Discussion

The 1991–2 Trial Excavations had identified a disparity in form and function between the two linear elements comprising the double–ditch feature, Anomaly D. The more extensive 1992 excavation, the subject of this report, supported that conclusion.

The northern linear feature, segment cuts 19, 220, 223 and 246, was of rounded profile, and notably lacking in any trace of wheel–ruts. In addition, the fills were noticeably more stony than those of the trackway segments. These more stony fills suggest different circumstances for their deposition, compared to the siltier trackway fills. It is possible that stony material removed from the original excavation of the ditch formed a bank, which silted and eroded back into the ditch over time.

The asymmetrical profile of 19, 220, 223 and 246 implies the presence of a re–cut. However, it was only in segment cut 220 that such an assumption was supported by the arrangement of the fills, with fills 219 and 218 apparently representing the fills of an earlier ditch, which was superseded by one containing 215, 216 and 217.

The 1992 excavation confirmed the existence of wheel–ruts in the base of the trackway; these features were present in all of the excavated trackway segments, contexts 35, 234, 239 and 285. Essentially, the road or trackway surface would appear to have been the natural bed–rock, which was eroded in time by the passing of traffic to form a hollow–way.

Segment 234 showed at least two pairs of wheel–ruts in its base; segments 35 and 239 each had a pair of broad ruts, probably representing the amalgamation of a number of ruts.

Trackway segment cut 285 was the only area of the trackway to exhibit ruts at a level above the base. It is likely that the uneven degree of erosion or wear, causing an asymmetrical profile, with rut cut segments 276, 282 and 284 being much deeper than rut cut segment 273, necessitated levelling the trackway with limestones to form metaled surfaces 255, 257 and 268. This has the appearance of 'patching' rather than overall surfacing. The uppermost of these layers, context 255, continued to function as a trackway, the use of which was represented by rut cut segments 249, 251 and 253.

The gauge of the wheel–ruts is c1.6m, which is slightly above that for the upper range of wheel–separation in a Late Bronze Age/Early Iron Age trackway at West Heslerton (Powlesland *et al* 1986, 134). A later date is provided for the West Lodge trackway by the Romano–British pottery from its fills.

The source of the material for trackway cut 285 is likely to have been the adjacent cut 58, which cut into the large (natural) hollow, Anomaly F. The angular limestone fill of this hollow must have represented a convenient source of stone. The amorphous appearance of cut 58 supports the suggestion that it functioned as a

quarry, and it apparently filled or silted up at the same time as the trackway segment, containing similar Romano-British calcite-gritted wares.

The large hollow into which 58 cut, Anomaly F, is believed to have been formed by the natural erosion or dissolving of the limestone bed-rock, either at the surface or at depth; the latter of which would have caused subsidence and the creation of a hollow. The fills examined in both the Trial Excavation and the 1992 Excavation (context 288) consisted of angular limestone blocks, with many voids and a marly matrix devoid of humic content. These fills would appear to have been formed by the deposition of naturally eroded stone.

Such natural erosion might possibly account for the presence of the fragmentary cremation urn (contexts 65 and 66). The urn was not confined within a specific cut and hence probably became incorporated into the hollow during the truncation of the adjacent land surface, perhaps during ancient cultivation. The 1991 excavation revealed no further urns or cremations, even though there was specific examination of the horizon in which 65 and 66 had been found. 65/6 might either represent the chance survival of a cremation which originally formed part of a cemetery, or be an isolated individual. The cremation is described in Appendix 4. Isolated Bronze Age cremations are comparatively rarer than groups, eg at West Heslerton, (D Powlesland, pers comm), but, as stated above, no attendant examples were encountered in the 1992 West Lodge excavation.

The geophysical survey, defined the two parallel linear features (Anomaly F) and re-emphasised their interpretation as a trackway, first put forward by Robinson (Robinson, no 44). A similar double-ditched trackway has been identified in Norton (*ibid*, no 375).

However, the disparity shown by the double-ditch features of the West Lodge excavations, in terms of their fills and form (outlined above) suggests that they represent two phases of activity: a boundary ditch (19, 220, 223 and 246), perhaps with a (vanished) bank, alongside which a hollow-way (35, 234, 239 and 285) was created by the passage of wheeled traffic. That there were no traces of similar ruts on the bed-rock surfaces between the two linear features (though these may have been removed by subsequent erosion or ploughing) suggests that this surface did not function as a trackway.

However, the possibility remains that a pre-existing, perhaps Iron Age, droveway was modified in Roman times. The 'model' for many of the double-ditched features in Eastern Yorkshire is that they represent Late Bronze Age or Iron Age land boundaries/Dykes or droveways. It has been shown that such Dyke systems have a long history, illustrated by a Triple Dyke at Fimber (Mortimer 1905, 189) which was dated to the Late Bronze Age by the presence of bronze-making mould fragments in the fill of a ditch cutting the bank. Later excavations at the Fimber Dyke (Ehrenburg and Caple 1983 and 1985) suggested a number of constructional phases as the two outer ditches were of flat-based-V profile, with the central ditch being narrower and of segmented form. A Double Dyke at Riplingham (Wacher 1965) was probably also of Late Bronze Age/ Early Iron Age date, and the eastern Dyke was seen as

having been used as a trackway, although in this case for foot or animal rather wheeled traffic.

The 1992 Excavation at West Lodge provided strong evidence that both the ditch and trackway were of Romano–British date. Romano–British sherds were found in all of the lower fills, and a coin was found in one of the lower fills of 246. No earlier pottery was found at the site, and the few flint implements and flakes are no more than might be expected from almost any cultivated field in the area, and do not imply any permanent settlement at the site.

The ditch and trackway had almost certainly silted up by medieval times; the few medieval sherds found in the upper fills of 19 and 35 support this assumption. In addition, it has been demonstrated that an Open Field system existed on the site (Robinson, 18), and the ridge and furrow of this Open Field cut across the top of the trackway, in the area of segment 234 at least. For this to occur surely attests that the trackway and ditch were essentially redundant by medieval times. More ridge and furrow is apparently represented by the parallel linear anomalies 'E' (Fig 2).

Analysis of the land snail assemblages (Appendix 3) strongly suggest that both the trackway and the ditch functioned in a landscape characterised by grassland. This suggests that the vicinity of the site, 1.5km west of the Roman fort and town of *Derventio*, was not used for arable purposes in the Romano–British period. The grassland may have been used for more intensive grazing at a later stage. Ultimately, the grassland and pasture seems to have given way to an arable landscape, presumably reflecting the introduction of the medieval Open Field.

Aerial photographs show the continuation of the ditch and trackway for a further 600m to the north–west of the site (Fig 1). It is possible that the trackway served a number of Romano–British sites on the Howardian Hills; only specific research beyond the scope of this report will illuminate this factor, and place the West Lodge features in their broader context.

Recommendations

It is recommended that an Archaeological Watching Brief be carried out on the installation of the roads and sewers at the northern part of the site where these intersect the ditch/trackway (Anomaly 'D') and natural hollow (Anomaly 'F'). The latter area is included because there is the chance that further cremations might be revealed.

