

Ancient Monuments Laboratory  
Report 81/89

WATERLOGGED PLANT REMAINS FROM  
ANNETWELL STREET, CARLISLE,  
CUMBRIA.  
PART 1: SAMPLE DESCRIPTIONS.

Karen Goodwin

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Summary

This report consists of a sample by sample description  
of material examined from the Roman fort at Annetwell  
Street.

Analysis of the data is presented in AML Report 37/89.

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Waterlogged plant remains from Annetwell Street, Carlisle:  
Part 1: Sample descriptions

K. Goodwin

A word of preface:

I wish to set on record my thanks for all the loving care, support and encouragement I received during the lengthy and painful recovery from last year's serious accident. As I lay waiting for the Mountain Rescue team to arrive I distinctly recall thinking I might never finish Annetwell Street. I am glad I was wrong.

This report consists of a sample by sample description of material examined from the Annetwell Street site at Carlisle. Circumstances dictate that it is otherwise than I might wish, but I nevertheless hope that availability of my results to others working in the field of archaeobotany will prove useful.

Period pre-3

Sample 464 context 6205: pit (pre-fort)

This botanical assemblage is dominated by the presence of Wheat (*Triticum*) glume bases and waterlogged cereal caryopses. Seeds of weedy species eg. Knotweeds (*Polygonaceae*), Docks (*Rumex* spp.), Stitchworts (*Stellaria* spp.) and Goosefoots (*Chenopodiaceae*) are also well represented. Fragments of Bracken frond and flowers of Ling (*Calluna vulgaris*) were recorded.

Generally the assemblage is quite diverse in nature, with a spread of wayside and weedy species indicative of relatively disturbed soil conditions. In addition there is an interesting group of species which normally thrive under cultivation, ie. *Sonchus asper*, *Stellaria media*, *Torilis arvensis*, *Thlaspi arvense*, *Sonchus oleraceus* and *Cerastium fontanum*. Two other species are particularly associated with growth of cereal crops - *Papaver argemone* and *Spergula arvensis*.

Taking all this together what we may have here is a discarded fraction of a wheat crop, dumped in a pit which may have already existed on site, or which was excavated specifically for this purpose. High numbers of small grass seeds present may represent another weed component of the crop. The relatively wide range of species recorded, together with presence of Birch tree seeds (which are dispersed by wind blow) suggests that this pit was not filled-in immediately after use, but remained open for some time.

Low levels of *Trichuris* and *Ascaris* human parasite ova were recorded here, probably washed or blown into the open pit.

Sample 474 context 6205: pit (pre-fort)

This assemblage has much in common with 474 above including a very low count for *Ascaris* parasite ova. Common weeds of disturbed ground are present, but these are more or less ubiquitous to Roman Carlisle and form part of what is called the "background flora". Plants of damper habitat are more marked in this sample - the two Water Blinks (*Montia* spp.), Spike Rush (*Eleocharis* sp.), Gipsywort

(*Lycopus europaeus*), Lesser Spearwort (*Ranunculus flammula*), Meadowsweet (*Filipendula ulmaria*) and Red Rattle (*Pedicularis palustris*). The cereal component is less outstanding than in the preceding sample, and consists largely of stem and floret fragments - possibly "chaff" or crop discard. The suite of weeds of cultivation is again present, this time including Scentless Mayweed (*Tripleurospermum maritimum* ssp. *inodorum*), a classic annual of arable land. In addition to the cereal fragments other species of a feedstuff/economic nature are present, ie. Linseed (*Linum* cf. *usitatissimum/bienne*), Hazel nut shell (*Corylus avellana*) and flowers of Heather (*Calluna vulgaris*). Again it seems likely that this deposit represents discarded material. Admixture of a relatively wide range of plant seeds may indicate that the pit was not infilled directly following deposition of the contents. Alternatively it may also indicate that the material deposited was in some way "collected up" or "gathered together" from a wider area upon which the disparate floral elements had previously accumulated. In other words we could be looking at "sweepings", possibly from a grain storage area.

In both of these samples a particular suite of species is evident - Self Heal (*Prunella vulgaris*), the Buttercups (Ranunculaceae group), SpikeRush (*Eleocharis palustris*), Meadowsweet (*Filipendula vulgaris*) and Small Scabious (*Scabiosa columbaria*). First recognised from waterlogged Roman deposits at York this has been interpreted by investigators there as characterising the presence of hay/cut vegetation (Allan Hall, *pers comm*). From an archaeological standpoint such material may have been gathered for fodder and brought into Carlisle; or the seed components may have travelled to the site in the intestines of animals grazed elsewhere and perhaps stabled there at night. Either way, some of the material was later dumped and buried. Examination of these samples for the presence of cattle intestinal parasites would show whether faecal material was present.

#### Period 3

Sample 258 context 3521: post pit - gate

The assemblage from this sample is very restricted in nature, and is dominated by a very high count for Barren Strawberry seeds (*Potentilla sterilis*), seeds of Cross-leaved Heath (*Erica tetralix*), seeds and flowers of Heather (*Calluna vulgaris*). Presence of the latter gives rise to speculation that the gatepost upright was perhaps packed into position with turf/sod cut from nearby heather moorland. The Barren Strawberry seeds present an interesting question - were the soft "fruits" perhaps part of a small mammal cache?

#### Period 3 construction

Sample 443 context 5713: construction

In this sample both the weeds of cultivation, and the cereal component, are again strongly represented; the damp/wet ground element includes Bristle Scirpus (*Isolepis setaceus*), both Water Blinks (*Montia fontana* ssp.), Lesser Spearwort (*Ranunculus flammula*) and a high count for Ragged Robin (*Lychnis flos-cuculi*). Weeds of disturbed ground occur as elsewhere in Carlisle at this time; *Calluna vulgaris* flowers are prominent and seeds of *Erica tetralix* were recorded. This admixture of ecological elements, together with inclusion of several carbonised items strongly indicates that this material represents deliberate spreading (and hence mixing) of pre-

existing deposits, possibly in an attempt to level part of the site prior to construction, material making up a levelling deposit of this nature would be of mixed origin - the cereal element may have originated from grain spilled elsewhere or deliberately discarded as waste. It might also have arrived as a component of "sweepings" (as discussed above) which then became incorporated into the levelling deposit. Preponderance of damp ground species may reflect (as at Castle Street) the existence of locally prevalent wet ground conditions or may simply indicate transport from elsewhere to the site of deposition by either humans or natural agencies. Presence of Heather flowers does suggest (as with Bracken fronds) that such material was being utilised on the site at this time.

Sample 415 context 5458: root material

Although there is a fair admixture of other species present, this sample is numerically dominated by flowers and seeds of both Bell Heather (*Erica cinerea*) and Ling (*Calluna vulgaris*), small grasses and seeds of an undifferentiated *Potentilla* species (possibly *P. erecta* - Tormentil). The implication is that the material in question represent partly decayed turf material, which was gathered from a sward where Ling and Bell Heather formed important botanical constituents. Such material may have been used for roofing, it certainly was utilised by the Romans for walling and, as discussed above, was probably in use elsewhere on this site for a wide range of purposes.

Sample 406 context 5294: pit

A very rich seed assemblage, but lacking the quantities of food plant remains which characterise latrine pits on this site. A cereal element (primarily wheat) is present, and includes a small number of carbonised items. This apart, the dominant constituent comprises Ling (*Calluna vulgaris*), Sedge (*Carex* spp), Goosefoot (*Chenopodium* sp.) small and large seeded grasses, creeping-type Buttercup (*Ranunculus repens*-type) and Common Mouse-ear (*Cerastium fontanum*). Basically this appears to be a cut vegetation assemblage, with admixture of other ecological groupings known to be present at nearby Castle Street. This does not appear to be a latrine pit. The material contained in this sample is of cut vegetation type, primarily composed of grasses and sedge. Such material may have been used as floor strewings, the very small amounts of foodplant remains present having become incorporated during use. After use the strewn material would have been removed and disposed of. Perhaps we see here a pit which was in receipt of such material, but was not regularly used for disposal of food remains or faecal material.

Sample 441 context 5698: construction

This sample contains a small cereal component, weeds of cultivation are strongly represented, and species indicative of nutrient enrichment and trampling are present - Goosefoot (*Chenopodium* sp), Orache (*Atriplex* spp.), Great Plantain (*Plantago major*) and Silverweed (*Potentilla anserina*). The indications are of disturbed, trampled conditions where addition and mixing of a variety of botanical elements has taken place.

The damp ground element is particularly well marked, including gipsywort (*Lycopus europaeus*), Water Blinks (*Montia fontana* ssp. *chondrosperma*), Water Pepper (*Polygonum hydropiper*), Meadowsweet (*Filipendula ulmaria*), Bristle Scirpus (*Isolepis setaceus*), Alder

(*Alnus glutinosa*), Bog Myrtle (*Myrica gale*) and Red Rattle (*Pedicularis palustris*). The variety of this latter species suite suggests strongly that wet woodland and heath/moorland habitats existed in reasonable proximity to the Annetwell Street fort. The use of moorland turf containing two species of heather, and possibly derived from similar habitats, has already been discussed above.

