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# CAMBRIDGESHIRE DYKES PROJECT: MOLLUSCA AND OTHER MACROFOSSILS

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Summary

This report concerns molluscs from buried soils and ditch fills associated with the Anglo-Saxon linear earthworks at the Devil's Dyke, Fleam Dyke, Brent Ditch, Bran Ditch and the Worstead Street Roman road. Samples from the top surfaces of buried soils produced snail assemblages indicative of open grassland conditions, though with localised variations in dampness and intensity of grazing. In the bases of buried soils under Worstead Street and the bank of Bran Ditch shade-loving snails predominated, pointing to an earlier (Iron Age?) phase of woodland or scrub at these sites. Avian eggshell and charred cereals were also recovered. Possible future lines of research are outlined.

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## Introduction

The Cambridgeshire Dykes extend from low marshy ground to the north-west, across the chalk ridge of the Icknield Way to the Boulder Clay Plateau of the Essex/Cambridgeshire border. The Devil's Dyke and Fleam Dyke have been dated to the very late or post-Roman period; Brent Ditch has been shown to be of post-2nd century date; and the last phase of the Bran Ditch was of Anglo-Saxon date. Although precise dating remains a problem, it is thought that the Dykes probably mark successive territorial boundaries between Mercia and East Anglia, dating probably to the 7th century AD (Robinson 1992).

All four dykes controlled access to East Anglia via the Roman road, now the A11. As a result of dualling of this road from 1991 onwards, and pipeline construction, short sections of the earthworks were to be destroyed and excavations were therefore undertaken by staff of Cambridgeshire Archaeology. In addition, road widening was to involve the destruction of a section of the minor Roman road, Worstead Street, which was also excavated as part of this project.

The excavations provided an opportunity to obtain palaeoecological information on the Cambridgeshire chalklands from the immediate pre-Roman period into the 7th century AD.

## Methods

Given the dry and highly calcareous nature of the deposits, land molluscs were the main palaeoecological indicators. Shells were extracted from samples using the methods of Evans (1972). The sieved fractions were partly scanned under a binocular microscope at low power to assess the nature of shell assemblages and assessment reports were prepared prior to full analysis (Murphy 1992; 1993 a, b). Samples which were not thought to be worth analysis at this stage have been retained for possible future examination. Bulk samples were also taken from appropriate deposits to retrieve carbonised plant material by flotation, but these proved to contain little charcoal with abundant modern roots. Detailed study was not thought to be profitable. Samples from palaeosols and other deposits were examined for pollen by Erika Guttman at Worstead Street, Fleam Dyke, Devil's Dyke and Brent Ditch but with negative results. Reports on the micromorphology of buried soils will be given in separate reports by Charly French. The excavation at the Bran Ditch was visited by Patricia Wiltshire, who noted the potential of lake sediments in the adjacent Fowlmere for pollen analysis.

## Worstead Street FULMF 91

A section across the Roman road, which is perpetuated as a modern lane, showed that layers of chalk and gravel metalling sealed an apparently intact palaeosol formed on chalk. It comprised two distinct horizons: 24, an upper, more organic silt loam (15 - 20 cm thick) or former A horizon); and 25, a lower, less organic silt loam B horizon (15 - 20 cm thick): C. French, *pers comm.* A short column of samples, sub-divided at 5 cm intervals, was taken by Erika Guttman from this buried soil for molluscan analysis (Table 1 and Figures1 and 2). Bulk samples were also assessed from context 30, a possible tree throw-hole, and 60, the basal fill of an undated roadside ditch. These included some charcoal, small mammal bone, abundant modern roots and shells, mainly of *Pupilla muscorum* and *Vallonia* spp. Shells were generally poorly preserved, weathered and pitted with holes and, in some cases, surface deposits of secondarily re-precipitated calcite, which has resulted in some identifications being only tentative.

The mollusc assemblages from the A horizon are composed almost entirely of snails characteristic of open conditions. *Pupilla muscorum* consistently predominates, *Vallonia costata, V. excentrica* and *Helicella itala* are common and there are a few shells of *Truncatellina cylindrica* and *Vertigo pygmaea.* The apparent absence of the commonly associated *Trichia hispida* group at this site is notable. All other taxa occur at percentages of 4% or less. The road was clearly constructed across an open, at least locally treeless, landscape. *Pupilla* is particularly characteristic of earth bare of vegetation; and *Vertigo,* more indicative of stable conditions with a complete grass cover (Evans 1972, 143 - 148), is rare. This suggests that either there was very intense grazing locally with soil disturbance by hooves or that the site was under cultivation just before the road was laid out.

The assemblages from the B horizon also include open country snails, but at 20 - 25 cm there is a marked concentration of shells of woodland snails, particularly *Pomatias elegans* but also *Carychium tridentatum, Discus rotundatus,* Zonitidae and Clausiliidae. It is quite common to find such concentrations in soils as a

result of earthworm sorting, though often these are composed of very abraded apices: here many shells are intact and relatively unweathered (Evans 1972, 212). Whatever the precise taphonomy of this assemblage it clearly relates to a woodland or scrub phase at the site, and the abundance of *Pomatias* points to disturbance of the soil surface during clearance. Placing a date on this phase is difficult, though the preservation state of the shells suggests it did not long pre-date the open conditions represented in the A horizon.

In summary, the road was constructed in an open landscape, possibly under cultivation locally, but woodland had been cleared from the site not long before, at some point in the Iron Age.

**Devil's Dyke SWPDD 91**

Excavation at this site was confined to a section through the ditch deposits: the pipeline was tunnelled through the bank, so there was no opportunity to sample the bank make-up or any buried soil beneath it.

The site of the excavation was in an area of scrub, dominated by elder with wild privet, hawthorn, sloe, brambles, ivy, ground ivy and nettles. At the margins of the scrub there was a tall herb vegetation of nettles, goosegrass, hogweed, wild carrot, wild mignonette, musk thistle and greater knapweed, with some brambles and small bushes of sloe and elder. It appeared that this vegetation was of fairly recent development and that scrub was in the process of spreading along the earthwork from the site into areas still under short grassland, presumably as a result of reduced grazing pressure.

The following samples were collected from the ditch fills:

| | | |
|---|---|---|
| a) Central column | 1.1 | |
| | 1.2 | Layer 1, subdivided at 10 cm intervals |
| | 1.3 | |
| | 15.1 | |
| | 2.1 | |
| | 2.2 | Layer 2, subdivided at 10 cm intervals |
| | 2.3 | |
| | 18.1 | |

b) Spot samples from layers at edges of ditch 7.1, 8.1, 12.1, 14.1 and 16.1.