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Appendix 1 – Finds Catalogue

Pottery

Context	Description	Total weight (Kg)
208	1 calcite–gritted body sherd	–
209	1 Norton Greyware body sherd	–
210	1 colour–coated body sherd 1 Greyware body sherd	–
212	11 calcite–gritted body sherds 1 York ware flanged rim sherd, abraded 1 Greyware body sherd	0.03
214	5 calcite–gritted body sherds 3 Norton Greyware	0.05
216	1 calcite–gritted body sherd	–
225	3 calcite–gritted sherds, incl 2 rims 4 Greyware sherds, incl 2 rims (Fig 13.1 & 3)	0.05
226	11 calcite–gritted sherds, incl 3 rims	0.05
227	4 calcite–gritted body sherds	0.02
235	13 calcite–gritted sherds, incl 2 rims 1 black–burnished type base	0.05
236	6 calcite–gritted sherds, incl 1 base 3 Crambeck Greyware sherds, incl 2 rims (Fig 13.4) 1 Greyware base sherd	0.06
237	2 calcite–gritted body sherds 2 Greyware body sherds	0.03
240	5 calcite–gritted body sherds 2 Greyware crumbs 1 Crambeck 'parchment ware' body sherd	0.01
242	3 small calcite–gritted body sherds 3 black–burnished type sherds	0.02
245	1 Greyware body sherd	–
247	57 calcite–gritted sherds, incl 4 rims (Fig 13.5&6) 4 Greyware sherds, incl 2 rims 2 small colour–coated body sherds 1 Crambeck 'parchment ware' base sherd (Fig 13.2) 1 unident mortarium body sherd; orange fabric, black grits	0.38
257	1 Greyware body sherd	–

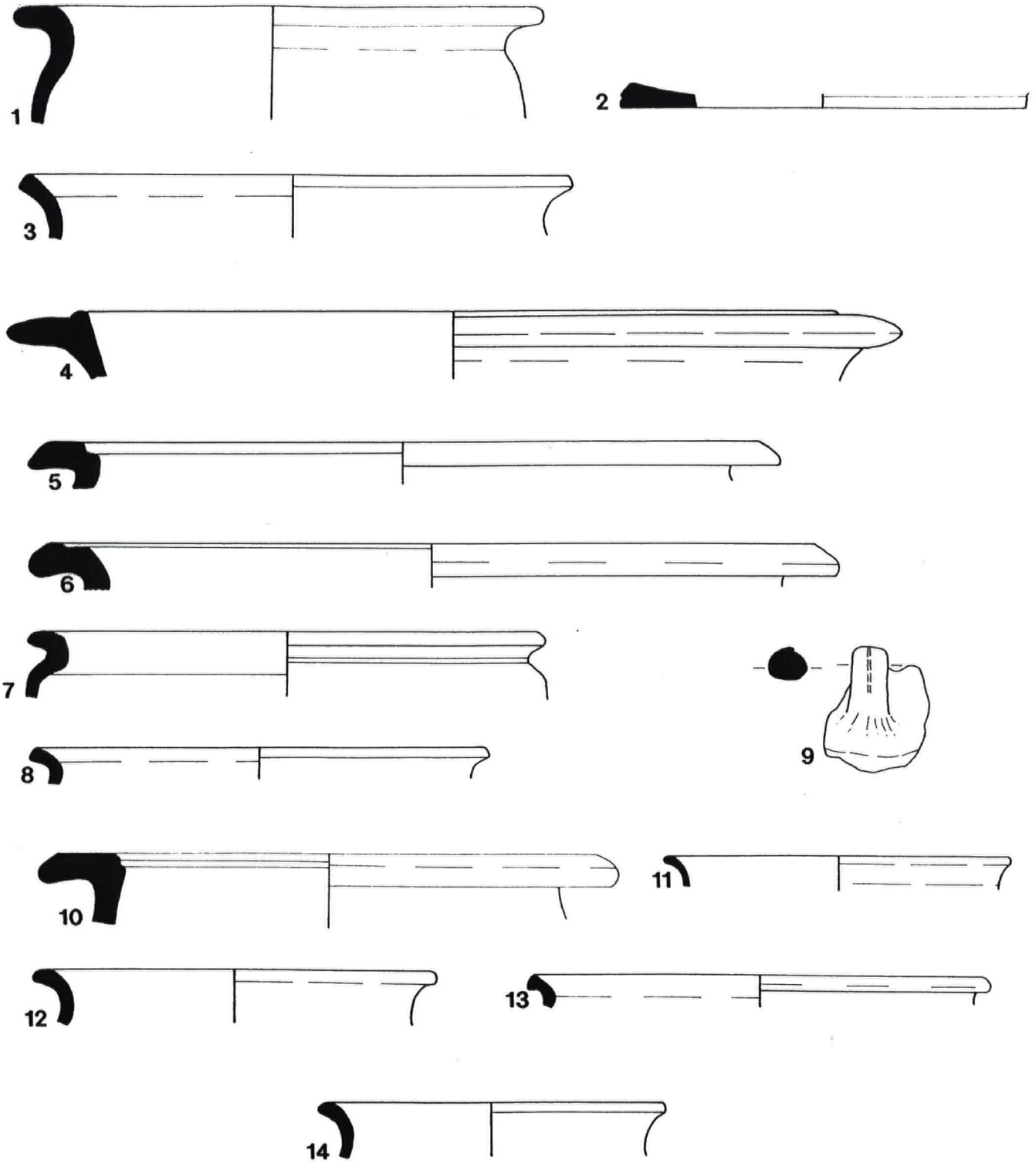

Figure 13 – Pottery from contexts 225, 236, 247, 260 and 272. Scale 1:2.

