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Supplement to Technical Report: Living conditions and resource exploitation at the Early Christian rath at Deer Park Farms, Co. Antrim, N. Ireland: evidence from plants and invertebrates

by

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Summary

This report presents some data additional to those provided by Allison et al. (1999a; b), mainly concerning 'bulk-sieved' and 'spot' samples from the Deer Park Farms site.

Keywords: DEER PARK FARMS; COUNTY ANTRIM; N. IRELAND; RATH; EARLY CHRISTIAN; 7TH-8TH CENTURY AD; FARMSTEAD; MACROFOSSIL PLANT REMAINS; HAIR; WOOL; HUMAN HAIR

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Introduction

At the time the *Technical Report* on plant and invertebrate remains from Deer Park Farms was completed, there remained some outstanding work, principally concerning some ‘spot’ samples and plant remains from a series of ‘bulk-sieved’ samples. The spot samples were ones which had not been examined during the main phase of study, and the bulk-sieved samples had been processed and examined by Beth Cassidy during the excavation but not reviewed by the present author. Thus, data for the latter group of samples had not been incorporated into the main dataset—neither those records of plant remains determined by BC or those subsequently checked by AH at the Archaeological Survey in Belfast in July 1999.

The previously unexamined spot samples included several samples of fibre, many of which proved to be animal hair. These have been examined by Penelope Walton Rogers (Textile Research in Archaeology (TRA), York) and Dr P. H. Greaves (Microtex International, Otley, W. Yorkshire) and their results (originally presented by Walton Rogers 1999) are incorporated into this report (samples marked §, with text quoted directly from the TRA archive report).

Spot samples

The samples are listed in phase, context and sample order. The layout and conventions follow those used in the *Technical Report*. Most of the sample numbers given here are actually small find numbers.

PHASE 0

Context 3529 [subsoil under first archaeological features]

§Sample 2780 (SPOT/SF) [‘fibre/hair’]

This material was found by Walton Rogers to possess ‘many of the same features as the other human hair samples (see below, under Context 1230) and is light brown and slightly wavy; its scale pattern is not well preserved, but all other features suggest human hair. ... The sample has been cut top and bottom, like 2597 (the locks in this case being about 60-70 mm long), and has a diameter range of 52-104 µm. The possibility that it is intrusive from the ... rath should be considered’ bearing in mind its similarity to the later samples of human hair.

PHASE 1-2II?

Context 2549 [organic spread in early phase of entranceway]

§Sample 3243 (SPOT/SF) (‘hair’)

A sample of sheep’s wool: ‘the intact staple was 30 mm long, pointed and slightly wavy. The fibres were fine and medium and the cross-sections round to oval. The scale pattern was irregular mosaic, occasionally waved, with smooth near margins. The fine fibres were without pigmentation and the coarser fibres pigmented, indicating a ‘brown skimlet’ fleece—that is, a fleece in which a fringe of brown hairs protrudes beyond the white underwool. Measurement of the fibre diameters gave the following results (in microns): range 15-63, mode 24, mean 30.9±11.2, co-efficient of skew +1.12 (i.e. skewed to positive); ≥3% medullas; 35% moderate-dense pigmentation.

‘This indicates a Hairy Medium fleece type (Ryder 1969; Walton Rogers 1995). Vari-coloured sheep with Hairy Medium fleeces arrived in the British Isles in the Iron Age. In England, during Roman and later periods, new stock arrived and displaced

these Iron Age sheep, but elsewhere they continued to be farmed and have even survived into modern times in the Cladagh of Galway and the Orkney of the Northern Isles. Brown skimlet wool comparable with the example from Deer Park Farms has been recorded in a modern Cladagh flock by Ryder (1983, 520), who also noted Hairy Medium grey skimlet wool in undated textiles excavated in Co. Kildare (*ibid.*, 517).'

PHASE 2I-?

Context 994 [midden ?pre-dating first structures]

§*Sample 456* (SPOT) ['wood, hair & other organic matter']

This appeared to be straight light brown human head hair, though not well preserved and thus only tentatively identified.

PHASE 2I-III

Context 3731 [clay below platform 3523, Str Iota, N. quad.]

Sample 1142 (SPOT) ['perforated bark']

A sheet of rather thin bark up to about 87 x 64 mm, perhaps from birch or hazel, with occasional small (7-8 mm diameter) circular perforations which might indicate deliberate holing for some purpose, although it is as likely that they were insect emergence holes (cf. *Sample 1143* from **Context 1266**, PHASE 2VI).

PHASE 2II-V

Context 1230 [extensive midden deposit]

§*Sample 2597* (SPOT/SF) ['?hair']

This consisted of 'several thick locks of wavy hair, 120 mm long, cut neatly at top and bottom. The fibres measure 56-107 µm in diameter and have an

irregular waved scale pattern with close crenate margins which are smoother towards the proximal end of the fibre. In cross-section the fibres are oval, oblong and elliptical. Medullas are new, narrow and fragmented. These features are all typical of human head hair—an identification made independently at both TRA and Microtex. Pigmentation on 2597 is moderate, indicating mid brown hair.'