Assessment of the sieved fractions indicated that there seemed to be three main phases of deposit accumulation: an initial phase of infilling with chalky rubble; stabilisation of the ditch profile and, recently, development of a humic soil under elder scrub.

The mollusc assemblages throughout all but the topmost fills were dominated by open-country snails. Two representative samples (2.2 and 18.1) were analysed quantitatively (Table 2). These clearly resemble the open country assemblages from the A horizon under Worstead Street, though the *Trichia hispida* group is common here. Open , disturbed conditions are clearly represented.

The modern topsoil sample (1.1) includes an interesting mixed assemblage of open-country and shade-requiring species. Some common 'shade' snails are apparently absent (notably *Discus rotundatus* ) and this presumably is related to accidents of colonisation: the elder scrub at the site is isolated from any nearby woodland by arable land and short-turfed grassland.

**Fleam Dyke BALFD 91**

At the Fleam Dyke a section was cut through the bank and ditch just next to the A11. The surrounding area comprised arable fields sloping markedly towards the site. The top of the dyke was a footpath, but its flanks and ditches were covered with buckthorn, hawthorn, wild privet, sloe, elder, roses, ivy and some fairly mature birches trimmed as a hedge where the scrub bordered the arable.

Beneath the bank an area of buried soil, about 10 x 2.5m was exposed. From the bank section it was clear that there was more than one phase of construction and so three column samples at different locations were taken from the soil (samples 10 - 12), since it seemed probable that not all areas of soil were buried by bank construction contemporaneously. The columns also provided an opportunity to check for the presence of charred plant material and thereby to determine whether bulk samples from the soil (samples

1 - 9) would be worth processing. Assessment of samples 10 - 12, however, showed that they included very similar mollusc assemblages and only one (11) was fully analysed (Table 3; Figure 4). There were only a few charcoal flecks in the samples and further work on charred macrofossils was not thought worthwhile.

The bank was largely constructed of chalk rubble though there were some more humic layers within it, apparently representing phases of stabilisation between construction phases. Samples from two of these (47 and 22 ) were analysed. There were two ditch cuts. From the first cut, samples from contexts 61, 62 and 64 were analysed and from the second, samples from 6, 43, 44, 45, 71 and 50 (Table 3). Other samples were assessed but seemed very similar to those fully analysed (Murphy 1992).

The assemblages from the buried soil were composed almost entirely of open country taxa. Compared to the buried soil under Worstead Street, of Late Iron Age/ Early Roman date, this Late or Post-Roman soil includes a much higher proportion of *Pupilla muscorum*. Here, it comprises up to 77% of total shells, compared to a maximum of 40% at Worstead Street. Apart from *Pupilla muscorum, Vallonia costata, V. excentrica* and *Helicella itala* other species are rare: *Cochlicopa* spp comprise up to 3.3%, the *Trichia hispida* group up to 1.6% and all other snails under 1%. This clearly indicates a very open landscape locally, with soil surfaces apparently more disturbed than at Worstead Street, as a result of cultivation or heavy grazing pressure.

The fills of the first ditch cut produced similar shell assemblages: the basal rubbly fills (eg 64) contained fewer shells than upper layers representing a phase of stability (eg 61) but there seems to be little variation in species composition. Similar assemblages, dominated by *Pupilla* and *Trichia* came from the second cut. Only at 225-235cm in context 71 were shade-requiring snails present in any significant numbers, but even in this layer there is no evidence for any significant scrub growth.

Layers 22 and 47 in the bank produced rather sparse assemblages of open country snails, which suggests that between phases of bank construction insufficient time elapsed for many shells to become incorporated into the earlier bank surface.

**Brent Ditch PAMBD 92**

At this site the monument lay within a ploughed field. The bank and any buried soil beneath it had been levelled and destroyed, and only the ditch was available for sampling. Other small features examined included a small ditch apparently associated with the Roman road.

A discontinuous column of samples was taken from the ditch fills in section 4 with additional topsoil samples from section 5. Samples processed and assessed were:

| | |
|---|---|
| Topsoil | 3 (101), 4 (102). |
| Upper loamy fills | 8 (103), 9 (105). |
| Underlying chalk rubble fills | 10 (106), 12 (109), 20 (109). |
| Underlying loamy fills | 11 (107), 13 (110), 14 (113). |
| Basal chalk rubble fills | 15 (108), 16 (126), 17 (127). |

From the possible road ditch in Trench C, two samples , 18 (151) and 19 (150), were examined.

The samples consistently produced assemblages of low species diversity dominated by *Vallonia excentrica, V. costata, Pupilla muscorum, Helicella itala,* and the *Trichia hispida* group. Other taxa included *Pomatias elegans, Cochlicopa, Punctum pygmaeum, Nesovitrea hammonis,* limacids, arionids, *Cepaea* and *Cecilioides acicula. Candidula intersecta* and *C. gigaxii* occurred in the topsoil samples and in 103, and sporadically in deposits as deep as 107, where they were probably introduced by burrowing animals. The presence of these alien species, in superficial deposits is unsurprising. Four representative sample samples from 101, 105, 110 and 127 were fully analysed (Table 4).

It appears that open conditions persisted throughout the period of ditch infilling: there is no evidence for any phase of scrub growth. Most of the deposits were rapidly-accumulated basal rubble fills, material derived from bank destruction or inwashed ploughsoil. The apparent absence of *Vertigo pygmaea,* a common grassland snail, and the frequent abundance of *P. muscorum,* a species favouring bare ground, implies that phases of stable, complete vegetation cover (if any) are unrepresented in these deposits. 107 and 105 included a few opercula of the freshwater snail *Bithynia tentaculata*, some discoloured by

burning, together with burnt non-apical shell fragments probably of other freshwater taxa. 107 also included scraps of mussel shell. It is probable that these are related to nearby domestic activities - food refuse and perhaps residues from the burning of fen peat.

**Bran Ditch FOWBD 93**

Sections across the Bran Ditch were excavated close to its terminus adjacent to Fowlmere. The excavation was on low ground at the foot of a ploughed hillslope.

Contexts sampled by Duncan Schlee were an Iron Age enclosure ditch (34), a pit (fill 20) and associated posthole (fill 23), the buried soil beneath the bank remnant (36) and fills of the Bran Ditch itself (11, 37, 38, 39, 40). Samples were collected from the buried soil as a short column, subdivided at 5cm vertical intervals. Following assessment (Murphy 1993b), full analysis was confined to just four contexts (Table 5).