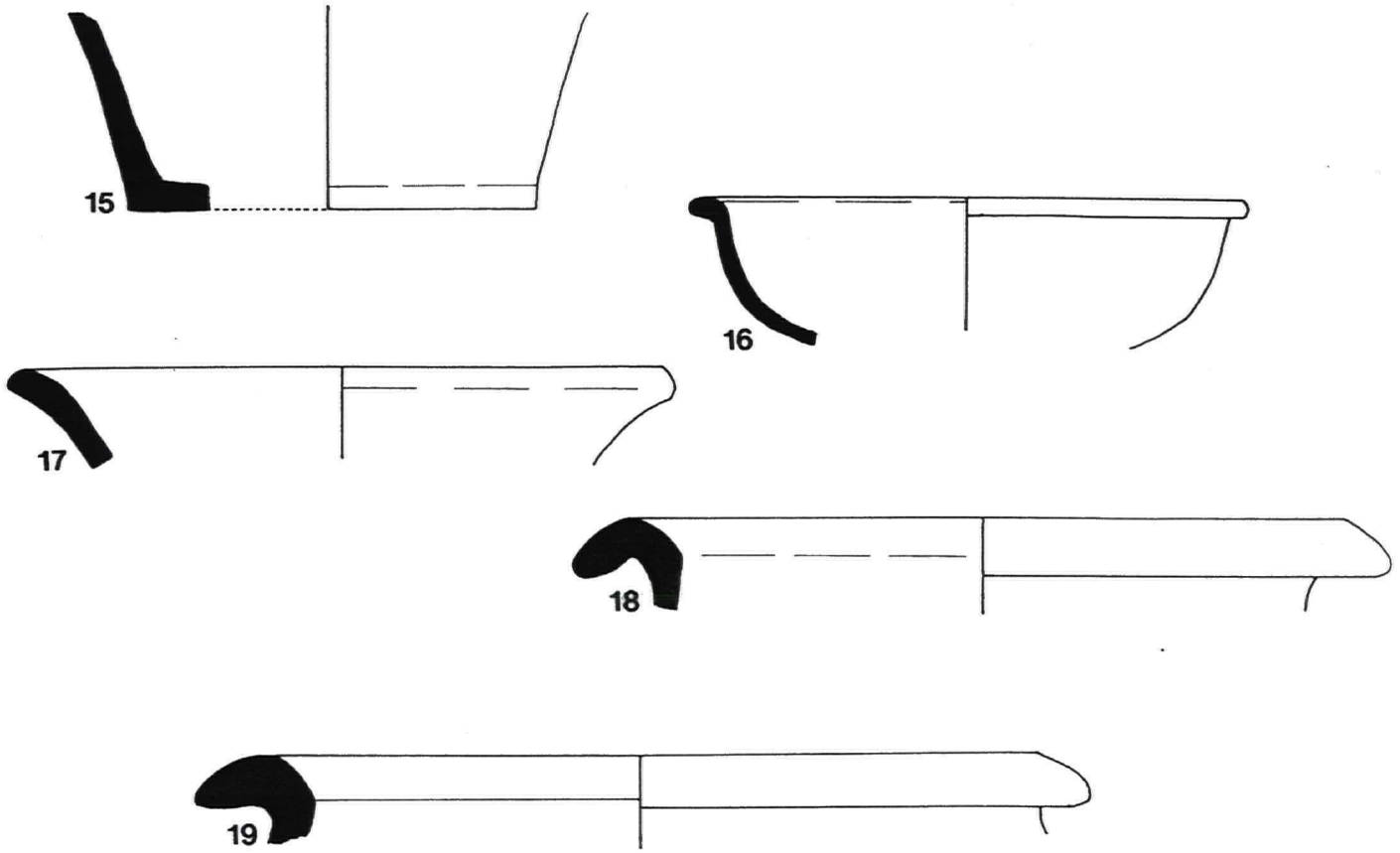

Figure 14 – Pottery from context 290. Scale 1:2.

Pottery (con)	Description	Total Weight (Kg)
259	5 Samian sherds, incl base	0.02
260	7 calcite-gritted body sherds 3 Greyware sherds, incl 1 rim (Fig 13.7) 1 small colour-coated body sherd 1 small Crambeck 'parchment ware' body sherd 2 black-burnished type, incl. 1 handle and 1 rim (Fig 13.8 & 9)	0.06
263	1 small Greyware body sherd	-
268	1 small calcite-gritted body sherd	-
271	16 calcite-gritted body sherds 1 Greyware body sherd 1 colour-coated body sherd	0.06
272	54 calcite-gritted sherds, incl 7 rims and 3 bases (Fig 13.10,12-14) 2 Greyware miniature jar sherds (Fig 13. 11)	0.4
288	8 calcite-gritted sherds, incl 1 rim	0.02
290	210 calcite-gritted sherds, incl 3 rims and 3 bases (Fig 14. 15, 17-19) 1 Crambeck 'parchment ware' jar rim sherd (Fig 14.16)	1.56

The pottery from the 1992 excavation generally reflects that from the Trial Excavation of Areas 3 and 4 in terms of date and fabric types, with the exception that medieval sherds are absent.

The majority of sherds are from calcite-gritted vessels of local manufacture, with a range of cook-pots and jars represented. These vessels date from the 2/3rd century.

The amount of sherds in other fabrics was small, with locally produced 2nd century Greywares, 3rd Crambeck wares, colour-coated, black-burnished, Samian and a single sherd of York manufacture being represented.

Most of the sherds are therefore from 2nd/3rd century standard everyday vessels, with few finer pieces. Many of the sherds are small suggesting deposition during agricultural activity.

Brick and Tile

Context	Description	Weight (Kg)
208	2 frags	0.01
214	4 frags	0.05
224	2 small frags	0.01
227	7 frags	0.25
236	1 frag	0.01
240	12 small frags	0.1
242	5 small frags	0.02

Brick and Tile (con)

Context	Description	Weight (Kg)
247	4 small frags	0.01
260	2 ?tile frags	0.06
290	1 *tegula* frag	0.11

The brick/tile fragments were kindly examined by Sandra Garside-Neville. Fragments from contexts 227, 240, 242, 260 and 290 were consistent with Roman fabrics at York; fragments from the remainder of the contexts containing brick/tile were too small for identification. Two fragments were large enough to identify the form of the original brick/tile: a fragment of curved roofing tile from context 260, and a piece of flat *tegula* from context 290 .

Stone

Context	Description	Weight (Kg)
4	4 small frags	0.01
214	3 frags	0.42
223	1 ?quern frag, pale brown sandstone	1.06
225	5 frags	0.25
227	8 frags	0.48
228	3 frags	0.11
235	1 pebble	0.05
236	1 frag	0.01
240	11 frags	0.16
242	3 frags	0.02
245	6 frags	0.24
247	12 frags	1.86
263	1 frag	0.01
270	1 frag	0.04
272	11 frags	1.16
288	2 frags	0.1
290	10 frags	1.38

The following contexts contained a number of flat roofing 'slate' fragments in a calcareous sandstone: 247, 272, 288 and 290 (included above).

Animal Bone

Context	Description	Weight (Kg)
238	6 frags	0.15
240	2 small cattle teeth frags	-
272	2 frags, incl 1 tooth	-
290	3 frags, incl 1 long bone	-

It can be seen that very few contexts contained any animal bone; this may be accounted for by soil conditions (the degree of acidity) or the nature in which the contexts were deposited (predominantly natural silting associated with cultivation, rather than deposition of occupational debris).

Marine Shell

A single fragment of marine shell was recovered, a fragment of common oyster, *ostrea edulis,* from context 272.

Flint

The following contexts contained struck flint flakes: 212, 235, 238, 247, 260, 270, 271 and 286. The only tools were both from context 212, comprising a blade with cortex remnants and no signs of retouching (Fig 15.1), and a blade-end fragment (Fig 15.2). The remaining flakes were waste flakes.

Objects of Iron

L = length, T = thickness, W = width, D = diameter. Measurements in mm.

Context 208: timber nail; curved, tapering shank of square cross-section, L = 48, T = 4. Rectangular head; L = 12, W = 9, T = 2. Overall L = 50.

Context 218: ?horse-shoe nail; rectangular shank, L = 24, W = 8, T = 5. Rectangular, key-shaped head, L = 22, W = 6, T = 6. Overall L = 30.

Context 228: 4 timber nail frags:
(a) Curved shank of square cross-section, L = 28, W = 6. Rectangular, domed head, L = 12, W = 5, T = 6. Overall length = 34.
(b) Shank of square cross-section, L = 24, W = 5. Square, flat head, L = 7, W = 7, T = 3. Overall L = 27.
(c) Tapering shank fragment, rectangular cross-section, L = 30, W = 4, L = 3.
(d) Square head fragment, W = 9, T = 4.

Context 238: L-shaped timber nail fragment; shank of square cross-section, L = 25, W = 6. Rectangular head, L = 14, W = 11, T = 3. Overall L = 28.

Context 242: Stud, tapering shank bent into an S-shape, L = 12, max T = 3. Domed, oval head, L = 11, W = 8, T = 3. Overall L = 15.