§*Sample 2636* (SPOT/SF) ['?hair'] and §*Sample 3244* (SPOT/SF) ['?hair']

These are also thought to be human hair. Walton Rogers reports that they 'are relatively straight and pigmentation seems to be lighter than in 2597. They have, however, a similar diameter range to 2597 (2636 = 50-144 µm; 3244 = 43-104 µm) and have the same scale pattern, cross-sectional shape and the same narrow, fragmented medullas.

Context 1230C [part of extensive midden deposit]

Sample 3249 (SPOT/SF) ['puffball']

This small find (3249) was a flattened puffball fruit to 50 mm max dimension, with *Bovista*-type capillitia threads and spores with sterigmal remnants: a *Bovista* sp., probably *B. nigrescens*.

PHASE 2III

Context 4206 [gravelly clay below kerb 4014, W. quad.]

Sample 1084 (SPOT) ['nibbled nuts? seeds?']

A cache of many tens of small sloe (*Prunus spinosa*) fruitstones (sample weight approx. 125 g), all (to judge from a subsample) with a hole presumably caused by the small mammal (rodent?) which collected and stored the stones in this spread. Also present were a few weed seeds and vegetative fragments of heather and bracken, and

some well-preserved insect material, as well as numerous earthworm egg capsules.

PHASE 2III/IV

Context 3550 [grey/black midden layer pre-dating Iota]

Sample 3248 (SPOT/SF) ['puffballs']

Two small puffball fruiting bodies to 50 mm; clearly *Bovista nigrescens*.

PHASE 2VI

Context 1266 (SPOT) [midden to N of and associated with X and Eta]

Sample 1143 (SPOT) ['perforated bark']

There were five irregular-shaped sheets of thin bark, the largest about 145 x 75 mm and 3-5 mm thick; each had a hole approx. 3-5.5 mm in diameter, usually circular. They appeared rather small to have resulted from pegging, and may simply be insect holes.

Context 1573 ['heathery' layer outside Str Epsilon, S. quad.]

Sample 2432 (SPOT/SF) ['puffball']

A flattened, folded to wrinkled 'skin' with adherent soil, up to about 105 x 45 x 17 mm. The surface was pale brown, the interior dark brown. This was clearly a lump of puffball fruiting body and appeared to be giant puffball, *Calvatia gigantea*, on the basis of the form of the capillitium threads and spores.

Sample 2433 (SPOT/SF) ['puffball']

A fragment to 60 mm of puffball fruiting body interior (gleba) and two smaller flattened

fragments of fruiting bodies to 50 mm: on the basis of microscopic characters of the capillitium threads and spores, the former was *Calvatia gigantea*, the latter *Bovista nigrescens*.

Context 4012 [floor of Str Zeta]

Sample 3245 (SPOT/SF) ['eggshell']

A few fragments of unidentified eggshell to 3 mm across with a layer of eggshell membrane beneath.

Context 4023 [clay layer in Str Eta 1]

§*Sample 3052* (SPOT/SF)

These loose fibres had a very distinctive structure which allowed them to be identified by Walton Rogers as cattle tail hair: 'the fibres are all short, 30-40 mm long, and coarse, 70-142 µm diameter. In cross-section they are circular or almost circular. In whole mount the medullas are narrow and continuous, and in cross-section they are latticed and concentric with irregular borders where the boundaries of the cortical cells are especially clear. The scale pattern is irregular mosaic, waved with close crenate margins which are smoother towards the base of the fibre.

'These features are all diagnostic of cattle tail hair (Wildman 1954, 136-9; Appleyard 1978, 6-7). The absence of any pigmentation suggests that they are from white animals, or at any rate from animals with white tails.'

Context 4172 [peaty layer butting gravel platform 3191, Str Eta 1]

Sample 3013 (SPOT/SF) ['fibrous material/bark?']

This sample comprised two fragments of dark grey fibrous material in the form of thin sheets; apparently these were bark fragments to 150 mm,

very thin and paper and probably silver birch, *Betula pendula* Roth.

PHASE 2VI-VII

Context 1287 [soil from organic layer over S. bedding 1291, Str X]

§*Sample 570* (SPOT) [‘?hair’]

Walton Rogers reports that this ‘was more tentatively identified as wool, from the range of diameters, smooth scale margins and medullary structure, although the poor state of preservation of this specimen left some doubt over the identification.’

Context 1293 [midden associated with Str X]

Sample 678 (SPOT) [‘?puffball from leather bag’]

The only identifiable plant material in this sample (which consisted of lumps of rather reddish (oxidised) and desiccated sediment rich in mineral soil) appeared to be some fragments of birch bark (to about 70 mm in maximum dimension) and two stalk fragments which might well have been from bracken. No fungal material was observed and nothing can be said of the artefactual nature of the material.

The sample (which weighed approx. 215 g) was disaggregated to check for other remains: some very decayed bracken frond was noted on some broken surfaces of lumps of undisaggregated sediment and there was a small range of weed and other taxa represented by seeds or fruits. Some reddish sheets of tissue proved to be extremely heavily decayed leather (to 20 mm) and fragments of papery bark.

