stone (Prunus domestica subsp. domestica) which was recovered from a phase 2 pit (feature 3115). It is possible that the farmstead had its own plum tree, or the fruits may have been bought at market as a special treat. It is difficult to assess the importance and range of non-cereal foodstuffs from a carbonised assemblage, but as primarily wild fruit and nut remains were recovered it appears that imported luxury goods, such as grapes, were not affordable to the occupants. Grape pips are very common in anaerobically preserved urban waste deposits and are quite often preserved by carbonisation. It is interesting to note that Davis (35/91) recorded surprisingly few remains of game animals and no deer bones. He suggests that this may point to the low status of the settlement at Eckweek.

It is not possible to know whether the brassica (Brassica/Sinapis sp.) and carrot (Daucus carota) seeds were from cultivated or wild plants. As with fruits, the likelihood of evidence for vegetables being preserved by carbonisation is remote, and even more so for plants harvested before they set seed, such as the leafy brassicas and root vegetables.

Evidence for herbs and spices is rarely preserved by carbonisation, although urban anaerobic deposits have produced a wide range of taxa for the medieval period (Greig, 1991). One record of interest in a fourteenth century title deed (Shorrocks, 1974) refers to the lease of Eckweek tenements and payment for one pound of cumin. Although there is no suggestion that the farmstead at Eckweek is connected with the cumin, this reference does demonstrate that imported herbs and spices were available locally to those that could afford them. Cumin has not yet been recovered archaeobotanically from medieval deposits in this country to the authors knowledge, but is mentioned in Medieval records from the Port of Southampton (Green, 1984).

IV. Crop processing activities

As noted in section I, none of the Eckweek samples contained sufficiently large proportions of chaff and arable weed seeds to indicate the presence of pure crop processing waste, although small quantities of waste were always present.

The chaff fragments recorded included rachis fragments, which are small and relatively heavy and would mostly be removed as fine sieving waste towards the end of the processing (Hillman, 1981), and large, heavy culm nodes and culm bases. These latter fragments would have mostly been removed in the early stages of processing along with the straw. The fact that they were relatively frequent suggests that a mixed type of waste is present which may be partially derived from animal fodder but could also represent burnt bedding and thatch. The weed seeds included both large and small seeds. The small seeds may have been sieved from the crop along with the rachis fragments in a late stage in the processing, but many of the larger weed seeds such as wild oat, chess and shepherd's needle, are of a similar size to the grain and would have to have been hand-picked from the crop. They may, therefore, have been carbonised as hand-picked waste, or as contaminants amongst the grain.

Calculating percentage compositions for samples with over 80 seeds (24 samples, phases 2-5), the cereal percentage ranged from 70-94% (table 2). The one exception was a phase 3 pit (context 318) which contained large quantities of Odontites verna/Euphrasia sp. seeds in the upper fill, bringing the cereal percentage down to 43% and the arable weed seeds up to 52%. Chaff ranged from 0% (7 samples) to a maximum of 7%. Arable weed seeds were between 1% and 16%, although a second sample with a high Odontites verna/Euphrasia sp. count reached 25% weed seeds. Vetches comprised 1%-12% of the assemblages, but were generally around 4% in most of the samples.

Medieval urban carbonised assemblages usually contain few chaff fragments although some weed seeds may be present. It is likely that free-threshing cereals would have been processed close to their point of production and transported into towns in a processed state. Some final cleaning might have been carried out in the towns, producing small quantities of chaff and weed seeds. A rural settlement, therefore, might be expected to produce more evidence of crop processing activities, particularly a farmstead. What is notable about the Eckweek assemblages, however, is their uniformity, both in species composition and wheat to chaff and weed seed ratios. None of the samples produced large quantities of chaff and arable weed seeds, but most had small quantities of both amongst the predominant component, the cereal grains. This type of carbonised assemblage is typical of most samples from any medieval site, urban or rural, representing the general background rubbish that is generated by settlements.

The apparent absence of crop processing waste can be explained in several ways;

- a) the material lies outside the area sampled
- b) the remains were not burnt, and so no evidence survives as carbonised material
- c) some of the remains were destroyed on burning leading to differential preservation.

a) It is likely that the initial stages of removing the grain from the straw would have occurred under cover on account of the unpredictable British weather. No samples were taken from within the proposed beast house (structure 463)

which might have served as a threshing floor, but samples from the general area did not produce any greater quantities of crop processing waste.

a) and b) For the remains to have been preserved by carbonisation some contact with fire is required. It is unlikely that bonfires would be lit close to any of the buildings, and as no large ashy areas were observed or sampled it is possible that burning occurred outside the area excavated. The ash would also have been a useful source of potash, so it may well have been routinely spread on the fields. However, what is more likely is that unburnt crop processing waste was a useful commodity which could be fed to livestock, used as a temper in building materials and used as a tinder in household fires and ovens. Evidence for use in the farmhouse hearths and ovens is slight, with only a few cereal grains having been recovered from these structures in the latest phase of building 460. It is likely that such features would have been regularly cleaned out. Redeposited ash from these sources may have ended up in any of the features sampled or been deposited on fields.

The proposed kiln, structure 466, produced slightly greater concentrations of carbonised plant remains but these assemblages (contexts 78 and 209) were composed primarily of grain and contained no chaff fragments. The presence of hawthorn and blackberry seeds, as noted earlier, indicates that fuel is represented, but if crop processing waste was used for this purpose, very little evidence has survived. Most of the weed seeds present were grassland taxa, such as clover (cf. Trifolium sp.), grasses (indeterminate Gramineae) and yellow rattle (Rhinanthus minor L.). This may indicate the use of waste hay for tinder. Although some cereals were recovered from the ?kiln the quantity was not great and the material may have been burnt as waste. The carbonised plant remains, therefore, provide no clear evidence for use of the ?kiln as a corndrier.

c) Experimental work by Boardman and Jones (1989) has demonstrated that differential preservation of cereal remains may take place under different regimes of carbonisation. Cereal grains are more likely to survive burning than rachis fragments, and this should be taken into account when examining the relative proportions of each component. In addition, material cleaned out from hearths and ovens may have suffered further effects of differential preservation through the destruction of more delicate chaff fragments during

redeposition. This may partially explain why arable weed seeds are often more numerous than might be expected, since many are more likely to survive redeposition than delicate chaff fragments.

To summarise, there was no evidence of *in situ* crop processing waste at Eckweek and none of the features contained obvious deposits of this type of waste. It is probable that such material would have been utilised by being fed to livestock. However, most of the larger assemblages contained some chaff fragments and/or arable weed seeds and these may have been present as contaminants of the grain when burnt, or been picked out of the grain prior to milling, or been present as waste from livestock fodder. If crop processing was a regular activity that was taking place in the area, small quantities of waste might have been generally blowing around the site.

V. The weed seeds

Most of the weed seeds recovered in the carbonised assemblages were weeds of arable and cultivated land. An examination of the arable weed assemblage provides information concerning the types of soils cultivated.

Arable weeds which have a preference for calcareous soils are thorowax (Bupleurum rotundifolium L.) and field madder (Sherardia arvensis L.). Others may grow on a range of soil types and are common in Medieval assemblages, e.g. corn cockle (Agrostemma githago L.), shepherd's needle (Scandix pecten-veneris), chess (Bromus sect. Bromus) and narrow-fruited cornsalad (Valerianella dentata (L.) Poll.). Some of the remaining taxa have a wider range of habitats which may include waste ground as well as cultivated fields. This group includes red bartsia/eyebright (Odontites verna/Euphrasia sp.), a small seed which was numerous in pit 339 (phase 2) and the upper fill of the adjacent pit 319 (phase 3). This may be due to a filtering effect whereby very small seeds can become concentrated at the bottom of continuously reworked dumps, or the spread of burnt remains of these plants in the area.

Stinking mayweed (Anthemis cotula L.) may grow in cultivated or otherwise disturbed soils, but its frequent association with carbonised cereal assemblages from the Iron Age onwards indicates that it was a common arable weed. It shows a preference for heavy, damp soils, such as might occur alongside the

tributaries of the Avon to the north and south of the site. Other plants of moist soils, such as sedges (Carex sp.) and great sedge (Cladium mariscus (L.)Pohl), may have been growing on field margins or be present as part of the grassland assemblage.

Grassland herbs such as yellow rattle (Rhinanthus minor), grass vetchling (Lathyrus nissolia L.), field scabious (Knautia arvensis (L.)Coult.) and purging flax (Linum catharticum L.) may indicate the presence of burnt waste hay within the assemblages, or may be evidence of crop rotation where fallow is included every two or three years. Campbell (forthcoming) suggests that tenacious perennials such as field scabious may be indicative of fallow, as they may be able to regenerate after periodic ploughing. Along with purging flax, it is characteristically found in dry, calcareous grassland. It is not possible to determine whether a year of fallow was employed within a crop rotation system at Eckweek. Brenchley and Warrington (1933) have shown that with some, but not all, weed species fallowing can have beneficial effects in lowering the weed seed population. Of the Eckweek taxa, this is true for cleavers and black medick but fallowing has little benefit over continuous cropping for shepherd's needle and red bartsia. The absence of pasture and meadow at Eckweek suggests that there may have been a certain amount of pressure on the land such that cropping was fairly continuous. The growing of large quantities of legumes would have helped to maintain fertility, as would the spreading of domestic and animal waste on the fields. It is notable that no mineralised cess-pit deposits were excavated, even though the mineralisation in drain 71 demonstrates that this type of preservation can occur on the local calcareous soils.

Indeterminate and Lolium-type grass seeds were frequent in many of the samples. Grassland taxa accounted for 1% or 2% of the total assemblages where seed numbers were high, with artificially raised percentages for the smaller assemblages in the Iron Age and phase 6 samples. Some taxa, such as silverweed (Potentilla anserina L.) and ribwort plantain (Plantago lanceolata L.) are more typical of open, grazed and trampled grassland.

The record for Eckweek in the Domesday Book states that the settlement lacked both pasture and meadow (Welldon Finn, 1973). This may have continued to be the case in later years, since in the fourteenth century the residents rented a

meadow at Oxenham some 2km south-east of Eckweek (Shorrocks, 1974, p.189). As the soils for several miles around Eckweek are primarily well-drained and calcareous it is not possible to determine how far the occupants had to go to find hay and grazing. Davis (35/91) notes the high occurrence of sheep, particularly older animals, so it may be that the renting of extra grazing related to an increase in wool production.

V. Changes through the phases

For all of the weed taxa discussed above no clear changes in the composition of the assemblages occurred to indicate any obvious changes in land use. A single bulbous culm base of onion couch grass (Arrhenatherum elatius var. bulbosum) was recovered from a phase 4 pit (context 340), and this grass often grows in abandoned arable land or pasture. However, the evidence is too slim to suggest a reduction of pressure on the land during the 12th and 13th centuries.

Fourteenth century title deeds (Shorrocks, 1974) describe a two field system at Eckweek, West Field and East Field. One of the furlongs was called Langebrech, a name that suggests newly cleared ground. It is not possible to provide any evidence of this possible expansion from the small phase 6 assemblages.

There were no obvious changes in the crops grown over the phase sampled, although for the phases with few plant remains changes would be more difficult to detect. It is interesting to note that there was also very little change in the animal bone assemblages over the centuries (Davis, 35/91).

VI. Comparisons with other rural and urban sites

The previously mentioned rural sites at Burton Dassett, Warwickshire (Moffett, 111/91), Dean Court Farm, Oxon (Moffett, 202/87 and Round Wood, Stansted, Essex (Murphy, 129/90) bear close resemblance to Eckweek in the cultivation of hexaploid and tetraploid wheats as well as vetch. The 14th to 16th century rural settlement at Barton Bendish, Norfolk (Murphy, 199/88) produced fewer carbonised plant remains which included bread-type wheat and peas but no tetraploid wheats or cultivated vetch. At Brighton Hill South, Basingstoke (Carruthers, forthcoming) wheat was again the predominant cereal grown on the local calcareous soils although, unfortunately, too few charred remains were recovered to determine whether tetraploid wheat was present. Poor soils in the

area of the 13th century farmstead at Cefn Graeanog, Gwynedd (Hillman, 1982) are the probable reason for oats being the major crop. There was also possible evidence of peas.