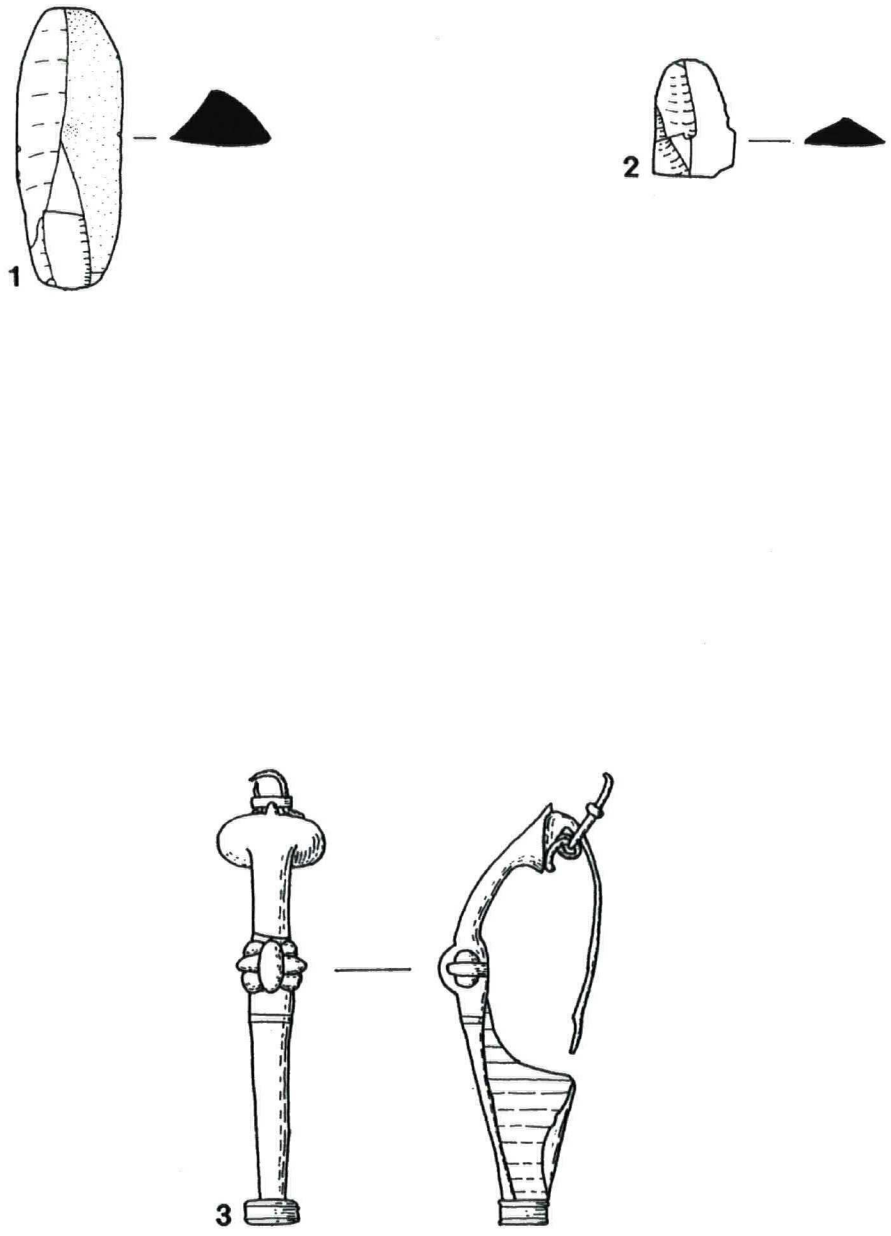

Figure 15 – Objects of Flint and Copper Alloy. Scale 1:2.

Context 247: 4 fragmentary nails, 1 obj:
(a) Nail; shank with square cross-section, L = 34, W = 5. Rectangular head, L = 12, W = 8, T = 2. Overall L = 36.
(b) Tapering nail shank frag, square cross-section, L= 19, max W = 4.
(c) Nail shank frag, square-cross-section, L = 18, W = 4.
(d) Circular nail head frag, D = 6, T = 4.
(e) Obj, ?blade frag, L = 27, W = 19, T = 2.

Context 255: Complete timber nail; curved, tapering shank of square cross-section, L = 68, W = 7. Oval head, L = 22, W = 13, T = 3. Overall L = 71.

Context 259: Nail shank frag, square cross-section, L = 15, W = 5.

Context 260: Nail frag; shank of square cross-section, L = 32, W = 5. Oval head, L = 11, W = 8, T = 3. Overall L = 35.

Context 279: Obj, ?blade frag, slightly curving, rectangular cross-section, L = 104, W = 32, T = 4.

Context 283: 2 nail frags, 1 obj:
(a) Nail frag; shank of rectangular cross-section, L = 35, W = 8, T = 6. Rectangular head, L = 20, W = 13, T = 3. Overall L = 38.
(b) Nail shank frag, square cross-section, L = 35, W = 5.
(c) Obj of triangular form, L = 55, W = 41, T = 6.

Objects of Copper Alloy

(Abbreviations as for Fe objs above)
Context 260: cast cylindrical obj with pierced semi circular moulding on one end, ?broken buckle pin, L = 24, W = 2.

Context 290: trumpet brooch with wire headloop (broken) and hinged pin (tip broken). Decoration consists of cast moulded beading on bow, with incised lines above and below, plus two incised lines on the knop. This brooch is comparable to an example from Rudston Villa (Stead 1980, Fig 60.8).

Coins

Context 238: 3rd century barbarous radiate, obv. radiate bust, rev. debased geometric design.

Context 290: 4th century Constantian, largely illegible, obv. laureate bust facing left.

Appendix 2 – Context List

(Contexts 16–66 relate to the Trial Excavations)

Context No	Area	Description
16	3a	'Hillwash'; clayey loam, 10 yr 5/6
19	3a	Ditch cut seg
20	3a	Fill of 19; clayey loam, 10 YR 5/6
30	3a	Fill of 19; silty loam, 10 YR 5/4
31	3a	Fill of 19; silty loam. 10 YR 5/6
32	3a	Fill of 19; loamy silt, 10 YR 6/6
33	3a	Fill of 19; fine loamy silt, 10 YR 5/4
34	3a	Fill of 19; silt, 10 YR 7/4
35	3a	Trackway cut seg
36	3a	Fill of 35; silty, clayey loam, 10 YR 4/4
37	3a	Fill of 35; silty loam, 10 YR 4/4
39	3a	Fill of 35; silt, 10 YR 5/4
58	4	?Quarry cut
60	4	Fill of 58; clayey, silty gravel, 10 YR 5/4
62	4	Fill of 58; marly, lst blocks, 10 YR 6/8
65	4	Pottery vessel
66	4	Fill of 65; clayey loam, 10 YR 5/4
200	3	Modern ploughsoil; clayey loam, 10 YR 3/1
201	3c	Fill of 202, sandy silt, 10 YR 4/2
202	3c	Furrow cut seg
203	3c	Layer, silty loam, 10 YR 4/4
204	3c	Fill of 234; loamy silt, 10 YR 4/4
205	3c	Fill of 234; loamy silt, 10 YR 4/4
206	3c	Fill of 234; loamy silt, 10 YR 4/4
207	3c	Fill of 223; loamy, sandy silt, 10 YR 4/4
208	3c	Fill of 223; loamy, sandy silt, 10 YR 4/4
209	3b	Fill of 220; coarse silty loam, 10 YR 5/4
210	3b	Fill of 220; silty loam, 10 YR 4/4
211	3b	Fill of 220; silty loam, 10 YR 4/6
212	3b	Fill of 239; silty loam, 10YR 5/6
213	3b	Fill of 239; silty loam, 10 YR 5/6
214	3c	Fill of 223; loamy, slightly sandy silt, 10 YR 4/3
215	3b	Fill of 220; fine loamy silt, 10 YR 4/6
216	3b	Fill of 220; loamy silt, 10 YR 5/4
217	3b	Fill of 220; loamy silt, 10 YR 5/6
218	3b	Fill of 220; silt, 10 YR 6/6
219	3b	Fill of 219; silt, 10 YR 5/6
220	3b	Ditch cut seg
221	3c	Fill of 223; sandy silt, 10 YR 4/3
222	3c	Fill of 223; sandy silt, 10 YR 5/2
223	3c	Ditch cut seg
224	3d	Fill of 246; sandy loam, 10 YR 4/6
225	3d	Fill of 246; sandy loam, 10 YR 3/6
226	3c	Fill of 234; loamy silt, 10 YR 4/3
227	3c	Fill of 234; loamy silt, 10 YR 4/3
228	3c	Fill of 230; silty sand, 10 YR 4/2
229	3c	Rut cut seg
230	3c	Rut cut seg
231	3c	Fill of 229 & 234; loamy, sandy silt, 10 YR 4/2
232	3c	Fill of 233; silty sand, 10 YR 5/2
233	3c	Rut cut seg
234	3c	Trackway cut seg
235	3b	Fill of 239; silty loam, 10 YR 5/4