#### Period 3/A CONSTRUCTION

Sample 401 context 5196: pit (below 397)

Relatively varied species list for this sample, but with no obviously dominant component. Cereals were present in the form of waterlogged caryopses and glume bases. Indeed their presence on this site was such as to suggest that incorporation into so many of the samples examined, was by virtue of the regular and widespread use of this commodity. Roman granaries have yet to be found in Carlisle, but it is apparent that grain (primarily wheat) was present at this site in relatively large quantities. Several species present in this sample are indicative of grassland pasture - Self Heal (*Prunella vulgaris*), Bulbous Buttercup (*Ranunculus bulbosus*), Creeping Buttercup (*Ranunculus repens*); of upland pasture - Lady's Mantle (*Alchemilla vulgaris*), and of basic/calcareous pasture conditions - Common Centaury (*Centaurea erythraea*) and Small Scabious (*Scabiosa columbaria*). Seeds from these species may have found their way on to site via natural agents of dispersal ie carriage by wind, water, animals) or through the activities of man. Their presence suggests that a relatively wide range of pasture conditions may have formed part of the hinterland resources accessible to Carlisle.

#### PERIOD 3/A

Sample 442 context 5714: floor

The botanical assemblage from this sample is of a restricted nature. Species present include the ubiquitous Docks (*Rumex* spp.) and Knotweeds (*Polygonum* sp.) and an interesting range of weeds of cultivation - Parsley Piert (*Aphanes arvensis*), Long Rough-headed Poppy (*Papaver argemone*), Corn Spurrey (*Spergula arvensis*) and Fumitory (*Fumaria* sp.). There is also a tentative record for Wild Parsnip (*Pastinaca sativa*), a plant of calcareous grassland. The paucity of seed material suggests either that the floor surface in question was kept clean, or that it was enclosed by a building of relatively sealed nature.

Sample 420 context 5592: drain

This assemblage is dominated by species representative of hay/cut vegetation, ie. Self Heal (*Prunella vulgaris*), Buttercup (*Ranunculus* sp.), Meadowsweet (*Filipendula ulmaria*), small-seeded grasses (Gramineae) and Small Scabious (*Scabiosa columbaria*). Legume flowers and seeds are also regarded by workers at York as being typical of such assemblages and they were recorded here. Sedge (*Carex* spp.) may also have been gathered as cut vegetation, perhaps for use as animal bedding or human floor-strewings.

What is interesting about this context is that it lacks the suite of food plant remains which elsewhere in both Roman and Medieval sites point toward the presence of human faecal material, and of domestic food remains. Here, we appear to have a drain, possibly serving an area adjacent to buildings used for storage of hay/cut vegetation, or perhaps for stalling of animals. Examination

for gut parasites would prove illuminating in this case. there is no evidence to suggest that this drain was functioning as a sewer.

Hayrattle (*Rhinanthus minor* agg.), Ox-eye Daisy (*Chrysanthemum leucanthemum*) and Purging Flax (*Linum catharticum*) all come from basic soils - it is possible that they arrived on site in the intestines of animals pastured over adjacent areas of this soil type.

Weeds of cultivation are quite well represented, as are cereals, but as indicated elsewhere, cereal caryopses and flower fragments occur in most samples examined from this site. Undoubtedly it is part of a cereal crop that is represented here.

The damp ground component is present as elsewhere, but here with two additions - Marsh Marigold (*Caltha palustris*) and Celery-leaved Crowfoot (*Ranunculus sceleratus*). The latter is a plant of pond edges and muddy ditches, and so might actually have grown in situ on the banks of this feature. It is more likely however, that the seeds were chance arrivals (carried in on human or animal feet) from adjacent marshy areas, possibly bordering pasture utilised by animals stalled on this site.

#### Sample 418 context 5534: pit

Quite a varied assemblage, with seeds of small Gramineae dominating, and having much in common with samples already described. Cut vegetation would appear to be present, and again there is a cereal element. Damp ground species are present in this sample as elsewhere, but also include Marsh Pennywort (*Hydrocotyle vulgaris*) and Skullcap (*Scutellaria galericulata*).

This sample contained an interesting group of botanical items - seed of Alder (*Alnus glutinosa*), Bog Myrtle (*Myrica gale*), Rowan (*Sorbus aucuparia*), and a cupule fragment of Oak. The Rowan seed was carbonised.

This pit does not appear to have functioned as a latrine; rather it was in receipt of cut vegetation, and judging by the range of species represented may have lain open for some time.

This sample also contained a very small number of *Ascaris* parasite ova. These may either have washed or blown into the pit whilst open and are not quantities sufficient to suggest use as a latrine.

#### Sample 440 context 5709: floor

The botanical assemblage for this sample is relatively small, and contains representatives from all the ecological groupings identified from previous work at Castle Street. There is no indication that this floor surface was used for either storage of plant stuffs or stalling of animals. Either the surface was kept clean, or material was not able to accumulate there. Preservation appeared to be good.

#### Sample 436 context 5705: pit

Large and varied assemblage, containing many elements common to other samples. Dominated by a very high count for Great Plantain (*Plantago major*), a plant of farmyards and cultivated ground. The cereal element is very strongly represented - the majority of this is Wheat, but there are also a number of single carbonised grains of other species ie Barley (*Hordeum* indet.), Oat (*Avena* und.) and also a single carbonised seed of Brome (*Bromus* sp.). Presence of other food-type plants is apparently lacking, apart from one pip of Grape (*Vitis vinifera*).

Weeds of cultivation and grassland species are again prominent, but this may merely reflect proximity of such habitats to the site. Sepals and a thorn from an indeterminate species of Rose could well belong to the Dog Rose (*Rosa canina*) which would be common in surrounding hedgerows.

In conclusion, there is no strong evidence to suggest that this pit was in receipt of faecal matter, ie that it was a latrine. Some food material does appear to be present, primarily cereal caryopses and glume bases, several carbonised grains and a single Grape pip. In view of the varied nature of the assemblage it seems likely that either material was deposited here from a wide range of sources, or that the pit was open to agents of natural deposition, ie windblow etc.

The variety of weeds of cultivation may indicate that arable agriculture was well established in the vicinity and the very high value for *Plantago major* may reflect nutrient-rich, trampled conditions in the general locale.

Traces of the human Whipworm, *Trichuris*, were present, but only at levels suggestive of background nature. More interesting was the record for a single ovum of *Oxyuris equi*, a gut parasite of horses. Such eggs are produced in very small numbers, and distributed by rubbing of the animal's rectal/anal area against walls, fenceposts etc. (pers. comm. Andrew Jones). Presence of this may suggest that the varied assemblage and strong grassland element described above constitute a grazing assemblage, deposited in the form of faecal matter. This context may therefore include material which was "mucked out" of horse stalling/stabling, and disposed of in the pit structure.

Sample 447 context 5457: floor

Fairly large and varied seed assemblage, but with no outstanding features. This surface was far from clean. Cut vegetation was present. There is no evidence to suggest that the building was used for grain storage. Examination of results from parasite studies would be helpful here.

Sample 445 context 5759: pit

Chief components of this assemblage are the nitrophilous Goosefoots (*Chenopodium* spp) and Oraches (*Atriplex* spp), together with small Gramineae, weeds of cultivation and the ubiquitous Water Blinks (*Montia fontana* ssp *chondrosperma*). The presence of cut vegetation in this feature seems to be indicated yet again. A small number of cereal caryopses and glume bases were recorded, but evidence of other possible food plants was lacking.

A small number of *Trichuris* parasite ova were present, but not in quantities sufficient to warrant interpretation as a latrine.

Sample 438 context 5658: peaty layer - subsidence

An assemblage having much in common with those previously described. Nitrophiles are well represented as are weeds of disturbed ground, perhaps reflecting conditions in the general vicinity. Weeds of cultivation are again prominent. Cereals were recorded but at relatively low levels. Cut vegetation obviously formed an important component of this deposit, with admixture of Bracken frond, Heather shoots and flowers, and occasional Coriander (*Coriandrum sativum*) and Hazel nut fragments. The peaty layer appears to consist of matted graminaceous material, and a turf containing Heather.



Minute traces of human Whipworm ova were found in this sample but no sufficient to indicate presence of faecal material. Two ova of *Oxyuris equi*, a gut parasite specific to horses, were recorded. Presence of horse droppings is indicated, and may suggest that the matted Gramineous material and cut vegetation component noted above formed part of a stable floor deposit. It is likely that the material was being utilised as bedding, with possible admixture of a fodder element. We appear to have here a spread of compressed stable floor deposits, with admixture of a range of elements.