All of these carbonised assemblages from rural settlements produced evidence of mixed cereals and legumes with only the occasional indication of luxury goods, such as walnut at Barton Bendish, fennel at Dean Court Farm, bullace/damson at Brighton Hill South and a plum at Eckweek. It is possible that the presence of waterlogged or mineralised faecal deposits might have provided more evidence of imported fruits and spices, although the mineralised and waterlogged remains from the market town of Newbury only produced the additional taxon apple, which might have been picked from the wild (Carruthers and Green, forthcoming). Waterlogged remains from a medieval rural settlement at Hungerford included cultivated flax and opium poppy, but no cultivated fruits. Of the carbonised remains, hexaploid wheat was dominant with some evidence for peas (Carruthers, forthcoming).

This contrasts strongly with the wide range of cultivated and imported fruits, nuts, herbs and spices from urban sites summarised by Greig (1991), and with high status sites such as the moated manor at Cowick (Hayfield & Greig, 1989) and Reading Abbey (Carruthers, forthcoming). Admittedly, most of these remains are preserved anaerobically rather than carbonised, but in general there is little evidence that rural communities could afford to supplement their diet with many imported goods.

It is not possible to link the documentary records precisely to the buildings excavated in trench A, but a fourteenth century record referring to a middle ranking peasant household with 17 acres appears to fit the evidence. The plant remains support this suggestion, in that the ability to grow predominantly wheat on the local well-drained calcareous soils would have provided a reasonable income. Although there was no evidence for imported foods the occupants may have had their own fruit trees. Fruits and nuts were gathered from the wild and legumes such as peas, beans and maybe lentils were grown.

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Figure 1: Wheat grain dimensions from some well-preserved grains

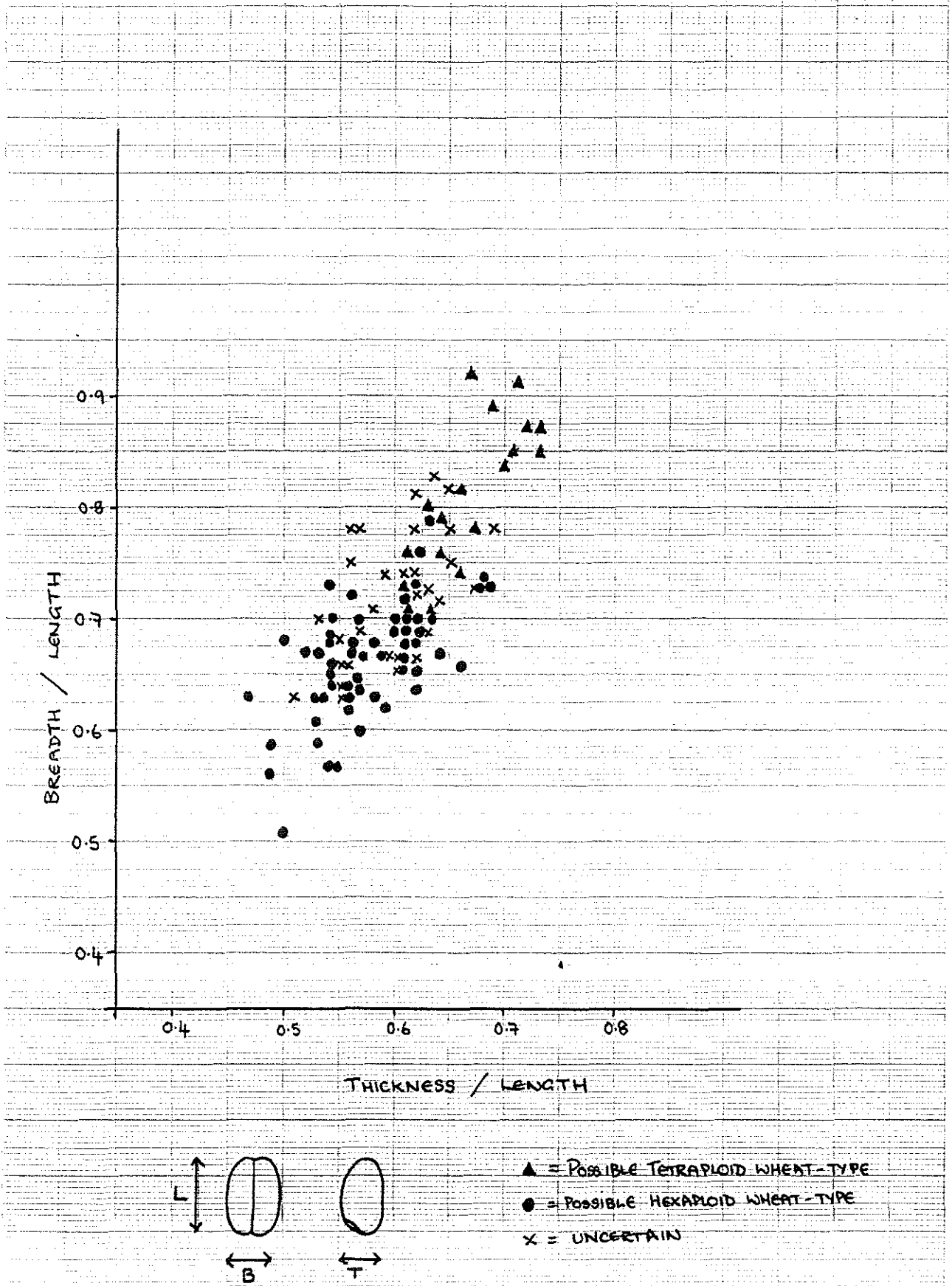
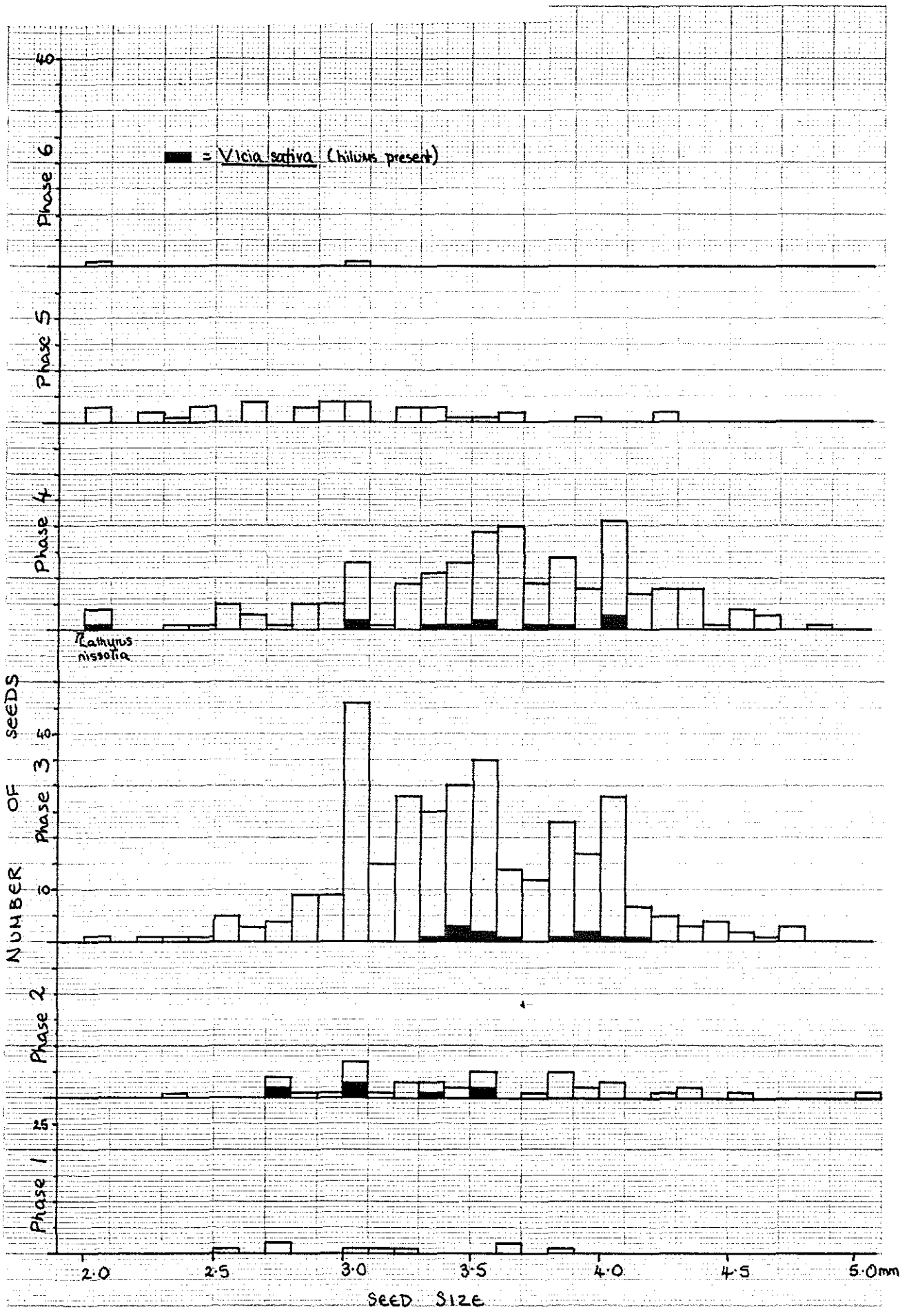