Context No	Area	Description
235	3b	Fill of 239; silty loam, 10 YR 5/4
236	3b	Fill of 239; loamy silt, 10 YR 5/4
237	3d	Fill of 246; medium loamy sand, 10 YR 3/4
238	3d	Fill of 246; medium loamy sand, 7.5 YR 4/6
239	3b	Trackway cut seg
240	3b	Fill of 241; loamy silt, 10 YR 4/6
241	3b	Rut cut seg
242	3b	Fill of 243; loamy silt, 10 YR 5/6
243	3b	Rut cut seg
244	3d	Fill of 246; medium loamy sand, 10 YR 3/6
245	3d	Fill of 246; silty sand, 10 YR 4/6
246	3d	Ditch cut seg
247	3d	Fill of 285; sandy silt, 10 YR 5/4
248	3d	Fill of 249; sandy silt, 10 YR 4/3
249	3d	Rut cut seg
250	3d	Fill of 251; sandy silt, 10 YR 5/4
251	3d	Rut cut seg
252	3d	Fill of 253; sandy silt, 10 YR 4/4
253	3d	Rut cut seg
254	3d	Fill of 285; gravelly, sandy silt, 10 YR 4/4
255	3d	Fill of 285; stony, sandy silt, 10 YR 4/4
256	3d	Fill of 285; rubbly, sandy silt, 10 YR 4/4
257	3d	Fill of 285; stony, sandy silt, 10 YR 4/4
258	3d	Fill of 285; sandy silt, 10 YR 5/4
259	3d	Fill of 285; sandy silt, 10 YR 5/4
260	4	Fill of 58; sandy silt, 10 YR 4/3
261	3d	Fill of 262; sandy silt, 10 YR 5/3
262	3d	Rut cut seg
263	3d	Fill of 264; sandy silt, 10 YR 5/4
264	3d	Rut cut seg
265	3d	Fill of 285; silt, 10 YR 5/4
266	3d	Fill of 285; clayey silt, 10 YR 4/4
267	3d	Fill of 285; clayey, sandy silt, 10 YR 5/4
268	3d	Fill of 285; sandy silt, 10 YR 5/3
269	3d	Fill of 285; clayey silt, 10 YR 5/4
270	3d	Fill of 273; clayey silt, 10 YR 5/4
271	4	Fill of 58; fine sandy silt, 10 YR 4/3
272	4	Fill of 58; sandy silt, 10 YR 4/4
273	3d	Rut cut seg
274	3d	Fill of 285; limestone frags, 10 YR 4/2
275	3d	Fill of 276; clayey, fine sandy silt, 10 YR 5/4
276	3d	Rut cut seg
277	3d	Fill of 285; fine sandy silt, 10 YR 5/4
278	3d	Rut cut seg
279	3d	Fill of 285; slightly clayey, fine sandy silt, 10 YR 5/4
280	3d	Fill of 285; angular limestones, lime matrix, 10 YR 7/2
281	3d	Fill of 282; clayey, fine sandy silt, 10 YR 5/4
282	3d	Rut cut seg
283	3d	Fill of 285; angular limestone
284	3d	Rut cut seg
285	3d	Trackway cut seg
286	4	Fill of 58; sandy silty gravel, 10 YR 7/2
287	4	Fill of 58; clayey silt, 10 YR 4/4
288	4	Angular limestone blocks
289	4	Fill of 58; sandy, clayey silt, 10 YR 4/4
290	4	Fill of 58; fine sandy silt, 10 YR 4/3

Appendix 3 - Molluscan remains from the excavations at West Lodge, Malton, 1991 (Draft).
Dr Annie Milles, Environmental Archaeology Unit, University of York, 5.11.92..

Summary

Samples were taken during the excavation of the Roman trackway and ditch at West Lodge, Malton and examined primarily for molluscan shells. The molluscan faunas from both the ditch and the trackway fills suggest the presence of grassland throughout the period of time represented by the fills, although changes in the molluscan faunas suggest differences in land use through time.

Introduction

The site examined consisted of an infilled trackway, the wheel ruts of which had worn into the underlying limestone, and a ditch. The site lies on Jurassic limestone, which forms a 60m high hill known as The Brows to the west of Malton. The trackway runs across the top of the hill and, at the point where it was sampled, the ditch lies three metres to the north of the trackway on relatively level ground. The ditch and trackway appear to diverge to the west of the sampling location.

Methods

One vertical sequence of samples was taken through sediments overlying the trackway (WL4), and another vertical sequence was taken through the fill of the ditch (WL5), at a point where this was only 2m north of the trackway. Samples were usually taken at 5cm intervals throughout the sequences, except for the upper part of the ditch fill, where samples were taken at 10cm intervals.

In the laboratory, all the samples were examined and their lithology described using a standard *pro-forma*. A 1kg subsample of each sample was processed following the methods outlined by Evans (1972).

The processed subsamples were sorted under a low power binocular microscope. All shells retaining apical fragments were removed for identification, along with particularly diagnostic body whorl or aperture fragments and other fossil biota, although in most of the samples examined only Mollusca were preserved.

Molluscan material was identified primarily with reference to other securely named sub-fossil land snails and modern comparative material in the Environmental Archaeology Unit. Published works such as Ellis (1969), Kerney, Cameron and Riley (1979), Evans (1972) and Pfleger and Chatfield (1988) were also useful.

Once identified, the specimens were stored in internally labelled glass specimen tubes, with the rest of the site archive.

Results: WL4 (The sediments overlying the trackway)

A brief description of the sediments is followed by the results of the molluscan analyses.

The sequence WL4 was taken through the sediments overlying the trackway worn into the limestone (cut 35; contexts 36, 37, 39 and 40). The depths of each sediment type and of the samples below the surface of the ploughsoil are given in centimetres.

> WL 4 0-20cm: a dark yellowish brown (10 YR 4/6), dry, crumbly, slightly sandy clay silt, with stones 2mm-6cm in size.

WL 4 20–50 cm: a yellowish brown (10 YR 5/8), dry crumbly, slightly sandy clay silt, with stones 2mm–2cm in size.

WL 4 50–65 cm: a yellowish brown (10 YR 5/8), dry, crumbly, clay silt, with stones 2mm–2cm in size.

WL 4 65–75 cm: a brownish yellow (10 YR 6/6), dry crumbly, clay silt, with stones 2mm–2cm in size.