#### Period 3A/1

Sample 435 context 5660: drain silt

This sample contained relatively low numbers of seeds of varied origin. Flowers of Ling were the most outstanding component. This apart, the species present represented a random cross-section of these recorded from other samples. Either the drain was cleaned out regularly or kept covered during its period of use. Nothing more can be added.

Sample 434 context 5660: drain backfill - Intervallum Street (from drain above)

Higher seed counts than for 435 above. Species composition is representative of that elsewhere, with the exception of relatively higher counts for frond fragments of Bracken, twigs and flowers of Ling, and flowers of Bell Heather. The higher species diversity is probably explained by incorporation of vegetation and seed material from other parts of the site during the process of backfilling. Bracken frond fragments may have been used on this site for animal bedding, as was the case at Castle Street. The two Heathers may have been present here in the form of turf, or were perhaps being used on this site in some other form.

Sample 451 context 5835: gulley - street area

This sample contains a rich and varied seed flora. Outstanding in this is the presence of a series of food and food related species - Corncockle (*Agrostemma githago* occurring as a contaminant of cropped grain), Coriander (a pot herb), Fig (*Ficus carica*, a luxury food probably imported although it will set fruit in this country), Bilberry (*Vaccinium myrtillus*, a plant of moorland habit and no doubt gathered locally), Opium Poppy (*Papaver somniferum*, seeds still used as decorative dressing for bread loaves), Wild Celery (*Apium graveolens*, probably used as a pot herb), Blackberry (*Rubus fruticosus*, gathered locally), Roman Coriander (*Nigella sativa*, native to Syria and apparently highly esteemed by the Romans as a pot herb). This is the first record of this species from Carlisle.

The suite of species listed has been found elsewhere associated with latrine deposits, so it would seem that the gulley was in receipt of domestic food waste and human faecal matter, and functioned as a sewer. Examination of parasite ova would be helpful here.

The wide range of species represented suggests that this gulley was open - seed and other vegetative material (including the pappus tufts of "seed parachutes" of Compositae) being blown and washed in by the agents of natural transport.

Sample 462 context 6184.3: drain fill

A large and relatively diverse seed assemblage dominated by species of hay/cut vegetation and grassland components. Cereal caryopses and fragments of wheat glume bases were present, but not outstanding. flowers of Ling were present in quantity. Remains of human food plants (other than cereal) were lacking, and the 'latrine suite' was not present.

From the phase plans this drain appears to be internal to a structure. Whilst it is possible that cut vegetation was stored in the vicinity of the drain and seeds from this found their way into the fill, there is also another important possibility. the deposit in this gully could represent an accumulation of faecal matter washed into it from adjacent animal byres, stalls or stables, the species recorded being compatible with grazing over damp meadow and grassland habitats. Presence of unusual items such as seed of Wood Anemone (*Anemone nemorosa*) and thorns from Roses may have been taken during browsing along hedgerows and woodland margins. Certainly well-preserved legume flowers have been reported from undisputed horse dung deposits at Lancaster (Wilson, D.G. 1979), and were recorded here. Cereal present may either have constituted feed material, or become incorporated into the deposit from elsewhere.

Examination for the presence of parasite ova would be helpful here.

Sample 459 context 6115: soil over 6266

An extremely rich and varied seed assemblage with the grassland and hay/cut vegetation component again the most prominent factor. Cereal is present in the form of waterlogged caryopses and glume bases of wheat, but this apart there is no human food element present. Ling and Bell Heather were both recorded. There were no parasite ova detected in this context. We have here a deposit attesting to the presence of species-rich cut vegetation, perhaps for use as animal fodder. Lack of prominence of nitrophilous species suggests that undue nutrient enrichment (as with the presence of faecal matter and urine) was not the case here; neither is there evidence to suggest a period of dereliction and decay. As discussed elsewhere presence of two heather species may indicate storage and/or use of cut heather, and heather turves, in the vicinity.

Sample 384 context 5093: drain

Average sized and relatively varied seed assemblage. Cereal caryopses and glume bases were present here, and also two of the species found elsewhere associated with latrine and cess deposits, ie Corncockle and Coriander. Eggs of the human parasite *Trichuris* were found in this deposit, but at a relatively low level.

This drain was in receipt of faecal material, probably human, but not on a regular basis, it does not appear to have functioned as a sewer.

#### Period 3A/2

Sample 352 context 4670: silt

The assemblage from this sample contains a spread of species types which have much in common with others described above. It is differentiated from them however, by presence of a range of carbonised cereal grains and glume bases. It seems likely that this

'silt' deposit is in fact part of the rake-out from ovens which were situated in the near vicinity. It is not possible to say whether the material was deliberately spread (perhaps to fulfill a levelling function), or merely discarded.

Sample 362 context 4859: drain - Intervallum road

This assemblage is dominated by the presence of cereal caryopses, and glume bases of *Cerealia*/large Gramineae. In addition to elements which it shares in common with other samples from this site, it contains a suite of food and food-related species - Corncockle, *Brassica* sp., Coriander, Bilberry and Opium Poppy. This assemblage is commonly associated with latrine deposits, and suggests that this drain was in receipt certainly of food debris and possibly of human faecal material. Examination of gut parasites would be useful here.

Incorporation into the deposit of the seeds of Alder (*Ainus glutinosa*) tree buds and bud scales, and a *Prunus* leaf suggests the drain may have been uncovered, at least for part of its length.

Sample 449 context 5802: pit

The most striking feature of this sample is the occurrence of species elsewhere associated with latrine/cess deposits. It is worth listing these in full, as they turn up time and time again on this site:

*Triticum* glume bases  
*Cerealia* indet (caryopses)  
Corncockle  
Coriander  
Hazelnut  
Fig  
Opium poppy  
Blackberry  
Bilberry  
Wild celery  
Apple-pear  
Roman coriander  
Black nightshade (*Solanum nigrum*)

The presence of very high counts for eggs of both human intestinal parasites, *Trichuris* and *Ascaris*, confirm that this feature was a latrine pit containing human excrement.

Corncockle was a heavy contaminant of the wheat grain consumed on this site; Coriander, Wild Celery and Roman Coriander were used as food flavourings, Opium Poppy as a bread garnish; Figs were an imported luxury, and as such unlikely to have formed part of a common soldiers ration. Blackberry and Bilberry would have been gathered locally as food supplements, as also would Apple and Pear fruit. Species of *Calamintha* and Black Nightshade have medicinal properties and may have been utilised for these.

Sample 375 context 5035: area of nutshells in charcoal

Fairly large and diverse seed assemblage, dominated by fragments of Hazelnut shell. There was strong evidence for presence of a cut vegetation component, and the usual Carlisle background assemblage was evident. Most noteworthy was a single carbonised grain of Rye (*Secale cereale*) which has been previously recorded from Castle Street, Carlisle.

As the hazelnuts were fragmented, a small mammal horde is not indicated. Presence of cereal, Coriander and Bilberry may suggest material of faecal origin, but indicators for this are not strong. Examination for parasite ova would be helpful. Fragments of fibrous felted material found in this sample may have formed part of a container in which the nuts had been placed.

Sample 398 context 5142: soil

This assemblage differs from others described above. It is distinguished by very high counts for Corncockle, small Gramineae, Wheat glume bases and cereal caryopses (by inference probably also Wheat), Sedge (*Carex* sp.), Rush (*Juncus* sp), Lesser Stitchwort (*Stellaria gramineae*) and flowers, pod fragments and seed of a small (<4mm) legume. Human food items, in the form of Coriander and Blackberry, are present but at very low levels. What we have here is a mixture of grassland, damp pasture and grain, plus legume. This is strongly suggestive of components of horsefeed and grazing. Context 5142 may consist of accumulated stable refuse containing horse droppings.

Examination for parasite ova would be extremely helpful.

Sample 456 context 6056: drain - Intervallum St.

Setting aside the background spectrum there is a very strong cut vegetation component. Cereals are moderately represented and 'human food' items are present at low levels. There is nothing to indicate excessive enrichment or nitrification, ie no rank growths of Nettle (*Urtica dioica*), Goosefoot or Fathen/Orache. There are some interesting species of waste ground present - Flixweed (*Descurainia sophia*), Shepherd's Purse (*Capsella bursa-pastoris*) and Hairy Bitter Cress (*Cardamine hirsuta*).

The indications are of a relatively clean area with no accumulation of rotting matter. There are very strong pointers towards the presence of hay/cut vegetation in the vicinity - horse fodder perhaps. Casual 'food' waste and/or occasional human faecal matter found its way into the drain, but not on a regular basis. This feature does not appear to have served as a sewer.

Sample 398 context 5142: soil

This assemblage is dominated by cereal caryopses and Wheat glume bases, Corncockle (probably as a contaminant of the former), Sedge, small Gramineae and flowers, pods and seeds of a small legume.