Figure 2: Vetch seed sizes by phase



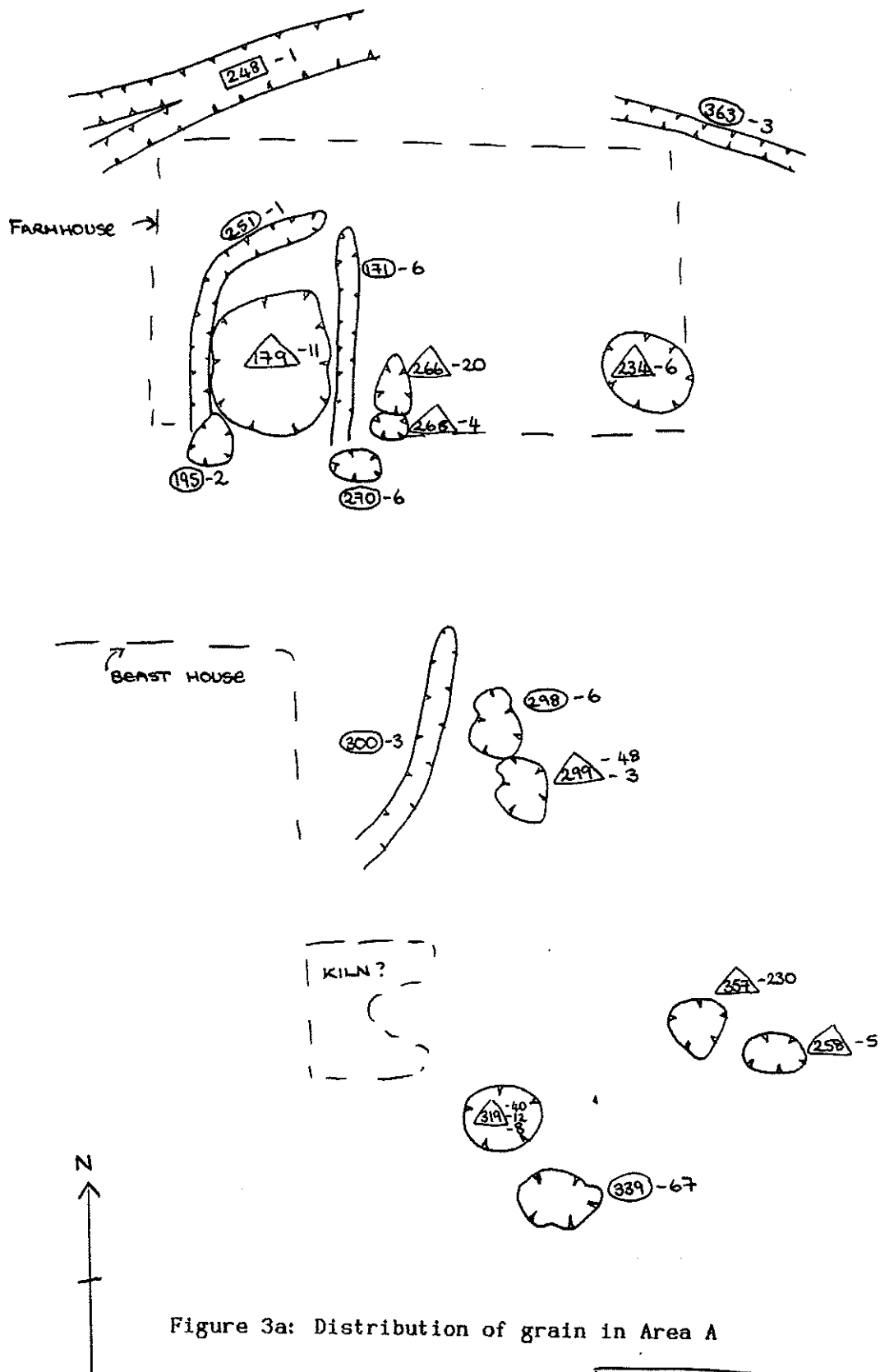


Figure 3a: Distribution of grain in Area A

ceramic phase 1 = context no.
 " " 2 = 11
 " " 3 = 11

- = number of seeds per litre
 + = < 1 per litre

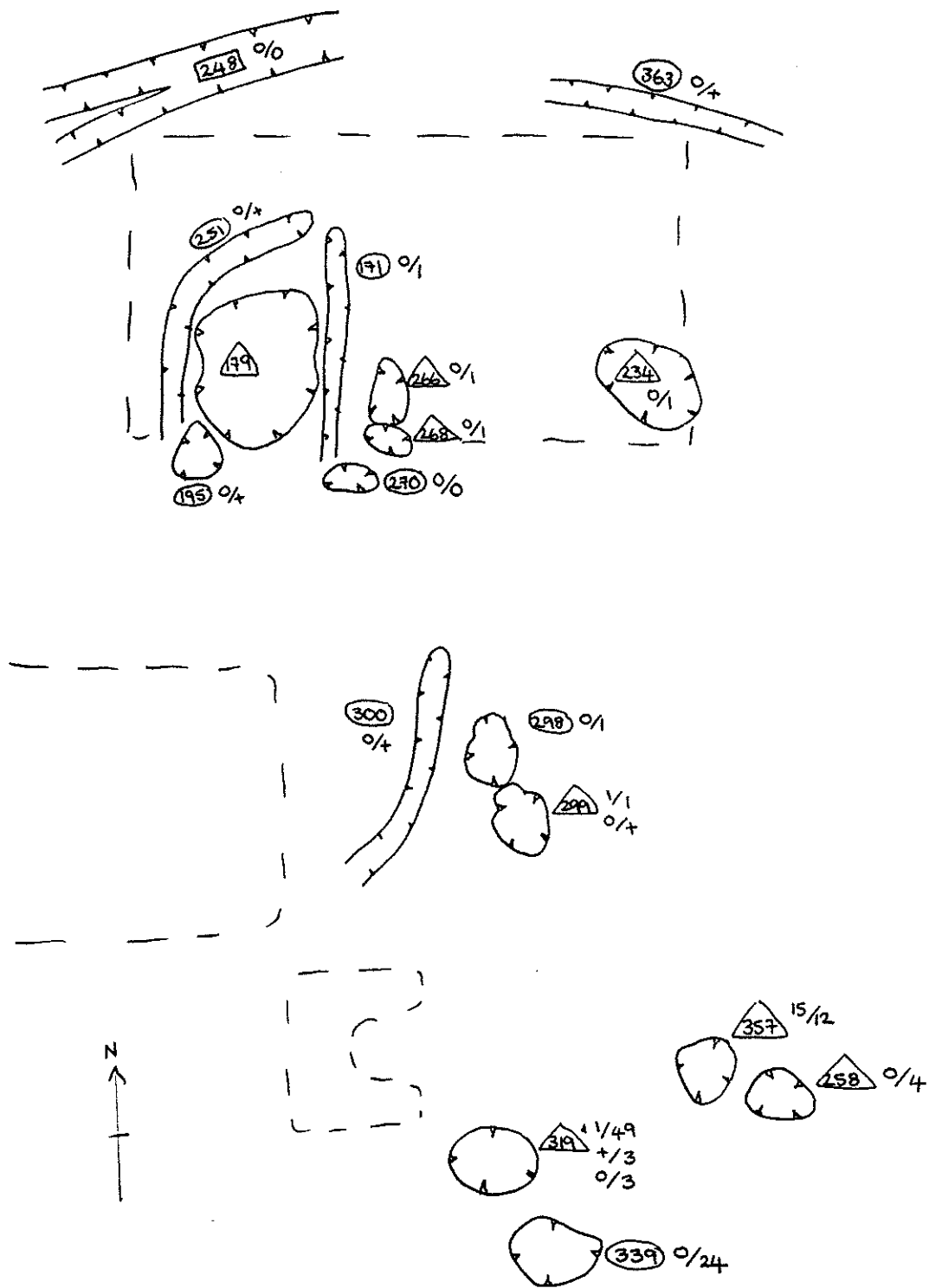


Figure 3b: Distribution of chaff and weed seeds in Area A

ceramic phase 1 = convexr no.
 " " 2 = \circ
 " " 3 = \triangle

number of chaff fragments / weed seeds per litre
 + = < 1 per litre

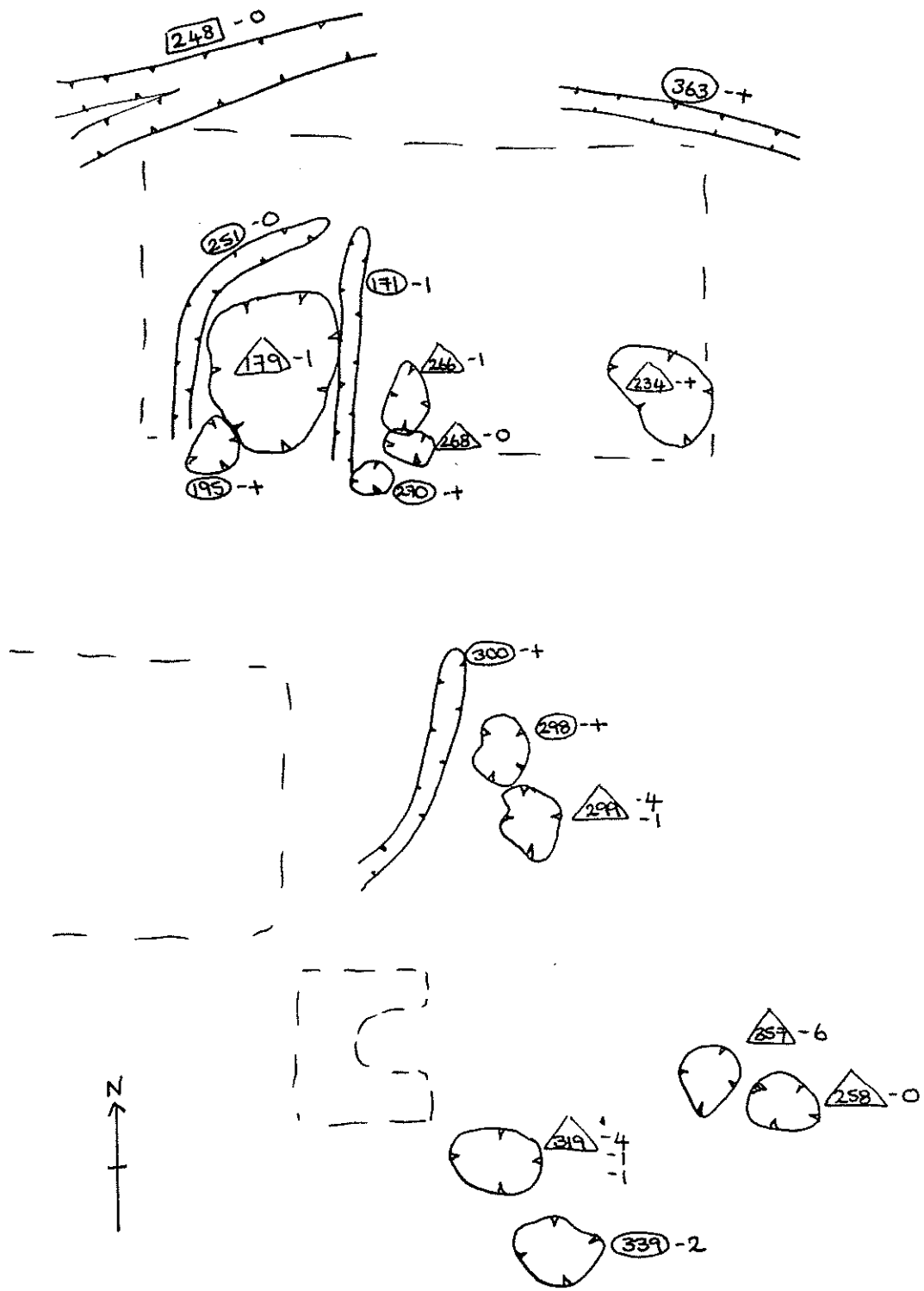


Figure 3c: Distribution of legumes in Area A

ceramic phase 1 = context NO.

" " 2 = 

" " 3 = 

- = number of legumes per litre

+ = < 1 per litre

Figure 4a: Distribution of grain in Area H

ceramic phase 2 = context no.
" " 3 = " "

- = number of seeds per litre
+ = < 1 per litre

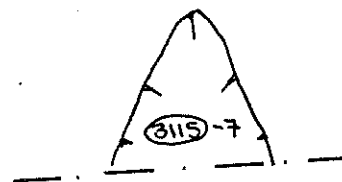
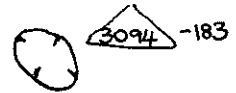
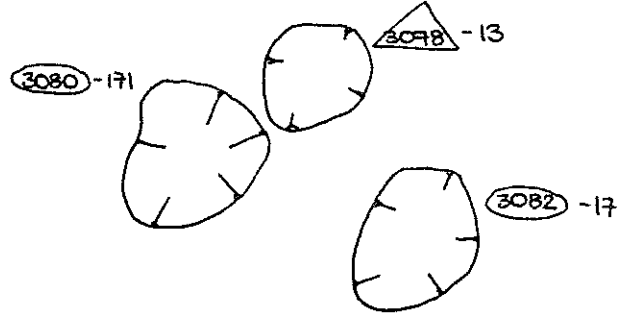
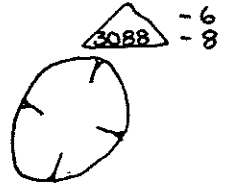
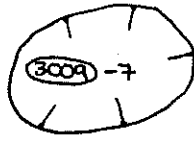


Figure 4b: Distribution of chaff and weed seeds in Area H

ceramic phase 2 = context NO.