The results of the molluscan analyses from this sequence are discussed using molluscan assemblage zones which are based on archaeological, lithostratigraphic and molluscan data. The results are presented in Table 1, and as a histogram of absolute numbers of land snails in each sub-sample (Fig 16).

Molluscan assemblage zone WL*A* 1 (WL*A* 75–65cm)

This zone is characterised by the low but increasing numbers of land snails, by the increasing amount of fine sediment and the very small amount of coarse material. The most numerous species is *Vallonia excentrica,* with *Pupilla muscorum, Vertigo pygmaea, Helicella itala, Trichia hispida, Punctum pygmaeum* and the Limacidae also represented, and *Nesovitrea hammonis* occurring in the upper part of the zone. This is a grassland assemblage, typically of shorter grassland, and contains species characteristic of grassland found elsewhere in Yorkshire (Bush 1988), and in some chalk grassland habitats in the south east of England (Cameron and Morgan-Huws 1975).

Molluscan assemblage zone WL*A* 2 (WL*A* 65–50 cm)

This zone is characterised by a substantial increase in the numbers of land snails, by a slight increase in the diversity of species, and by an overall very slight increase in the amount of very fine sediment, although in the upper part of the zone there is a slight and short-lived peak in the amount of coarse sediment. The zone is marked by the appearance of *Cochlicopa lubrica* and *Vallonia costata,* and of *Carychium tridentatum* in the upper part. The most numerous species is *Vallonia excentrica,* with lower numbers of *Trichia hispida, Pupilla muscorum, Vertigo pygmaea, Punctum pygmaeum* and *Helicella itala; Nesovitrea hammonis* and the Limacidae are present in low numbers. This too is a predominantly grassland assemblage, but the increase in the numbers and diversity of land snails argues for a change in land use from the previous zone.

Molluscan assemblage zone WL*A* 3 (WL*A* 50–20cm)

This zone is characterised by the abrupt decline in the numbers of land snails, and by a slight increase in the amount of coarse material in the sediment. Although most species show a decline throughout the zone, there is an increase in the numbers of *Trichia hispida, Helicella itala* and *Pupilla muscorum* in the lower part of the zone, and in the middle of the zone, a slight increase in the numbers of *Cochlicopa lubrica, Vertigo pygmaea, Vallonia costata* and the Limacidae. *Carychium tridentatum, Punctum pygmaeum* and *Nesovitrea hammonis* are present in low numbers in the lower part of the zone. Although this remains a grassland assemblage, the decline in the number of land snails together with the increase in the amount of coarse material in the sediment, suggests another change in land use in the area.

Molluscan assemblage zone WL*A* 4 (WL*A* 20–0cm)

This zone is characterised by an initial increase in the numbers of snails, and by a slight increase in the diversity of the species represented. *Vallonia excentrica* continues to show an overall decline in numbers; *Helicella itala* declines in the lower part of the zone before increasing slightly, whilst *Trichia hispida, Punctum pygmaeum, Vallonia costata, Vertigo pygmaea* and *Pupilla muscorum* all show an increase in all but the topmost part of the zone. The zone is also characterised by the absence of *Carychium tridentatum, Cochlicopa lubrica* and *Nesovitrea hammonis.* This grassland assemblage is similar in character to that of the previous zone.

Discussion

The land snails in the samples from the trackway are likely to have colonised the track from the surrounding area, and thus will represent the landscape through which the trackway was routed. However, the trackway itself may have afforded slightly different ecological conditions, favouring species not able to be an important component of the faunas from the surrounding areas.

The molluscan faunas are of grassland throughout the sequence, and those represented in this profile have similarities with those described by Bush (1988). They may be typical faunas of calcareous grassland in the more northerly parts of Britain, as work by Bush (1988) and by Milles (1991) suggests that species (such as *Nesovitrea hammonis* and *Punctum pygmaeum*) more typically of more shaded habitats in the south east of England, may be components of grassland communities elsewhere, although such species may also occur when grazing pressure is relaxed (Cameron and Morgan-Huws 1975).

The absence of bare ground faunas in Zone 1 may suggest that the track was not used enough to erode the grassland sward very much. However, the sudden increase in the numbers and diversity of land snails in Zone 2 suggests a change in land management in the area, perhaps that the area became used for grazing.

The abrupt change at the boundary of Zones 2 and 3, where there is a sudden decrease in the numbers and diversity of the land snails, suggests another change in land management of the area, perhaps of a change in the intensity of grazing. The even more marked decline in the numbers and diversity of land snails in Zone 4, and the very restricted nature of the fauna may perhaps be a reflection of a change in the land use to arable, as has been suggested for similarly restricted faunas in north Cornwall (Milles 1991), although *Vallonia costata* is usually thought to be very rare in arable habitats (Evans 1972).

Results: WL5 (the fill of the ditch)

The vertical sequence WL 5 was taken throughout the fills of the ditch (cut 19; contexts 16/20, 30, 31, 33 and 34). The depths of each sediment type and of the samples below the surface of the ploughsoil are given in centimetres.

> WL 5 10-50cm: a dark yellowish brown (10 YR 4/6), dry, crumbly, slightly sandy clay silt, with stones 2mm-6cm in size.
>
> WL 5 50-60 cm: a yellowish brown (10 YR 5/6), dry, crumbly, slightly sandy clay silt, with stones 2mm-20cm in size.
>
> WL 5 60-70 cm: a yellowish brown (10 YR 5/8), dry, crumbly, clay silt, with stones 2mm-2cm in size.
>
> WL 5 70-75 cm: a very pale brown (10 YR 7/4), dry, crumbly, slightly sandy silt, with stones 2cm-6cm in size.

The results of the molluscan analyses from this sequence are discussed using molluscan assemblage zones, which are based on archaeological, lithostratigraphic and molluscan data. The results are presented in Table 2, and as a histogram of absolute numbers of land snails in each sub-sample (Fig 17).

Molluscan assemblage zone WL5 1 (WL5 75-70 cm)

This zone is characterised by the low numbers and low diversity of the land snails, and by the high proportion of coarse and stony material in the sediment. The most numerous species is *Pupilla muscorum*, with lower numbers of *Vallonia excentrica* and *Vertigo pygmaea*, and individuals of *Helicella itala* and *Cochlicopa lubrica*. This assemblage is characteristic of fairly short-turfed

grassland, but as most of the shells are fairly worn, this might indicate that they had been derived from elsewhere, and are thus representative of the local vegetation in general, rather than that of the ditch alone.

Molluscan assemblage zone WL5 2 (WL5 70–60 cm)

This zone is characterised by the very marked increase in the numbers of land snails, and by a slight increase in the diversity of the species; there is a marked increase in the amount of fine sediment as the amount of coarse material declines. The molluscan assemblage is dominated by *Pupilla muscorum,* with lower numbers of *Vallonia excentrica* and *Vertigo pygmaea,* low numbers of *Helicella itala* and *Cochlicopa lubrica,* and the appearance of *Trichia hispida, Punctum pygmaeum* and the Limacidae. Many of the shells are quite worn and therefore these shells may be derived from contexts outside the ditch, but the assemblage would be typical of grassland, and probably of a more diverse and species rich grassland than that represented in Zone 1. The abundance of *Pupilla muscorum* may also suggest the presence of areas of bare or disturbed ground.