Context 1298 [midden layer N. of Str X]

§*Sample 616* (SPOT) [‘hair’]

This appeared to be straight light brown human head hair though not well preserved and thus only tentatively identified.

PHASE 2VII

Context 3041 [occupation deposit: charcoal around hearth in Eta 2]

Sample 1157 (SPOT) [‘?peat block’]

This spot find was a rectangular lump of desiccated peat approx. 170 x 60 x 30 mm very much in the form of a small sod. The material appeared to be well humified and examination of a small piece of the piece softened in dilute acid suggested that it had formed in a fen, tentatively identified remains of *Cratoneuron filicinum* and *C. commutatum* and/or *Drepanocladus* being observed; it was certainly not a *Sphagnum* peat. It gives the best evidence so far for a discrete peat sod, though imported peat was found in small clasts in many contexts. It is perhaps no coincidence that it was found close to a hearth where it presumably had been intended as fuel.

PHASE 2VII/VIII

Context 3183 [build-up between 1st and 2nd phases of Str Eta]

Sample 3247 (SPOT/SF) [‘puffball’]

A puffball fruiting body to 70 mm; another specimen of *Bovista nigrescens*, evidently mature and complete at the time it was buried.

PHASE 3III

Context 964 [pit fill]

Sample 302 (SPOT = SF1665) [‘crust on pot’]

The crust was in the form of angular fragments of charred organic material up to about 1 mm thick

with a little charcoal and basalt gravel. There were no visible macroscopic remains to indicate what this crust material might be (biochemical analysis might prove helpful here).

PHASE 3VIII

Context 184 [burnt thatch destruction layer associated with later Str R]

Sample 111 (SPOT) [‘burnt thatch’]

The sample consisted of lumps of crumbly and poorly consolidated burnt soil (or ?daub) to 50 mm with a few fragments of charred ?grass/cereal culm, mostly less than 1-2 mm in maximum dimension on some surfaces, and occasionally embedded within it. Also present was a fragment of charred bracken (*Pteridium aquilinum* (L.) Kuhn) pinnule and one of bracken rachis (frond-midrib), together with a few lumps (to 2-3 mm) of matted charred plant detritus.

Sample 255 (SPOT) [‘burnt wicker/grass’]

This sample was another lump of crumbly burnt soil/daub to 80 mm, bound with some (presumably recent) rootlets, and with charred herbaceous plant material in places; most of the material seemed likely to be grass or cereal leaf, the presence of a single hulled barley grain perhaps suggesting it was cereal straw.

PHASE ?

Context ??

Samples 1160 (SPOT) [fungus attached to the outer wall of X] and *1161* (SPOT) [seeds: outer wall of X]

These two sample both consisted of lumps of bark to 70 mm some with a dense cover of small globular fungal fruiting bodies (perithecia) with characteristic central apical umbo; they are a species of *Rosellinia*, probably *R. mammiformis* (Pers.) Ces. & De Not.

Bulk-sieved samples

Data concerning plant remains from a total of 30 bulk-sieved samples examined by Beth Cassidy during or soon after the excavation at Deer Park Farms have been added to the plant macrofossil database. Where possible, material sorted by BC and stored at the Archaeological Survey in Belfast has been re-examined by the present author. This led to a few additional and revised identifications. The data are presented in Tables 1 and 2. Note that a semi-quantitative three-point scale of abundance has been used for all items recorded, though (since the original samples were not available) for the most part a score of ‘1’ (= ‘present’) has been used.

The results of bulk-sieving are difficult to discuss because of the incompleteness of the record. The lists of plant remains essentially repeat the taxa seen in the GBA subsamples, usually a mixture of weed seeds and occasionally vegetative fragments of heather and bracken, with mosses, woodland taxa, plants from grassland or moorland likely to have arrived in turves, and with occasional records for flax and woad. Records of charred cereals were, as for the GBA subsamples, extremely sparse, with oats (recorded in five BS samples) the most frequent; clearly for this site, at least, the paucity of charred cereal remains observed in the GBA samples was not particularly a function of the kind of sample used.

GBA samples

A number of the dried (or in a few cases wet) residues from subsamples of ‘GBA’ samples examined in the late 1980s were re-examined in an attempt to look for:

(i) the nature of plant fragments recorded informally during the original analysis as ‘tea leaves’ but not at that stage identified further;

(ii) vegetative material of woad, given that pod fragments were present in several samples and have been found in association with what are thought to be the undecayed remnants of leaves of

the plant—the part actually used in dyeing—at Anglo-Scandinavian Coppergate, York (Kenward and Hall 1995);

(iii) evidence for the presence of turves;

(iv) the nature of the remaining matrix of plant and other remains in some selected cases where unusual plant assemblages were recorded, particularly those with a large count of taxa or a large of vegetative remains identified only to a low level;

(v) the character of (two) samples for which only the ‘flots’ had previously been examined;

(vi) evidence for material burnt in the few samples from hearths.