" " 3 = 11

number of chaff fragments per litre / weed seeds per litre
+ = < 1 per litre

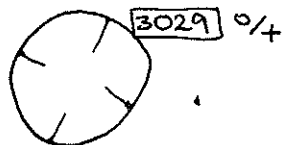
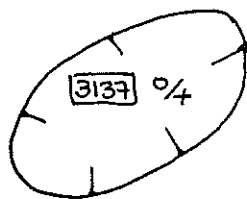
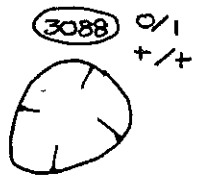


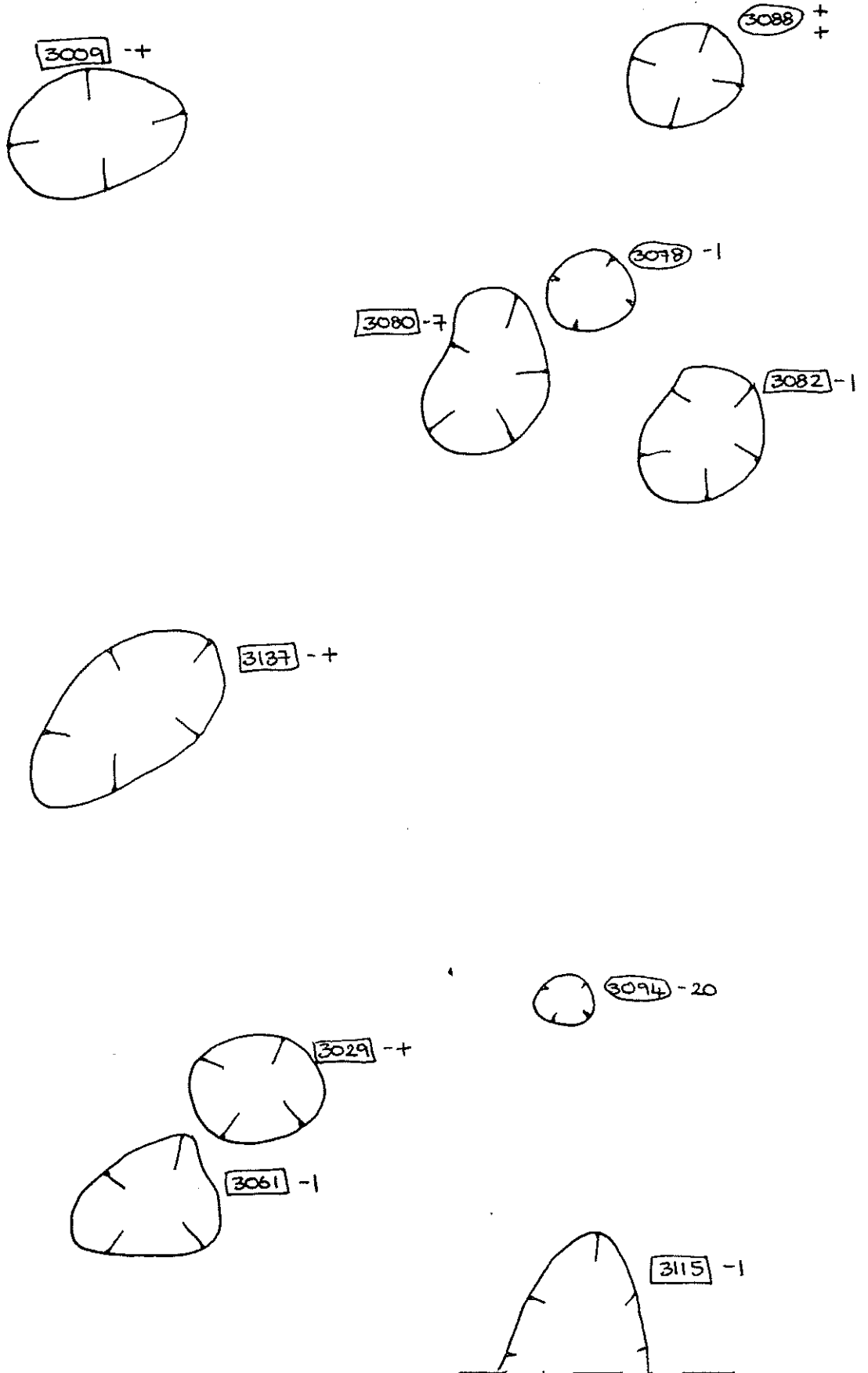
Figure 4c: Distribution of legumes in Area H

ceramic phase 2 = Context NO.

" " 3 = n

- = number of legumes per litre

+ = < 1 per litre



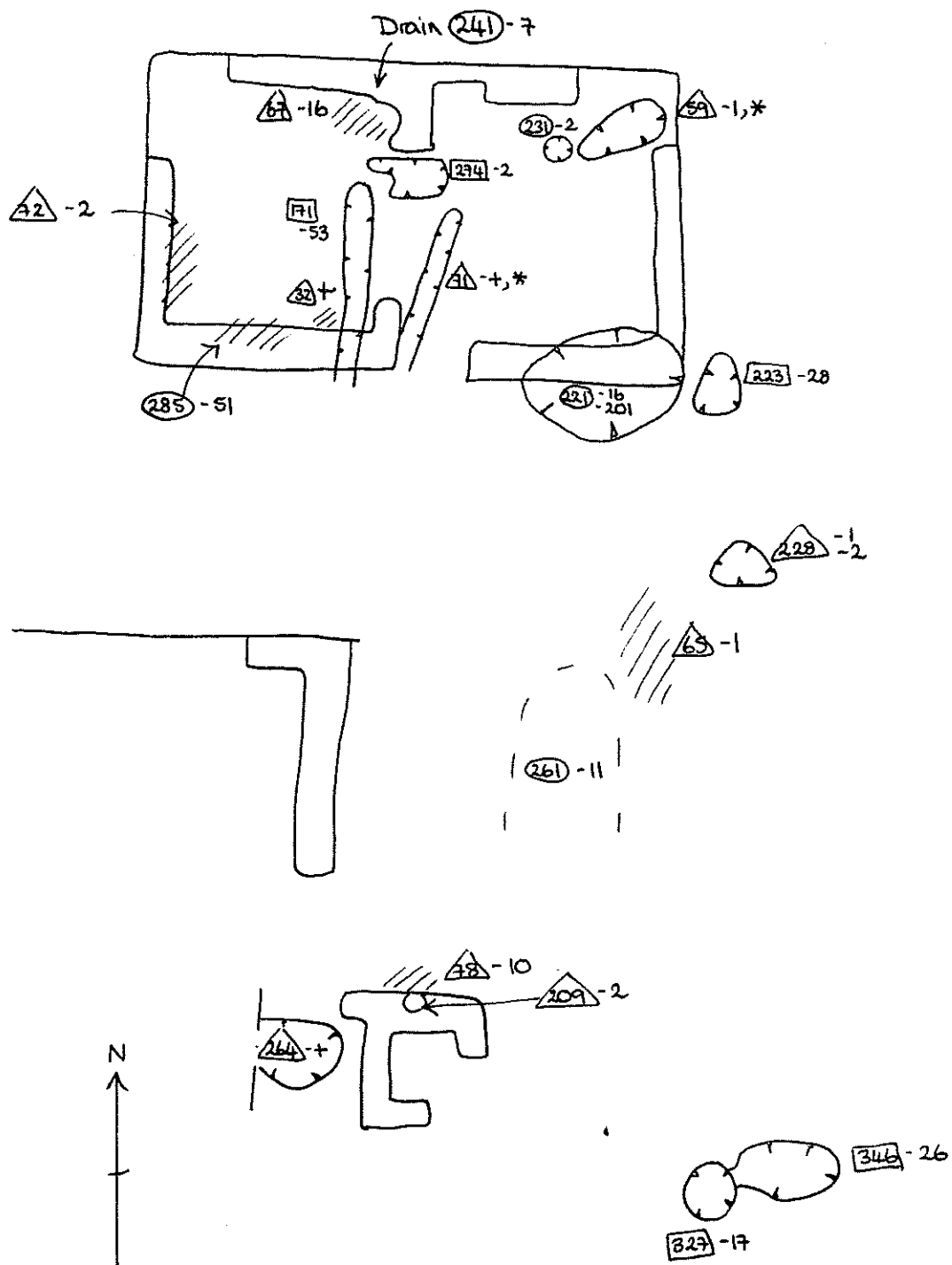


Figure 5a: Distribution of grain in Area A

ceramic phase 4 = context no.
 " " 5 = ○
 " " 6 = △

- = number of seeds per litre
 + = < 1 seed per litre
 * = mineralised seeds present