As at Worstead Street, the base of the buried soil (36: sample 10, 30-35cm) produced an assemblage indicative of shaded conditions. The Bran Ditch assemblage, however, is much more diverse in species composition, and indicates established woodland. Dating is, again, a problem but it is likely that this woodland fringing Fowlmere existed in the Iron Age/Roman period.

The base of the Iron Age ditch enclosing a low hill next to the mere (34: sample 12) included a snail assemblage with open country and woodland terrestrial species. A possible interpretation is that this ditch enclosed a cleared hummock within a locally wooded environment.

The top of the buried soil under the bank (36; sample 4) contained snails indicating that the earthwork was constructed in open grassland. However, catholic terrestrial species are common and *Pupilla muscorum* relatively rare. This, together with the presence of *Vallonia pulchella* and *Lymnaea truncatula*, indicates tall, damp grassland, in contrast to the Fleam Dyke and Worstead Street.

Context 40, a fill of the Bran Ditch, included a mixed shell assemblage comprising open country, catholic and shade-loving terrestrial species with marsh, freshwater slum and aquatic molluscs. The deposit presumably contained a substantial allochthonous component of shells derived both from the mere during flooding and shells transported downslope.

Other noteworthy contexts were the undated pit (15: fill 20) and associated posthole (fill 23). Samples from these were not analysed in detail, but assessment indicated the presence of predominantly open-country snails,, associated with abundant avian eggshell fragments, some of which were discoloured by burning. It is possible that these relate to egg collection from wildfowl nests around the mere.

The buried soil, 36, produced sparse charred cereal remains, including spelt and barley, presumably of Iron Age or Roman date (Table 6).

**General conclusions**

1. At all sites investigated molluscs from buried soils and ditch fills clearly indicate construction in open, probably grassland, habitats. However, there are marked variations in assemblage composition (Figs 1,4,5,7). The assemblage from the top of the buried soil at the top of the Fleam Dyke produced an extreme open-country assemblage, dominated by *Pupilla muscorum*, indicating a high proportion of bare ground and disturbed soils in the vicinity. At the other extreme is the Bran Ditch, where there was a higher proportion of catholic land molluscs and *Pupilla* was rather scarce. The presence at this latter site of freshwater and marsh species indicates wetter conditions and periodic flooding. Taller, damp grassland is indicated.

2. At the bases of the buried soils under Worstead Street and the bank of the Bran Ditch snails indicative of shaded conditions predominated ( Figs 2,6, 8). These relate to more wooded conditions at these sites at an earlier period. Residence and survival times for shells in soils cannot be at all precisely determined at present, but we may reckon with periods of hundreds of years rather than millennia.

The basal assemblage from Worstead Street resembles, in its gross composition, an assemblage from a

modern soil under scrub predominantly of elder at the Devil's Dyke (Fig 3). Moreover, the main shade snail in the assemblage from Worstead Street is *Pomatias elegans*, indicative of soil disturbance. This implies the following sequence:

a) Disturbed soils under scrub - Iron Age.
b) Clearance and development of open grassland - Late Iron Age.
c) Road construction - Roman.

At the base of the buried soil at the Bran Ditch was a much more diverse assemblage of shade snails, clearly indicating denser woodland at the site, in the Iron Age or Roman periods.

Samples were inspected for charred plant remains, but only at the Bran Ditch were significant amounts of charred cereals (spelt, barley) present. It seems likely that these were derived from crop processing activity further upslope. They are likely to be of Roman or Iron Age date.

The only other 'economic' finds were large fragments of avian eggshell (some burnt) from a pit under the Bran Ditch - suggesting egg collection from nests of breeding wildfowl around Fowlmere.

The linear earthworks of Cambridgeshire represent fossil transects across the interfluves and there is little doubt that sampling buried soils at intervals along their lengths would provide information on spatial variations in vegetation cover across the landscape just before construction. The suggestion that the south-eastern termini of these earthworks mark the boundary of dense woodland is amenable to testing by mollusc analysis.As has been shown above, the soils also preserve semi-stratified chronological sequences, with the potential to give information on variations in land-use history. Further information on the vegetational history of the area could come from pollen analysis of lake sediments within the Nature Reserve at Fowlmere.

**References**

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Robinson, B (1992)
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Worstead Street. Ct. 24. Buried soil (0-5cm). N=968.

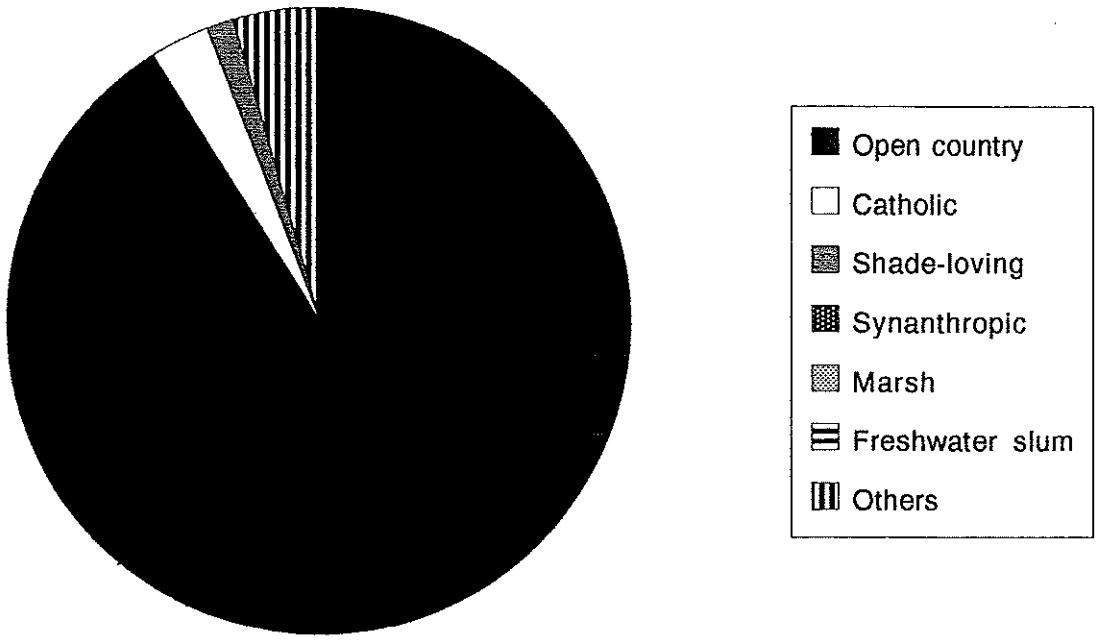


Figure 1

Worstead Street. Ct. 25. Buried soil (20-25cm). N=143.