This context may represent spillage of grain intended for human consumption, or of animal feedstuff. It may also represent the defecated remains of cut vegetation and grain-feed mixed. Presence of seeds, pods and flowers of the legume may point toward the latter interpretation, ie that these are stable deposits containing the remnants of grain feed, Gramineaceous fodder and grazing over grassland and damp pasture habitats.

Analysis for the presence of parasite ova would be very helpful here.

Sample 397 context 5174: 3A/2/pit pre-fort above 401 (Phasing unclear)

This sample is very similar to those from context 6205 above (both pre-fort pits). The most marked feature is presence of cereal caryopses, bran fragments, wheat glume bases and small Gramineae. Corncockle is present. Water Blinks is well represented. Heather

flowers and shoots and fronds of Bracken were recorded. Other food/human use species present were Coriander, Hazelnut, Flax (*Linum usitatissimum*) and Dill (*Anethum graveolens*). However, there were no parasite ova in this deposit, so it does not represent the contents of a latrine pit. Rather it seems that discarded animal fodder and bedding were buried, and the pit left open for a period during which seeds from plants growing in the vicinity (and occasional carbonised items) were either blown or washed in.

Relatively low levels of nitrophilous species suggest that accumulations of foul matter and urine were not present at this time.

Sample 396 context 5174: levelling subsidence.

This assemblage is dominated by cereal caryopses and glume bases, Corncockle and small Gramineae. The cut vegetation component is again very marked, and there are minute traces of human food elements (probably here only part of the 'background' range). Weeds of cultivation are present including Scentless Mayweed and Sea Arrow-grass (*Triglochin maritima*). The latter is a new record for the site, and grows normally as part of the saltmarsh sward. A small number of records exist from other Roman sites, its presence having been ascribed to the practice of pasturing grazing animals on saltmarsh grassland. Seeds are then subsequently transported to the site of deposition inside the animal gut. Interestingly, parasite studies yielded no ova from this context.

Sample 387 context 5094: floor

This assemblage is relatively small with a restricted number of species. Dominant among these are small Gramineae, Corncockle (but not this time accompanied by grain), pod fragments of legume and another record for Sea Arrow-grass. There is nothing here to indicate the presence of faecal material - examination for parasite remains would be useful. Perhaps cut-grass material was stored here.

Sample 359 context 4912: pit fill

This context was found to contain spicules of sponge.

Compared with other contexts of this type the assemblage is rather restricted. Numerically prominent are seeds of small Gramineae, Hazelnut fragments, lenticular Sedge and Stinging Nettle.

Sponge spicules have previously been found associated with Roman cess and latrine deposits - they arise from the documented practice of using a wet sponge to fulfill the role of present-day toilet tissue. Coriander is present at a very low level along with Corncockle, hazelnut fragments, and a very small number of Wheat glume bases. The usual rich 'latrine suite' is absent. Presence of the nitrophilous Stinging Nettle suggests localised nitrogen accumulation, possibly due to accumulation of urine or faecal material. At present other evidence to support this is lacking. Examination for the presence of parasite ova would be most instructive.

Sample 450 context 5812: drain silt

The most prominent element in this assemblage is seeds of small Gramineae - presence of hay/cut vegetation is strongly indicated. Legume flowers were present, but large quantities of cereal were not. Alder tree seed, seed and catkin scales of Birch (wind dispersed) are in agreement with an open setting. A preponderance of wet ground species including Water Crowfoot, may indicate that wet ground

conditions prevailed in the area. Indeed, this may be the reason for existence of so many drains on the site. Again we may be looking at fodder storage in the vicinity of this feature. Parasite remains were not found, suggesting that faecal matter was absent from this context.

Sample 448 context 5802: pit

Another context over shadowed by counts for small gramineae and strongly suggestive of the presence of hay/cut vegetation. Cereal counts were restricted to a few carbonised items, and there were very few potherb or food plants present. Traces of *Trichuris* were found to be present, however, suggesting that some human excrement had entered the pit. Egg levels were not sufficiently high to warrant classifying the feature as a latrine, and it also lacked the usual accompanying suite of food plants, pot herbs and soft fruit pips. Goosefoots were strongly represented indicating a degree of soil nutrient enrichment in the vicinity of the feature.

This feature appears to have been in receipt of primarily graminaceous/cut vegetation material, with domestic-type refuse (carbonised cereals, small amounts of non-carbonised cereal, nutshell fragments and fig pips) and human faecal material contributing relatively little. The feature does not appear to have been a latrine or cess pit.

Sample 454 context 5943: gulley

This assemblage is dominated by very high values for Goosefoot, Corncockle, cereal caryopses and Wheat glume bases. Primarily the deposit suggests existence of a grain crop with attendant weeds of cultivation. Strong presence of the *Chenopodiaceae*, *Polygonaceae* and Stinging Nettle suggests existence of relatively disturbed nutrient-enriched conditions in the vicinity. Excluding grain, domestic and food plants are restricted in occurrence, comprising Bilberry, Coriander, Hazelnut shell fragments and Fig. A very small number of eggs of the human Whipworm were recorded, but these could have been blown or washed in from elsewhere and need not indicate presence of faecal matter. This was not a sewer.

### Period 3B

Sample 410 context 5421: gulley fill

Assemblage dominated by seed of small Gramineae. No marked evidence of disturbance or localised nutrient enrichment. Only a moderate level of presence of cereal caryopses and Wheat glume bases. Weeds of cultivation well marked, although this may merely reflect prevalence of the activity in the surrounding area. From the phase drawing the feature appears to be close-ended, being more of a soak-away than an actual drain. If this were the case, and soil conditions were periodically damp, then some of the wetter ground elements may have flourished there. Remains of food/spice plants were extremely sparse. No parasite ova were found in this sample.

The structure does not appear to have been in receipt of faecal material, either animal or human.

Sample 423 context 5598: pit

A typical "latrine assemblage" - wheat glume bases, cereal caryopses (Wheat by inference), Corncockle, Coriander, Fig, Bilberry, Wild Celery, Dill, Opium Poppy and Water Cress (*Rorippa nasturtium-aquaticum*), Henbane (*Hyoscyamus niger*), Black Nightshade, Flax.

Of the latter four species Flax may have been grown locally as a source of fibre from which to weave fabric; whilst Henbane and Black Nightshade have medicinal properties. Watercress could have been gathered from local streams.

A small number of carbonised cereal grains were recorded, including a single grain of Rye.

Very high levels of both human gut parasites, *Trichuris* and *Ascaris* were found, confirming beyond doubt that this pit functioned as a latrine.

Seeds of small gramineae were quite strongly represented and may indicate that cut graminaceous material was perhaps spread at intervals over the contents of the latrine.

Sample 422 context 5598: pit

A very rich assemblage characterised by the latrine suite of species - Corncockle, Coriander, Fig, Blackberry, Bilberry, Wheat glume bases and cereal caryopses, Dill, Wild Celery, Opium Poppy and Apple/Pear. Also present were Roman Coriander, *Brassica* sp(p) (members of the Cabbage family) which may have been used as food sources, although not usually utilised in the seed-bearing state; a single mineralised pip of Grape and Millet. The latter is another new record for Carlisle, and has been recorded only from very few other Roman sites in Northern Europe. Two other interesting species from this sample are Marsh Arrow-grass (as the name implies a plant of marshland, growing amongst tall grass) and a large number of seeds tentatively identified as Gold of Pleasure (*Camelina sativa*). This latter is known from Roman sites in Europe, but not, as far as I am aware, in Britain. In the past it was cultivated for its oil-yielding seeds, and also grew as a weed in Flax crops. Interestingly Flax is present in this sample too, and also occurs in others from Annetwell Street. However, occurrence is only ever in twos or threes whilst the *Camelina* was present at a much higher level. This appears to suggest that rather than a weed and contaminant of Flax, Gold of Pleasure was here being used in its own right, possibly as a source of oil.

The presence of very high values of parasite ova of both Whipworm and Mawworm confirm the presence of human excrement in this context. The feature was a latrine/cess pit.

Sample 312 context 4248: occupation

Moderately sized and varied seed assemblage, dominated by small Gramineae, sedge and partly carbonised immature Barley grain (*Hordeum vulgare*). It is the first time that Barley has been recorded from Annetwell Street Specialist Samples in any quantity. Waterlogged chaff fragments were also present. Other domestic use and food plants were represented at low levels only - Coriander, Hazelnut, Flax, Wild Celery and Opium Poppy. *Triticum* glume bases were present but caryopses were not. The usual background spread of disturbed ground, cultivated, weed, and damp ground species was present.

Cut sedge and grass material may have been in use as floor covering, but since evidence of these occurs in other context types

this can only be a suggestion. What is clear is that some form of process involving Barley was associated with this context.