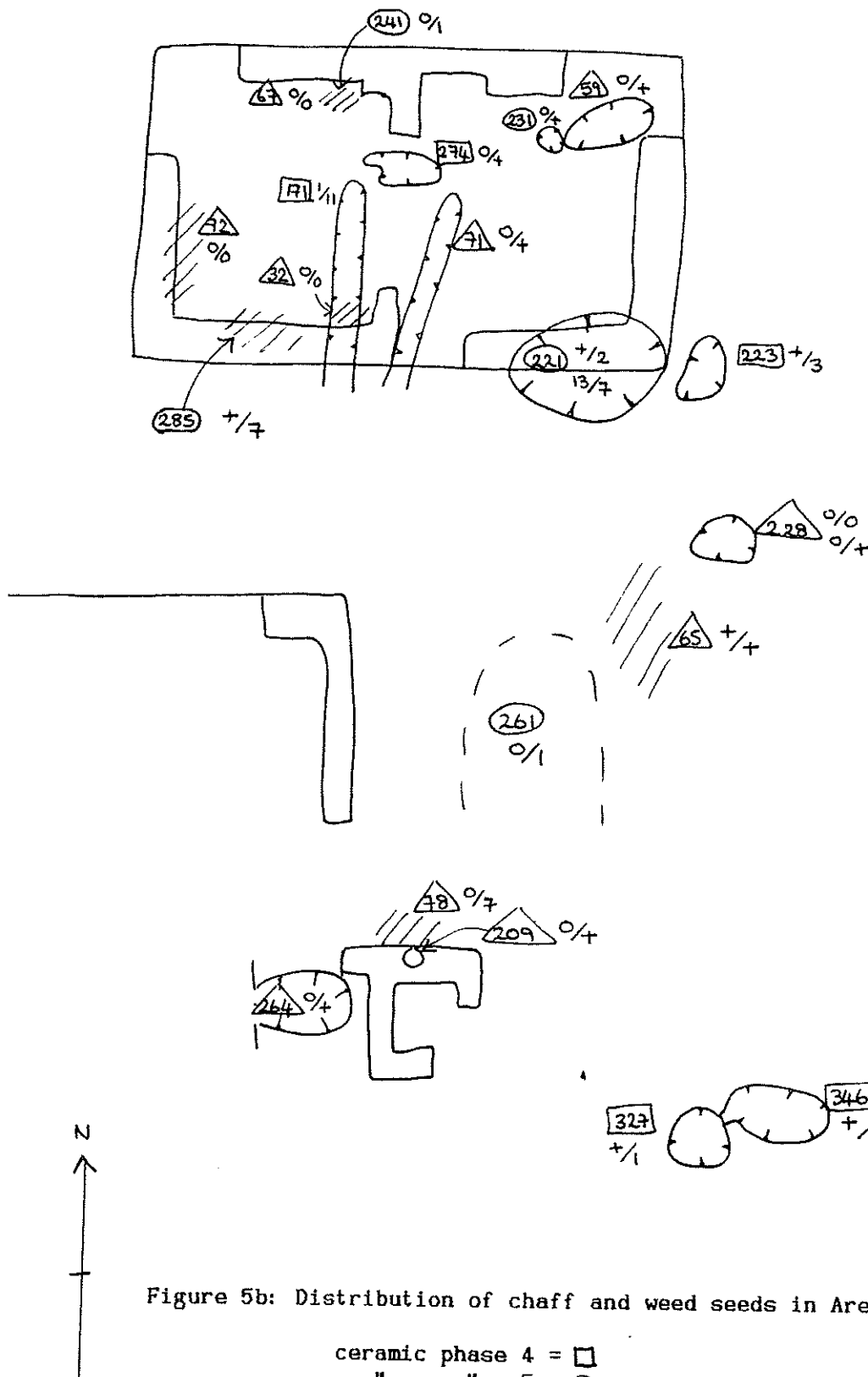


Figure 5b: Distribution of chaff and weed seeds in Area A

ceramic phase 4 = □
 " " 5 = ○
 " " 6 = △

number of chaff fragments per litre / weed seeds per litre
 + = < 1 per litre

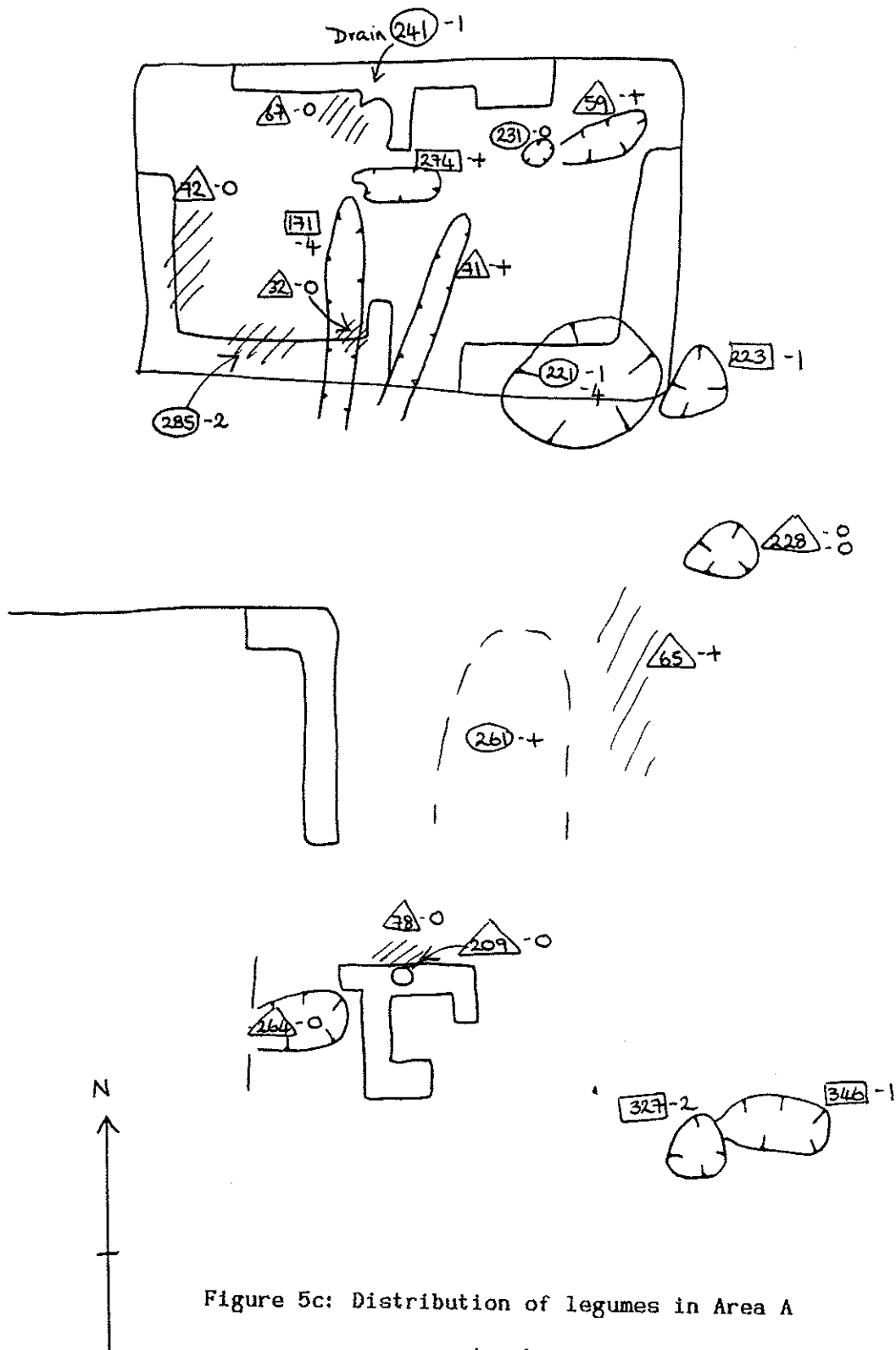


Figure 5c: Distribution of legumes in Area A

ceramic phase 4 = □
 " " 5 = ○
 " " 6 = △

- = number of legumes per litre
 + = < 1 per litre

ECKWEEK

Table 1 : Summarised list of the carbonised plant remains by phase

[] = mineralised remains

TAXA	habitat	ceramic phase						
		IA	1	2 ^a	3	4	5	6
CEREALS								
<u>Triticum</u> spp. (free-threshing wheat)		2	1	1233	6880	1967	1638	81
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)				17	34	7		
<u>Hordeum</u> sp. (hulled barley)		5		71	378	46	9	4
<u>Avena fatua</u> L. (wild oat)					3	1		
<u>Avena</u> sp. (oat)				43	225	135	10	7
<u>Secale cereale</u> L. (rye)					7			
<u>Secale/Triticum</u> sp. (rye/wheat)					5			
Indeterminate cereals		2	4	990	3860	901	332	79
CHAFF								
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)				2	20	1	53	
<u>Triticum aestivocoopactum</u> s. l. (bread/club wheat rachis frags.)				3	27	1	10	
<u>Triticum</u> sp. (wheat rachis frags.)				55	300	10	23	
<u>Hordeum</u> sp. (barley rachis frags.)				5	45			
<u>Avena</u> sp. (awn fragments)					+	+		
<u>Secale cereale</u> L. (rye rachis frags.)					5			
Indeterminate rachis fragments					125			
Cereal-type culm nodes				32	84	9	9	1
Cereal-type culm bases				4	8			
OTHER								
<i>Caprifoliaceae</i>								
<u>Sambucus nigra</u> L. (elder)	HSWn			1				
<i>Caryophyllaceae</i>								
<u>Agrostemma githago</u> L. (corn cockle)	A				8			
<u>Silene dioica</u> (L.) Clairv. (red campion)	HW				3			

TAXA (cont.)	habitat	ceramic phase						
		IA	1	2	3	4	5	6
<i>Caryophyllaceae</i> (cont.)								
<u>Silene latifolia</u> subsp. <u>alba</u> (white campion)	ADR				1			
<u>Silene</u> cf. <u>vulgaris</u> (cf. bladder campion)	AGR			0			1	
<u>Stellaria media</u> (L.) Vill. (chickweed)	CD				1			
<i>Chenopodiaceae</i>								
<u>Atriplex patula/prostrata</u> (common/hastate orache)	CDn				21	1	1	2
<u>Chenopodium album</u> L. (fat hen)	CDn	2						
Indeterminate		1			1			1
<i>Compositae</i>								
<u>Anthemis cotula</u> L. (stinking mayweed)	ADD			12	55	32	20	8
<u>Centaurea nigra</u> L. (lesser knapweed)	GR				3	1	1	
<u>Cirsium/Carduus</u> sp. (thistle)	DE						1	
<u>Crepis capillaris</u> (L.) Wallr. (smooth hawk-beard)	DE				1			
<u>Lapsana communis</u> L. (nipplewort)	DH			2	4			
<i>Corylaceae</i>								
<u>Corylus avellana</u> L. (hazel nut shell frags)	HSW			10	33	62	37	4
<i>Cruciferae</i>								
<u>Alliaria petiolata</u> (Sieb.) C&G (garlic mustard)	HR			1				
<u>Brassica/Sinapis</u> sp. siliqua fragments					7	14	2	2
<i>Cyperaceae</i>								
<u>Carex</u> sp. (sedge)	GM			1	1	1		
<u>Cladium mariscus</u> (L.) Pohl (great sedge)	fens						1	
<i>Dipsacaceae</i>								
<u>Knautia arvensis</u> (L.) Coulter (field scabious)	gcd			1	10	4	1	
<i>Fumariaceae</i>								
<u>Fumaria</u> sp. (fumitory)	C				1			
<i>Gramineae</i>								
<u>Arrhenatherum elatius</u> subsp. <u>bulbosum</u> (onion couch grass)	G					1		
<u>Bromus</u> sect. <u>Bromus</u> (chess)				25	61	5	11	5
<u>Avena/Bromus</u> sp.				81	219	120		

TAXA (cont.)	habitat	ceramic phase						
		IA	1	2	3	4	5	6
<i>Gramineae</i> (cont.)								
<u>Lolium temulentum</u> type (darnel)	CD				20	21	1	
<u>Lolium</u> type				12	78	16	6	1
Indeterminate				14	77	42	15	6
<i>Leguminosae</i>								
<u>Lathyrus nissolia</u> L. (grass vetchling)	GR					1		
<u>Lens esculenta</u> Moench (lentil)	†				2			
<u>Medicago lupulina</u> L. (black medick)	GR				1			6
<u>Medicago/Trifolium</u> sp. (medick/clover)	GR					8	2	3
<u>Pisum sativum</u> L. (pea)	†				1			
cf. <u>Trifolium</u> sp. (cf. clover)	GD	3		3	7	3		8
<u>Vicia faba</u> L. (field bean)	†			1		4		
<u>Vicia sativa</u> subsp. <u>sativa</u> (cultivated vetch)	†				15	9		
<u>Vicia/Lathyrus/Pisum</u> (vetch/tare/pea)				83	423	212	49	3
<i>Linaceae</i>								
<u>Linum catharticum</u> L. (purging flax)	Gc			1				
<i>Plantaginaceae</i>								
<u>Plantago lanceolata</u> L. (ribwort plantain)	G						1	
<i>Polygonaceae</i>								
<u>Fallopia convolvulus</u> (L.) A. Löve (black bindweed)	CD	1		3	9			
<u>Polygonum aviculare</u> agg. (knotgrass)	CD	1		2	9	4	1	
<u>Rumex acetosella</u> agg. (sheep's sorrel)	CGa					3		
<u>Rumex</u> sp. (dock)		1		20	38	7	2	
<i>Primulaceae</i>								
<u>Anagallis arvensis</u> L. (scarlet pimpernel)					2	1		1
<i>Ranunculaceae</i>								
<u>Ranunculus acris/bulbosus/repens</u> (buttercup)	DG							1011
<i>Rosaceae</i>								
<u>Aphanes arvensis</u> (L.) Scop. (parsley piert)	CG					1		
<u>Crataegus monogyna</u> Jacq. (hawthorn)	HSW							3

TAXA (cont.)	habitat	ceramic phase						
		IA	1	2	3	4	5	6
<i>Rosaceae</i> (cont.)								
<u>Potentilla anserina</u> L. (silverweed)	DG						1	
<u>Potentilla</u> sp. (cinquefoil)	GH			e		1		
<u>Prunus domestica</u> subsp. <u>domestica</u> (plum)	*			1				
<u>Prunus spinosa</u> L. (sloe)	HSV				2			6
cf. <u>Prunus</u> sp.						2		1
<u>Rubus fruticosus</u> agg. (blackberry)	HSV							1
cf. <u>Sorbus</u> sp.	SW					2		
<i>Rubiaceae</i>								
<u>Galium aparine</u> L. (cleavers)	DH			1	19	2	1	
<u>Galium</u> cf. <u>verum</u> L. (cf. lady's bedstraw)	G					1		
<u>Galium</u> sp. (frag.)					1	1		1
<u>Serratia arvensis</u> L. (field madder)	ADHc			1	6	1		
<i>Scrophulariaceae</i>								
<u>Odontites verna</u> / <u>Euphrasia</u> sp. (red bartsia/eyebright)	CD			60	347	15	13	
<u>Rhinanthus minor</u> L. (yellow-rattle)	G			1		13		2
<i>Umbelliferae</i>								
<u>Asthusa cynapium</u> L. (fool's parsley)	C					1		
<u>Serula erecta</u> (Huds.) Coville (narrow-leaved water-parsnip)	D				1			
<u>Eupatorium rotundifolium</u> L. (thorowax)	Ac			6	10	17	1	
<u>Daucus carota</u> L. (carrot)	Gc					1		
<u>Scandix pecten-veneris</u> L. (shepherd's needle)	A			4	10	2		

TAXA (cont.)	habitat	ceramic phase						
		1A	1	2	3	4	5	6
<hr/>								
<i>Valerianaceae</i>								
<i>Valerianella dentata</i> (L.) Poll. (valerian)	A				1	12		
<i>Violaceae</i>								
<i>Viola</i> sp. (violet)				®	5	1	1	1
<hr/>								
Total no, remains		18	5	2718	13521	3723	2254	237
Total no, samples		2	1	15	14	7	8	13
Total volume sieved (l)		8,6	6	146	207,3	116	50	138,25
Fragments per litre		2	1	19	65	32	45	2