In the event, the dried material was not found to be suitable for pursuing most of these aims, though it did reveal that the mineral component of many samples, usually in the form of basalt sand and gravel, had been under-recorded (the samples were originally examined at a time when the routine recording of non-plant components was not fully established). Moreover, some residues were found to contain clasts of peaty sediment which appeared to be an inclusion in the original deposit and not part of the organic accumulation forming the matrix. These redeposited ‘peats’ (variously recorded as ‘peat fgts’ or ‘peat/mor humus fgts’) seem likely to represent the remains of turves in the broad sense and, with the quantities of mineral sediment and plant remains from grassland, heathland and moorland, suggest that the importation of turves or sods (scraws) from a variety of habitats occurred regularly at this site, the debris from turves in decay contributing in no small measure to the accumulation of the mound.

Another material which was probably under-recorded was charred seaweed. Re-examination of residues led to the discovery that one sample, in particular, contained not only rather more fragments of this than originally estimated, but that the residue also contained some quartz sand, something which was otherwise extremely rare at

the site (decayed basalt being the predominant mineral material present).

The following notes are offered in confirmation of or addition to the observations made in the *Technical Report*.

PHASE 0

Context 3608 [possible old soil level]

Sample 1020

There was some undisaggregated sediment which might represent turves and the plant remains observed seemed more likely to represent turf than at the time the material was first recorded; the abundance scores for several taxa were revised.

PHASE 2II-V

Context 1230

Sample 1005: only flot examined before.

This was a rather large residue of about 500 cm³ from 1 kg, including bark, wood and twigs, with woodland and heathland mosses added to the original list, as well as flax seeds and capsule fragments.

PHASE 2II/III

Context 3760 [material below Str Iota]

Sample 1099

Charred seaweed was more abundant than previously recorded (the abundance score was raised from 2 to 3); fragments up to 15 mm were present, perhaps of more than one type: some were flattened thallus fragments with a marginal process or tooth (perhaps *Fucus serratus* or *Ascophyllum*) while some fragments bore small pustules with a central pore (perhaps the reproductive parts?). The finest fraction (<1 mm) yielded spirorbid (marine

annelid worm) shells, along with some fine ashy glassy material and some tiny quartz grains in a (?slightly calcareous) matrix. The shells no doubt arrived (as epibionts) attached to the seaweed, as presumably did the quartz sand; fused glassy fragments probably formed through burning of the seaweed and sand.

PHASE 2III

Context 1448 [organic clay in Str Iota]

Sample 829

This sample was not initially picked as having a 'turf' component, but some elements consistent with the presence of such material were certainly observed and the residue contained some lumps of ?peat (to 15 mm), with much more in the fine fraction.

Sample 906

The dried residue was briefly re-checked (woad pods having been scored at '2' when the material was first examined). Bone and bark fragments were perhaps under-recorded previously. There was a lump of puffball interior (gleba, probably from *Calvatia gigantea*) with something of the appearance of fine leather. There were also some small (to 5 mm) fragment of the bright blue mineral vivianite (the latter were subjected to strong heat on a hot-plate and were shown certainly not to be indigo from woad which, as an organic substance rather than a mineral, would have burnt and disintegrated).

PHASE 2IV

Context 4028 [fill of central ash and charcoal-filled pit, Str Kappa]

Sample 982: only washover and flot seen previously.

The residue consisted mainly of charcoal and unusual pale, low-density calcareous

concretions—maybe burnt chalk? The abundance of burnt bone was revised down to '1' on the assumption that these pale lumps had been mistaken for bone (of which there was only a little), although it is possible that most of the bone had been removed during the previous stage of examination.

PHASE 2V

Context 4100 [organic occupation layer possibly associated with Theta, Zeta and X]

Sample 1050

The residue was rather richer in bracken stalk—mainly dissociated cortex and vascular bundles (this perhaps partly a result of drying)—so the abundance score for this component was raised to 3.

PHASE 2VI

Context 1266 [midden to N of and associated with X and Eta]

Sample 643

Some gravel and grit not recorded previously was added to the list of components; there were also peat/mor fragments (to 5 mm) present in some quantity.

Context 3065 [stacked turves in space between Strs X, Eta and Zeta [=1266]]

Sample 1009

The small residue of fine plant detritus with a little grit and gravel was also found to contain moderate numbers of small (to 5 mm) fragments of peat/mor humus, something observed in the whole sediment during the initial analyses but overlooked when the disaggregated sample was examined.

Sample 1038

The residue was checked for the presence of small fragments of peat/mor humus, representing turves, which were present—though rendered very much indurated by drying—and up to about 10 mm in maximum dimension.

Context 3098 [cavity wall fill of Str Eta on outer face of inner wall, N. side]

Sample 981

The residue contained some peat/mor humus pellets to 5 mm, perhaps derived from turves.

Context 4095 [fibrous layer butting revetment 4026 of platform, Str Eta 1]

Sample 1027

For this sample, the ‘voucher’ of unprocessed sediment held in store at York was revisited. It consisted of soft, amorphous, humic material surrounding rather harder lumps of humic, amorphous sediment to 60 mm. The latter were apparently lumps of well-humified peat (though with some macroscopic plant remains, including rootlets, still present inside, though the latter could have penetrated ‘post-redepositionally’).