Sample 292 context 3921: drain - road

A relatively diverse seed assemblage dominated by the presence of small Gramineae and species of *Carex* (lenticular seeded). Weeds of cultivation and species of damp/wet ground are present, but at very low levels; cereals are present at a reduced level. Most of the food-type species are present - Coriander, Hazelnut, Fig, Wild Celery, Dill and Opium Poppy, but again at very low levels. Examination for gut parasite ova showed the presence of small numbers of Whipworm. these may have been washed or blown in from elsewhere. Bearing in mind the traces of food plants present however, it is possible that human faecal matter did enter this context on an occasional basis. This drain did not function as a sewer. The over-riding element in this assemblage is the implied presence of hay/cut vegetation material in the vicinity. Another single seed of Saltmarsh Arrow grass was also recorded.

#### PERIOD 3C/1

Sample 302 context 1759: bonfire demolition

A very small and restricted seed assemblage dominated by the presence of small Gramineae, in both waterlogged and carbonised form. Also present were shoots of Ling and seeds of Flax. Burning activity is supported by the presence of several carbonised items. The relative paucity of the assemblage suggests that the site did not lie abandoned and derelict for any length of time.

#### PERIOD 3C/2

Sample 277 context 3800: soil - post demolition silt

A relatively varied assemblage dominated by small seeded Gramineae, weeds of disturbed and nutrient-enriched ground, and traces of food/medicinal species. No parasite eggs were found. The list from this context is what one might expect where a previously disturbed site is undergoing vegetative re-colonisation.

#### PERIOD 3C/2:4A

Sample 272 context 3745: dump

This assemblage is dominated by species indicative of waste ground, disturbance and nutrient enrichment. There is a strong grassland element. The total assemblage is relatively small and restricted. Nothing more can be added.

#### PERIOD 4

Sample 288 context 3869: pit

Seed assemblages from pit contexts are often extremely rich and varied; this one is not particularly so. For the most part it is dominated by small Gramineae, and by Long Prickly-headed Poppy (a weed of light soils), with a low level presence of species



characteristic of cut vegetation, and a small number of carbonised cereal grains. Small Nettle is well represented and indicative of disturbed nutrient-enriched conditions. Egg shell fragments and membrane were recorded, but the usual rich suite of food species was lacking. No parasites were found. Indications are that this deposit may have accumulated after the feature had gone out of use.

#### PERIOD 5

##### Sample 208 context 2452: pit fill

This assemblage is distinguished by a relatively high count for Corncockle, the presence of the cut vegetation suite, and a range of carbonised cereal grains. Strong representation of other food and human-use species is markedly absent. No gut parasites were present.

This feature does not appear to have been in receipt of faecal material, and was not a latrine pit. It may have been used for disposal of domestic rubbish but, carbonised grains apart, this does not seem to have contained much in the way of food items.

##### Sample 233 context 2770: occupation

Botanical material from this samples was in a poor state of preservation. The only outstanding feature was the presence of both Stinging and Small Nettles which may indicate conditions of abandonment and dereliction. No further interpretation can be offered. Gut parasites were not present.

##### Sample 207 context 2451: pit fill

This assemblage is dominated by species of cut vegetation and grassland associations. Food/domestic use species are very poorly represented. there were no parasite ova present.

This feature does not appear to have contained cess material. Indications are of the presence of cut vegetation/hay, possibly disposed of by burial.

##### Sample 235 context 2788: burning/silt

This assemblage is dominated by a very large number of hazelnut shell fragments. In addition it includes wheat glume bases and seeds of small Gramineae. These latter are widespread in other contexts from Annetwell Street, and so do not aid interpretation here. The remainder of the list comprises a cross-section of the various ecological groups identified elsewhere in Carlisle. No parasite eggs were detected, so it is unlikely that the cluster of hazelnut fragments represents a localised deposit of faecal matter. Fragments of a fibrous nature were recorded, and these may have formed part of a container originally enclosing the nuts. There were very few carbonised items present.

##### Sample 150 context 1958: surface?

This sample yielded three items only, one carbonised. No interpretation can be offered.

##### Sample 241 context 2912: pit

A relatively small and restricted assemblage, dominated by Corncockle, shell fragments of Hazelnut, Wheat glume bases and cereal caryopses. The species-rich suite of foodplants encountered in other

pit contexts from Carlisle is lacking here. Eggshell membrane was recorded; there were no parasite ova present.

There is no evidence to suggest that this feature functioned as a latrine pit, and the range of domestic refuse items present is very limited.

Sample 240 context 2912: pit

This assemblage is dominated by the presence of Corncockle, Wheat glume bases, cereal caryopses and small Gramineae. Of the other food-type species the following were recorded - Hazelnut shell fragments, Coriander, Fig and Dill, but only at very low levels. The cut vegetation component is present. Eggshell membrane was recorded.

*Ascaris* (Maw worm) parasite ova were present at a relatively low level. Lacking as it does the quantity and variety of food plant remains elsewhere associated with cess deposits, it seems likely that this feature was not in receipt of human faecal material on a regular basis.

#### PERIOD 5A/1

Sample 252 context 3239: pit

This assemblage is dominated by components of the cut vegetation element. Cereal remains are not markedly present, and food plant items are scarcely represented.

There were no parasite remains.

No obvious function can be ascribed to this feature.

Sample 247 context 3111: drain fill N/S road

This assemblage comprised a wide range of species, but all present at very low levels. Each of the major vegetation components recognised at Carlisle was represented. There was no concentration of latrine suite species. Parasite remains were not present, suggesting that the drain did not receive faecal matter, ie it did not function as a sewer.

#### PERIOD 5A/1:2

Sample 257 context 2203: drain fill - E/W road

This assemblage is of mixed origin - it contains cereal remains together with Corncockle and also flowers of Ling. Species indicative of disturbed conditions are well represented. The latrine suite is absent, and there are no botanical indicators of nutrient enriched soil conditions. Tree buds may have fallen or been blown into this external feature. Several wet ground species may have been growing on muddy sediments within the drain - Spike Rush, Bristle Scirpus, Lesser Spearwort, Water Crowfoot and Water Pepper.

Sample 256 context 3247: drain fill - E/W road

This assemblage is moderately sized and diverse. It is dominated by a cut vegetation element. Species indicative of disturbed ground conditions were recorded and there was evidence of the presence of a cereal crop in the vicinity with attendant weeds of cultivation. Remains of food-type plants (cereal apart) are lacking. A small number of whipworm eggs was found in this sample. These could

have either blown or washed in from elsewhere, and need not indicate the presence of faecal matter in this feature.

Sample 254 context 3240: drain fill - E/W road

A fairly rich and varied assemblage, with strong indications of disturbed ground conditions and local nutrient enrichment. Seeds of small Gramineae are the dominant feature, perhaps representing the major constituent of a gathered/cut vegetation element. The presence of this in other contexts has already been remarked upon. There is a small cereal element present. Items likely to have been either washed or blown into this feature include seed of Birch, a Birch catkin scale and a number of buds. Food species (other than cereals) are not represented in this context. No parasite remains were found.

Sample 226 context 2547: silt edge of E/W road

Relatively large and diverse seed assemblage. Corncockle is prominent and glume bases of wheat are present. Shell fragments of Hazelnut, Coriander and Dill represent the foodplant suite here. This sample has no outstanding features, but it does contain an interesting new addition to the flora of Roman Carlisle - Harebell (*Campanula rotundifolia*). This plant would have been common in adjacent dry, grassy places.

#### PERIOD 5A/2

Sample 219 context 2569: silt - occupation?

This assemblage contains several possible indicators of occupation activity - Hazelnut shell fragments, Dill and several carbonised cereal fragments. It is of a very slight nature though, and more or less swamped by presence of species indicative of disturbed and possibly nutrient enriched soil conditions, and also damp ground conditions. Birch tree seed and several small buds - items added by rainwash or windblow - add further weight to indications that this site lay waste for a time.

Sample 230 context 2644: charcoal and silt (over debris)

There was only a single carbonised item in this assemblage. Shoots and flowers of Ling were prominent and in this context may have been used as kindling for the adjacent oven. Other human use and food species were recorded - Hazelnut shell fragments and Blackberry - but only at trace levels. There is an interesting assortment of items which may have been blown or washed into this deposit including tree buds, leaf scar tissue, Rose thorns and spines of Sloe. the latter occurred in quantity - perhaps this thorny shrub was also being utilised for kindling.

Sample 225 context 2601: shallow hole

This assemblage consists of a random selection of species from a range of ecological groups. Carbonised grass and Woodrush (*Luzula* sp) seeds were present. The deposit appears to have developed under conditions of natural silting.