Habitats : A = arable; C = cultivated; D = disturbed; G = grassland; H = hedgerow; M = marsh; R = roadside;
 S = scrub; W = woodland; a = acidic soils; c = calcareous; d = damp; n = nutrient-rich;
 † = cultivated plant

ECKWEEK

Table 2 : Percentage composition of large carbonised plant remains assemblages (over 80 fragments)

Context	% cereals	% chaff	% weeds	% legumes	% other	total frags
PHASE 2						
338	72	0	25	2	0	464
3042	86	4	7	3	0	216
3062	85	7	6	1	1	1175
3108	94	+	2	4	0	547
3140	89	4	1	6	0	94
PHASE 3						
149	81	0	12	4	3	182
236	82	0	13	4	1	360
265	92	0	2	5	1	88
291	89	2	2	7	+	272
318*	43	1	52	4	0	653
341	78	+	16	4	2	275
354	70	0	14	12	4	121
359	87	6	5	2	+	10305
3087	83	0	10	7	0	91
3135	91	3	5	1	0	156
3143	83	2	6	9	0	882
PHASE 4						
127	93	0	2	4	1	225
170	77	1	15	5	2	1850
230	88	+	8	3	1	450
340	85	+	5	9	1	1014
347	95	+	+	3	2	301
PHASE 5						
220	89	1	5	3	2	180
237	88	6	2	2	2	1579
285	85	1	10	3	1	363

* very high Odontites verna/Euphrasia sp. count = 36%

ECKWEEK

Table 3 ; The carbonised plant remains

TAXA	ceramic phase;	IA	1	2	195	171	251	
	feature;	3076	3161	248				339
	habitat	3075	3162	249	338	194	207	250
<hr/>								
CEREALS								
<u>Triticum cf. turgidum/durum</u> (cf, rivet/hard wheat)					18	3	7	
<u>Triticum cf. aestivocompactum</u> (cf, bread/club wheat)				1	17	1	5	
<u>Triticum spp.</u> (wheat)		2			125	3	17	3
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)					3			
<u>Hordeum sp.</u> (hulled barley)		2	3		9	1		
<u>Avena sp.</u> (oat)					17		1	
<u>Secale cereale</u> L. (rye)								
Indeterminate cereals			2	4	145	4	3	4
CHAFF								
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)								
<u>Triticum aestivocompactum</u> s.l. (bread/club wheat rachis frags.)								
<u>Triticum sp.</u> (wheat rachis frags.)								
<u>Avena sp.</u> (awn fragments)								
<u>Secale cereale</u> L. (rye rachis frags.)								
Cereal-type culm nodes								
Cereal-type culm bases								
OTHER								
<i>Chenopodiaceae</i>								
<u>Chenopodium album</u> L. (fat hen)	CDn	2						
Indeterminate				1				
<i>Compositae</i>								
<u>Anthemis cotula</u> L. (stinking mayweed)	ADD				7	2	2	
<u>Lapsana communis</u> L. (nipplewort)	DH				1			

	phase;	IA	1	2				
	feature;	3076	3161	248	339	195	171	251
TAXA	habitat	3075	3162	249	338	194	207	250
<hr/>								
<i>Corylaceae</i>								
<i>Corylus avellana</i> L. (hazel nut shell frags)	NSW				1			2
<i>Cruciferae</i>								
<i>Alliaria petiolata</i> (Bieb.)C&G (garlic mustard)	HR				1			
<i>Cyperaceae</i>								
<i>Carex</i> sp. (sedge)	GM				1			
<i>Gramineae</i>								
<i>Bromus</i> sect. <i>Bromus</i> (chess)						8		
<i>Avena/Bromus</i> sp.						17		
<i>Lolium</i> type						9		
Indeterminate						6	2	1
<i>Leguminosae</i>								
cf. <i>Trifolium</i> sp. (cf. clover)	GD	3			3			
<i>Vicia/Lathyrus</i> sp. (vetch/tare)					10	1	6	
<i>Vicia/Lathyrus/Pisum</i> (vetch/tare/pea)						1		
<i>Linaceae</i>								
<i>Linum catharticum</i> L. (purging flax)	Gc				1			
<i>Polygonaceae</i>								
<i>Fallopia convolvulus</i> (L.) Á. Löve (black bindweed)	CD	1						
<i>Polygonum aviculare</i> agg. (knotgrass)	CD	1			1			
<i>Rumex</i> sp. (dock)		1			8		1	
<i>Scrophulariaceae</i>								
<i>Odontites verna/Euphrasia</i> sp. (red bartsia/eyebright)	CD				53		2	
<i>Rhinanthus minor</i> L. (yellow-rattle)	G				1			
<i>Umbelliferae</i>								
<i>Bupleurum rotundifolium</i> L. (thorowax)	Ac				2			
<hr/>								
	Total	12	6	5	464	16	46	10
	Volume sieved (l)	3,6	5	6	5	5	6	7
	seeds/litre	3,3	1,2	0,8	92,8	3,2	7,7	1,4

ECKWEEK

The carbonised plant remains (contd.)

	phase:	2					
	feature:	270	298	300	363	3009	3061
TAXA	habitat	269	290	296	362	3042	3062

CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf, rivet/hard wheat)		3	3	6	4	1	3
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf, bread/club wheat)				1		4	9
<u>Triticum</u> spp. (wheat)		12	13	4	5	78	468
<u>Hordeum</u> <u>vulgare</u> L. emend, (6-row hulled barley)				1		4	8
<u>Hordeum</u> sp. (hulled barley)			2	3	1	18	21
<u>Avena</u> sp. (oat)			1	1			6
<u>Secale</u> <u>cereale</u> L. (rye)							
<u>Triticum/Secale</u> <u>cereale</u> (wheat/rye)			1	1			
Indeterminate cereals		9	8	26	18	80	478
CHAFF							
<u>Triticum</u> <u>turgidum/durum</u> (rivet/hard wheat rachis frags,)							2
<u>Triticum</u> <u>aestivocompactum</u> s.l. (bread/club wheat rachis frags,)							3
<u>Triticum</u> sp. (wheat rachis frags,)						7	48
<u>Hordeum</u> sp. (barley rachis frags)						1	4
<u>Avena</u> sp. (awn fragments)							
<u>Secale</u> <u>cereale</u> L. (rye rachis frags,)							
Cereal-type culm nodes							27
Cereal-type culm bases							3
OTHER							
<u>Caprifoliaceae</u>							
<u>Sambucus</u> <u>nigra</u> L. (elder)	HSWn						1

	phase;	2					
	feature;	270	298	300	363	3009	3061
TAXA (contd)	habitat	269	290	296	362	3042	3062
<hr/>							
<i>Compositae</i>							
<i>Anthemis cotula</i> L. (stinking mayweed)	ADD			1			
<i>Lapsana communis</i> L. (nipplewort)	DH						1
<i>Corylaceae</i>							
<i>Corylus avellana</i> L. (hazel nut shell frags)	HSW			2	3	1	1
<i>Gramineae</i>							
<i>Bromus</i> sect. <i>Bromus</i> (chess)			1			7	7
<i>Avena/Bromus</i> sp. (oat/brome)			1			5	52
<i>Lolium</i> type					3		
Indeterminate				1	1		
<i>Leguminosae</i>							
<i>Vicia/Lathyrus</i> sp. (vetch/tare)			2	1	4	7	13
<i>Vicia/Lathyrus/Pisum</i> sp. (vetch/tare/pea)		1					4
<i>Polygonaceae</i>							
<i>Fallopia convolvulus</i> (L.) Á. Löve (black bindweed)	CD						3
<i>Polygonum aviculare</i> agg. (knotgrass)	CD						1
<i>Rumex</i> sp. (dock)						2	7
<i>Rubiaceae</i>							
<i>Galium aparine</i> L. (cleavers)	DH						1
<i>Scrophulariaceae</i>							
<i>Odontites verna/Euphrasia</i> sp. (red bartsia/eyebright)	CD				3	1	
<i>Umbelliferae</i>							
<i>Rupileurum rotundifolium</i> L. (thorovax)	Ac		1			1	
<i>Scandix pecten-veneris</i> L. (shepherd's needle frags)	A						3
<hr/>							
	Total	25	33	48	42	216	1175
	Vol. sieved 4		5	13	17	25	25
	frags per litre	6.3	6.6	3.7	2.5	8.6	47

ECKWEEK

The carbonised plant remains (contd)

	phase:	2				3	
	feature:	3029	3080	3115	3082	3137	179
TAXA	habitat	3064	3108	3116	3140	3145	149

CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf. rivet/hard wheat)		1	9	10	8		14
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf. bread/club wheat)			14	2	5	1	5
<u>Triticum</u> spp. (wheat)		7	284	22	46	11	71
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)		1					1
<u>Hordeum</u> sp. (hulled barley)			12	3		1	1
<u>Avena</u> sp. (oat)			3	3	10	1	6
<u>Secale cereale</u> L. (rye)							
Indeterminate cereals		7	189	5	14		50
CHAFF							
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags,)							
<u>Triticum aestivocompactum</u> s.l. (bread/club wheat rachis frags,)							
<u>Triticum</u> sp. (wheat rachis frags,)							
<u>Avena</u> sp. (awn fragments)							
<u>Secale cereale</u> L. (rye rachis frags,)							
Cereal-type culm nodes			2		3		
Cereal-type culm bases					1		
OTHER							
<i>Compositae</i>							
<u>Anthemis cotula</u> L. (stinking mayweed)	Add						7
<i>Corylaceae</i>							
<u>Corylus avellana</u> L. (hazel nut shell frags)	HSW						4
<i>Dipsacaceae</i>							
<u>Knautia arvensis</u> (L.) Coulter (field scabious)	6cd			1			1

	phase;	2				3	
	feature;	3029	3080	3115	3082	3137	179
TAXA (contd)	habitat	3064	3108	3116	3140	3145	149
<hr/>							
<i>Gramineae</i>							
<u>Bromus</u> sect. <u>Bromus</u> (chess)	CDG		2				
<u>Avena/Bromus</u> (oat/chess)	CDG		6				
Indeterminate	DG		3				5
<i>Leguminosae</i>							
cf. <u>Trifolium</u> sp. (cf, clover)	GD						1
cf. <u>Vicia faba</u> (cf, broad bean)	*		1				
<u>Vicia/Lathyrus</u> sp. (vetch/tare)			14	5	4	1	7
<u>Vicia/Lathyrus/Pisum</u> sp. (vetch/tare/pea)		1	5	1	2		1
<i>Polygonaceae</i>							
<u>Rumex</u> sp. (dock)			1		1		1
<i>Rosaceae</i>							
<u>Prunus domestica</u> subsp. <u>domestica</u> (plum)	*			1			
<i>Rubiaceae</i>							
<u>Sherardia arvensis</u> L. (field wadder)	ADHc					1	
<i>Scrophulariaceae</i>							
<u>Odontites verna/Euphrasia</u> sp. (red bartsia/eyebright)	CD	1					6
<i>Umbelliferae</i>							
<u>Bupleurum rotundifolium</u> L. (thorowax)	Ac	2					1
<u>Scandix pecten-veneris</u> L. (shepherd's needle frags)	A		1				
<hr/>							
	Total	19	547	53	94	16	182
	Vol, sieved (litres)	7	3	6,2	4,8	13	14
	frags/litre	2,7	182	8,5	19,6	1,2	13