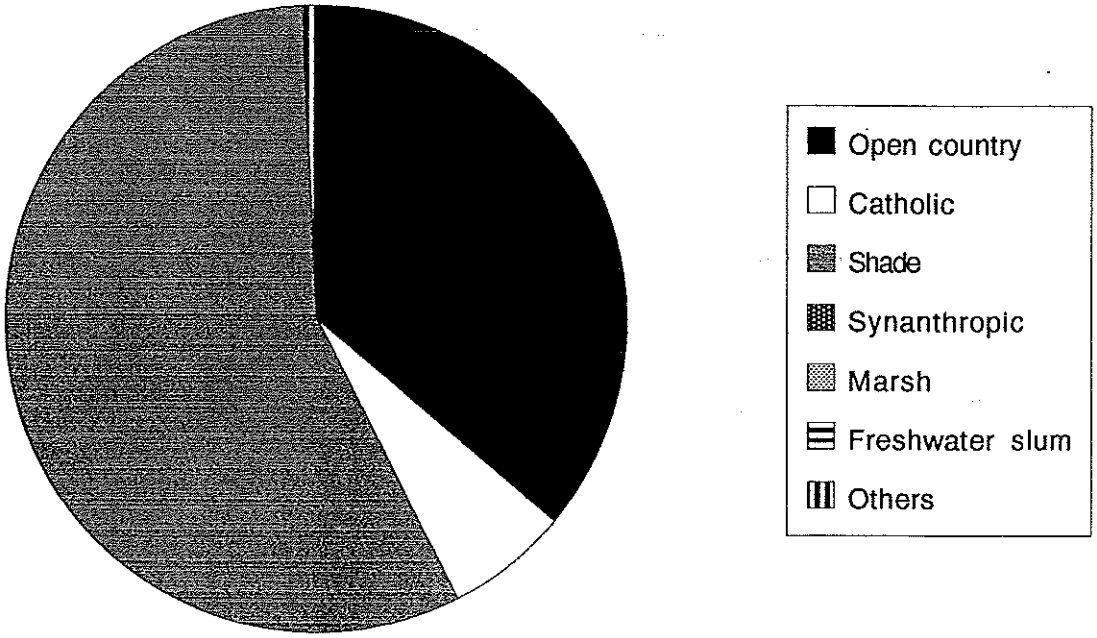


Figure 2

Devil's Dyke. Ct. 1. Modern soil under elder scrub. N=842.

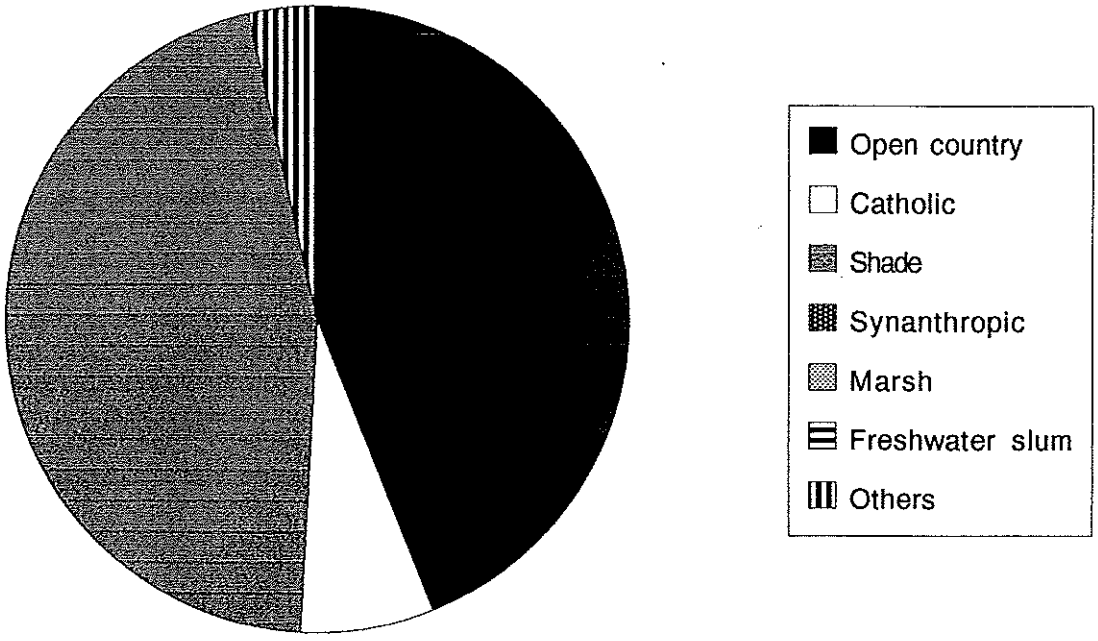


Figure 3

Fleam Dyke. Ct. 4. Buried soil (0-5cm). N=637.