Sample 217 context 2404: silt E/W road

Compared with similar deposits described above this assemblage is very restricted in nature. It is dominated by the presence of small Gramineae, which appear to be ubiquitous to Annetwell Street. A number of small buds was no doubt incorporated into the deposit by the action of rain, wash and waterflow. Human use and food plants present include Coriander, Hazelnut shell fragments, Bracken frond fragments and glume bases of Wheat. None are present in any quantity.

The paucity of material present may suggest this area was kept relatively clean.

Sample 192 context 2383: drain fill (below 188)

This assemblage is dominated by the presence of Hazelnut shell fragments and also includes singles of Coriander, Wheat glume base and Wild Celery. Alder was recorded from this sample and occurs fairly regularly in drain fill from this site. This, together with a persistent wet ground element, strongly suggests prevalence of these conditions in the vicinity of Annetwell Street. There are no indications of particularly disturbed, nutrient-enriched or foul conditions here, nor of the presence of faecal material. No parasite ova were found.

Sample 188 context 2370: drain silt N/S road

A fairly diverse assemblage but with all species occurring at relatively low levels. Fragments of Hazelnut shell represent the most prominent component. Human use/food species present are Ling flowers and shoots (singles of each), Bracken frond fragments and a single seed of Dill. Indications of disturbed ground conditions and the presence of faecal material are lacking. This drain appears to have been relatively clean.

Sample 190 context 2379: clay spread

A small and restricted assemblage, dominated by trigonous Sedges and Lesser Spearwort. A number of small buds, larger tree buds and spines of Sloe may have been incorporated into the deposit as a result of rainwash or windblow. Fig and Blackberry were present.

Basically a deposit of botanically mixed origin of which Sedge formed the most important constituent. No further interpretation can be offered.

#### PERIOD 5A/2a

Sample 242 context 2994: cobble/silt

Quite a large assemblage with strong indications of disturbed and nutrient enriched soil conditions. The presence of cut vegetation is also implied. Of the human use/food plant groups the following were present - flowers of Ling, Hazelnut shell fragments, Fig and Bracken frond fragments - though at very low levels. No further interpretation can be offered.

### PERIOD 5A/2-3

Sample 253 context 3207: drain, minor N/S road

A relatively large and varied assemblage, containing in several instances both carbonised and waterlogged examples of the same species - Hazelnut shell fragments, Wild Radish (*Raphanus raphanistrum*) seed pod fragments, Wild Celery, small Gramineae and Wheat glume bases. This sample contains a little of everything - Corncockle, Ling flowers and shoots, Fig, Bracken frond fragments and Dill. Conditions of disturbance are indicated and small Gramineae are again very prominent. Another new record for Carlisle was recorded in this context - Sea Milkwort (*Glaux maritima*). This is a plant of middle to upper saltmarsh grassland, and the second species from this habitat to occur at Annetwell Street. There is a strong possibility that animals from this site were being pastured on saltmarsh grazing, the nearest estuarine site being some four miles distant.

No parasite remains were found.

Sample 255 context 3207: drain, minor N/S road

A large and varied assemblage dominated by weeds of cultivation and species indicative of disturbed soil conditions, trampling and localised nutrient enrichment. Cereal remains were present but not prominent. There was no evidence to suggest the presence of faecal material in this context, and no parasite eggs were present. Fragments of eggshell were recorded.

The richness and variety of this context suggests either that more material was collecting here, or that the drain was cleaned less regularly than others at Annetwell Street.

### PERIOD 5A/3

Sample 197 context 2397: latrine fill

Very much a typical latrine assemblage, dominated by very high counts for cereal caryopses and glume bases, Fig and Corncockle. Other species in the latrine suite consist of food and spice species - Black Mustard (*Brassica nigra* - probably used as a flavouring), Coriander (a well-known spice), Hazelnut (a locally gathered food supplement), Bilberry (another locally available food item), Opium Poppy (often used as a garnish for bread but having medicinal properties too), Dill (a spice), Wild Celery, Bullace (a wild member of the plum family probably gathered locally), Sloe (perhaps used in cooking or maybe medicinally, as the fruits have a strongly laxative effect), Apple and Olive. The latter is native to the Mediterranean region and is present at Annetwell Street as an imported exotic. Olive has been recorded from other Roman urban sites in Britain, notably London and York. A single seed of Hemlock (*Conium maculatum*) was recorded from this context - the species may have been utilised for medicinal purposes. The relatively high count for seeds of Small Nettle is interesting. Whilst these may have come from plants growing nearby (the vicinity of a privy being perhaps the archetypal habitat for nettles) this species also has considerable medicinal uses including arresting of bleeding and as a tonic. Addition of seeds to the feed of cattle is said to increase milk yield, whilst in horses it imparts a gloss to the coat.

Very high counts for both types of human parasite egg were found to be present.

Sample 199 context 2397: latrine fill

This assemblage contains a wide range of weeds of cultivation. It is dominated by the presence of cereals and species from the cut vegetation suite. The latrine suite is not as rich as elsewhere at Annetwell Street and, in addition to cereals (including several carbonised grains) comprises - Corncockle Coriander, Hazelnut shell fragments, Fig, Bilberry, Opium Poppy, Sloe and Flax. although the parasite levels found were low, the workers at York have identified the presence of human excrement in this context.

Sample 209 context 2397: latrine fill

This assemblage is dominated by the damp ground element and species characteristic of disturbance and cultivation. Trampling and localised nutrient enrichment are also indicated. The latrine suite of food/human use species is markedly absent, and no parasite eggs were found. Perhaps this deposit represents an infill, rather than the period during which the feature was in active use.

Sample 205 context 2450: clay-silt

A relatively large and varied assemblage, containing strong indications of the presence of cut vegetation. Cereal remains were present in trace quantities only, and other food/human use species were represented by Coriander and Hazelnut shell fragments. Fairly high levels for Stinging Nettle suggest localised soil enrichment, possibly due to accumulation of refuse or dead vegetation. There is no evidence to suggest the presence of faecal material.

Sample 269 context 3701: latrine fill

This assemblage contained a wide range of carbonised and waterlogged cereal remains, together with the following latrine suite species - Corncockle, Coriander, Fig, Flax, Blackberry, Bilberry, Wild Celery, Dill and Opium Poppy. Conditions of localised nutrient enrichment were strongly suggested. A fairly typical latrine fill assemblage. Parasite results for this sample were not available.

Sample 263 context 3649: pit

Another typical latrine pit assemblage - Corncockle Coriander, Hazelnut, Fig, Blackberry, cereal (caryopses, floret bases, glume bases), Wild Celery, Dill and Opium Poppy but with several other interesting species present ie. Hemlock (very poisonous and used medicinally), Henbane (*Hyoscyamus niger*, also poisonous and possessing medicinal value), Mint (*Mentha* sp, possibly used in cooking) and nutshell fragments of Pine (seeds of which can be consumed as "nuts" and have been reported from Roman sites in London). Parasite egg levels were found to be extremely high, confirming the presence of human excrement. This pit functioned as a latrine.

Sample 172 context 2161: silt and charcoal

This small but unusual assemblage is dominated by apices of *Sphagnum* moss, flowers of Ling and seeds of small Gramineae. Coriander and Hazelnut shell fragments were also present, together with a large number of indeterminate bryophyte fragments. The context is described as a dump deposit. It is worth pointing out that both *Sphagnum* moss and Heather flowers have medicinal properties. The former were used as wound dressings on account of their sponge-like absorbency, and infusions made from the latter may be used to treat

coughs, colds, bladder and kidney disorders, and rheumatic pain. In the damp west coast climate of Carlisle, coughs and colds would almost certainly constitute a seasonal malady.

Sample 141 context 2030: occupation

This assemblage is distinguished by a large number of Hazelnut shell fragments. Small amounts of Wild Celery, Dill and Fig seed were present. The remainder of the botanical material present is of a background nature. There is no evidence for a specialised usage of this area. Presence of faecal matter is not indicated, and no parasite remains were found.

Sample 210 context 2466: clay floor

A very small seed assemblage, dominated by an extremely large number of Hazelnut shell fragments. No interpretation can be offered.

Sample 161 context 2161: silt and charcoal

This assemblage is dominated by species indicative of disturbed, nutrient-enriched soil conditions. Cereal and Corncockle are well represented, whilst Ling and Wild Radish are present at quite high levels. This appears to be a fairly typical outdoor deposit from Annetwell Street. The repeated presence of Ling shoots and flowers, and seed of small Gramineae, begs the question as to whether such material was being gathered for use; or whether these species grew abundantly in the vicinity and so merely constitute part of the background assemblage. The levels at which species of nutrient-enriched soils are present suggest accumulation of rubbish or refuse at this site. There is no evidence to indicate presence of faecal material.

Sample 168 context 2183: fill of wood-lined hole

A relatively unremarkable assemblage containing no strong cereal element, and little in the way of food plants. There is nothing to indicate any specialised use. This appears to be a background assemblage of mixed origin, indicating that this was a deliberate infill rather than a deposit relating to the period of use for this wood-lined hole.