Molluscan assemblage zone WL5 3 (WL5 60–50 cm)

This zone is characterised by a fall in the numbers of land snails, and by the increasing amounts of coarse material in the sediment. *Pupilla muscorum* remains the most numerous species, with *Vallonia excentrica, Vertigo pygmaea, Cochlicopa lubrica,* the Limacidae and *Trichia hispida* rather less numerous and also declining; *Helicella itala* and *Punctum pygmaeum* increase in numbers at the beginning of the zone, and an individual of *Nesovitrea hammonis* is present. The decline in numbers and the increase in the amount of coarse material in the sediment may suggest an increase in the erosion of the ditch sides, perhaps also as a result of changes in land use of the area.

Molluscan assemblage zone WL5 4 (WL5 50–10cm)

This zone is characterised by a further reduction in snail numbers in most species except *Vallonia excentrica,* by the absence of *Cochlicopa lubrica,* and by the sediment containing coarse and fine material in almost equal parts. *Vallonia excentrica* is the most numerous species and its increase in numbers coincides with a decline in the numbers of *Helicella itala* and *Trichia hispida,* until these two species appear to increase in numbers coincident with a decline in the numbers of *Vallonia excentrica* in the upper part of the zone. The occurrence of the Limacidae and of *Punctum pygmaeum* likewise seems to be complementary. This zone is also distinguished by the appearance of *Vallonia costata* and *Candidula intersecta,* species particularly characteristic of dry grassland, and of *Oxychilus cellarius, Vitrea* sp. and *Vitrina pellucida,* which occur as grassland species, but typically of damper habitats.

Discussion

The low diversity and low numbers of land snails in the lowest part of the sequence are likely to reflect the hostile nature of a ditch recently dug out of the solid underlying rock, and therefore favouring *Pupilla muscorum,* a species which can thrive on bare ground. The increasing numbers of both species and individuals are likely to reflect the infilling of the ditch, both from its sides, and also from the surrounding area. The predominance of species favouring short-turfed grassland in zone 2, together with the increase in numbers and diversity of the land snails, may suggest that the grass was kept short by the grazing of sheep, or other herbivores, although it is also possible that the assemblage is also a reflection of the ditch being more stony in parts than the surrounding area generally.

The increase in the amount of coarse material in the sediment of Zone 3, together with the decrease in numbers of land snails, is likely to mark a change of land use in the area: it is possible that the increase in coarse sediment results from the eroding ditch sides, but it is also possible that a similar effect might have been caused by ploughing in the area. The rather restricted molluscan faunas of Zone 4 may, as suggested above for WL 4 Zone 4, result from arable.

The presence of *Candidula intersecta* in Zone 4 is of interest in that the dates of the post-glacial introduction and subsequent spread of this species are not yet established in the British Isles. Evans suggested that it might have been a medieval introduction (1972, 179). It has recently been found in bronze age contexts at Brean Down (Bell 1990), although the speed and route of its spread are not established.

Conclusions

The molluscan assemblages from both sequences show similar evidence of the range of species which may turn out to be typical of the more northerly English chalk grasslands. There are indications that the area may have been pasture, perhaps contemporary with the use of the trackway, but that subsequently the area was ploughed, and arable farming may have occurred. The grassland appears to have become less species-rich through time, as the more diverse assemblages do not persist to the upper parts of the sequences, and it may be that this is a result of the postulated arable activity. There are also indications, from the lower numbers of land snails in the upper parts of the sequences, that the area is not now as calcareous as it once was, perhaps again reflecting changing land use in the area.

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Table 1 – Landsnails from West Lodge WL4

	75–70	70–65	65–60	60–55	55–20
Carychium tridentatum	–	–	–	–	1
Cochlicopa lubrica	–	–	1	3	1
Cochlicopa sp.	2	1	2	6	4
Vertigo pygmaea	1	7	5	10	21
Pupilla muscorum	7	11	8	16	31
Vallonia costata	–	–	2	19	10
Vallonia excentrica	8	12	45	56	60
Vallonia sp.	6	19	51	97	81
Punctum pygmaeum	1	4	5	11	23
Nesovitrea hammonis	–	2	2	2	2
Cecilioides acicula	16	20	24	28	24
Limacidae	2	2	–	2	2
Helicella itala	4	10	10	17	11
Trichia hispida	13	10	41	53	43
Total	60	98	196	320	314

	50–45	45–40	40–35	35–30	30–25
Carychium tridentatum	1	1	1	1	1
Cochlicopa lubrica	–	–	1	1	–
Cochlicopa sp.	–	2	–	1	–
Vertigo pygmaea	10	7	13	–	6
Pupilla muscorum	22	25	15	13	5
Vallonia costata	5	2	4	–	3
Vallonia excentrica	30	29	19	15	16
Vallonia sp.	35	24	23	32	35
Punctum pygmaeum	12	7	3	2	1
Nesovitrea hammonis	1	–	1	–	–
Cecilioides acicula	49	25	43	26	72
Limacidae	2	–	6	1	–
Helicella itala	6	15	5	6	5
Trichia hispida	16	24	23	19	9
Total	189	161	157	107	153

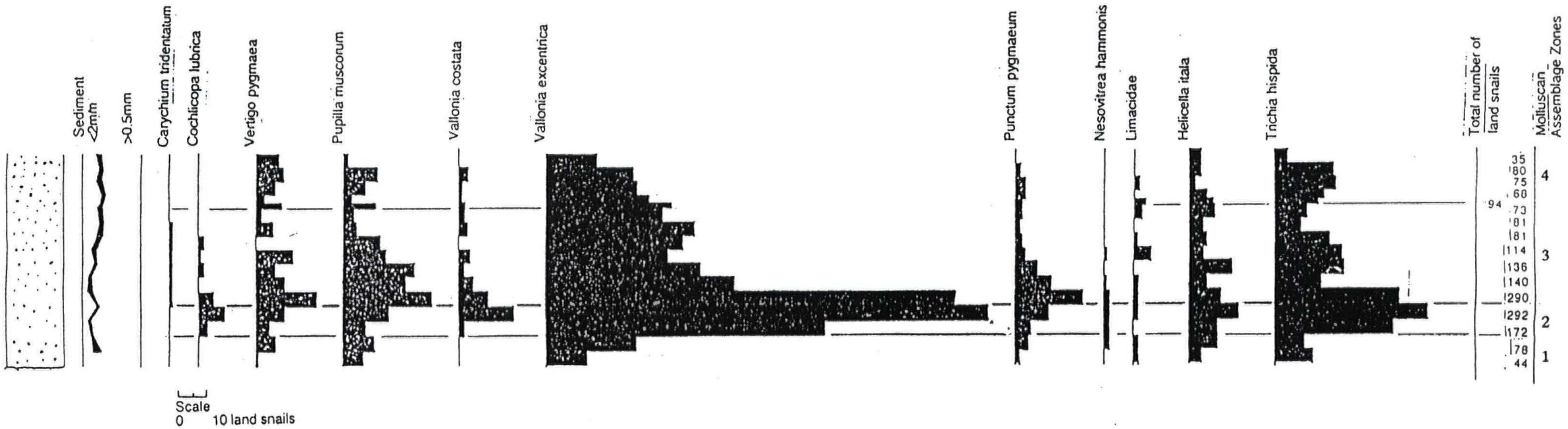
	25–20	20–18	18–15	15–10	10–5	5–0
Carychium tridentatum	–	–	–	–	–	–
Cochlicopa lubrica	–	–	–	–	–	–
Cochlicopa sp.	–	–	–	–	–	–
Vertigo pygmaea	2	9	3	7	10	8
Pupilla muscorum	4	11	3	8	12	2
Vallonia costata	2	2	1	1	3	–
Vallonia excentrica	20	20	10	13	10	5
Vallonia sp.	20	23	25	18	20	12
Punctum pygmaeum	2	2	3	3	1	–
Nesovitrea hammonis	–	–	–	–	–	–
Cecilioides acicula	61	88	80	110	112	128
Limacidae	3	4	–	2	–	–
Helicella itala	9	8	6	2	4	4
Trichia hispida	11	15	17	21	20	4
Total	134	182	148	185	192	163