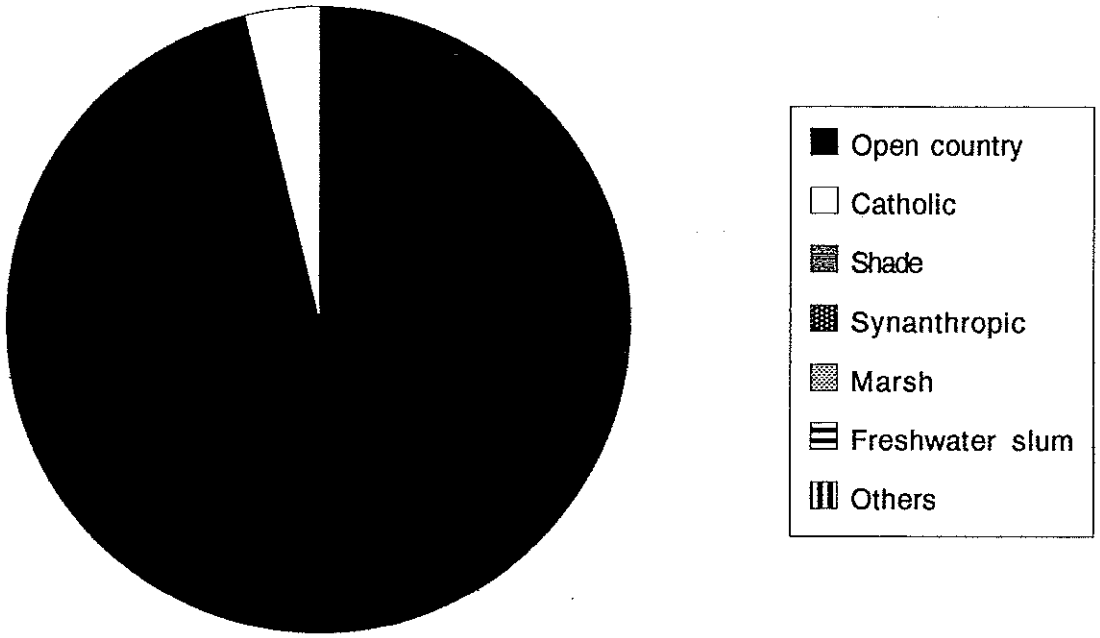


Figure 4

Bran Ditch. Ct. 36. Buried soil (0-5cm). N=628.

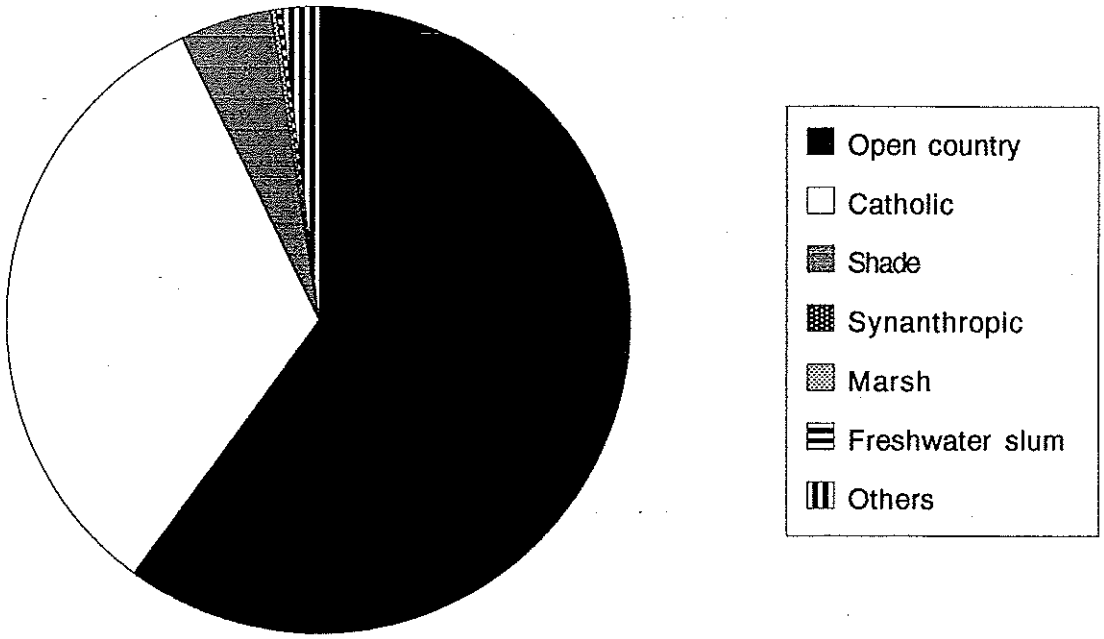


Figure 5

Bran Ditch. Ct. 36. Buried soil (30-35cm). N=791.

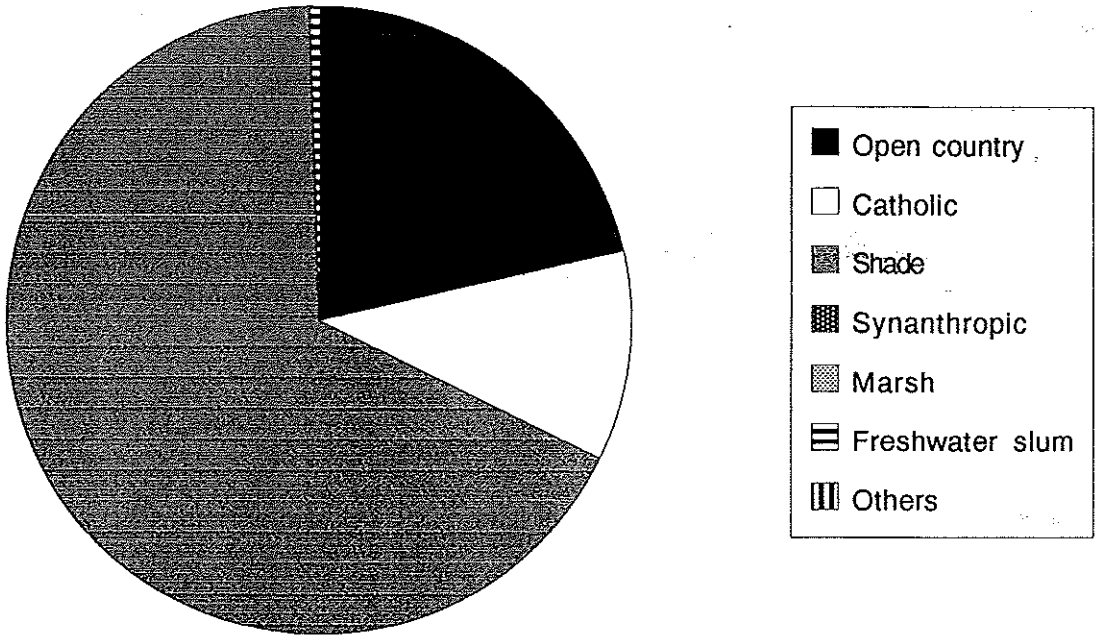


Figure 6

**Percentage composition of the open country component at top of buried soils.**
**Top: Worstead Street, Ct. 24, N=91. Middle: Fleam Dyke, Ct. 4, N=613.**
**Bottom: Bran Ditch, Ct. 36, N= 378.**