ECKWEEK

The carbonised plant remains (contd)

	phase;	3					
	feature;	234	266	268	299	299	319
TAXA	habitat	236	265	267	291	297	318
<hr/>							
CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf. rivet/hard wheat)		27	6	2	11		43
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf. bread/club wheat)		26	11	1	5		15
<u>Triticum</u> spp. (wheat)		105	33	3	138	10	112
<u>Hordeum</u> <u>vulgare</u> L. emend. (6-row hulled barley)					2		
<u>Hordeum</u> sp. (hulled barley)		6			6	2	15
<u>Avena</u> sp. (oat)		10					14
<u>Secale</u> <u>cereale</u> L. (rye)		1					
Indeterminate cereals		125	31	2	79	38	83
CHAFF							
<u>Triticum</u> <u>turgidum/durum</u> (rivet/hard wheat rachis frags.)					1		
<u>Triticum</u> <u>aestivocompactum</u> s.l. (bread/club wheat rachis frags.)							
<u>Triticum</u> sp. (wheat rachis frags.)					5		
<u>Avena</u> sp. (awn fragments)							
<u>Secale</u> <u>cereale</u> L. (rye rachis frags.)							
Cereal-type culm nodes							5
Cereal-type culm bases							
OTHER							
<i>Chenopodiaceae</i>							
<u>Atriplex</u> <u>patula/prostrata</u> (common/hastate orache)	CDn						1
Indeterminate	CDn	1					
<i>Compositae</i>							
<u>Anthemis</u> <u>cotula</u> L. (stinking mayweed)	ADd	6			1		3
<u>Crepis</u> <u>capillaris</u> (L.) Wallr. (smooth hawk's beard)	DGE						1
<i>Corylaceae</i>							
<u>Corylus</u> <u>avellana</u> L. (hazel nut shell frags)	HSW	2	1		1	9	

TAXA	phase:	3					
	feature;	234	266	268	299	299	319
	habitat	236	265	267	291	297	318
<hr/>							
<i>Cyperaceae</i>							
<u>Carex</u> sp. (sedge)	GM						1
<i>Dipsacaceae</i>							
<u>Knautia arvensis</u> (L.) Coulter (field scabious)	6cd						2
<i>Gramineae</i>							
<u>Bromus</u> sect. <u>Bromus</u> (chess)	CDG		1	1	1		27
<u>Avena/Bromus</u> sp.					1		22
<u>Lolium</u> type	CD	4					14
Indeterminate		10			1		13
<i>Leguminosae</i>							
<u>Medicago lupulina</u> L. (black medick)	6R						1
<u>Pisum sativum</u> L. (pea)	*	1					
cf. <u>Trifolium</u> sp. (cf. clover)	6D	2					3
<u>Vicia/Lathyrus</u> sp. (vetch/tare)		10	4		16	11	23
<u>Vicia/Lathyrus/Pisum</u> sp. (vetch/tare/pea)		2			2		3
<i>Polygonaceae</i>							
<u>Fallopia convolvulus</u> (L.) Á. Löve (black bindweed)	CD		1				1
<u>Rumex</u> sp. (dock)							4
<i>Primulaceae</i>							
<u>Anagallis arvensis</u> L. (scarlet pimpernel)	CD			1			
<i>Rosaceae</i>							
<u>Prunus spinosa</u> L. (sloe)	HSW						2
<u>Sorbus</u> sp.	SW	1					
<i>Rubiaceae</i>							
<u>Galium aparine</u> L. (cleavers)	DH	1				1	1
<i>Scrophulariaceae</i>							
<u>Odontites verna/Euphrasia</u> sp. (red bartsia/eyebright)	CD	20			2		236

	phase:	3					
	feature:	234	266	268	299	299	319
TAXA	habitat	236	265	267	291	297	318
<hr/>							
<i>Umbelliferae</i>							
<i>Berula erecta</i> (Huds.) Coville (narrow-leaved water-parsnip)	D						1
<i>Bupleurum rotundifolium</i> L. (thorowax)	Ac	1					1
<i>Scandix pecten-veneris</i> L. (shepherd's needle frags)	A						5
<i>Violaceae</i>							
<i>Viola</i> sp. (violet)							3
<hr/>							
	Total	360	88	10	272	73	653
	Volume sieved (l)	51	4	2	5	15	7
	frags/litre	7,1	22	5	54,4	4,9	93,3

ECKWEEK

The carbonised plant remains (contd)

	phase;	3					
	feature;	319	358	357	3078	3088	3088
TAXA	habitat	341	356	359	3077	3087	3135

CEREALS							
<u>Triticum cf. turgidum/durum</u> (cf, rivet/hard wheat)		27		+	4	1	3
<u>Triticum cf. aestivocompactum</u> (cf, bread/club wheat)		12		+	4	4	6
<u>Triticum spp.</u> (wheat)		69	5	5332	25	36	99
<u>Hordeum vulgare L. emend.</u> (6-row hulled barley)		2		21		1	3
<u>Hordeum sp.</u> (hulled barley)		15		316	2	4	4
<u>Avena fatua</u> (wild oat)				1			
<u>Avena sp.</u> (oat)		9		160	1	5	4
<u>Secale cereale L.</u> (rye)				6			
<u>Triticum/Secale</u> (wheat/rye)		1			1		
Indeterminate cereals		81	2	3141	9	25	24
CHAFF							
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)					19		
<u>Triticum aestivocompactum</u> (bread/club wheat rachis frags.)		1		24			
<u>Triticum sp.</u> (wheat rachis frags.)					294	1	3
<u>Hordeum sp.</u> (barley rachis)					45		
<u>Avena sp.</u> (awn fragments)					11		
<u>Secale cereale L.</u> (rye rachis frags.)					5		
Indeterminate rachis					125		
Cereal-type culm nodes					71		1
Cereal-type culm bases					8		
OTHER							
<u>Caryophyllaceae</u>							
<u>Agrostemma githago L.</u> (corn cockle)	A				8		
<u>Silene latifolia subsp. alba</u> (white campion)	ADR				1		

TAXA (contd)	phase:	3					
	feature:	319	358	357	3078	3088	3088
	habitat	341	356	359	3077	3087	3135
<hr/>							
<i>Caryophyllaceae</i> (contd)							
<i>Silene dioica</i> (L.) Clairv. (red campion)	HW			3			
<i>Stellaria media</i> (L.) Vill. (chickweed)	CD			1			
<i>Chenopodiaceae</i>							
<i>Atriplex patula/prostrata</i> (common/hastate orache)	CDn			20			
<i>Compositae</i>							
<i>Anthemis cotula</i> L. (stinking mayweed)	ADd	5		31			1
<i>Gentaurea nigra</i> L. (lesser knapweed)	GR			3			
<i>Lapsana communis</i> L. (nipplewort)	HR			4			
<i>Corylaceae</i>							
<i>Corylus avellana</i> L. (hazel nut shell frags)	HSW	5	1	5			
<i>Cruciferae</i>							
<i>Brassica/Sinapis</i> sp.	C*			7			
<i>Dipsacaceae</i>							
<i>Knautia arvensis</i> (L.) Coulter (field scabious)	6cd			7			
<i>Fumariaceae</i>							
<i>Fumaria</i> sp. (fumitory)	C			1			
<i>Gramineae</i>							
<i>Bromus</i> sect. <i>Bromus</i> (chess)	CDG	1		18		1	2
<i>Avena/Bromus</i> sp.				182			
<i>Lolium temulentum</i> type (darnel)	CD			18			
<i>Lolium</i> type Indeterminate	CD			56			2
		10		6	4	1	
<i>Leguminosae</i>							
<i>Lens esculenta</i> Moench (lentil)	*			2			
<i>Trifolium</i> sp. (clover)	6D			1			
<i>Vicia sativa</i> L. (common vetch)	6H*			12			
<i>Vicia/Lathyrus</i> sp. (vetch/tare)		9		149	2	5	
<i>Vicia/Lathyrus/Pisum</i> sp. (vetch/tare/pea)		3		85		1	1

TAXA	phase:	3					
	feature:	319	358	357	3078	3088	3088
	habitat	341	356	359	3077	3087	3135
<hr/>							
<i>Polygonaceae</i>							
<i>Fallopia convolvulus</i> (L.) Á.Löve (black bindweed)	CD	1		6			
<i>Polygonum aviculare</i> agg. (knotgrass)	CD			7		1	
<i>Rumex</i> sp. (dock)		3		19		1	2
<i>Primulaceae</i>							
<i>Anagallis arvensis</i> L. (scarlet pimpernel)	CD			1			
<i>Rubiaceae</i>							
<i>Galium aparine</i> L. (cleavers)	DH			16			
<i>Galium</i> sp. (frag.)			1				
<i>Sherardia arvensis</i> L. (field madder)	AD			6			
<i>Scrophulariaceae</i>							
<i>Odontites verna/Euphrasia</i> sp. (red bartsia/eyebright)	CD	21	1	43	5	4	
<i>Umbelliferae</i>							
<i>Bupleurum rotundifolium</i> L. (thorowax)	Ac		2	2		1	
<i>Scandix pecten-veneris</i> L. (shepherd's needle frags)	A			5			
<i>Valerianaceae</i>							
<i>Valerianella dentata</i> (L.)Poll. (valerian)	A			1			
<i>Violaceae</i>							
<i>Viola</i> sp. (violet)				1			1
<hr/>							
	Total	275	12	10305	58	91	156
	Volume sieved (l)	18	1	39	3,8	13,5	19
	frags/litre	15,3	12	264	15,3	6,7	8,2

ECKWEEK

The carbonised plant remains (contd)

	phase:	3	4				
	feature:	3094	258	387	223	274	327
TAXA	habitat	3143	127	170	230	273	340

CEREALS							
<u>Triticum cf. turgidum/durum</u> (cf. rivet/hard wheat)		29	6	98	15	2	67
<u>Triticum cf. aestivocompactum</u> (cf. bread/club wheat)		17	7	55	15	2	70
<u>Triticum spp.</u> (wheat)		531	111	630	257	5	485
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)		1		3		1	1
<u>Hordeum sp.</u> (hulled barley)		3	1	17	4		19
<u>Avena fatua</u> L. (wild oat)		2		1			
<u>Avena sp.</u> (oat)		13	4	117	7		7
<u>Secale cereale</u> L. (rye)							
Indeterminate cereals		136	81	508	97	7	208
CHAFF							
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)					2		
<u>Triticum aestivocompactum</u> s.l. (bread/club wheat rachis frags.)		2		1			
<u>Triticum sp.</u> (wheat rachis frags.)		7		10			
<u>Avena sp.</u> (awn fragments)				3			
<u>Secale cereale</u> L. (rye rachis frags.)							
Cereal-type culm nodes		6		4	1		4
Cereal-type culm bases							
OTHER							
<i>Chenopodiaceae</i>							
<u>Atriplex patula/prostrata</u> (common/hastate orache)	CO			1			
<i>Compositae</i>							
<u>Anthemis cotula</u> L. (stinking mayweed)	ADD			23	2		7
<i>Corylaceae</i>							
<u>Corylus avellana</u> L. (hazel nut shell frags)	HSW		2	40	2		13

	phase:	3	4				
	feature:	3094	258	387	223	274	327
TAXA	habitat	3143	127	170	230	273	340
<hr/>							
<i>Cruciferae</i>							
	<u>Brassica/Sinapis</u> sp.			14			
	" " siliqua frags			2			
<i>Cyperaceae</i>							
	<u>Carex</u> sp.	6M					1
	(sedge)						
<i>Dipsacaceae</i>							
	<u>Knautia arvensis</u> (L.)Coulter	6cd		4			
	(field scabious)						
<i>Gramineae</i>							
	<u>Arrhenatherum elatius</u> subsp. <u>bulbosum</u>	6					1
	(onion couch grass)						
	<u>Bromus</u> sect. <u>Bromus</u>	CDG	4	2		1	2
	(chess)						
	<u>Avena/Bromus</u> sp.		14		109		11
	<u>Lolium tenulentum</u> type	CD	2		21		
	(darnel)						
	<u>Lolium</u> type	CD			6	7	3
	Indeterminate		25	1	29	10	2
<i>Leguminosae</i>							
	cf. <u>Lathyrus nissolia</u> L.	GS					1
	(cf. grass vetchling)						
	<u>Medicago/Trifolium</u> sp.	GD					8
	(medick/clover)						
	<u>Trifolium</u> sp.	GD			2	1	
	(clover)						
	<u>Vicia faba</u> L.	x			1	1	2
	(broad bean)						
	<u>V. sativa</u> L.	6H*	3				9
	(common vetch)						
	<u>Vicia/Lathyrus</u> sp.		63	8	41	12	50
	(vetch/tare)						
	<u>Vicia/Lathyrus/Pisum</u> sp.		12	1	55	2	1
	(vetch/tare/pea)						32
<i>Polygonaceae</i>							
	<u>Polygonum aviculare</u> agg.	CD	1			1	3
	(knotgrass)						
	<u>Rumex acetosella</u> agg.	6Ea			2	1	
	(sheep's sorrel)						
	<u>Rumex</u> sp.		8		4	2	1
	(dock)						
<i>Primulaceae</i>							
	<u>Anagallis arvensis</u> L.	CD				1	
	(scarlet pimpernel)						