Sample 173 context 2185: matted fibrous patch in silt layer

This assemblage is entirely dominated by Common Sow-thistle (*Sonchus oleraceus*), a weed of cultivation. Other weeds of cultivation are also prominent. Cereal remains are present, but not markedly so. Indications of soil nutrient enhancement, possibly due to accumulation of refuse, are quite strong. Coriander, Hazelnut shell fragments and Dill are present, but not in quantity - there is nothing to suggest the presence of faecal material here.

Sample 203 context 2446: pit

An assemblage dominated by species indicative of cut vegetation, together with a small suite of food and food related plants ie. Corncockle, Coriander, Hazelnut, Dill, Wild Celery and cereal. Presence of a relatively high count for Stinging Nettle suggests conditions of soil nutrient enrichment. Faecal material does not appear to have been present. Parasite remains were not recorded.

PERIOD 5B/1?

Sample 158 context 2137: drain, N/S minor road

Very much a background assemblage. Food species are represented by Coriander, Hazelnut and Dill, but not in quantities sufficient to suggest the presence of domestic waste or faecal material. There are no indications of elevated soil nutrient levels. This context does not appear to represent material deposited whilst the feature was in active use.

PERIOD 5B/1

Sample 213 context 2205: floor

This sample yielded only a single seed of Chickweed (*Stellaria media*). No interpretation can be offered.

PERIOD 5B/2

Sample 135 context 1862: occupation

A fairly small and restricted assemblage in which Hazelnut shell fragments were prominent. This surface appears to have been relatively clean. No parasite remains were present.

Sample 139 context 2079: floor

This gravelly sample yielded a very small and restricted assemblage. Free-drainage promoted by the presence of gravel may have rendered conditions unfavourable for the preservation of vegetative remains. No parasite remains were found.

Sample 121 context 1786: gulley fill

A relatively small seed assemblage dominated by Sedge, small Gramineae and Small Nettle. The former two categories are common in all assemblages from Annetwell Street, the latter species is not. Small Nettle is a weed of cultivation. There is no indication of any crop in this sample, but the presence of this weed may suggest that cultivation was being carried out in the vicinity. Faecal material does not appear to have been present in this context - the feature did not function as a sewer. No parasite eggs were found.

Sample 115 context 1633: silt/gulley

This sample is very much an outdoor background assemblage. It is distinguished, however, by an extremely high count for Small Nettle, a weed of cultivation. The actual count was 1367 seeds per kilogram of sample, and exceeded the upper levels allocated on the data logging format.

As with sample [121] above, there is no indication of any crop with which Small Nettle may have grown in association. This being the case it seems likely that the plant was being used for its own inherent properties. Dried nettles have been used as fodder substitute in historical times, being rich in albuminoid matter and fat. Powdered nettle added to the food of fowls is said to increase egg production, whilst the seeds aid in fattening. Added to horsefeed, seeds impart a gloss to the coat. Nettles provide fibre for weaving, and yield a permanent green dye. A bundle of fresh nettles hung in a room will apparently keep flies away. We know horses were stabled at the Annetwell Street site because eggs of *Oxyurus* (a parasite



specific to horses) have been recorded. Perhaps seed of Small Nettle was used as a conditioning additive to horsefeed, and some of this has washed into these two gulley contexts.

There was no botanical evidence for the presence of faecal material in this context. No parasite eggs were found.

Sample 116 context 1634: silt - fence base

Basically this is an outdoor assemblage of mixed origin and resembles others from this site. It is located on the opposite side of a fence feature to sample [115] above. This is interesting because the two samples have in common high counts for Small Nettle. It seems likely from the ground plan, that these two contexts merge laterally and that the nettle seed has spread beneath the fence by the agents of rainsplash and waterflow. See [115] above for a consideration of the possible uses of Small Nettle.

This sample also contained a single seed of *Triglochin maritima*, a plant of saltmarsh grassland. The possibility of pasturing grazing animals on saltmarsh turf has already been mentioned. In passing it is worth noting that this species also had a use as a green vegetable. A more likely explanation of the presence of occasional seeds of this plant may lie in the carrying of other materials from saltmarsh sites, turves perhaps.

there is no evidence to support the presence of faecal material in this context.

#### PERIOD 6A

Sample 110 context 1551: silt, E/W road

This assemblage is similar to others described above. There is evidence of disturbance and conditions of localised nutrient enhancement. Species of waste ground and cultivation are present. Small Gramineae are again the dominant component. Food species are not strongly represented and there is no evidence to suggest the presence of faecal material.

Sample 117 context 1675: pit

Fairly large and diverse assemblage, with strong indications of disturbed ground conditions and soil nutrient enhancement. Cut vegetation/fodder material is also represented. Wheat glume bases and Corncockle were present, perhaps as part of a crop. Human food species (cereal apart) were not markedly present. Shepherd's Purse (*Capsella bursa-pastoris*) is unusually well represented. It is a common weed of waste and wayside ground, but also long known for medicinal virtues which include staunching of bleeding, treatment of kidney and bladder ailments, and of diarrhoea. Veterinary uses are also recorded, and the seed can be used as caged bird seed. Two other plants with medicinal uses, Black Nightshade (*Solanum nigrum*) and Small Nettle were also present in this context at higher than usual levels. The suggested use of Small Nettle seed as a feed additive for horses has already been mentioned. Interestingly this context was found to contain eggs of *Oxyuris equi* (a gut parasite specific to horses), indicating that faecal material from these animals was present in the pit.

## PERIOD 7

Sample 104 context 1387: make up

This sample yielded three carbonised items, two being naked Barley in the germinated state. No interpretation can be offered.

## PERIOD 9

Sample 38 context 974: green grey silt

This sample came from a patch of silt inside a room of building [1000]. It was found to contain no vegetative material. No interpretation can be offered.

Sample 62 context 1261: floor earth

A very small assemblage of which all the items (bar 9 waterlogged seeds of Common Persicaria (*Polygonum persicaria*), were carbonised, including flowers of Ling. Either the floor of this room was kept very clean or waterlogged material has not preserved well. No parasite ova were found.

Sample 54 context 1184: drain fill

A very small and restricted assemblage which is unusual for this type of context. Both carbonised and mineralised items were recorded. The paucity of plant material present suggests that preservation conditions were not conducive to survival of waterlogged remains. No parasite eggs were found.

Sample 39 context 968: occupation

This sample contained only two pieces of charcoal and three small fragments of brown, glassy material with bubble inclusions. No interpretation can be offered. No parasite remains were found.

Sample 37 context 961: occupation

A very small assemblage consisting almost entirely of carbonised items. Flowers of Ling were prominent. It has been suggested elsewhere that dried sprays of Ling may have been used as kindling for ovens and fires on this site. Paucity of remains again raises questions about the preservation of waterlogged material here. No parasite remains were found.

Sample 44 context 1053: back-fill of pit

A small but distinctive assemblage of mineralised seeds in which those of the food plant Fig were most numerous. Mineralisation is the replacement of the organic fraction of a seed by salts of calcium, and the process most often occurs in cess or latrine deposits. Human parasite ova were present at trace levels only, but this need not totally rule out the presence of faecal material in this context.

Sample 56 context 1213: occupation floor

Another extremely small and restricted assemblage, all the items present being carbonised. No interpretation can be offered. Parasite remains were not found.

Sample 63 context 1265: occupation silt?

An extremely small assemblage comprising singles only of - carbonised small Gramineae, carbonised indeterminate, waterlogged indeterminate and waterlogged Gipsywort (*Lycopus europaeus*). Either preservation conditions for waterlogged material were unfavourable or the floor of this room was kept very clean. No parasite remains were found.

#### PERIOD 10A?

Sample 58 context 1242: sump fill - petrol

A relatively small assemblage but with most of the items present in a mineralised state. No interpretation can be offered. No parasite remains were found.

#### PERIOD 12

Sample 175 context 2204: moss/root deposit in well wall

This assemblage is basically of a background nature. It contains several categories of material which appear to have fallen in ie. small buds (c.2mm), larger tree buds, unidentified inflorescence fragments and seeds of Alder. Stinging Nettle is prominent and indicative of nutrient-enriched soil conditions in the vicinity. Wood Sorrel (*Oxalis acetosella*) is an interesting new addition to the Carlisle archaeological flora. With its preference for moist shady habitats (it is a plant of the woodland floor) it may actually have grown in a soil-filled crevice within the upper part of the well, where incoming light was sufficient to sustain it. It is highly possible that this small context represents a clump of vegetation growing out from the well wall, together with material which has fallen in and been caught by the tangle of plant stems.

None of the material present suggests that the well was being used for dumping of refuse at this time. Parasite remains were not recorded.