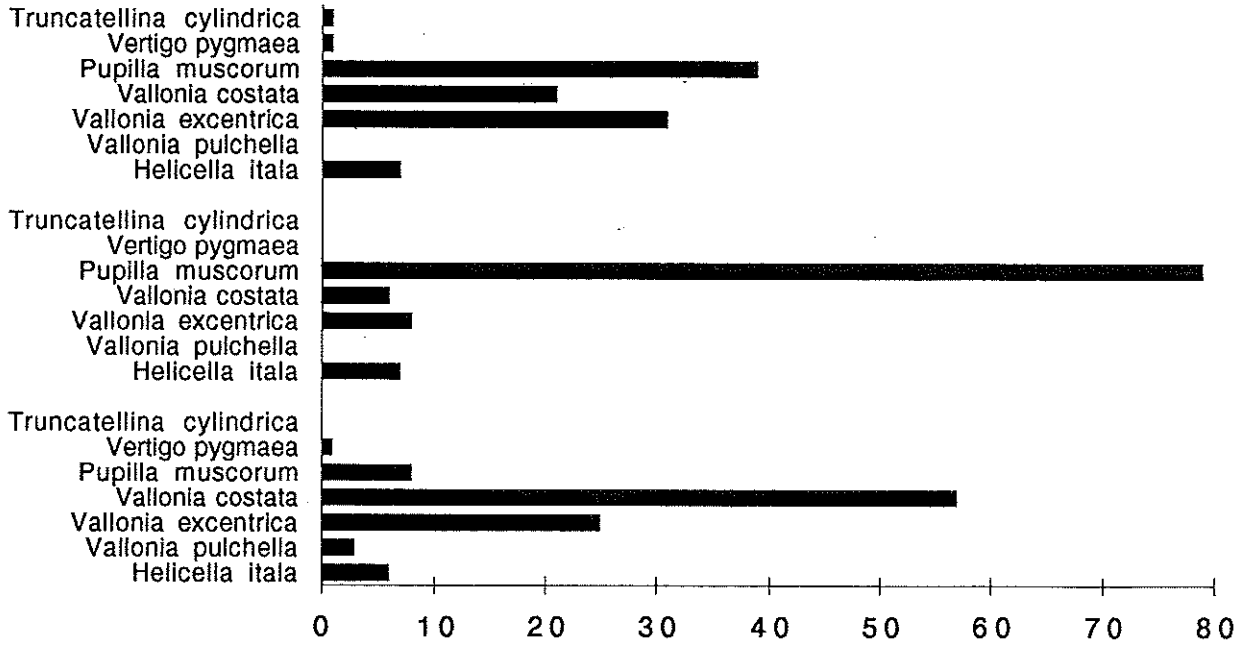


Figure 7

**Percentage composition of the shade mollusc component. Above: Worstead Street, Buried soil, 20-25cm. N=57. Below: Bran Ditch, Buried soil, 3C 35cm. N=531.**

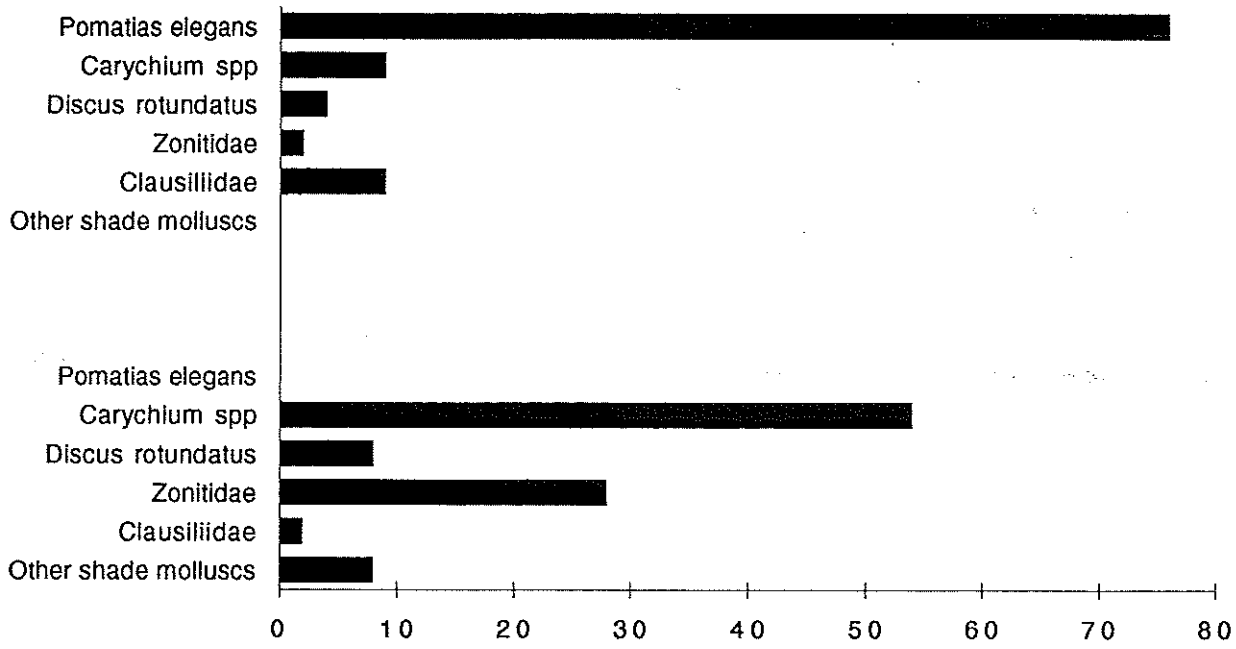


Figure 8

Table 1. Molluscs from Worstead Street Roman Road (FULMF 91)