	phase;	3	4				
	feature;	3094	258	387	223	274	327
TAXA	habitat	3143	127	170	230	273	340
<hr/>							
<i>Rosaceae</i>							
<i>Aphanes arvensis</i> (L.) Scop. (parsley piert)	CG						1
<i>Potentilla</i> sp. (cinquefoil)	GH			1			
cf. <i>Prunus</i> sp. (frags)					2		
<i>Rubiaceae</i>							
<i>Galium aparine</i> L. (cleavers)	DH		1	1			
<i>Galium</i> cf. <i>verum</i> L. (cf. lady's bedstraw)	G						1
<i>Galium</i> sp.							1
<i>Sherardia arvensis</i> L. (field madder)	AD				1		
<i>Scrophulariaceae</i>							
<i>Odontites verna</i> /Euphrasia sp. (red bartsia/eyebright)	CO	1		5	5	1	3
<i>Rhinanthus minor</i> L. (yellow rattle)	G			13			
<i>Umbelliferae</i>							
<i>Aethusa cynapium</i> L. (fool's parsley)	C				1		
<i>Bupleurum rotundifolium</i> L. (thorowax)	Ac	2		17			
<i>Daucus carota</i> L. (carrot)	Gc						1
<i>Scandix pecten-veneris</i> L. (shepherd's needle frags)	A				2		
<i>Valerianaceae</i>							
<i>Valerianella dentata</i> (L.) Poll. (valerian)	A			12			
<i>Violaceae</i>							
<i>Viola</i> sp. (violet)					1		
<hr/>							
	Total	882	225	1850	450	19	1014
	Volume sieved(l)	4	8	27	14	7	49
	frags/litre	220,5	28,1	68,5	32,1	2,7	20,7

ECKWEEK

The carbonised plant remains (contd)

	phase:	4	3	5			
	feature:	346	319	231	221	228	221
TAXA	habitat	347	354	123	220	229	237

CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf. rivet/hard wheat)		17	2		10	1	3
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf. bread/club wheat)		9	4	2	7		1
<u>Triticum</u> spp. (wheat)		116	32	7	80	1	1295
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)		2	3				
<u>Hordeum</u> sp. (hulled barley)		5	4		1		3
<u>Avena</u> sp. (oat)			3				6
<u>Secale/Triticum</u> (rye/wheat)		3					
Indeterminate cereals		135	34	10	59	3	101
CHAFF							
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)		1					53
<u>Triticum aestivocompactum</u> s.l. (bread/club wheat rachis frags.)							9
<u>Triticum</u> sp. (wheat rachis frags.)					1		20
<u>Avena</u> sp. (awn fragments)							
<u>Secale cereale</u> L. (rye rachis frags.)							
Cereal-type culm nodes					1		8
Cereal-type culm bases							
OTHER							
<i>Chenopodiaceae</i>							
<u>Atriplex patula/prostrata</u> (common/hastate orache)	CDn						1
<i>Compositae</i>							
<u>Anthemis cotula</u> L. (stinking mayweed)	ADd		1		1		
<u>Centaurea nigra</u> L. (lesser knapweed)	GR	1					1
<u>Cirsium/Carduus</u> sp. (thistle)	DG						1
<i>Corylaceae</i>							
<u>Corylus avellana</u> L. (hazel nut shell frags)	HSW	5	5		5		29

TAXA	phase;	4	3	5			
	feature;	346	319	231	221	228	221
	habitat	347	354	123	220	229	237
<hr/>							
<i>Cruciferae</i>							
<u>Brassica/Sinapis</u> sp.						1	
<i>Cyperaceae</i>							
<u>Cladium mariscus</u> (L.) Pohl (great sedge)	fens						1
<i>Gramineae</i>							
<u>Bromus</u> sect. <u>Bromus</u> (chess)	COG		5				9
<u>Lolium</u> type	CO		1		1		5
Indeterminate			2	2	5		1
<i>Leguminosae</i>							
<u>Medicago/Trifolium</u> sp. (medick/clover)	DG				1		
<u>Vicia/Lathyrus</u> sp. (vetch/tare)		4	6		6		22
<u>Vicia/Lathyrus/Pisum</u> sp. (vetch/tare/pea)		6	8				4
<i>Plantaginaceae</i>							
<u>Plantago lanceolata</u> L. (ribwort plantain)	G						1
<i>Polygonaceae</i>							
<u>Polygonum aviculare</u> agg. (knotgrass)	CO						1
<u>Rumex</u> sp. (dock)							1
<i>Rosaceae</i>							
<u>Potentilla anserina</u> L. (silverweed)	DG						1
<i>Rubiaceae</i>							
<u>Galium aparine</u> L. (cleavers)	DH						1
<i>Scrophulariaceae</i>							
<u>Odontites verna/Euphrasia</u> sp. (red bartsia/eyebright)	CO		8		1		
<i>Violaceae</i>							
<u>Viola</u> sp. (violet)							1
<hr/>							
	Total	301	121	21	180	5	1579
	Volume sieved (l)	11	11	9	10	5	7
	frags/litre	27,4	11	10,5	18	1	225,6

ECKWEEK

The carbonised plant remains (contd)

	phase:	5		6			
	feature:	241	261	285	59	65	67
TAXA	habitat	241	261	285	59	65	67
<hr/>							
CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf, rivet/hard wheat)		2	2	40		4	
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf, bread/club wheat)		2	2	26		4	
<u>Triticum</u> spp. (wheat)		19	26	112	1	25	2
<u>Hordeum</u> <u>vulgare</u> L, emend. (6-row hulled barley)							
<u>Hordeum</u> sp. (hulled barley)		1		4			
<u>Avena</u> sp. (oat)				4		2	
<u>Secale</u> <u>cereale</u> L. (rye)							
Indeterminate cereals		24	13	122	4	22	2
CHAFF							
<u>Triticum</u> <u>turgidum/durum</u> (rivet/hard wheat rachis frags.)							
<u>Triticum</u> <u>aestivocompactum</u> s.l. (bread/club wheat rachis frags.)				1			
<u>Triticum</u> sp. (wheat rachis frags.)				2			
<u>Avena</u> sp. (awn fragments)							
<u>Secale</u> <u>cereale</u> L. (rye rachis frags.)							
Cereal-type culm nodes							1
Cereal-type culm bases							
OTHER							
<u>Caryophyllaceae</u>							
<u>Silene</u> cf. <u>vulgaris</u> (cf, bladder campion)				1			
<u>Compositae</u>							
<u>Anthemis</u> <u>cotula</u> L. (stinking mayweed)	ADD		1	18	1	3	

	phase;	5	6			
	feature;	241	261	285	59	65 67
TAXA	habitat	241	261	285	59	65 67
<hr/>						
<i>Corylaceae</i>						
<i>Corylus avellana</i> L. (hazel nut shell frags)	HSW		1	2	2	1
<i>Cruciferae</i>						
<i>Brassica/Sinapis</i> sp.				1		
<i>Dipsacaceae</i>						
<i>Knautia arvensis</i> (L.) Coultter (field scabious)	Gcd			1		
<i>Gramineae</i>						
<i>Bromus</i> sect. <i>Bromus</i> (chess)	CDG		2			
<i>Lolium temulentum</i> type (darnel)	CD	1				
Indeterminate		3		4		2
<i>Leguminosae</i>						
<i>Medicago lupulina</i> L. (black medick)	GR					6
<i>Medicago/Trifolium</i> sp. (medick/clover)	GR			1		
<i>Vicia/Lathyrus</i> sp. (vetch/tare)		4	1	10	1	1
<i>Vicia/Lathyrus/Pisum</i> sp. (vetch/tare/pea)				2		
<i>Polygonaceae</i>						
<i>Rumex</i> sp. (dock)				1		
<i>Rosaceae</i>						
<i>Prunus</i> sp. (stone frag)	HSW					1
<i>Rubiaceae</i>						
<i>Galium</i> sp. (frag)	OH				1	
<i>Scrophulariaceae</i>						
<i>Odontites verna/Euphrasia</i> sp. (red bartsia/eyebright)	CD	1		11		
<i>Rhinanthus minor</i> L. (yellow rattle)	G					1
<i>Umbelliferae</i>						
<i>Bupleurum rotundifolium</i> L. (thorowax)	Ac		1			
<hr/>						
	Total	57	49	363	10	73 4
	Volume sieved (l)	7	4	6	8	41 0,25
	frags/litre	8,1	12,3	60,5	1,3	1,8 16

ECKWEEK

The carbonised plant remains (contd)

	phase:	6					
	feature:	72	78	208	71	228	264
TAXA	habitat	72	78	209	213	227	263

CEREALS							
<u>Triticum</u> cf. <u>turgidum/durum</u> (cf. rivet/hard wheat)			6	8	2		
<u>Triticum</u> cf. <u>aestivocompactum</u> (cf. bread/club wheat)			1			1	
<u>Triticum</u> spp. (wheat)			8	11	3	3	2
<u>Hordeum vulgare</u> L. emend. (6-row hulled barley)							
<u>Hordeum</u> sp. (hulled barley)			1	3			
<u>Avena</u> sp. (oat)			1	4			
<u>Secale cereale</u> L. (rye)							
Indeterminate cereals		2	24	11	10	4	
CHAFF							
<u>Triticum turgidum/durum</u> (rivet/hard wheat rachis frags.)							
<u>Triticum aestivocompactum</u> s.l. (bread/club wheat rachis frags.)							
<u>Triticum</u> sp. (wheat rachis frags.)							
<u>Avena</u> sp. (awn fragments)							
<u>Secale cereale</u> L. (rye rachis frags.)							
Cereal-type culm nodes							
Cereal-type culm bases							
OTHER							
<i>Chenopodiaceae</i>							
<u>Atriplex patula/prostrata</u> (common/hastate orache)	CDn			1			1
Indeterminate	CDn			1			
<i>Compositae</i>							
<u>Anthemis cotula</u> L. (stinking mayweed)	ADD			4			

	phase;	6					
	feature;	72	78	208	71	228	264
TAXA	habitat	72	78	209	213	227	263
<hr/>							
<i>Corylaceae</i>							
<i>Corylus avellana</i> L. (hazel nut shell frags)	HSW					1	
<i>Gramineae</i>							
<i>Bromus</i> sect. <i>Bromus</i> (chess)	CDG		5				
<i>Lolium</i> type Indeterminate	GD				1		
<i>Leguminosae</i>							
<i>Medicago/Trifolium</i> sp. (medick/clover)	GR		3				
cf. <i>Trifolium</i> sp. (cf. clover)			8				
<i>Vicia/Lathyrus</i> sp. (vetch/tare)					1		
<i>Primulaceae</i>							
<i>Anagallis arvensis</i> L. (scarlet pimpernel)	CD		1				
<i>Ranunculaceae</i>							
<i>Ranunculus acris/bulbosus/repens</i> (buttercup)	DG		1		(1)		
<i>Rosaceae</i>							
<i>Crataegus monogyna</i> Jacq. (hawthorn)	HSW		1	2			
<i>Prunus spinosa</i> L. (sloe stone frags)	HSW				6		
<i>Rubus fruticosus</i> agg. (blackberry)	HSW			1			
<i>Scrophulariaceae</i>							
<i>Rhinanthus minor</i> L. (yellow rattle)	G		1				
<i>Violaceae</i>							
<i>Viola</i> sp. (violet)					1		
<hr/>							
	Total	2	70	42	24	9	3
	Volume sieved (l)	1	4	17	57	4	6
	frags/litre	2	17,5	2,5	0,4	2,3	0,5

Habitats : A = arable; C = cultivated; D = disturbed; G = grassland; H = hedgerow; M = marsh; R = roadside;
S = scrub; W = woodland; a = acidic soils; c = calcareous soils; d = damp; n = nutrient-rich;
‡ = cultivated plant