Two lumps of peat, about 150 cm³ in volume were cleaned of the soft superficial humic material and broken down rather vigorously to check their content, the data being added to the database as a ‘spot’ sample (Table 3). The peat was, in its overall appearance, more like the ‘fen peat with rootlets’ seen, for example, in certain deposits in medieval York, Hull and Beverley, though the fragments of holly leaf, assuming they came from within these peat clasts, is perhaps a little surprising. Given the other plant remains, the formation of the peat is perhaps more likely to have occurred in something more like a wet meadow than a fen proper.

PHASE 2VI-VII

Context 1287 [soil from organic layer over S. bedding 1291, Str X]

Sample 571: only flot was examined previously.

The rather small residue of about 500 cm³ from 3 kg consisted of brown ?humic silt, the undisaggregated clasts invested with moss stem and roots, perhaps all deriving from imported turves if not an *in situ* turf.

Many of the plant remains were taxa likely to have grown in short grassland.

Context 1293 [midden associated with Str X]

Sample 565

The dry residue was examined to try to elucidate what the ‘tea leaves’ previously recorded might consist of, but drying had made small plant fragments contract and curl up. However, it was noted that, besides the quantities of basalt gravel there were also some fragments of undisaggregated peaty sediment or small clasts of actual peat (to 5 mm).

Context 1298 [midden layer N. of Str X.]

Sample 600

This residue was apparently quite gravel-rich, though some, at least, of the finer gravel-sized clasts proved to be undisaggregated clayey sediment. Records for charred seaweed (and a spirorbid shell) were also added. The unprocessed sediment for this samples was also re-examined. It consisted of dark orangeish brown, crumbly to plastic clay with basalt gravel to 25 mm. Surfaces of lumps of sediment were coated with tiny arthropod frass fragments, but within discrete lumps the sediment was still some much less strongly oxidised (grey-brown in colour) and with macroscopic remains of plants visible; within these

lumps there were also pellets to about 10 mm of somewhat indurated mineral sediment containing sand-grit sized basalt. These very much suggest the presence of reworked mineral sediment, as from turves.

material is very similar to that seen in the sample from Context 3760 (see above).

PHASE 2VII

Context 2437 [thick peaty deposit forming after life of Eta]

Sample 861

The residue contained some lumps of hardened humic material to 15 mm, presumably originating in turves.

Sample 892

'Amorphous peat' was scored at 3, previously; on re-examination this has been revised to 'peat/mor humus' (to 5 mm).

Context 2435 [turfy bank material of Gamma]

Sample 827

The small residue was found to include small fragments peat/mor humus (to 5 mm).

PHASE 3I-II

Context 802 [layer pre-dating Z and probably associated with Alpha]

Sample 245

More charred seaweed was observed in this residue than had previously been recorded (there was also some other charred material in lumps to about 10 mm), much of it in the 1-2 mm fraction. The fine fraction also yielded some quartz sand, some clasts consisting of several tiny grains cemented/fused together (sometimes effervescing with dilute hydrochloric acid, but not falling apart); this

Table 1. Contexts and samples examined by means of bulk-sieved samples.

Context	Sample	Phase	Feature type
41	350	3	soutterain, CN=?41
89	277	3	hearth in D
172	388	3	hearth in B
184	224	3vii	burnt thatch destruction layer associated with later Str R
184	239	3vii	burnt thatch destruction layer associated with later Str R
184	427	3vii	burnt thatch destruction layer associated with later Str R
322A	151	3vii	layer in J
324	141	3	layer
341	149	3	pit fill
351	128	3	hearth in B
994	459	2i-?	midden ?pre-dating first structures, E. quad
998A	657	2	layer
1008	282		
1116	305	3	hearth in G
1226	413	3ii	midden on N. side of rath
1228	635	2vi-vii	organic midden layer N. of X
1260	462	2viii	heather spread at base of build-up at end of occupation of X
1281	534	2vi-vii	occupation (inc bedding) in Str X
1290	639	2vi-vii	bedding, N. side of Str X (1290A above, 1290B below)
1302	579	2	spread in X
1307	623	2	layer in X
1310	582	2	layer in X
1414	671	2vi	soft organic layer over cobbled path 1415, N. quad
1446	728	2iv	organic layer in Str Lambda, N. quad
2055	598	3	hearth
2246	574	3	gully fill in X
2414	765	3	posthole fill in Alpha
2519	697	2vi-vii	fill of drain 2534 thro' southern entranceway wall

Context	Sample	Phase	Feature type
3313	917	2	spread in Theta
4022	973	2	hearth in Eta

Table 2. Plant remains from bulk-sieved samples, abundance scored using a three-point scale. Abbreviations for plant parts may be found in Table 2 of the Technical Report.