| Context no. | 24 | 24 | 24 | 25 | 25 | 25 |
|---|---|---|---|---|---|---|
| Sample no. | 24.5 | 24.6 | 24.7 | 25.1 | 25.2 | 25.3 |
| Depth (cm) from top of 24 | 0 - 5 | 5 - 10 | 10 - 15 | 15 - 20 | 20 - 25 | 25 - 30 |
| **Open-country species** | | | | | | |
| Truncatellina cylindrica (Ferussac) | 2 | | | | | |
| Vertigo pygmaea (Draparnaud) | 7 | 10 | 4 | | | |
| Pupilla muscorum (Linne) | 346 | 550 | 167 | 6 | 22 | 7 |
| Vallonia costata (Muller) | 78 | 105 | 49 | 2 | 5 | 1 |
| Vallonia excentrica Sterki | 114 | 158 | 53 | 2 | 4 | |
| Vallonia spp (a) | 270 | 327 | 101 | 2 | 18 | 13 |
| Helicella itala (Linne) | 67 | 100 | 35 | 3 | 3 | |
| **Catholic species** | | | | | | |
| Cochlicopa spp | 26 | 53 | 19 | 1 | 2 | |
| Cepeaea/Arianta (b) | 2 | 4 | 1 | 1 | 7 | 5 |
| Limacidae | | 2 | | | | |
| **Shade-loving species** | | | | | | |
| Pomatias elegans (Muller) | 8 | 9 | 8 | 4 | 62 | 15 |
| Carychium tridentatum (Risso) | 1 | 3 | | | 7 | 3 |
| Punctum pygmaeum (Draparnaud) | 1 | 3 | 2 | | | |
| Discus rotundatus (Muller) | | x | | | 3 | x |
| Aegopinella sp (b) | | | | | 1 | |
| Zonitidae (b) | | | | | 1 | |
| Nesovitrea hammonis (Strom) | 1 | 2 | 1 | | | |
| Clausiliidae (b) | 2 | 4 | 1 | 1 | 7 | 1 |
| **Others** | | | | | | |
| Helicella/Trichia sp. | 43 | 47 | 16 | 1 | 1 | 5 |
| **Sample weight (kg)** | 1.8 | 2 | 1.6 | 2 | 2 | 2 |

Arionid granules also present. Shells generally poorly preserved.(a) Immature/small apical frags; (b) Badly abraded.

Table 2. Molluscs from the Devil's Dyke (SWPDD 91)

| Context no. | 1 | 2 | 18 |
|---|---|---|---|
| Sample no. | 1.1 | 2.2 | 18.1 |
| **Open country species** | | | |
| Vertigo pygmaea (Draparnaud) | 3 | | 2 |
| Pupilla muscorum (Linne) | 101 | 80 | 46 |
| Vallonia costata (Muller) | 69 | 7 | 9 |
| Vallonia excentrica Sterki | 19 | 18 | 24 |
| Vallonia spp (a) | 162 | 51 | 37 |
| Helicella itala (Linne) | 16 | 9 | 18 |
| **Catholic species** | | | |
| Cochlicopa spp | 37 | 2 | 4 |
| Trichia hispida group | 18 | 27 | 23 |
| Limacidae | 5 | 1 | 1 |
| **Shade-loving species** | | | |
| Pomatias elegans (Muller ) (d) | x | x | 1 |
| Carychium tridentatum (Risso) | 61 | | |
| Ena obscura (Draparnaud) | 4 | | |
| Punctum pygmaeum (Draparnaud) | 17 | 3 | 2 |
| Vitrina pellucida (Muller) | 109 | | 1 |
| Aegopinella spp (b) | 141 | | |
| Oxychilus sp | 4 | | |
| Zonitidae (a) | 25 | | 2 |
| Clausiliidae (c) | 1 | | |
| Trichia striolata (Pfeiffer) | 20 | | |
| **Synanthropic species** | | | |
| Helix aspersa Muller (d) | 1 | | |
| **Others** | | | |
| Trichia spp (a) | 17 | | |
| Cecilioides acicula (Muller) | 12 | 11 | 6 |
| Sample weight (kg) | 2 | 2 | 2 |

Arionid granules also present. (a) Small apical frags;(b) A. pura and A. nitidula present;(c) Abraded;(d) Non-apical frags.

Table 3. Molluscs from the Fleam Dyke (BALFD 91)

| Context no. | 4 | 4 | 4 | 47 | 22 | 61 | 62 | 64 |
|---|---|---|---|---|---|---|---|---|
| Sample no. | 11 | 11 | 11 | 13 | 14 | 16 | 18 | 19 |
| Depth (cm), where appropriate | 0 - 5 | 5 - 10 | 10 - 15 | | | | | |
| Context | Buried soil | | | Layers in the bank | | Layers in the first ditch cut | | |
| **Open country species** | | | | | | | | |
| Vertigo pygmaea (Draparnaud) | | | 1 | | | | 1 | |
| Pupilla muscorum (Linne) | 486 | 530 | 223 | 48 | 43 | 324 | 84 | 66 |
| Vallonia costata (Muller) | 17 | 57 | 18 | | 3 | 27 | 10 | 7 |
| Vallonia excentrica Sterki | 22 | 37 | 5 | 3 | 1 | 14 | 2 | 7 |
| Vallonia spp (a) | 46 | 86 | 16 | 6 | 5 | 41 | 26 | 18 |
| Helicella itala (Linne) | 42 | 49 | 19 | 8 | 3 | 97 | 31 | 9 |
| **Catholic species** | | | | | | | | |
| Cochlicopa spp | 21 | 27 | 4 | | 1 | 22 | 8 | 4 |
| Trichia hispida group | 3 | 13 | 2 | 2 | 3 | 37 | 7 | |
| Cepaea/Arianta (b) | | | | 1 | | | 1 | |
| Limacidae | | 1 | | | | | | |
| **Shade-loving species** | | | | | | | | |
| Pomatias elegans (Muller) (c) | x | 1 | x | x | x | x | x | 1 |
| Punctum pygmaeum (Draparnaud) | | | | 1 | | | | |
| Vitrina pellucida (Muller) | | | | | | | | |
| Aegopinella sp | | | | | | | | |
| Nesovitrea hammonis (Strom) | | 4 | | | | | | |
| Oxychilus sp | | | | | | | | |
| Zonitidae (a) | | | | | | | | |
| **Others** | | | | | | | | |
| Cecilioides acicula (Muller) | | | | | | | 2 | 1 |
| Indeterminate (b) | | | | 1 | | | | |
| **Sample weight (kg)** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

Arionid granules also present. (a) Small apical fragments/immature shells; (b) Abraded; (c) Mostly non-apical fragments

Table 3. Molluscs from the Fleam Dyke (BALFD 91)

| 6 | 43 | 43/44 | 45 | 71 | 50 |
|---|---|---|---|---|---|
| 22 | 23 | 25 | 27 | 28 | 30 |
| 75 - 95 | 95 - 105 | 115 - 125 | 175 - 185 | 225 - 235 | 265 - 275 |
| Layers | in | the | second | ditch | cut |
| 2 | 1 | | 2 | | |
| 20 | 15 | 122 | 92 | 223 | 29 |
| 6 | 1 | | 1 | 50 | |
| 3 | | | 2 | 15 | 1 |
| 6 | 5 | | 2 | 96 | |
| 1 | 3 | 4 | 9 | 30 | |
| | 1 | | | 18 | 2 |
| 106 | 71 | 93 | 11 | 109 | |
| | | | | | |
| 1 | | | | | |
| x | x | x | x | 1 | x |
| | | 1 | 3 | 6 | |
| | | | | 1 | |
| 2 | | | | | |
| | | | | | |
| 1 | | | | | |
| | | | | 4 | |
| 5 | 3 | 5 | 9 | 3 | |
| | | | | | |
| 2 | 2 | 2 | 2 | 2 | 2 |