Table 2 – Landsnails from West Lodge WL5

	75–70	70–65	65–60	60–55	55–50
Cochlicopa lubrica	–	4	3	–	2
Cochlicopa sp.	1	2	4	4	–
Vertigo pygmaea	5	25	34	13	6
Pupilla muscorum	10	83	104	90	42
Vallonia costata	–	–	–	–	–
Vallonia excentrica	1	28	25	12	4
Vallonia sp.	4	12	20	4	8
Punctum pygmaeum	–	6	3	8	–
Vitrina pellucida	–	–	–	–	–
Vitrea sp.	–	–	–	–	–
Nesovitrea hammonis	–	–	–	1	–
Cecilioides acicula	7	11	4	4	26
Limacidae	–	1	3	1	–
Candidula intersecta	–	–	–	–	–
Helicella itala	1	7	8	17	14
Trichia hispida	–	22	35	20	8
Total	29	204	243	174	110

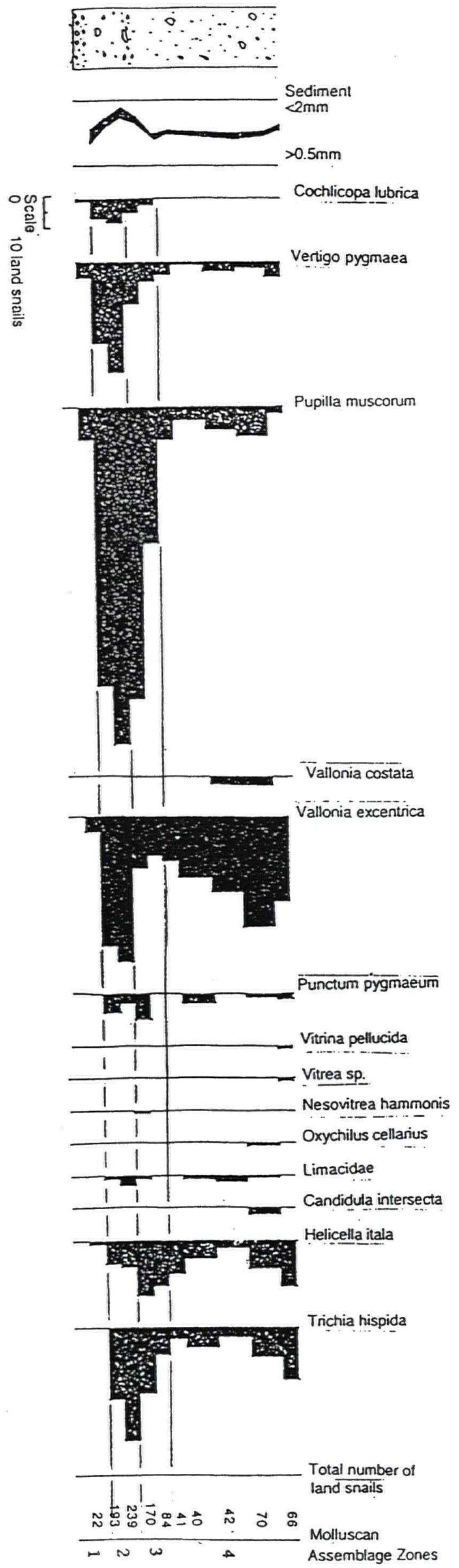
	50–45	45–35	35–25	25–15	15–10
Cochlicopa lubrica	–	–	–	–	–
Cochlicopa sp.	–	–	–	–	–
Vertigo pygmaea	4	1	3	2	5
Pupilla muscorum	10	4	7	9	2
Vallonia costata	–	–	2	2	–
Vallonia excentrica	1	6	11	13	11
Vallonia sp.	13	13	12	21	15
Punctum pygmaeum	–	3	–	1	2
Vitrina pellucida	–	–	–	–	1
Vitrea sp.	–	–	–	–	1
Nesovitrea hammonis	–	–	–	–	–
Oxychilus cellarius	–	–	–	1	–
Cecilioides acicula	36	11	23	20	82
Limacidae	–	1	2	1	–
Candidula intersecta	–	–	–	2	–
Helicella itala	10	6	2	9	13
Trichia hispida	3	6	3	9	16
Total	77	51	65	90	148

Fig 16 – West Lodge, Malton: Mollusca from the trackway sequence (WL 4)



West Lodge, Malton: Mollusca from the trackway sequence (WL4)

Fig 17 – West Lodge, Malton: Mollusca from the ditch sequence (WL 5)



West Lodge, Malton: Mollusca from the ditch sequence (WL5)

Appendix 4 – Report on Human Cremation by Jacqueline I McKinley

A single, disturbed cremation was received for examination.

Methods

The cremation was passed through a stack of sieves of 10, 5 and 2mm mesh size. The weight of bone collected from each sieve (presented as a percentage of the total weight), together with the maximum fragment sizes for skull and long bone, illustrates the degree of bone fragmentation.

The identifiable bone was then separated for further examination, being divided into the categories of skull, axial, upper and lower limb (only fragments which can be identified fully are subject to further examination). The percentage of identifiable bone in each category may illustrate any deliberate bias in the skeletal elements collected for burial.

Age of immature individuals was assessed from the stage of tooth development and eruption (Van Beek 1983), and the stage of ossification and epiphyseal bone fusion (Gray 1977, McMinn and Hutchings 1985). The categories used are:

Infant – 0–4 yrs
Juvenile – 5–12 yrs

Cranial measurements 1a and 1b were taken according to Gejvall (1981). Any variation in colour from the normal buff/white for individual bones was noted.

Results

Total bone weight: 20.8g.
Percentage of bone in sieves: 10mm – 48.1%, 5mm – 61.5%, 2mm – 38.5%.
Maximum fragments: skull – 28.0mm, long bone – 27.0mm.
Percentage identifiable bone: 45.7%.
Percentage identifiable bone in each skeletal area: skull – 93.7%, axial – 3.6%, upper limb – 3.6%.

Skull: deciduous/?permanent incisor/canine/premolar root fragment, apex open.
Vault; 25 thin fragments including occipital (bit grey). 1a = 2.85mm, 1b = c4.5mm.
Axial: Rib; 3 fragments shaft.
Upper Limb: Clavicle; shaft fragment.
?Ulna; shaft fragment.
Minimum one upper/lower limb shaft fragment – femur/tibia/humerus.

Age: older infant/juvenile.

Discussion

The bone recovered represents less than 15% by weight of the total weight of cremated bone one might expect from an individual of this age. In view of the fact that the burial was disturbed, much of the bone is likely to have been lost (?or remain unexcavated) post deposition, though of course, the entire cremated remains were rarely, if ever, buried (McKinley 1989 and forthcoming a).

The bone appears to have been fully cremated (well oxidized), and cannot be said to have suffered deliberate fragmentation (see McKinley 1989 and forthcoming a and b).

Jacqueline I. McKinley
August 1992.

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