Context 41, Sample 350/B

Rubus sp(p).	1
Urtica dioica	2
Viola sp(p).	1
insects	1

Context 89, Sample 277/B

Rumex sp(p). (ch)	1
burnt bone fgts	1
cf. Avena sp(p).	1
moss	1

Context 128, Sample 351/B

charcoal	1 max 15 mm
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Context 184, Sample 224/B

Gramineae (ch)	1
Polygonum persicaria (ch)	1
buds	1

Context 184, Sample 239/B

'ash beads'	1
?glassy slag	1
Avena sp(p).	1

Context 184, Sample 427/B

Ajuga reptans	1
Carex sp(p).	1
Cenococcum (sclerotia)	1
Lapsana communis	1
Ranunculus Section Ranunculus	1
Rubus fruticosus agg.	1
Rumex sp(p).	1
Sonchus asper	1
Stellaria media	1

Context 322A, Sample 151/B

Corylus (charcoal)	1
cf. Alnus (charcoal)	1
charcoal	2 max 25 mm

Context 324, Sample 141/B

charcoal	1 max 10 mm
slag	1 max 10 mm
wood fgts	1 max 10 mm

Context 341, Sample 149/B

charcoal	1 max 15 mm
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Context 388, Sample 172/B

charcoal	1 max 10 mm
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Context 936, Sample 252/B

Alnus glutinosa (ch b/bs)	1
Avena sp(p).	1
Corylus avellana (ch b/bs)	1
Linum usitatissimum (ch)	1
Polygonum persicaria/lapathi folium (ch)	1
Rumex sp(p). (ch)	1
Spergula arvensis (ch)	1

Context 994, Sample 459/B

Calluna vulgaris (sht fgts)	1
Carex sp(p).	1
Cenococcum (sclerotia)	1
Chenopodium album	1
Hypnum cf. cupressiforme	1
Lapsana communis	1
Linum usitatissimum	1
Polygonum lapathifolium	1
Pteridium aquilinum (pinn fgts)	1
Ranunculus Section Ranunculus	1
Ranunculus flammula	1
Rubus fruticosus agg.	1
Rumex sp(p).	1
Stellaria media	1
beetles	1
dicot lf fgts	1

Context 998, Sample 657/B

Calluna vulgaris (fls)	1
Calluna vulgaris (sht fgts)	1
Carex sp(p).	1

Cenococcum (sclerotia)	1
Chenopodium album	1
Galeopsis Subgenus Galeopsis	1
Polygonum aviculare agg.	1
Polygonum lapathifolium	1
Polygonum persicaria	1
Ranunculus Section Ranunculus	1
Rubus cf. idaeus	1
Rumex sp(p).	1
Sonchus asper	1
beetles	1
earthworm egg caps	1
leaf ab pads	1

Context 1008, Sample 282/B

Avena sp(p).	1
bone fgts	1 max 3 mm
burnt bone fgts	1 max 3 mm
cf. Hordeum sp(p).	1

Context 1116, Sample 305/B

charcoal	1
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Context 1226, Sample 413/B

Carex sp(p).	1
Cenococcum (sclerotia)	1
Corylus avellana (ch b/bs)	1
Polygonum lapathifolium (ch)	1
Polygonum persicaria (ch)	1
Potentilla cf. erecta	1
Rubus fruticosus agg.	1
Rumex sp(p).	1

Context 1228, Sample 635/B

Brassica cf. rapa	1
Carex sp(p).	1
Galeopsis Subgenus Galeopsis	1
Hypochoeris sp(p).	1
Lapsana communis	1
Polygonum hydropiper	1
Polygonum lapathifolium	1
Polygonum persicaria	1
Potentilla cf. erecta	1
Prunella vulgaris	1
Ranunculus Section Ranunculus	1
Ranunculus flammula	1
Rubus cf. fruticosus agg.	1
Sonchus asper	1
beetles	1
earthworm egg caps	1
fly puparia	1

Context 1254, Sample 437/B

?Cenococcum (sclerotia)	1
Brassica sp./Sinapis arvensis	1
Calluna vulgaris (fls)	1
Calluna vulgaris (sht fgts)	1
Carex sp(p).	1
Galeopsis Subgenus Galeopsis	1
Hypnum cf. cupressi forme	1
Lapsana communis	1
Polygonum aviculare agg.	1
Polygonum lapathifolium	1
Polygonum persicaria	1
Potentilla cf. erecta	1
Prunella vulgaris	1
Rubus sp(p).	1
Rumex sp(p). (inc per)	1
Sonchus asper	1
Stellaria media	1
cf. Carduus/Cirsium sp(p).	1

Context 1260, Sample 462/B

Ajuga reptans	1
Calluna vulgaris (fls)	2
Calluna vulgaris (sht fgts)	1
Hypnum cf. cupressi forme	1
Potentilla cf. erecta	1

Context 1281, Sample 534/B

Calluna vulgaris (fls)	1
Calluna vulgaris (sht fgts)	1
Hylocomium splendens	1
Hypnum cf. cupressi forme	1
Lapsana communis	1
Linum usitatissimum	1
Polygonum lapathifolium	1
Pteridium aquilinum (pinn fgts)	1
Ranunculus flammula	1
Rubus fruticosus agg.	1
Thuidium cf. tamariscinum	1