Arionid granules also present. (a) Small apical fragments/immature shells; (b) Abraded; (c) Mostly non-apical fragments

Table 4. Molluscs from the Brent Ditch (PAMBD 92)

| Context no. | 101 | 105 | 110 | 127 |
|---|---|---|---|---|
| Sample no. | 3 | 9 | 13 | 17 |
| **Open-country species** | | | | |
| Truncatellina cylindrica (Ferussac) | | | | 2 |
| Pupilla muscorum (Linne) | 5 | 58 | 165 | 368 |
| Vallonia costata (Muller) | 2 | 4 | 4 | 69 |
| Vallonia excentrica Sterki | 6 | 16 | 77 | 27 |
| Vallonia spp (a) | 6 | 19 | 98 | 87 |
| Candidula intersecta (Poiret) | 1 | | | |
| Candidula gigaxii (Pfeiffer) | 2 | | 3 | |
| Candidula spp (a) | 5 | 1 | | |
| Helicella itala (Linne) | 8 | 16 | 38 | 152 |
| Helicella/Candidula spp (a) | 2 | | | |
| **Catholic species** | | | | |
| Cochlicopa spp | | 5 | 36 | 27 |
| Cepaea/Arianta (b) | | 1 | | 1 |
| Trichia hispida group | 1 | 2 | 90 | |
| Limacidae | 1 | 2 | 4 | |
| **Shade-loving species** | | | | |
| Pomatias elegans (Muller) | 1 | 2 | 3 | x |
| Punctum pygmaeum (Draparnaud) | | 1 | | 5 |
| Vitrina pellucida (Muller) | | | | 1 |
| Zonitidae (a) | 1 | | | |
| Clausiliidae (b) | | 1 | | |
| **Synanthropic** | | | | |
| Helix aspersa (Muller) | x | | | |
| **Freshwater** | | | | |
| Bithynia tentaculata (Linne) (c) | | 4 | | |
| **Others** | | | | |
| Cecilioides acicula (Muller) | 9 | 13 | | |
| Burnt non-apical fragments | | x | | |
| **Sample weight (kg)** | 2 | 2 | 2 | 2 |

Arionid granules also present. (a) Small apical frags (b) Abraded apices; (c) Opercula.

Table 5. Molluscs from the Bran Ditch (FOWBD 93)

| Context no. | 34 | 36 | 36 | 40 |
|---|---|---|---|---|
| Sample no. | 12 | 4 | 10 | 15 |
| Context type | IA ditch | Buried | soil | Bran Ditch |
| Open country species | | | | |
| Vertigo pygmaea (Draparnaud) | 2 | 3 | 4 | |
| Pupilla muscorum (Linne) | 63 | 30 | 8 | 5 |
| Vallonia pulchella (Muller) | 8 | 4 | 1 | 4 |
| Vallonia costata (Muller) | 29 | 89 | 54 | 21 |
| Vallonia excentrica Sterki | 18 | 39 | 7 | 6 |
| Vallonia spp (a) | 156 | 191 | 93 | 50 |
| Helicella itala Linne) | 5 | 22 | 4 | 3 |
| Catholic species | | | | |
| Cochlicopa spp | 31 | 8 | 26 | 33 |
| Trichia hispida group | 145 | 191 | 43 | 114 |
| Cepaea nemoralis (Linne) | 2 | | | |
| Cepaea/Arianta spp | | 4 | 10 | 10 |
| Limacidae | 6 | 3 | 6 | 11 |
| Shade-loving species | | | | |
| Pomatias elegans (Muller) | x | 1 | x | 1 |
| Carychium spp (b) | 65 | 9 | 286 | 54 |
| Vertigo pusilla Muller | | | 2 | |
| Acanthinula aculeata (Muller) | | | 32 | |
| Punctum pygmaeum (Draparnaud) | 13 | 4 | 10 | 1 |
| Discus rotundatus (Muller) | 3 | 1 | 42 | |
| Vitrina pellucida (Muller) | | 6 | | |
| Aegopinella spp | 2 | 3 | 36 | 5 |
| Vitrea spp | 3 | | 35 | 11 |
| Nesovitrea hammonis (Strom) | 6 | 1 | 26 | 5 |
| Oxychilus sp | | | | 1 |
| Zonitidae indet (a) | 7 | 3 | 49 | 3 |
| Euconulus fulvus (Muller) | | | 1 | 4 |
| Clausilia bidentata (Strom) | | | 11 | |
| Clausiliidae indet (a) | 3 | 2 | 1 | |
| Marsh species | | | | |
| Succineidae indet | | 1 | | 16 |
| Vertigo angustior Jeffreys | 3 | | 1 | |
| Freshwater 'slum' species | | | | |
| Lymnaea truncatula (Muller) | | 1 | 1 | 16 |
| Anisus cf leucostoma (Millet) | | | 2 | 9 |
| Freshwater species | | | | |
| Valvata cristata Muller | | | | 1 |
| Bithynia sp (opercula) | 1 | | | |
| Lymnaea cf peregra (Muller) | | | | 22 |
| Planorbis planorbis (Linne) | | | | 23 |
| Armiger crista (Linne) | | | | 1 |
| Sphaeriidae indet (juveniles) | 1 | | | 1 |
| Others | | | | |
| Vertigo sp | 1 | 1 | 2 | 4 |
| Cecilioides acicula (Muller) | | 7 | 1 | 14 |
| Unidentified (a) | 1 | 4 | | 2 |
| Sample weight (kg) | 1 | 1 | 1 | 1 |

Arionid granules present. (a) Immature/small apical frags; (b) Mainly C. tridentatum. C. minimum present.

Table 6: Charred cereals from the buried soil (36) at the Bran Ditch

| Context number | 36 | 36 |
|---|---|---|
| Sample number | 4 | 10 |
| Triticum sp (caryopses) | 2 | |
| Triticum sp. (glume base) | 1 | |
| Triticum sp. (spikelet base) | 1 | |
| Triticum spelta L. (glume base) | | 1 |
| Hordeum sp (caryopsis fragment) | 1 | |
| Sample wt (kg) | 1 | 1 |