Sample 48 context 1123: well fill

Large and varied assemblage with weeds of cultivation predominating, including Stinking Mayweed (*Anthemis cotula*), Corncockle, Small Nettle, Corn Marigold, and Corn Spurrey (*Spergula arvensis*). Disturbed and waste ground conditions with localised nutrient enrichment were also strongly indicated. Two interesting species of damp ground, both with medicinal properties, were recorded - Hemlock and Bog Myrtle (*Myrica gale*). Food species were very sparsely present and consisted of carbonised Oat grains (*Avena* sp.), Blackberry and Hazelnut shell fragments. There is no evidence to suggest either the presence of faecal matter in this context or use of this feature for dumping of rubbish.

Sample 49 context 1123: well fill

An extremely rich assemblage dominated by species indicative of disturbed ground conditions and particularly by a varied weed of cultivation suite - Yellow Toadflax (*Linaria vulgaris*), Spiny Sow-thistle (*Sonchus asper*), Corn Spurrey, Chickweed, Small Nettle, White Campion (*Silene alba*), Corn Marigold, Common Sow thistle, Stinking Mayweed and Purple Dead-nettle (*Lamium purpureum*). Enhanced soil

nutrient and nitrogen levels are also strongly suggested. There are several species present in this assemblage, any or all of which may have been grown as crops in the locality - Flax (seed, together with fragments of seed capsule) was grown as an oil-producing crop, Dyers' Rocket (*Reseda luteola*) a dye plant but also occurring as a weed of disturbed ground, Turnip (*Brassica rapa*) a root crop, and Black Mustard (*Brassica nigra*) used as a condiment. Cereal grains were present at trace levels only. Other food species were not well represented, being restricted to Hazelnut shell fragments and two Sloe fruit stones. There is no evidence here for the presence of domestic food waste or faecal material. This feature does not appear to have been used for the dumping of rubbish. A Willow tree may have grown close to the well as remains of bud scales, catkin fragments and fruit were present in the fill. Hemlock was recorded from this context in quantity. It seems likely that this species was being used at this time, presumably for its medicinal properties as a sedative. No parasite eggs were present.

#### PERIOD 12A

Sample 28 context 531.4: pit

A fairly large and varied assemblage dominated by a very high count for Corncockle. There is no relatively high value for a cereal to accompany this. Other weeds of cultivation are quite well represented, so perhaps part of this assemblage comprises seed cleaning waste. Turnip and Black Mustard were again present, but not at very high levels. Soil eutrophication and elevated nitrogen levels were strongly indicated. Some of the other food species were prominent here - Blackberry Bilberry and Apple/Pear, indicating the possible presence of faecal matter in this context. During sorting, fish bones and fly puparia were noted - both are characteristic of latrine assemblages. It would appear that this context contained a mixture of seed cleaning and domestic refuse together with human faecal material. Human parasite ova were present as background traces only.

#### PERIOD 12B

Sample 22 context 486: well

A relatively large and varied assemblage dominated by weeds of disturbed and waste ground, with species indicative of cultivation also well represented. Conditions of moderate soil nutrient and nitrogen enrichment are suggested. Species of damp and muddy habitats are present. Food plants are present at trace levels only, and there is no indication of the presence of domestic refuse or faecal material in this context. Buds and a pine needle may have fallen into the open well.

Sample 23 context 486: well

From the same context as sample 22 above and having much in common with it. Species indicative of disturbed conditions, and particularly cultivation, are predominant. Possible crop species include Black Mustard, Swede and Turnip. Tree buds, thorns of *Rosa* sp and a fragment of pine nutshell are items which may have fallen or been blown into the well. Two very interesting species recorded from

this layer of the well were Henbane and Hemp (*Cannabis sativa*). The latter is a new record for Carlisle. Both have medicinal properties and Henbane was apparently well known and much used in medieval times. Hemp has been grown for fibre but is perhaps better known for its narcotic properties. Much used for the relief of pain and inducement of sleep. Food species are represented only by four seeds of Fig.

This deposit may represent seed cleaning waste, the well being used as a dump at this time. Traces of Whipworm parasite ova suggest possible faecal contamination but may also have blown in, or become incorporated into dumped material from elsewhere, without faecal material being present.

#### Sample 24 context 486: well

A large and varied seed assemblage from the same context as 23 and 22 above. Weeds of cultivation are again very prominent, indicating that this activity was taking place in the vicinity. Several small items may have either fallen or been blown into the well - buds, a Birch catkin scale and thorns of a Rose. Food plants are present, but not strongly represented ie. Hazelnut shell fragments, Fig, Opium Poppy, and Dill. Possible crop plants are cereal and Flax although neither is present in quantity. The medicinal species Hemp and Henbane are again both present. Eggs of the gut parasite Whipworm occur at low levels indicating possible faecal contamination. On the other hand, being both small and light, they could easily have blown in from elsewhere on this site, and certainly the accompanying latrine suite is not strongly represented in this context. Conditions of soil disturbance, nutrient enrichment and nitrogen enhancement are indicated. Damp muddy conditions, such as might exist at the margins of drainage ditches, are well represented in the botanical record.

#### Summary for context 486

Generally a picture of disturbed ground conditions with strong input from adjacent cultivation activities. Several possible crop plants occur in this context. Medicinal species were also recorded. Parasite eggs present are likely to have blown in and so represent the presence of faecal material elsewhere on the site. This context does not appear to have been in receipt of human or animal faecal material. It does seem, however, that waste material from seed cleaning was deposited in the well at one stage.

#### Sample 11 context 328: pit

A fairly small and restricted assemblage, dominated by the presence of Corncockle and fig. Other edible species were present - Hazel, Blackberry, and Bilberry. Elevated soil nitrogen levels are indicated by the strong presence of Common Nettle. Weeds of cultivation and species indicative of a degree of ground disturbance were also recorded.

This pit appears to have been in receipt certainly of domestic food waste and possibly also of human faecal matter. Low levels of both Whipworm and Maw Worm parasite ova were found, confirming the possible presence of small quantities of human excrement. This pit did not function primarily as a latrine.

Sample 19 context 487: pit

Extremely rich and varied assemblage, dominated by very high counts for species of disturbed and nutrient enriched habitat - principally Orache, Goosefoot, Knotgrass, Elder (*Sambucus nigra*) and Common Nettle. Weeds of cultivation were also strongly represented - Corncockle, Stinking Mayweed, Pale Persicaria, Persicaria, Corn Spurrey, Chickweed, Small Nettle, Red Dead-nettle and Corn Marigold. Two members of the cabbage family recorded - Black Mustard and Turnip - may have been grown as a crop, but also occur as crop weeds. A third member of this family, Wild Radish, was represented by large numbers of pod fragments. This grows as a weed of crops and waste places.

The food plant list is quite comprehensive and includes - Hazelnut, Fig, Blackberry, Bilberry, Sloe, Apple/Pear, Black Mustard, and Opium Poppy. Several of the items recorded were mineralised (a process common in latrine and cess pit deposits) and pieces of eggshell membrane were recorded from this context. Taken together the evidence suggests that this pit was in receipt of human faecal matter. High counts for parasite ova of Whip Worm confirm this.

Several pieces of fibrous "twine", apparently made up of numerous moss stems twisted together were found in this context.

Sample 20 context 487: pit

This sample is from the same context as 19 above, and has much in common with it. Weeds of disturbed ground and cultivation are again the dominant element - there is a particularly high count for seed of Corn Marigold. Elevation of soil nitrogen levels is very strongly indicated. Food species present include Hazelnut, Fig, Sloe, Blackberry, Bilberry, Black Mustard, Apple/Pear and Opium Poppy. Other human use species were Flax, a possible crop, and Hemlock, having medicinal properties. Again high numbers of Wild Radish pod fragments were present, leading to speculation that the seeds may have been utilised in some way.

Abundant ova of both human gut parasites (*Trichuris* and *Ascaris*) were found, confirming the presence of human faecal material.

### PERIOD 13

Sample 5 context 329: pit

A very small but interesting assemblage dominated by the presence of Fig pips and distinguished by the presence of mineralised seed remains. The majority of these latter were found to be from Wild Strawberry (*Fragaria vesca*). Other possible food and food-related species were *Brassica* sp., Blackberry and Opium Poppy. Both the botanical content and the presence of mineralised items point toward this being a cess pit or latrine deposit. Abundant ova of the human gut parasite Whip Worm confirm this interpretation.

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## Acknowledgements:

I gratefully acknowledge Shaun Doran for processing and initial sorting of the material, and Jacqui Huntley for kindly undertaking the typing and interpreting my worse-than-usual script. Thanks also go to friends and colleagues in the Carlisle Archaeology Unit for helpful suggestions and discussions; and to Allan Hall and Andrew Jones at the Environmental Archaeology Unit at York, both for information, and making available to me the results of parasite studies on Annetwell Street material.