Context 1290, Sample 639/B

?charred seaweed	1
Betula sp(p). (b/bs)	2
Carex sp(p).	1
Hylocomium splendens	1
Linum usitatissimum	1
Myxotrichum chartarum (ascocarps)	1
Neckera complanata	1
Polygonum persicaria	1
Pteridium aquilinum (pinn fgts)	1
Thuidium cf. tamariscinum	1
burnt bone fgts	1 max 2 mm

cf. *Corylus avellana* (b/bs) 1

cf. *Homalothecium* sp(p). 1
? *Cenococcum* (sclerotia) 1

Context 1302, Sample 579/B

Bilderdykia convolvulus (ff) 1
Brassica rapa (sf) 1
Calluna vulgaris (fls) 1
Calluna vulgaris (sht fgts) 2
Carex sp(p). 1
Corylus avellana (b/bs) 1
Eurhynchium sp(p). 1
Frullania dilatata 1
Galeopsis Subgenus *Galeopsis* 1
Homalothecium sericeum/lutescens 1
Hylocomium splendens 1
Hypnum cf. *cupressiforme* 1
Isatis tinctoria (pod fgts) 1 a single specimen
Linum usitatissimum 1
Neckera complanata 1
Polygonum hydropiper 1
Polygonum lapathifolium 1
Polygonum persicaria 1
Potentilla palustris 1
Pseudoscleropodium purum 1
Pteridium aquilinum (pinn fgts) 1
Ranunculus flammula 1
Rubus fruticosus agg. 1
Rumex sp(p). 1
Sonchus asper 1
Sorbus aucuparia 1
Spergula arvensis 1
Stellaria media 1
Ulota sp(p). 1
dicot lf fgts 1

Context 1310, Sample 582/B

Carex sp(p). 1
Hylocomium splendens 1
Lapsana communis 1
Neckera complanata 1
Polygonum persicaria/lapathifolium (ch) 1
Sonchus asper 1
dicot lf fgts 1

Context 1414, Sample 671/B

Brassica rapa 1
Calluna vulgaris (fls) 2
Calluna vulgaris (sht fgts) 2
Chenopodium album 1
Corylus avellana (b/bs) 1
Hypnum cf. *cupressiforme* 1
Hypochoeris sp(p). 1
Linum usitatissimum 2
Neckera complanata 1
Polygonum lapathifolium 1
Polygonum persicaria 1
Prunella vulgaris 1
Pteridium aquilinum (pinn fgts) 2
Ranunculus flammula 1
Rubus fruticosus agg. 1
Rumex sp(p). 1
Sonchus asper 1
Sorbus aucuparia 1
Spergula arvensis 1

Context 1307, Sample 623/B

Ajuga reptans 1
Avena sp(p). 1
Calluna vulgaris (caps) 1
Calluna vulgaris (sht fgts) 1
Cenococcum (sclerotia) 1
Hypnum cf. *cupressiforme* 1
Lapsana communis 1
Linum usitatissimum 1
Neckera complanata 1
Polygonum aviculare agg. 1
Polygonum lapathifolium 1
Polygonum persicaria 1
Pteridium aquilinum (pinn fgts) 1
Ranunculus Section *Ranunculus* 1
Ranunculus flammula 1
Rubus fruticosus agg. 1
Rumex sp(p). (inc per) 1
Urtica dioica 1
buds 1

Context 1446, Sample 728/B

Carex sp(p). 1
Carex sp(p). (ch) 1
Cenococcum (sclerotia) 1
Chenopodium album 1
Gramineae (ch c/n) 1
Gramineae/Cerealia (c/n) 1
Hordeum sp(p). (rachis internodes) 1 a single specimen
Hypnum cf. *cupressiforme* 1
Isatis tinctoria (pod fgts) 1
Lapsana communis 1
Linum usitatissimum 1
Polygonum lapathifolium 1
Potentilla palustris 1
Ranunculus Section *Ranunculus* (ch) 1
Ranunculus flammula 1
Rubus fruticosus agg. 1
Rubus fruticosus agg. (ch) 1
Sonchus asper 1

Spergula arvensis	1		
Stellaria media	1		
beetles	1		
fly puparia	1		
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Context 2055, Sample 598/B			
Avena sp(p).	1		
Bilderdykia convolvulus (ch)	1		
Carex sp(p). (ch)	1		
Corylus avellana (ch b/bs)	1		
Polygonum aviculare agg. (ch)	1		
Polygonum persicaria (ch)	1		
Pteridium aquilinum (ch pinn fgts)	1		
burnt bone fgts	1	max 2 mm	
cf. Triticum sp(p).	1		
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Context 2064, Sample 764/B			
Carex sp(p). (ch)	1		
Polygonum persicaria/lapathifolium (ch)	1		
Rumex sp(p). (ch)	1		
Stellaria media (ch)	1		
cf. Avena sp(p).	1		
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Context 2245, Sample 574/B			
charcoal	1	max 5 mm	
grit	1		
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Context 2414, Sample 765/B			
slag	1	max 2 mm	
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Context 2519, Sample 697/B			
Calluna vulgaris (fls)	1		
Carex sp(p).	1		
Cenococcum (sclerotia)	1		
Chenopodium album	1		
Hypnum cf. cupressi forme	1		
Lapsana communis	1		
Linum usitatissimum	1		
Neckera complanata	1		
Polygonum persicaria	1		
Potentilla cf. erecta	1		
Potentilla palustris	1		
Pteridium aquilinum (pinn fgts)	1		
Ranunculus Section Ranunculus	1		
Rubus fruticosus agg.	1		
Rumex sp(p).	1		
earthworm egg caps	1		
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Context 3313, Sample 917/B			
Ajuga reptans	1		
Atriplex sp(p).	1		
Avena fatua (spk/fts/fgts)	1		part-charred ('toasted')
Brassica rapa (sf)	1		
Carex sp(p).	1		
Cenococcum (sclerotia)	1		
Cerealia indet.	1		
Chenopodium album	1		
Corylus avellana (ch b/bs)	1		
Galeopsis Subgenus Galeopsis	1		
Galeopsis sp(p). (ch)	1		
Isatis tinctoria (pod fgts)	1		a single specimen
Lapsana communis	1		
Linum usitatissimum	1		
Polygonum lapathifolium	1		
Polygonum persicaria	1		
Potentilla palustris	1		
Prunella vulgaris	1		
Pteridium aquilinum (pinn fgts)	1		
Racomitrium canescens	1		
Ranunculus Section Ranunculus	1		
Ranunculus flammula	1		
Rubus fruticosus agg.	1		part-charred ('toasted')
Sonchus asper	1		
Stellaria media	1		
cf. Secale cereale	1		a single specimen
earthworm egg caps	1		
slag	1	max 2 mm	
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Context 4022, Sample 973/B			
Ajuga reptans	1		
Brassica rapa (sf)	1		
Carex sp(p).	1		
Cenococcum (sclerotia)	1		
Chenopodium album	1		
Corylus avellana (ch b/bs)	1		
Galeopsis Subgenus Galeopsis	1		
Lapsana communis	1		
Leguminosae (fls/pet)	1		
Polygonum aviculare agg.	1		
Polygonum hydropiper	1		
Polygonum lapathifolium	1		
Polygonum persicaria	1		
Pteridium aquilinum (pinn fgts)	1		
Ranunculus Section Ranunculus	1		
Ranunculus flammula	1		
Rubus caesius	1		fragment(s) only
Rumex sp(p).	2		
Rumex sp(p). (flg st fgts)	1		
Sonchus asper	1		

Spergula arvensis	1	earthworm egg caps	1
Stellaria media	1	fly puparia	1
Ulota sp(p).	1	leaf ab pads	1
Urtica dioica	1	mites	1
beetles	1	twig fgts	2
buds	1		

Table 3. Plant remains and other components recorded from a 'spot' find of peat within Sample 1027, Context 4095, using a three-point scale of abundance.

Betula sp(p).	1	Scirpus setaceus	1
Carex sp(p).	2	beetles	1
Cenococcum (sclerotia)	2	cf. Gramineae (culm bases/rh fgts)	1
Galeopsis Subgenus Galeopsis	1	cf. Gramineae (culm fgts)	1
Ilex aquifolium (lef)	1	cf. Rhytidiadelphus sp(p).	1
Juncus cf. acutiflorus	1	charcoal	1 to 5 mm
Neckera complanata	1	peat fgts	3
Potentilla cf. erecta	1	root/rootlet fgts	2
Ranunculus flammula	1	twig fgts	1 to 10 mm

References

- Allison, E., Hall, A. and Kenward, H. (1999a). Technical Report. Living conditions and resource exploitation at the Early Christian rath at Deer Park Farms, Co. Antrim, N. Ireland: evidence from plants and invertebrates. Part 1: Text. *Reports from the Environmental Archaeology Unit, York* **99/8**, 64 pp.
- Allison, E., Hall, A. and Kenward, H. (1999b). Technical Report. Living conditions and resource exploitation at the Early Christian rath at Deer Park Farms, Co. Antrim, N. Ireland: evidence from plants and invertebrates. Part 2: Tables. *Reports from the Environmental Archaeology Unit, York* **99/10**, 144 pp.
- Appleyard, H. M. (1978). *Guide to the identification of animal fibres*. Leeds: WIRA.
- Kenward, H. K. and Hall, A. R. (1995). Biological evidence from Anglo-Scandinavian deposits at 16-22 Coppergate. *The Archaeology of York* **14** (7), 435-797 + xxii + loose figures. York: Council for British Archaeology.
- Ryder, M. L. (1969). Changes in the fleece of sheep following domestication, pp. 495-521 in Ucko, P. J. and Dimbleby, G.W. (eds.), *The domestication of plants and animals*. London: Duckworth.
- Ryder, M. L. (1983). *Sheep and man*. London: Duckworth.
- Walton, P. (1989). Textiles, cordage and raw fibre from 16-22 Coppergate. *The Archaeology of York* **17**(5). London: Council for British Archaeology.
- Walton Rogers, P. (1995). The raw materials of textiles from northern Germany and the Netherlands. *Probleme der Küstenforschung im südlichen Nordseegebiet* **23**, 389-400.
- Walton Rogers, P. (1999). Archive Report: Animal fibres from the Early Christian rath at Deer Park Farms, Co. Antrim, N. Ireland. York: Textile Research in Archaeology.
- Wildman, A. B. (1954). *The microscopy of animal textile fibres*. Leeds: WIRA.